

DIRECTIONS IN DEVELOPMENT
Public Sector Governance

Closing the Feedback Loop

*Can Technology Bridge the
Accountability Gap?*

Björn-Sören Gigler and Savita Bailur, Editors



THE WORLD BANK

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Contents

<i>Foreword by Sanjay Pradhan</i>	<i>xi</i>
<i>Foreword by Rakesh Rajani</i>	<i>xv</i>
<i>Acknowledgments</i>	<i>xvii</i>
<i>About the Contributors</i>	<i>xix</i>
<i>Abbreviations</i>	<i>xxiii</i>
Chapter 1	Introduction: The Potential for Empowerment through ICTs 1
	<i>Savita Bailur and Björn-Sören Gigler</i>
	Theories and Cases Presented in This Collection 2
	Underlying Theories of Empowerment through ICTs 5
	A Critical Analysis of Factors Influencing Empowerment through ICTs 8
	A Framework for Analyzing Empowerment through ICTs 10
	Note 14
	References 14
Chapter 2	Informational Capabilities: The Missing Link for Understanding the Impact of ICT on Development 17
	<i>Björn-Sören Gigler</i>
	Introduction to the Literature 17
	The Capability Approach 19
	The ICT Impact Chain 30
	Conclusions 37
	Notes 38
	References 38
Chapter 3	New Routes to Governance: A Review of Cases in Participation, Transparency, and Accountability 43
	<i>Renee Wittemyer, Savita Bailur, Nicole Anand, Kyung-Ryul Park, and Björn-Sören Gigler</i>
	Transparency, Accountability, and Participation: Assumptions and Critiques 44

	Objectives and Approaches: An Analytical Structure for Case Studies	47
	Improved Public Service Delivery	50
	New Spaces for Citizen Voices and Political Engagement	53
	Improved Budget Transparency	56
	Lower Levels of Corruption	61
	Legislative Reform	61
	Judicial Transparency and Accountability	62
	Reaching Impact: Considerations for Achieving Accountability	62
	Going Forward	64
	Notes	65
	References	66
Chapter 4	Interactive Community Mapping: Between Empowerment and Effectiveness	71
	<i>Jennifer Shkabatur</i>	
	From Mapping to Interactive Community Mapping	72
	The Elements of Interactive Community Mapping	74
	A Framework for Effective Interactive Community Mapping	80
	Applying the Framework	86
	Conclusion	103
	Notes	104
	References	105
Chapter 5	The Role of Crowdsourcing for Better Governance in Fragile State Contexts	107
	<i>Maja Bott, Björn-Sören Gigler, and Gregor Young</i>	
	Crowdsourcing: A New Panacea for Social Accountability and Governance?	108
	How Is Crowdsourcing Expected to Improve Governance?	110
	Critical Success Factors of Crowdsourcing Systems	111
	Potential Role of Crowdsourcing and Interactive Mapping in Fragile States	115
	Challenges and Risks of Applying Crowdsourcing and Interactive Mapping in Fragile State Environments	119
	The Experience of the Crisis-Mapping Community	122
	Other Applications of Crowdsourcing	131
	An Analysis of Crowdsourcing Success Factors	138
	Recommendations for Donors: Applying Crowdsourcing and Interactive Mapping for Socioeconomic Recovery and Development in Fragile States	141
	Notes	144
	References	146

Chapter 6	Check My School: A Case Study on Citizens' Monitoring of the Education Sector in the Philippines	149
	<i>Jennifer Shkabatur</i>	
	Introduction to Check My School	151
	Stakeholders	152
	Enabling Conditions and Methods	156
	Technology	159
	The 12-Step Implementation Cycle of CMS	162
	Lessons from the First Phase: CMS 1.0	175
	The Next Phase: CMS 2.0	178
	Recommendations for Replicating CMS in Other Countries	182
	Conclusion	184
	Annex 6A: Sources	185
	Notes	187
	References	187
Chapter 7	Information Tools for Improving Accountability in Primary Health Care: Learning from the Case of Karnataka	189
	<i>Shirin Madon</i>	
	Unpacking Concepts: Participation, Transparency, and Accountability	191
	Karnataka's Rural Health Strategy	192
	NRHM Accountability Initiatives in Karnataka	194
	Discussion and Conclusion	205
	Notes	208
	References	208
Chapter 8	Closing the Feedback Loop: Can Technology Amplify Citizen Voices?	211
	<i>Björn-Sören Gigler, Samantha Custer, Savita Bailur, Elizabeth Dodds, and Saher Asad, with Elena Gageva-Petrova</i>	
	Conceptualizing Citizen Feedback in Development Assistance	212
	A Five-Point Systems Framework	219
	Primary Research	236
	Moving Forward: Recommendations to Maximize the Impact of Technology-Enabled Feedback	260
	Annex 8A: Survey Questions	264
	Annex 8B: List of 2013 World Bank–Financed Projects Incorporating Citizen Feedback, by Region	270
	Note	272
	References	273

Chapter 9	The Loch Ness Model: Can ICTs Bridge the “Accountability Gap”?	279
	<i>Björn-Sören Gigler, Savita Bailur, and Nicole Anand</i>	
	Understanding the Dimensions of ICT-Enabled Citizen Engagement	280
	How Can ICTs Bridge the Accountability Gap?	
	The Loch Ness Model	284
	Key ICT Enabling Factors	290
	Constraints on ICTs: A Door Still Ajar	294
	Recommendations	296
	Notes	301
	References	301

Boxes

6.1	Media Coverage of Check My School	150
6.2	Social Accountability	158
6.3	The College of Saint Benilde, Manila	166
6.4	The Brigada Eskwela Project	168
8.1	Integrating Feedback from Civil Society and Beneficiaries into Project Implementation: The E-ISR+	215
8.2	Complementing Existing Feedback Mechanisms with ICT Platforms: OnTrack	216
8.3	Initial Challenges of Integrating Mobile Technology in Feedback Mechanisms: Nigeria’s Third National Fadama Project	218
8.4	The Challenge of Digital Inclusion and Incentivizing Participation: Daraja’s Maji Matone Project in Tanzania	220
8.5	Engaging Citizens and Civil Society to Improve Governance through Mobile Technology: The Democratic Republic of Congo’s ICT4Gov Project	224
8.6	Complementing Existing Feedback Mechanisms with ICT Platforms: Nepal’s Poverty Alleviation Fund	231
8.7	Engaging Citizens to Reduce Corruption: The Punjab Government’s Model of Proactive Governance	233
8.8	A Context-Driven Approach to Multichannel Crowdsourcing in Brazil: The “Government Asks” Initiative	235
8.9	Uganda’s U-Report: SMS-Based Polling Mechanism or Citizen Feedback Platform?	244

Figures

1.1	Assumed Relationship between Empowerment, Participation, Transparency, and Accountability	7
1.2	Assumed Impact of ICTs on Empowerment, Participation, Transparency, and Accountability	8

1.3	Questioned Relationships between Empowerment, Participation, Transparency, and Accountability	10
1.4	The STEP Framework	11
2.1	The Concept of Informational Capabilities	23
2.2	The ICT Impact Chain: A Five-Step Process	32
4.1	Continuum of Trade-Offs for ICM Projects	81
4.2	Framework for Successful ICM Interventions	84
4.3	Continuum of Trade-Offs for the Four Projects	102
6.1	Major Stakeholders in CMS	152
6.2	Problems Encountered in Using the CMS Website: Results of a Survey Completed by CMS Infomediaries, October 2011	161
6.3	Use of the CMS Website and Facebook Page: Results of a Survey Completed by CMS Infomediaries, October 2011	162
6.4	First CMS Pilot Cycle	163
6.5	Preparatory Process for CMS Validations	163
6.6	Data Acquired from the Department of Education	164
6.7	Discrepancies between DepEd and CMS Data: Results of the First Cycle of CMS Validations, August–October 2011	171
6.8	Expanding the User Base	180
7.1	Health Management Information System Portal	195
7.2	Village Report Cards (Cumulative of Four Districts)	198
7.3	Composite Health Indicators in Four PHCs, 2010 and 2011	199
7.4	VHSC Structure	200
8.1	The Broken Feedback Loop	213
8.2	Distinction between Citizens, Civic Engagement, and the Use of ICTs	214
8.3	Types of Feedback during the Project Cycle	228
8.4	Current and Desired Levels of Feedback Collection across Sectors	239
8.5	Current and Desired Areas of Feedback Collection	241
8.6	Current and Desired Levels of Feedback from Providers	241
8.7	Current and Desired Frequency of Feedback Collection	242
8.8	Desired Form of Feedback Collection	243
8.9	Current Use of No-, Low-, and High-Tech Feedback Platforms	243
8.10	Desired ICT-Based Platform for Feedback Collection	246
8.11	Respondents, by Country of Residence and Sector	248
8.12	Nature of Feedback with Respect to Organization Represented	249
8.13	Nature of Feedback with Respect to Organization Represented, by Sector	249
8.14	Factors to Consider in Discussing Citizen Feedback	250
9.1	Strengthening Civic Engagement in Development with ICT-Enabled Feedback	280
9.2	Dimensions of Citizen Engagement: Embedding ICTs	281

9.3	The Loch Ness Model: Contextual and ICT-Enabling Factors	285
9.4	The Loch Ness Model: Process	285
9.5	ICT Penetration Rates, 2001–13	292

Maps

4.1	Geo-Spatial Map of Kibera, Kenya	88
4.2	Information Layers on Map Kibera	88
4.3	Voice of Kibera	89
4.4	Tandale, Tanzania	91
5.1	Libya Crisis Map	125
5.2	Example of Geographic Targeting Based on CRM Data in East Sudan	129
6.1	Interactive CMS Map	160

Tables

2.1	Empowerment through ICT Framework	26
2.2	Dimensions of Stronger Individual Empowerment and Human Capabilities	28
2.3	Indicators for Stronger Social Capabilities for Community Empowerment	29
3.1	Approaches of Existing Cases, by Goal and Method	48
4.1	Enabling Factors: Map Kibera, Map Tandale, ICM in the Gulf of Mexico, and HOT in Indonesia	100
5.1	Effect Determination Matrix	113
5.2	Rating of Cases Using Sharma's Model of Crowdsourcing Critical Success Factors	139
7.1	Missing Data on Diarrhea, Malaria, and Tuberculosis in Chamrajnagar District, Karnataka, Various Years	196
7.2	Concurrent Evaluations in Karnataka, 2009	197
7.3	Details of VHSC Meetings, Gumballi Village, December 2010–December 2012	201
7.4	Results from VHSC Meetings	202
7.5	Systems of Accountability	205
8.1	Feedback Typologies	226
8.2	Spectrum of ICTs	230
8A.1	Design Questions for Collecting Citizen Feedback Using a Systems Approach	269
9.1	Opportunities and Barriers to Closing the Accountability Loop through ICTs	282
9.2	Contextual Constraints on ICTs	295

Foreword

Recent experiences of the Arab Spring and other citizen movements from around the world have highlighted the urgent need to fundamentally rethink traditional governance models toward a new approach that is based on a more open, direct, and inclusive engagement with citizens, including the most marginalized groups. Enhanced transparency, accountability, and government/donor responsiveness to people's needs are imperative to achieve better and more sustainable development results on the ground.

The rapid spread of new technologies is transforming the daily lives of millions of poor people around the world and has the potential to be a real game changer for development. In particular, the rapid spread of the mobile phone—with approximately 6 billion mobiles in the world in 2012—is having profound effects on people's lives, even in the most remote communities of Africa, Latin America, the Middle East, and Asia. Innovations in technologies are empowering citizens to make their voices heard and to better participate in political decision-making processes in the governance of villages, cities, states, and countries.

Innovative grassroots programs such as Ushahidi, a crowdsourcing platform from Kenya; Map Kibera, a community mapping program in Nairobi, Kenya; Daraja, a program to monitor the provision of water services in rural Tanzania; or Check My School, a citizen feedback platform in the Philippines, are leveraging the power of SMS, cell phones, and interactive mapping to empower citizens to better hold governments and service providers accountable.

The widespread use of cell phones, SMS, and social media combined with crowdsourcing approaches is a key enabler for social change. It provides us with the unique opportunity to better listen to the most vulnerable and marginalized groups in society, to broaden the information base on which decisions are made, and, ultimately, to enhance our responsiveness to people's real needs.

In Bolivia, for instance, we are working closely with the Ministry of Agriculture to implement OnTrack—a citizen feedback program that enables for the first time 30,000 marginalized rural families to make their voices heard by simply sending a text message from a cell phone that directly reaches the government's project team of the Rural Alliances programs. During a recent field visit, Francisco Mamani, an indigenous leader and head

of a local rural producers' association from Buenavista in Santa Cruz that specializes in producing organic coffee and handicrafts greeted the project team:

It is important that you have come with a mindset of listening, and through the new OnTrack platform we now have a window to the world through the Internet. We feel that now our voices are being heard and that for the first time we are in direct contact with our government officials who are responsible for implementing this project. We believe that through this new form of dialogue we can better contribute to the protection of the Amboro National Park through our sustainable, organic farming.

However, a key challenge we are encountering in these types of programs is that it is not sufficient to empower marginalized communities to make their voices heard; we have to go beyond listening and support governments to build institutional systems that allow policy makers and project teams to better incorporate citizen voices in decision-making processes and thus to increase the responsiveness of government programs to people's real needs. While improved citizen engagement has an intrinsic value in itself, our ultimate goal is not only to empower the poor but also to improve the reach and quality of public services offered to poor and marginalized communities.

Central to this process is the issue of how to close the "feedback loop" between citizens and governments—the central theme of this publication. We can only bridge the existing "accountability gap" between the supply side of governance (government reforms) and the demand side (citizen voices and social movements) by enhancing the responsiveness of governments to people's real needs. Bringing together the demand and supply sides of governance is critical to tackling the accountability puzzle. In fact, such an approach is instrumental for a new collaborative model of governance that aims to make the development process more open, effective, and inclusive.

Such an approach is critical not only for enhanced accountability but also can be truly transformational for changing the relationship between governments and citizens. Furthermore, improved accountability and responsiveness are critical for reaching our goals of eliminating extreme poverty and promoting shared prosperity with a focus on improving the well-being of the most vulnerable and marginalized groups in society.

Within this broader political economy context, many questions remain unanswered about the role that new technologies can play to act as an "accelerator" for closing the accountability gap. Early experiences of grassroots innovations, such as Ushahidi of the OpenStreetMap community, have demonstrated that new technologies and crowdsourcing approaches have the potential to fundamentally alter the relationship between citizens, civil society, and governments and donors alike.

Within this context, *Closing the Feedback Loop: Can Technology Bridge the Accountability Gap?* brings together new evidence from leading academics and

practitioners on the effects of technology-enabled citizen engagement. The report aims to address the following four main questions:

- How do new technologies empower communities through participation, transparency, and accountability?
- Are technologies an accelerator for closing the accountability gap—the space between supply (governments, service providers) and demand (citizens, communities, civil society organizations) that must be bridged for open and collaborative governance?
- Under what conditions does this occur?
- What are the experiences and lessons learned from existing grassroots innovators and donor-supported citizen engagement and crowdsourcing programs, and how can these programs be replicated or scaled up?

In addition, the report presents a theoretical framework about the linkages between new technologies, participation, empowerment, and the improvement of poor people's human well-being based on Amartya Sen's capability approach.

The book provides rich case studies about the different factors that influence whether or not ICT-enabled citizen engagement programs can improve the delivery and quality of public services to poor communities.

For instance, the report analyzes in depth both the factors and process of using new technologies to enhance the delivery of primary health services to pregnant women in Karnataka, India, and of several community mapping and crowdsourcing programs in Guinea, Haiti, Kenya, Libya, Sudan, and other countries.

Finally, the Loch Ness model is introduced, which presents ten enabling factors (including openness, timeliness, responsiveness) that can help new technologies contribute to shrinking the accountability gap. The model also analyzes the main reasons why the gap remains open in many cases, and what can be done to help close it.

It is important to mention that not only does this publication analyze the effects of crowdsourcing on development, but it also has used this innovative approach in the process of generating the data and findings presented in the chapters. Through our Open Development Technology Alliance—one of the World Bank's Knowledge Platforms—the early drafts of several papers were broadly shared with the community of practitioners, civil society leaders, grassroots innovators, international donors, and academics. We would like to express our gratitude to the many people who have actively commented on and contributed to the materials presented in this book. This approach has clearly demonstrated that to a large extent the knowledge and expertise on the innovative uses of technologies for improved accountability and delivery of services lie outside the World Bank Group. Based on this experience, it seems to us that an open and iterative learning approach among all different stakeholders is best suited to analyzing the lessons learned from existing experiences and further developing new approaches on how to effectively leverage technology for meaningful citizen engagement.

We hope that the early findings presented in this volume will stimulate a rich discussion about how best to leverage technology innovations to fundamentally alter the relationship between citizens, government, and donors with the key objective of enhancing the human development and well-being of the poorest and most marginalized communities around the world.

Sanjay Pradhan
Vice-President for Change, Leadership and Innovation
The World Bank Group

Foreword

Ideas that hold the most promise can also be the most deceptive, for their power and allure can mask the inconvenient details that come in the way of a good story. The use of technology in development, and in particular its potential to close the gap between citizen voice and state responsiveness, is one such idea.

In the past decade, development blogs and mainstream press have dedicated pages to the transformative power of the Internet and mobile telephony—in closing information asymmetries, creating pathways for citizen expression and feedback, monitoring service delivery, aggregating and visualizing data, and creating new possibilities for collective action. At Twaweza, we have claimed that the spread of communication technologies is a “game changer” in East Africa, that the information space has been “democratized” now that the content and methods that used to be the preserve of a few are open to the many, and because facts and ideas can travel in so many directions, so quickly, and at little cost. Who cannot be moved by the memes of the fisherman calling in to find out which market will give him the best price, or the village woman reporting the broken water point, or the budget visual that gives you simple, color-coded bubbles to follow your money?

That technology can allow us to do interesting and at times transformative things is clear. The case studies in this volume provide some rich examples. The trouble is that too many of us too much of the time have oversold technology’s promise. Not so long ago serious people would talk as if all one had to do was to sprinkle mobile phones or Internet apps and the persistent, structural imbalances and power asymmetries that had dogged us for decades would melt away. Thankfully, for the most part, we are past that stage.

So how do we sensibly think about these issues? It’s not easy. Our ability to grapple with the question of the application of technology in development has been hampered by inadequate theorizing and by the lack of reliable evidence and historically grounded clear thinking.

This book is a serious attempt to fill these gaps. Chapters 2 and 9 lay out frameworks, in terms of “information capabilities” and “information ecologies.” Basic, critical considerations regarding the purposes and motives for human action are addressed in conceptually helpful ways: What exactly is one seeking to achieve? What assumptions are we making about who would act? Do we understand why people would get engaged and what the constraints are to their

action? How do we make feedback loops real, meaningful, trusted, and effective?

The book's middle chapters contain a wealth of case studies and useful evidence from across the world that examine what worked and why and under what circumstances. Examples include both successes and failures. The authors—academics and practitioners—bring an unusual balance of rooted experience and conceptual rigor. And, even as they glean general insights, they are appropriately cautious about the limits of transferring success from one place and one time to another. They persuasively demonstrate that the primary barriers to closing the accountability gaps are nontechnological in nature and largely stem from sociopolitical factors. And they show that action is likely to be more successful when the deployment of modern technology has paid attention to old-fashioned concerns regarding human behavior, choice, and collective action, particularly in relation to “closing the feedback loop” between citizens and the state.

Even as I learned much and discovered helpful gems in every chapter, I found myself wishing for a little more: that there was a more critical take on some of the case studies, addressing matters such as the uptake by key users outside the project participants, effectiveness in addressing structural constraints, and durability over time; that greater attention was given to the role of evaluation, from rigorous experiments to deep ethnography, and a discussion of the value of third-party, independent assessments; that the Loch Ness design in chapter 9 was simpler, with a more consistent use of the analytical frameworks across the chapters; and that the reference points were less *projectized*, drawing on cases that were not only donor-funded, and that were better contextualized in historical accounts of social movements responding to contestations over transparency and accountability.

Nonetheless, this book is valuable precisely because it propels us to ask these sorts of questions and equips us with primary case evidence and useful framing tools. It is a practical and thoughtful reference for researchers seeking to study the role of technology in fostering transparency and accountability. And for practitioners it illuminates the extent and limits of how technology can be deployed to ignite citizen action and make government work for people.

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communities by improving transparency, social accountability, and government responsiveness have been a real inspiration for our team.

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Abbreviations

AIDS	acquired immunodeficiency syndrome
ANM	auxiliary nurse midwives
ANSA-EAP	Affiliated Network for Social Accountability in East Asia and the Pacific
AOI	All Our Ideas
ASHA	Accredited Social Health Activist
AusAID	Australian Agency for International Development
AWW	anganwadi worker
BEIS	Basic Education Information Services
BESRA	Basic Education Sector Reform Agenda
BNPB	National Disaster Management Agency
BP	British Petroleum
BVS	Beneficiary Verification System
CMS	Check My School
CPB	citizen participatory budgeting
CRM	crisis and recovery mapping
CRMA	crisis and recovery mapping and analysis
CSO	civil society organization
FCPF	forest carbon partnership facility
FOSS4G	Free and Open Source Software for Geospatial
GIS	geographic information system
GMM	Google Map Maker
GPS	Global Positioning System
GV10	Guinée Vote 2010 Temoign
HISP	Health Information Systems Program
HMIS	Health Management Information System
HOT	Humanitarian OpenStreetMap Team
IBP	International Budget Partnership
ICM	interactive community mapping

ICT	information and communication technologies
ICT4Gov	Information and Communication Technology for Governance
IMWG	Information Management Working Group
InaSAFE	Indonesia Scenario Assessment for Emergencies
ISR	implementation status and results
ITU	International Telecommunication Union
IVR	interactive voice response
JHA	junior health assistant
JSY	Janani Suraksha Yojana
KHSDRP	Karnataka Health System Development and Reforms Project
LABB	Louisiana Bucket Brigade
LAC	Latin America and the Caribbean
MoHFW	Ministry of Health and Family Welfare
NGO	nongovernmental organization
NRHM	National Rural Health Mission
OAP	Open Aid Partnership
OCHA	Office for the Coordination of Humanitarian Affairs
ODTA	Open Development Technology Alliance
OGP	Open Government Partnership
PAF	Poverty Alleviation Fund
PHC	primary health centers
PLOTS	Public Laboratory for Open Technology and Science
PRA	participatory rural appraisal
PTA	parent-teacher association
RTI	Right To Information
SBTF	Standby Task Force for Live Mapping
SC/ST	scheduled caste/scheduled tribe
SMS	short message service
STEP	sociocultural, technical, economic, and political
TPI	The Philanthropic Initiative
TTL	task team leader
UN	United Nations
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
UNRISD	United Nations Institute for Social Development
USSD	unstructured supplementary service data
VHSC	Village Health and Sanitation Committees
WBG	World Bank Group

Introduction: The Potential for Empowerment through ICTs

Savita Bailur and Björn-Sören Gigler

Information and communication technologies (ICTs) have exploded in the last decades. Analog radios, televisions, loudspeakers, and cassette decks—the “old,” nondigital technologies—have been joined by Web browsers, mobile phones, smartphones, and interactive television, to name but a few of the available information technologies. These ICTs provide a tremendous diversity of tools that enable citizens to participate in the governance of villages, cities, states, and countries. By now, popular as well as academic papers on the critical role of social media in the 2010–11 Arab Spring are ubiquitous. Phrases such as Government 2.0 (Chun *et al.* 2010) and “we-government” (Linders 2012) have been used to describe the collaborative nature of governance owing to participation through ICTs. Prominent examples of “people power” through ICTs include the crowdsourcing platform Ushahidi, first launched in Kenya during the 2007 election violence, which allowed citizens to use short message service (SMS) and e-mail to report acts of violence that were then mapped online, and Daraja, a nongovernmental organization (NGO), which facilitated citizen use of mobile phones and SMS to report on government water provisioning in rural Tanzania.

The proliferation of these initiatives and the potential of ICTs have led to high expectations of technology as “empowering.” Larry Diamond coined the term “liberation technology,” which he sees as “any form of information and communication technology (ICT) that can expand political, social, and economic freedom” (Diamond 2010, 79). The day Hosni Mubarak resigned as president of the Arab Republic of Egypt, Wael Ghonim, Google’s Middle East marketing director and Egyptian activist, told CNN, “If you want to liberate a society, just give them the Internet” (Hofheinz 2011, 1417). Ghonim stated that the potential of technology to connect, unify, and organize ensured that “the power of the people is stronger than the people in power” (Hofheinz 2011, 1421).

More cautious thinkers advise that instead of immediately assuming a causality—that more technology leads to more political engagement—we need to analyze the factors necessary for empowerment (Bertot, Jaeger, and Grimes 2010; Hofheinz 2011; Wade 2002). Hofheinz states, “It is almost as if we are constantly searching for political utopia through the next generation of technology,” which he calls a “nextopia” (Hofheinz 2011, 1423). Instead of embracing the next new technology, it is more helpful to look at historical and long-term patterns of engagement, personal and group dynamics, and political, social, economic, and financial conditions that are necessary *in addition* to technology for citizen engagement. Why do some initiatives succeed and others do not? How do we move from short-term impact to long-term change? What factors are necessary for this long-term change?

The chapters in this book, written by both academics and practitioners, provide a base of evidence for citizen engagement through ICTs. Each chapter demonstrates how technologies enhance access to information, participation, collaboration, and empowerment. The outcome is accelerated progress toward closing the “accountability gap”—the space between the supply (governments, service providers) and demand (citizens, civil society organizations, communities) that must be bridged for open and collaborative governance. This collection explores multiple ICT initiatives that aim to engage citizens in governance and examines two principal questions: To what extent are technologies an accelerator in closing the accountability gap? Under what conditions does this occur? This collection is a critical addition to existing literature on ICTs and citizen engagement for two main reasons: first, it covers a range of interventions, from mobile phone reporting to crowdsourcing to interactive mapping; second, it is the first of its kind to offer concrete recommendations on how to close feedback loops.

In the next section, we briefly summarize each of the chapters. We then discuss the key terms in empowerment—empowerment itself as well as transparency, accountability, and participation—and how examples from the chapters illustrate these. We proceed to examine the challenges within the assumptions of empowerment, transparency, accountability, and participation, critique the assumed relationships between them, and demonstrate how some of the cases in the following chapters exemplify these challenges. Finally, we introduce an overarching framework of factors that may enable or inhibit citizen empowerment through ICTs. We label this the STEP framework, which considers *social*, *technical*, *economic*, and *political* factors that influence empowerment. This framework is pervasive throughout the chapters in this book, which return to it as a guideline for enabling or inhibiting factors.

Theories and Cases Presented in This Collection

This book is structured as follows. In chapter 2, Gigler develops an alternative evaluation framework of the impact of ICTs on human development, based on Amartya Sen’s capability approach, a more pluralistic means of assessing development than simple economic development, by seeing what people are capable

of being or doing with the goods to which they have access. He devises an *informational capability* framework, which assesses whether people have the capability (a) to use ICTs in an effective manner (ICT capability); (b) to find, process, evaluate, and use information (information literacy); (c) to communicate effectively with family, friends, and professional contacts (communication capability); and (d) to produce and share local content with others (content capability). Informational capabilities refer to a person's positive freedom to use ICTs within the institutional and socioeconomic setup of a society. The expansion of informational capabilities can then be translated into agency and the expansion of a person's well-being in the economic, political, social, and cultural spheres of his or her life. The chapter sets the theme for the rest of the book: we need to look beyond the technology and seek to understand the value of ICTs.

In chapter 3, Wittemyer, Bailur, Anand, Park, and Gigler deconstruct the definitions, assumptions, and challenges to transparency, accountability, and participation in governance. The authors review a sample of initiatives targeting these goals and make preliminary conclusions about what evidence exists to date and where to go from here. Cases illuminate the approaches that open government initiatives take, including collecting, analyzing, and visualizing data; accessing and disseminating information; and organizing and unifying communities. The summary of cases also allows for determining trends and gaps in practice areas, with many examples of efforts to improve service delivery and fewer examples of efforts to improve legislative and judicial accountability.

In chapter 4, Shkabatur reviews the process of interactive community mapping (ICM). This engages individuals in mapping their own community and potentially in creating empowerment through both the process (capacity building) and the results (changes in political behavior or development outcomes). Two types of ICM are assessed—maps to support general development (such as Map Kibera in Nairobi's largest informal settlement) and maps to mitigate natural disasters (such as the environmental consequences of the Gulf of Mexico oil spill). Shkabatur identifies necessary enabling factors including a supporting information infrastructure, the need for information, civil society capacity, government cooperation, the quality of collected data, and incentives for community mappers. Although she recognizes the unintended negative effects of ICM (including elite capture), the benefits of harnessing collective wisdom and local knowledge are immense, as is the sense of ownership in ICM. In turn, this sense of ownership allows for better assessment of local needs and concerns and more effective future development activities.

In crisis situations or fragile states, interactive mapping can serve an immediate purpose, whether tracking aid flows, reporting on incitement, or organizing grassroots movements. In chapter 5, Bott, Gigler, and Young examine crowdsourcing, defined as "the act of taking a job traditionally performed by a designated agent and outsourcing it to an undefined, generally large group of people in the form of an open call." Examples of crowdsourced mapping are given for crisis situations, such as in Guinea, Haiti, Kenya, Libya, and Sudan, when government intervention is weak. The challenge arises when governments reconstruct after

crisis situations, in which case their own commitment and leadership are essential.

In chapter 6, Shkabatur reviews Check My School (CMS)—a community-monitoring project that aims to promote transparency and social accountability in the Philippine education sector by tracking the provision of services in public schools. Spearheaded by the Affiliated Network for Social Accountability in East Asia and the Pacific, the project engages local community volunteers in monitoring the existence of sufficient numbers of textbooks, working toilets, teacher attendance, use of school funds, and other issues in public schools. This information is then made available on public websites in an easily accessible format, allowing citizens to comment on the accuracy of the data collected and to voice related concerns and issues. While the CMS project relied on a variety of ICT tools, the case study highlights the importance of non-ICT issues, such as the need for constructive, cooperative relations between civil society groups and government and “complementarity with ongoing government projects” to create an environment conducive to initiatives. The case study also demonstrates that, even (or perhaps especially) in ICT-related initiatives, an organized presence on the ground of local networks of civil society organizations and youth groups is critical for the success of a community-monitoring project.

In chapter 7, Madon introduces four key citizen-governance initiatives in primary health care in India, focusing on the southern state of Karnataka. These range from the “no-tech” Village Health and Sanitation Committees and community monitoring report card to the “higher-tech” Health Management Information System and a Beneficiary Verification System, which has been recently piloted in Karnataka with a view to statewide implementation. Through the analysis of these coexisting systems, Madon concludes that, while the efforts made have contributed to improving basic primary health care, much learning is needed and many programs have to be consolidated for accountability to be improved, and technology is not always necessary for accountability.

In chapter 8, Gigler, Custer, Bailur, Dodds, Asad, and Gagieva-Petrova examine the World Bank Institute’s use of ICTs to expand citizen input on economic and social development projects. The aim is to understand the extent to which ICTs can either engender a new “feedback loop” or ameliorate a “broken loop.” The authors primarily interviewed World Bank project staff working in the Africa region and technical experts working on issues related to the delivery of public services as well as governance, accountability, and social inclusion issues across the different regions. Staff expressed a clear preference for using hybrid technology or multiple streams rather than depending solely on comprehensive cell phone or Internet penetration. Two interrelated suggestions are to reduce the cost and increase the benefit of participation. A feedback system is recommended for understanding five components: the purpose, people, process, tools, and environment into which the ICTs are introduced.

To conclude, in chapter 9, Gigler, Bailur, and Anand return to the original question of how ICTs contribute to participation and transparency to achieve accountability. Specifically, they introduce the “Loch Ness model” to sum up how

technologies have contributed to shrinking the accountability gap by accelerating citizen engagement. Four dimensions of ICT-led citizen engagement—information, participation, collaboration, and empowerment—provide a framework for analyzing the enabling and constraining factors that exist. Taking this forward, they open up the conversation to next steps for addressing the barriers and elucidating the unaddressed ethical and regulatory issues that have arisen with the increasing use of ICTs for closing the feedback loop.

Underlying Theories of Empowerment through ICTs

More than 2,000 years ago, the Greek philosopher Aristotle defined citizens as *all* who share in the civic life of ruling and being ruled in turn and a good citizen as someone who must possess the knowledge and capacity requisite for ruling as well as being ruled (cited in Mansbridge 1999). Modern definitions of citizenship build on Aristotle's understanding in seeing citizenship as "the rights and responsibilities" of individuals who plead allegiance to the constitution of a country. But the difference is that for Aristotle a city-state ideally comprised 5,000 people. As country populations grow into the higher millions, knowing their rights and responsibilities is an immense challenge for today's citizens, particularly in developing countries. In theory, then, ICTs offer great opportunities for citizens not only to understand these rights and responsibilities but also to question governments when it appears that their rights are not being heard and for governments and other citizens to hold them accountable for their responsibilities. In practice, however, several complementary factors are necessary for such empowerment to occur. Before these factors are examined in detail, it is necessary to deconstruct the four terms that are frequently used but often ill-defined in the literature: empowerment, participation, transparency, and accountability.

First, what exactly is empowerment? As with participation, transparency, and accountability, empowerment is a fuzzy concept. A widely cited definition is that of the World Bank's *World Development Report*, which sees empowerment as "enhancing the capacity of poor people to influence the state institutions that affect their lives, by strengthening their participation in political processes and local decision making. And it means removing the barriers—political, legal, and socio-cultural that work against particular groups and building the assets of poor people to enable them to engage effectively in markets" (World Bank 2000, 39). Kabeer defines empowerment as "the expansions in people's ability to make strategic life choices in a context where the ability was previously denied to them" (Kabeer 1999, 262). Robert Chambers, a pioneer in participatory evaluation (known as participatory rural appraisals), saw empowerment as a process that gave the poor more control over their lives (Chambers 1993). An example may be having more female representatives in local government committees, thus providing an increased opportunity to ensure that their voices are heard, although inclusion or "participation" may not necessarily lead to "empowerment" if these women's voices are not acted upon (Chattopadhyay and Duflo 2004).

It has been stated that empowerment comprises two enabling factors: agency and opportunity structure (Ibrahim and Alkire 2007). Agency is seen as the ability to act on behalf of what we value and opportunity structure as the pre-conditions for effective agency. As an example, a young school graduate from a rural area may have all the skills and be willing to work in an entry-level job (*agency*), but she may have no opportunities, either economically or socioculturally, because such work is not considered appropriate for young women (*opportunity structure*). Agency and opportunity structure are both iterative and interdependent: the presence of agency may not necessarily mean that there is opportunity structure or vice versa, and it can be both a virtuous and a vicious circle. Thus empowerment is a complex process.

How can ICTs enable empowerment? First, they enable *downward* flows of information, from government to citizen. Second, they create the possibility of *upward* flows of information, from citizen to government, which are essential to inform decision making. Third, in theory they enable *horizontal* flows of communication, flattening hierarchies. Broadly speaking, these three functions can be related to transparency, accountability, and participation. An example may be a government agency that publishes its budgets online (illustrating transparency and downward accountability), requests and, in certain cases, enforces further inputs from citizens (upward accountability), and invites participation from both citizens and other agencies (horizontal flows and participation). Cutting across time and space, ICTs reduce the distance between the government service provider and citizen. Each has a right and a responsibility, and each is accountable to the other (indeed, the two are not exclusive: a government employee is also a citizen). In theory, and following Aristotle's thinking, ICTs also enable the "ruled" to be "rulers." In empowerment terms, ICTs can facilitate both agency (by providing the information and tools to develop what we value) and opportunities (by providing information and skills to develop opportunities).

Empowerment, then, is constituted by three other terms, frequently used in the following chapters: participation, transparency, and accountability. In order to be empowered, citizens need to *participate*, to raise their concerns and voices (whether their voices are heard is another step). In theory, ICTs provide an opportunity for empowerment because they lower the barriers to participation. Citizens can access information and communicate directly, instead of being dependent on intermediaries, with their own biases and insecurity regarding the sharing of power.

Transparency, too, is an often used, but frequently poorly defined, term. One definition of it is "any attempts (by states or citizens) to place information or processes that were previously opaque in the public domain, accessible for use by citizen groups, providers, or policy makers" (Joshi 2010, 3). A worldwide movement toward transparency is evident in the growth of right to information (RTI) acts, starting in 1766 in Sweden and spreading in the past decades to countries as diverse as India, Mexico, and the United Kingdom. Currently, more than 85 countries have implemented RTI acts. Again, the assumption is that increased transparency has the potential to enhance participation and empowerment.

The final concept in this quadrangular equation is accountability. Schedler (1999) defines accountability as the relationship between the power holder (account provider) and delegator (account demander). Joshi (2010) sees the key components of accountability as setting standards, acquiring information about actions, making decisions on the appropriateness of actions, and identifying and sanctioning unsatisfactory performance. Schedler collapses these into two major components: *answerability* and *enforcement*. Answerability encompasses the obligation of public officials to inform about and explain what they are doing, whereas enforcement is the capacity of accounting agencies, including civil society and the general public, to impose sanctions on those power holders who have violated their obligations. Significant numbers of stakeholders, institutional procedures, and regulations are necessary to ensure effective answerability and enforcement, and thus answerability does not always translate to enforcement (an issue that arises consistently when considering the role of ICTs).

As shown in figure 1.1, empowerment can therefore both support and be supported by participation, transparency, and accountability.

Yet all four terms are interdependent, but also relational. In addition, the gain to one may be accompanied by loss to another—for example, participation may not necessarily lead to empowerment (it may even disempower), if participation is not welcomed or has unintended consequences (consider the example of more female representatives in local government committees, which may mean empowerment in the committee, but create conflict in the domestic sphere).

In theory, ICTs can enable empowerment, participation, transparency, and accountability, as illustrated in figure 1.2.

However, caution is needed when assuming the causality shown in figure 1.2. First, there is a tendency to view ICTs homogenously as a black box. However, ICTs fall along a spectrum, from low-tech to high-tech. The lower-tech end of the spectrum includes narrowcasting (playing cassettes), using loudspeakers, or

Figure 1.1 Assumed Relationship between Empowerment, Participation, Transparency, and Accountability

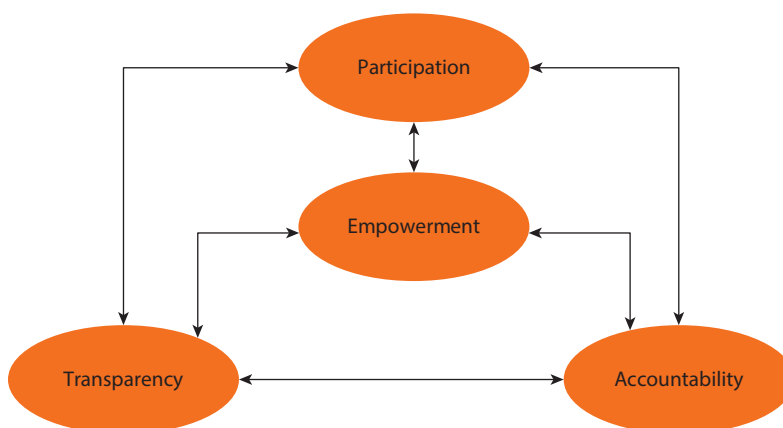
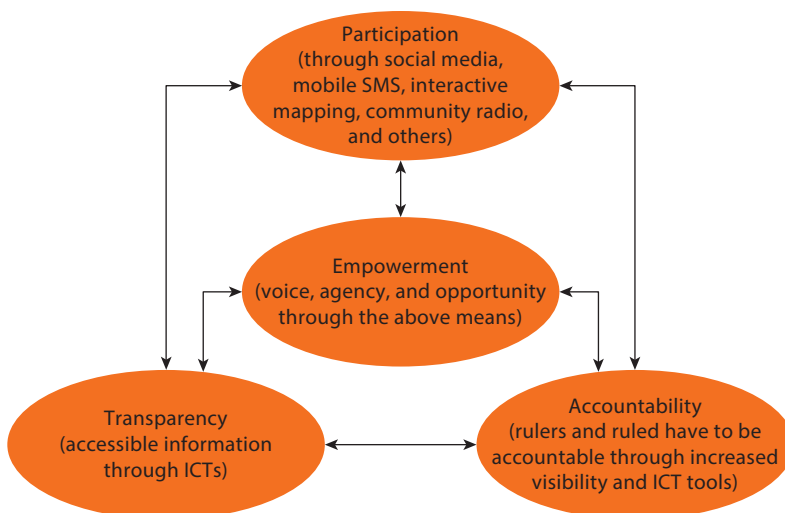


Figure 1.2 Assumed Impact of ICTs on Empowerment, Participation, Transparency, and Accountability



Note: ICT = information and communication technology; SMS = short message service.

making presentations to community groups for raising awareness about government policies and using paid SMS or call feedback to solicit views on government policies. On the other hand, features such as online forums, Facebook groups, and interactive mapping are more sophisticated and have greater reach, but may exclude those with no connectivity or skills to access such technology. It is important to recognize the spectrum of methods available in order to avoid designing technologically focused pilots.

Second, a more fundamental critique is the extent to which ICTs are truly capable of having this impact on government-citizen interaction and ultimately citizen empowerment. In order to address this in detail, we need to analyze the underlying assumptions in empowerment, transparency, accountability, and participation, discussed next.

A Critical Analysis of Factors Influencing Empowerment through ICTs

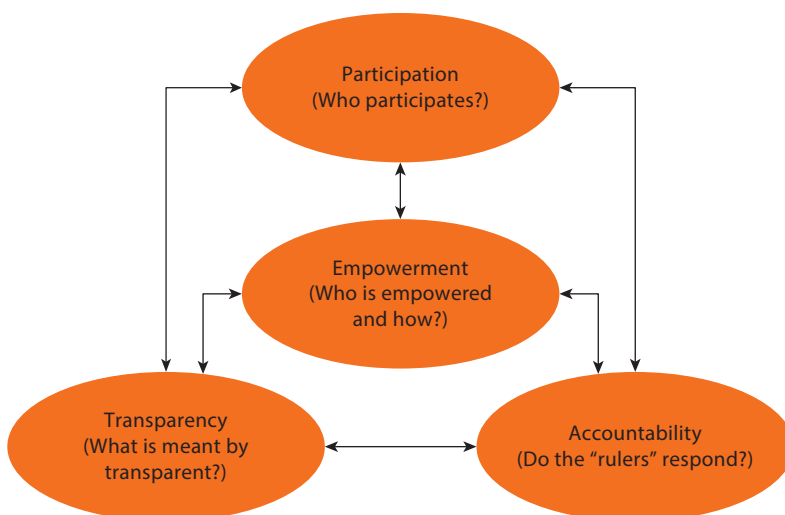
The cases in this book reveal preliminary evidence from the field. Yet they are also analytical. What is the evidence that, through ICTs, transparency will automatically lead to accountability and therefore empowerment? There is an increasingly urgent need to examine the claims made by both technological positivists (the “nextopia” described by Hofheinz 2011) as well as the popular press in the wake of the Arab Spring and the exaltation of ICTs, particularly social media, during that time. To do this, we first need to return to the roots of the assumptions made with regard to the terms empowerment, participation, transparency, and accountability as well as the causality between them.

These four seemingly innocuous words encompass vast concepts that contain both theoretical and practical challenges. As noted earlier, empowerment

requires both agency as well as the opportunity to execute this agency. It implies either the willingness of those who are empowered to empower others or the ability or agency of those who are not empowered to gain this power in some way, even without the support of those empowered. The willingness to empower others may be problematic for those in power because it challenges their own status quo and authority (Crewe and Harrison 1998; Guijt and Shah 1998; Nelson and Wright 1995; Rahnema 1992). The same is often true of participation, which, it is argued, implies “participation” in a project owned by someone else rather than outright ownership itself (Brett 2003; Chambers 1993; Rahnema 1992). Thus participation is seen in more instrumental terms as a means to an end of greater efficiency when the actual project “owner” may have different aims. Yet, with increasingly lower barriers to participation, due in great part to greater access to ICTs, there is a noticeable difference between “managed” participation for a particular development project and more free and unstructured citizen participation (for example, contributing to online discussions or community radio phone-ins).

Critiques of accountability and transparency inevitably abound. There are degrees of transparency—a government may make data and information available—for example, online—but how *accessible* is this to the average person? The data may need to be interpreted and analyzed by NGOs or other third parties, but even when a government makes its data publicly available, such intermediary institutions may be weak or nonexistent. Similarly, with regard to accountability, in Schedler’s (1999) definition, who is the account provider and who is the account delegator? These roles are interchangeable and subjective. In large government bureaucracies, it may be all too easy to pass on the responsibilities of account provider to another department or entity. A bigger question is whether the account demanders can gain sufficient power and confidence to suggest and enforce sanctions when they themselves may be at risk by doing so, as they are *not* the power “holder”. Once again, ICTs have the potential to empower here (for example, under the protection of anonymity on the Internet), but how does this happen in practice? Second, in addition to the concepts themselves, the assumptions made on the causality *between* the concepts may be problematic—for example, that participation will lead to empowerment, transparency will lead to accountability, and so on. According to Heeks (2002), the assumption that ICTs enable empowerment is based on the conditions that (a) data are made available and transparent; (b) this information is accessed by stakeholders who are able to assess it and transform it into information; (c) it can be acted upon; (d) it is used to initiate citizen-government and citizen-citizen dialogue and activism; and (e) government takes action based on these processes. Instead, as Gigler illustrates in chapter 2, we need to understand how humans understand and apply information, in order for it to be translated into agency. In addition, in transparency and accountability initiatives in governance, we need to ask, Who provides the data? Is the information reliable? Is it understandable? Who accesses it? Do they have the means to assess it? How do they apply it? How can they act on it? The impact of ICTs therefore is closer to that shown in figure 1.3.

Figure 1.3 Questioned Relationships between Empowerment, Participation, Transparency, and Accountability



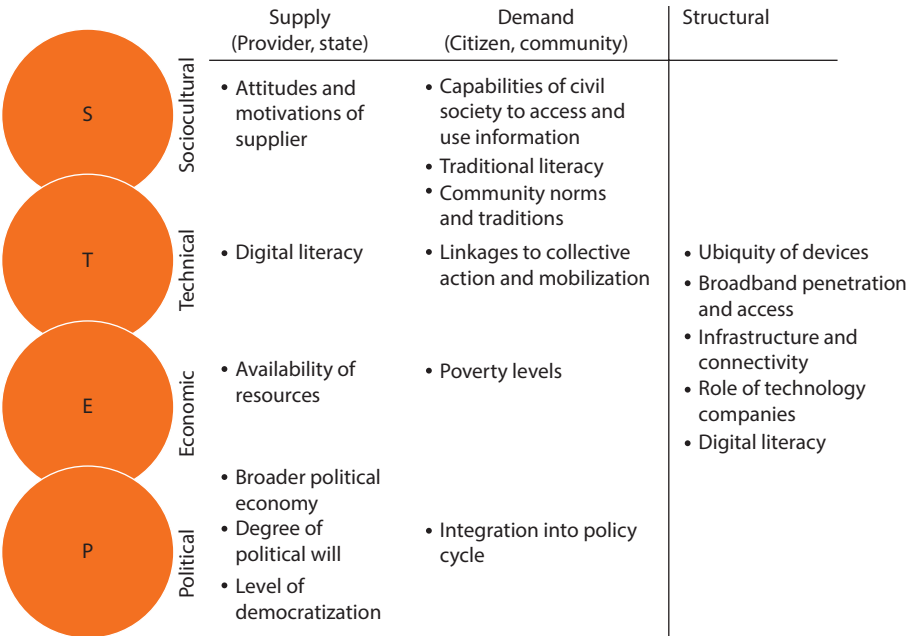
In sum, all of these critiques of the definitions of empowerment, participation, transparency, and accountability lead us to ask, under what conditions and in what circumstances can ICTs enhance empowerment, participation, transparency, and accountability?

A Framework for Analyzing Empowerment through ICTs

Access to ICTs cannot *ensure* empowerment. Instead, technology is a *potential* tool for empowerment. Relevant *sociocultural technical*, *economic*, and *political* conditions are critical for this potential to be realized. These conditions—distilled into what we call the STEP framework (figure 1.4)—are applied in this volume and discussed next.

In the *sociocultural* dimension of empowerment through ICTs, we need to understand the *motivation* for participation and empowerment. As Meer, Sever, and Mukhopadhyay (2004) argue, citizenship is a complex, interpreted concept. To be a citizen infers rights and responsibilities that are conditions for belonging to any group, community, or network, but to become a citizen (or be born one) is to pledge allegiance to a very complex, abstract concept of a constitution (Heater 2004). The relevance of such a pledge is not immediately obvious, especially if individuals do not believe that they have sufficient—or any—rights or know what rights they should have (Anderson 1991; Hall 1990). In this case, some may be more motivated to participate than others. According to Haste (2004), participation is almost always motivated by morals such as compassion, anger, outrage, or identification. Shirky (2009) famously writes of “cognitive surplus”: while television made passive consumers of the majority of the world’s

Figure 1.4 The STEP Framework



population in the latter half of the twentieth century (and this is no developed-versus developing-country divide, as evidenced by the number of satellite dishes in some of the world’s most impoverished areas), people are increasingly becoming not just consumers but also producers because they both identify with these issues for discussion and, which is crucial, have the tools to do so.

Motivation to participate is perhaps one of the key enabling or inhibiting factors to empowerment through ICTs. Shirky believes that, fundamentally, “People want to do something to make the world a better place. They will help when they are invited to” (Shirky 2009, 17). Benkler and Nissenbaum (2006) use examples of commons-based peer production such as Wikipedia and Slashdot to argue that participation initiates and fosters a virtuous cycle of increasing participation and commitment to the values of democracy and community. However, the majority of citizens are motivated only when a critical mass of participation begins to build. A common language of communication here sounds obvious but is nonetheless important—the reasons the Arab Spring events happened in such quick succession include Haste’s (2004) motivating factors of compassion, anger, outrage, and identification, because these events were occurring in neighboring countries but also because they could be understood through a common language. However, language does not have to be the only motivator. ICTs enable an empathetic far-flung diaspora to participate in viral campaigns (and are able to do so precisely *because* of ICT innovations) because they identify with the culture, even if a second or third generation does not understand the language.

Here, one can see the problematic link between the individual and the collective, the psychological and the sociocultural. People may very well want to help, but they may not be convinced that their actions will make a difference. How can a lone voice create a global, collective movement? There needs to be sufficient motivation but also an expectation that the result will be worth the risk (Rinke and Röder 2011). If there is fear of harassment, none but the most ardent of online activists and protestors may consider the risk worthwhile. The aggregating and multiplying aspect of ICTs means that they can encourage citizens to participate by creating a feeling that “the power of the people is stronger than the people in power” (Ghonim cited in Hofheinz 2011). However, security features need to assure individuals that their lives will not be at risk if they do participate.

These security features comprise the “T” of the STEP framework, or the *technical* artifacts necessary for empowerment through ICTs. There is insufficient discussion of the design of the method of interaction or infrastructure to support it. What kinds of tools are available? How are they designed and by whom? What kind of infrastructure exists? Is there service provision in underserved areas? Does the technology exist for two-way communication (participation) as well as one-way top-down information? The nature of the technical features is what defines the extent of participation, collaboration, and connection—that is, it brings lone voices together (Bertot, Jaeger, and Grimes 2010). The “architecture of participation” (Thompson 2008, 825) in “Web 2.0” (O’Reilly 2007) is critical. Simply posting information online (Web 1.0), for example, is not as valuable as adding features of searchability or real-time interaction (Web 2.0). Similarly, the tendency has been to group “social media” together, but there is a need to distinguish the features of each—for example, Twitter is enhanced by trending and hashtags (Lotan *et al.* 2011), while Facebook provides more opportunities for adding multimedia (Harlow and Johnson 2011) or engaging in more detailed discussions. At the same time, it is important not to be diverted by the more sophisticated technologies and to remember that participation is also possible through other technologies, including mobile phones, SMS, and community radio phone-ins and discussions.

Another precondition for empowerment through ICTs is *economic*. In the early 2000s, many warned against the increasing digital divide between the “haves” and “have-nots” (Heeks 2002; Norris 2003; Wade 2002; Warschauer 2004). Much is made of the term “elite capture” with regard to ICT initiatives for democracy or participation in governance. The concern here is that because of the relatively high barriers to entry for ICTs (depending on what exactly these are—for example, radio may be cheaper than the Internet), only the elite may participate, which creates a circle of participation: the economic and political elite become more politically engaged, governments only respond to their concerns, and so on. First, can citizens afford the *cost* of the necessary ICT artifact (phone, computer, Internet access, community radio, and so forth)? Second, can citizens afford the *time* to participate? What is the opportunity cost of participation? An *Economist* article gives the example of a South Indian telecenter intending to provide ICT access (albeit simply basic ICT training and access to

agricultural information, not political participation) to an illiterate fisherman who is dependent on an unstable income and therefore cannot afford to visit the center.¹

One solution to these economic barriers is to lower the cost of artifacts and provide more flexible payment plans—for example, in the use of mobile phones and computers. Another is to use cheaper and more accessible technologies such as community radio. In the haste to embrace technology, a third essential, but often overlooked, solution is to mediate between the technological and nontechnological or between the digital and nondigital—for example, use blogs or social media to organize street protests or plays. Here, the role of intermediaries is critical, whether individuals or organizations—for example, civil society organizations (Bailur and Masiero 2012; Fung, Gilman, and Shkabatur 2013). This runs the risk of intermediary bias and influence. In addition, even if access to technology is made cheaper and intermediaries provide assistance, citizens need to be convinced that participation is worth their time. To understand how this might be possible, the social and psychological aspects of empowerment need to be examined.

Finally, *political* conditions are necessary to foster an empowering ICT initiative. In Heeks's framework, the first factor is the ability to "access" data. Yet most countries in the world filter Internet content and track usage (Deibert *et al.* 2010). How can citizens act on data in the absence of information transparency? In addition, even if there is access to information, a government is needed that encourages or at least tolerates activism both online and offline. Citizens need to engage without fear of reprisal: "If I speak up, I will be beaten up" (Rinke and Röder 2011).

A second political factor is the execution of ICT initiatives. Returning to the inherent challenge of empowerment—one group may be reluctant to empower another that threatens its own grasp on power, even if a nation's politicians are willing to empower them—what is the attitude of the administrators (civil servants and field-level government servants) who may feel threatened by this empowerment or be deprived of a means of corruption (Bertot, Jaeger, and Grimes 2010)? This question is linked to the critical need for a key champion of empowerment, one who has sufficient motivation, influence, and resources to see through an ICT initiative while not alienating or threatening others. However, an important point here is that we can never simply bifurcate the "powerful" and "powerless" in empowerment—there are multiple stakeholders with diverging and often conflicting interests.

Two final interlinked political factors to facilitate empowerment through ICTs are the presence of a free media and external (international) pressure. Underlying both are the factors of transparency and accountability. A free (but regulated) media can bring to light and scrutinize political activity, making governments answerable (accountable). Amartya Sen (1999) famously gave the example that famines could not occur in democracies because criticisms are expressed through elections and a free media. Equally, a free media inside a nation facilitates transparency for the outside world, leading to the potential for

external pressure for change. The speed with which information travels as a result of ICTs also ensures rapid transnational media coverage (for example, the coverage of Arab Spring events by Qatar-based Al Jazeera when media outlets were shut down in Egypt). Both operate on the principle of the “glare effect”: when media coverage is given to an initiative, citizens are likely to participate more.

The STEP framework, although simplistic, is an effective structure for analyzing the enabling factors of empowerment through ICTs. Each of the following chapters deconstructs which of the factors are relevant in the cases discussed. In most cases, a key champion, political support, strong intermediaries, low cost, or existent technology are critical factors. However, the evidence to follow also demonstrates that the challenges of elite capture, scale-out, gaps between design and reality, and sustainability of pilots still exist. In presenting these issues objectively, this collection offers a valuable addition to the existing literature on citizen empowerment through ICTs.

Note

1. “Behind the Digital Divide,” *Economist*, March 10, 2005 (<http://www.economist.com/node/3714058>).

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Informational Capabilities: The Missing Link for Understanding the Impact of ICT on Development

Björn-Sören Gigler

Under what conditions can information and communication technologies (ICTs) enhance the well-being of poor communities? This chapter designs an alternative evaluation framework that applies Amartya Sen's capability approach to the study of ICTs in order to place people's well-being, rather than technology, at the center of the study. The alternative framework develops an impact chain that examines the mechanisms by which access to, and meaningful use of, ICTs can enhance people's "informational capabilities" and lead to improvements in their human and social capabilities. This approach thus uses human capabilities, rather than measures of access or usage, as its principal evaluative space.

Introduction to the Literature

In recent years, the literature has increasingly articulated the links between ICTs¹ and socioeconomic development (Avgerou 2003, 2008; Avgerou and LaRovere 2003; Braga 1998; Heeks 1999; Madon 2000; Mansell and When 1998). Proponents of the "ICT for development agenda" have claimed that these technologies create new opportunities for economic and social development for developing countries and poor communities (Eggleston, Jensen, and Zeckhauser 2002; Hamelink 1997; Ngwainmbi 1995; Pigato 2001;

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Pohjola 2002). This literature explicitly or implicitly assumes a direct relationship between ICTs and economic growth, social development, and enhanced democratic participation (Avgerou 2008; Bedi 1999). For instance, Hudson assumes a causal link between ICTs and development when she argues, "If information is critical to development, then ICTs, as a means of sharing information, are not simply a connection between people, but a link in the chain of the development process itself" (Hudson 2001, 12).

Some observers take a pessimistic view and claim that, given existing socioeconomic inequalities, ICTs favor the privileged segments within society and do not reach the economically and socially disadvantaged, thus widening the socioeconomic gap within developing countries (Castells 1998; Ciborra 2002; Dagron 2001; Panos Institute 1998; Wade 2002). For instance, Castells underscores that ICTs can represent both the cause and effects of social marginalization and warns that computer-mediated communication is culturally, educationally, and economically restrictive and thus could reinforce culturally dominant social networks, while the poor majority of the developing world would become irrelevant in the new knowledge economy and "network society" (Castells 1996, 1998).

Finally, growing numbers of authors have called for a much deeper and more nuanced understanding of the relationship between ICTs and development (Burkett 2000; Heeks 2002, 1; Loader 2004; Madon 2000; Wilson and Heeks 2000). They point out that whether or not ICTs can have a significant impact on socioeconomic development and people's lives depends on the extent to which these technologies are amenable to the particular local socioeconomic, political, and cultural context in which they are being inserted. Such an approach stresses the need to take a more holistic approach that fully "integrates ICTs into the overall development objectives of specific programs, rather than being driven solely by technological concerns" (Heeks 2002, 7).

Recent community informatics makes an important contribution to this emerging literature in the sense that it helps us to understand the conditions under which ICTs can be made more usable and useful to excluded groups. This literature looks beyond mere access to examine the effects of ICTs on local communities within the broader context of existing social systems and cultures (Gurstein 2000; Warschauer 2004). In particular, this research draws on the concept of "effective use," developed by Michael Gurstein, which emphasizes that people can derive real benefits from ICTs depending on "the way people are making use of ICTs in their daily lives and how well they have integrated ICTs into their social, productive, and cultural activities" (Gurstein 2003, 10).

The proponents of this more nuanced approach have identified a major gap in the literature: a scarcity of research that presents in-depth empirical evidence unpacking the links between ICTs, socioeconomic development, and people's well-being, particularly for rural areas in developing countries (Avgerou and Walsham 2000; Blattman, Jensen, and Roman 2003; Nulens 2003; Wilson and Heeks 2000). For instance, DiMaggio emphasizes, "We need to move research away from the ideological debate about the relationships between ICTs and

development towards robust survey-based and in-depth qualitative work that begins to unpack the complexity of digital divide” (DiMaggio *et al.* 2001, 327).

In spite of their significant difference, all three approaches share one key feature: their investigations focus on technology and its societal, economic, and political impact. These schools of thought distinguish themselves either by emphasizing the positive or negative impacts of ICTs on people’s lives or by stressing that the impacts will vary depending on the local and social context in which the ICT program is being carried out.

Based on a “people-centered” approach to development, this chapter develops an alternative framework for evaluating ICT interventions that attempts to operationalize Amartya Sen’s capability approach and to apply its theoretical framework directly to evaluation of the impact of ICT programs (Gigler 2004). It addresses a central question: Whether and under which conditions can the improved access to information and knowledge facilitated by ICTs enhance the human capabilities of the poor to achieve the lifestyle they value?

The Capability Approach

This chapter uses Sen’s (1985, 1992, 1993) multidimensional capability approach to well-being, which moves away from an income-based perspective of well-being (utilitarianism) to emphasize instead the nonmaterial (social, cultural, and political) aspects of human well-being. Sen conceives of development as “a process of expanding the real freedoms that people enjoy” and emphasizes the need for the “expansion of ‘capabilities’ of persons to lead the kinds of lives they value” (Sen 1999, 18).

This view of development places people and human development at its center. What matters, according to Sen, is what people are capable of being or doing with the goods to which they have access. A person’s “capability” refers to “the alternative combinations of functionings that are feasible for her to achieve. Capability is thus a kind of freedom: the substantive freedom to achieve alternative functioning combinations (or, less formally put, the freedom to achieve various lifestyles)” (Sen 1999, 75). Capabilities include things that a person has done as well as things he or she can possibly do. In other words, capabilities refer to the extent of one’s positive freedoms (Gasper 2002, 5). The concept of “functioning” “reflects the various things a person may value doing or being” (Sen 1999, 75). In this sense, a person’s functionings represent the “various components or aspects of how a person lives,” whereby a person’s ability to realize these desired and valued functionings depends on her or his capabilities as well as entitlements or assets (Gasper 2002, 4).

Operationalizing Sen’s Capability Approach

In the last couple of years, there has been a lot of debate in the literature on ways to operationalize Sen’s capability approach and apply it in a more practical way to empirical research. On the one hand, as Comim suggests, the capability framework is well suited for “evaluating and assessing social arrangements,

standard of living, inequality, poverty, justice, quality of life, or well-being” (Comim 2001, 4). On the other hand, operationalizing the approach is difficult. These difficulties derive from the capability approach’s “theoretical under-specification and inclusive view of operationalization which contest not only the evaluative but also the practical foundations of utilitarianism” (Comim 2001, 2). Furthermore, a key challenge has been to define a priori a set of basic capabilities, in order to have a baseline from which to start (Alkire 2002; Nussbaum 2000).

Another difficulty is that some capabilities are harder to measure than others. For instance, it is much more difficult to assess the ability to have self-esteem than the ability to write and read. This represents a particular challenge for gathering data on the nonmaterial aspects of people’s well-being.

The capability approach is particularly suited for micro-level studies, since it focuses to a large extent on variables other than income (Comim 2001). Such an approach, Comim argues, will reveal more interesting findings at the micro than at the macro level, since research at this level can focus on people’s ability to choose what to do or be.

Capabilities and the Sustainable Livelihoods Approach

One particularly interesting way to operationalize the capability approach has been suggested by Bebbington (1999), who integrates this method into the sustainable livelihoods framework and then develops his own version based on capital (assets) and capabilities.² The livelihoods approach asks, What combination of livelihood resources (different types of capital) results in the ability of the poor to follow a combination of livelihood strategies (that is, livelihood diversification) with what outcomes on their well-being (Scoones 1998, 3)? Bebbington develops a powerful framework that highlights the importance of combining capital with capabilities. He argues, “Assets (or capital) are not simply resources that people use in building livelihoods: they are assets that give them the capability to be and act” (Bebbington 1999, 2022). He refers back to Sen’s discussion on the significance of human capital to strengthen the capabilities of the poor. Sen stresses that the possession of human capital not only means that people produce more, and more efficiently, but also gives them the capability to engage more fruitfully and meaningfully with the world, ultimately and most importantly, providing them with the capability to change the world (Sen 1997).

I turn now to the interlinkages between capital, agency, and capabilities. Kabeer defines agency as “the ability to define one’s own goals and act upon them” (Kabeer 1999b, 438). She points out that agency is usually operationalized as “decision making,” but in terms of empowerment it is more important to see agency within the context of the poor’s ability to negotiate or bargain with the formal institutions of the market, civil society, and the state. The major significance of this notion for operationalizing the capability approach lies in the *combination* of resources (or capital) and agency, constituting what Sen refers to as capabilities. In this sense, improving the access to resources for the poor—for instance, providing girls with access to education or communities with access to ICTs—only represents a potential for enhancing their capabilities; it does not automatically

lead to empowerment. A direct and automatic causal relationship does not exist between improving access to resources and empowerment. Kabeer instead emphasizes the notion of agency and the role it plays in determining whether or not the increase in resources can expand the realized functionings of the poor.

When designing outcome indicators for empowerment, Kabeer highlights the need for advanced knowledge of the development priorities and goals of the marginalized group themselves; in its absence, the intervention runs the risk of prescribing empowerment, which would violate its essence. This last point addresses the issue of who defines the desirable and valued livelihood outcomes, which is of particular importance for the purposes of this chapter. Robert Chambers argues that, within the capability (or well-being) approach to poverty and livelihoods, the analysis may allow people themselves to define the criteria they deem to be important (Chambers 1997). This may result in a range of sustainable livelihoods outcome criteria, including factors such as self-esteem, security, happiness, stress, vulnerability, power, and exclusion, as well as more conventional material concerns.

Applying the Capability Approach to ICTs

This chapter draws on previous studies by Garnham (1999), Madon (2003, 2005), and Mansell (2001), who have stressed the value of using the capability approach to develop an evaluation framework for ICTs. Garnham points out, “Thinking in terms of functionings and capabilities allows us to get behind the superficial indices of access and usage that we so often use” (Garnham 1999, 32). Based on a capability perspective, Madon has developed an evaluation framework that emphasizes human agency rather than structural or institutional variables. She uses this framework to evaluate the development impacts of two e-governance programs in India (Madon 2003). Use of the capability approach for ICTs raises a key question: Should new options, such as the ability to hold government accountable, to pay bills, or to generate income through e-governance applications, be added to the capability set of individuals, communities, organizations, and states (Madon 2003, 4)? These studies have shifted the focus away from evaluating ICT programs solely on criteria related to access, expenditure, and infrastructure and placed it on human well-being.

Indeed, measuring ICTs in terms of capabilities reveals that there is no linear relationship between access to and use of ICTs—having Internet access is a necessary, but insufficient, condition for its use. This goes hand in hand with one of the fundamental principles inherent in the conceptual framework of the capability approach, which is that access to a basic good, in this case ICTs, represents an entitlement and key prerequisite for its use; however, differences in people’s capabilities determine whether they are indeed able to transform a set of actual opportunities into realized functionings (that is, into improved access to information). In Sen’s words (1999, 74), “People have different ways of transforming the same bundle of goods [ICTs, here] into opportunities for achieving their plans in life.”

Thus, when assessing the impact of ICTs on well-being, it is essential not only to evaluate the range of information and communication options made available

(the potential use of ICTs), but also to consider people's capabilities—that is, their ability to transform these options into actual or realized functionings (Garnham 1999, 32). Such a process entails examining people's motivations, expectations, and reasons for use, as well as the outcomes in relation to their well-being (Mann 2003).

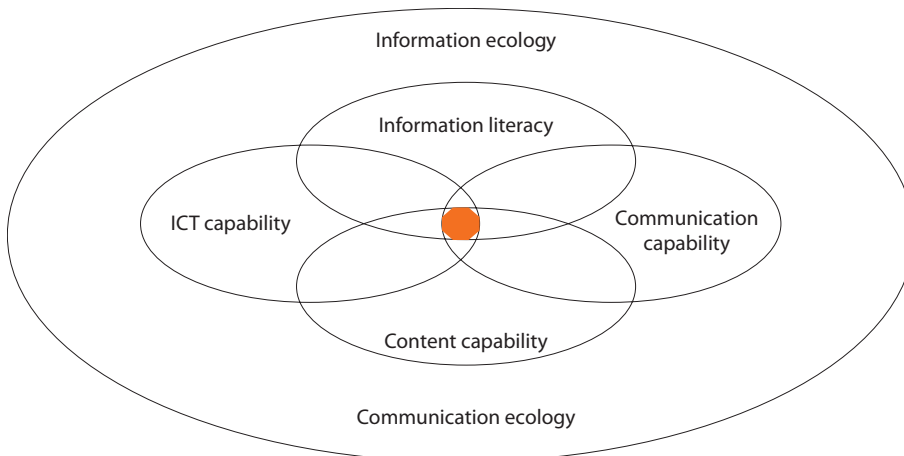
This chapter draws on the contextual approach to ICTs, emphasizing the importance of the socioeconomic and cultural milieu, which it considers crucial to understanding the potential effects of ICTs on development (Avgerou 2001; Kling 2000; Walsham 1993, 1995). This approach stresses that technology only receives meaning once it is “enacted” by users; people can control its use by interpreting and appropriating it to their specific realities (Orlikowski 2000). In essence, it places human action rather than technology at the center and emphasizes the interdependencies between technology and social context (Avgerou 2001; Orlikowski 2000). It seeks to broaden the evaluative space from analyzing the immediate and measurable effects of the diffusion and use of ICTs to analyzing their impact on the social, economic, political, organizational, and cultural aspects of people's lives.

From Information Literacy to Informational Capabilities

This section draws on the literature on information literacy in order to conceptualize informational capabilities (Breivik 1992; Eisenberg and Berkowitz 1990; Horton 1983; McClure 1994; Menou 2002; Ochs *et al.* 1991; Zurkowski 1974). The term “information literacy” was first used in 1974 by Paul Zurkowski, who pointed out that individuals need the ability to find, evaluate, and utilize various sources of information, which should include five capabilities: (a) knowing what kind of information is helpful, (b) knowing where to get that information, (c) knowing how to inspect the information, (d) evaluating and organizing the information, and (e) immediately transmitting the information. While a standard definition of information literacy is yet to appear, this chapter uses the commonly quoted definition provided by the American Library Association Presidential Committee on Information Literacy: “Information literacy is a set of abilities enabling individuals to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information” (ALA 1989, 2). According to McClure (1994), information literacy highlights people's capability to use information to solve problems. For McClure, information literacy has four components: (a) traditional literacy—the basic capability of reading and writing; (b) media literacy—the ability to use multimedia (that is, compact discs, microfilms) to solve information problems; (c) computer literacy—the capability to operate a computer; and (d) network literacy—the ability to identify, access, and use electronic information from the network.

Applying the capability perspective to ICTs introduces the concept of “informational capabilities.” Figure 2.1 summarizes the main aspects of this concept and illustrates how the various components are interdependent.

Figure 2.1 visualizes four components of informational capabilities, which refer to a person's capability, or ability, (a) to use ICTs in an effective manner

Figure 2.1 The Concept of Informational Capabilities

Source: McClure 1994.

Note: ICT = information and communication technology.

(ICT capability); (b) to find, process, evaluate, and use information (information literacy); (c) to communicate effectively with family members, friends, and professional contacts (communication capability); and (d) to produce and share local content with others through the network (content capability). In Sen's words, informational capabilities are a person's "capability" to transform his or her existing informational capital, such as level of access to ICTs (the entitlement), into human agency and real opportunities in society to achieve the things he or she values doing or being. In other words, informational capabilities refer to a person's positive freedom to use ICTs within the institutional and socioeconomic setup of a society.

There are significant differences between informational capital, ICT capabilities, and informational capabilities. The concept of informational capital describes the level of livelihood resources or assets a person has at his or her disposal in terms of information. Informational capital has four components:

- The extent to which a person has access to information from the formal institutions of the market, state, and civil society
- The level of local knowledge in the community and the extent to which this knowledge is being used in a person's daily life
- The level of access to information provided by the traditional "information systems" in a person's community
- The extent to which traditional forms of ICT (such as community radio and amateur radio) are being used within the community.

The concept of ICT capabilities encapsulates a person's ability to use computer hardware, software, and ICT tools. The definition of informational capabilities is much broader and relates to the role of information itself and a person's

ability or capability to analyze and place information into his or her own socio-cultural context (Castells 1995, 1997, 1998; Horton 1983). The concept, then, is an information-centric approach, deemphasizing the role of technology and people's ability to use these tools. Furthermore, it highlights the combination of a person's human agency and his or her existing informational capital. Furthermore, the concept of "informational capabilities" refers to the combination of a person's current livelihood resources, including information (informational capital), and the person's agency, or ability to strengthen these assets and use them to achieve the "beings" and "doings" the person would like to achieve. At the center of this concept stands the transformative role that information can play in a person's life and the options or opportunities it can provide in multiple dimensions of life. Furthermore, a person's capability to use, process, and evaluate information is embedded in the broader socioeconomic and institutional local context. Thus, on the one hand, the existing endowment (local knowledge) of the community can significantly strengthen a person's ability to use information and thus constitutes an important aspect of a person's overall informational capability. On the other hand, the institutional aspects of the way information is made accessible at the community level and the existing barriers to the free access to information represent critical impediments for an individual's informational capabilities. For instance, a person's informational capabilities can be significantly restricted by the existence of powerful information brokers within the local community who impede the free flow of information and instead aim to control the community's access to information.

Based on a capability perspective, it is critical not only to analyze the status quo in terms of information within communities, but also to understand the dynamic process by which a person's use of ICTs can enhance his or her informational capabilities and how these enhanced informational capabilities are being translated into greater human and social capabilities. Only then will it be possible to evaluate the impact of ICT use on people's well-being. The following section lays out an alternative evaluation framework that provides an integrated approach to evaluating the development impacts of ICTs on the well-being of marginalized groups.

Enabling Factors: The Role of Intermediary Organizations

The existing literature gives intermediary organizations a critical role in the process of introducing ICTs to local communities (Heeks 2002; Madon 2000; McConnell 2000). For instance, Heeks argues that intermediaries are critical in helping rural communities to overcome some of the barriers to political access while providing ICT services (Heeks 2002). However, the literature does not specify the exact role of intermediaries in the process. Instead, it takes a more institutional perspective and analyzes the effects of ICTs within organizations (Avgerou 2001; Meyer 1997; Powell 1999).

To address this gap in the literature, ICT programs are categorized here as either (a) ICT or technical intermediaries or (b) social intermediaries. An ICT intermediary is defined as a person or organization providing "effective"

support to local communities in the use and adaptation of technology. Most commonly, an ICT intermediary is a specialized organization from outside the community—a nongovernmental organization (NGO), local government, or international donor. A social intermediary is a “local” institution, such as a community-based organization.

This classification is used to analyze the two main aspects of the intermediary process: (a) the way in which ICTs are introduced and in which technical support services (for example, training, content development) are provided to the community and (b) the extent to which the ICT program is embedded into existing social and organizational structures (that is, the relationship between existing information ecology and the ICT intervention). The investigation distinguishes between high and low levels of intermediation. A high-level intermediation is characterized by a high degree and frequency of direct involvement at the local community level; a low-level intermediation is characterized by centralized management and a lower degree of interaction with the local community.

Toward an Alternative Evaluation Framework for ICT Programs

Based on the theoretical foundation discussed above and my previous work (Gigler 2004), this section develops an alternative framework for evaluating ICT interventions. It asks, Whether and under which conditions can the improved access to information and knowledge facilitated by ICTs enhance the individual and collective capabilities of the poor to achieve the lifestyle they value? Sen’s holistic approach to development is well suited to evaluating the potential effects of ICT interventions, because ICTs are multisectoral, meaning that they can affect people’s lives simultaneously in the economic, social, and political spheres.

Heeks (1999) argues that information instead of technologies should be placed at the center of the analysis. This chapter places individual and collective capabilities at the center, with information and ICTs occupying the outer circles of the model. This placement underscores the fact that ICTs are not a means to an end in themselves and that, under certain conditions, they can expand the capabilities of the poor to realize improved economic, social, political, and cultural opportunities. Although the right to information and knowledge is an important entitlement and its absence can contribute to poverty, this notion needs to be balanced against the broader context of existing social and economic inequalities, which may reinforce themselves through the technology (Castells 1997; de Alcántara 2001). Consequently, the sustainable livelihoods framework is used here to conduct a more holistic socioeconomic analysis of the possible effects of ICTs.

As a starting point, the concepts of “informational capital” and “informational capabilities” are introduced into the livelihoods approach. As table 2.1 shows, “informational capital” is included in the set of livelihood resources of the poor. Due to the cross-sectoral nature of information, the interlinkages between informational capital and all the other types of capital are crucial for determining the impact of ICTs.

Table 2.1 Empowerment through ICT Framework

<i>Context</i>	<i>Livelihood resources</i>	<i>Institutional processes</i>	<i>Capabilities</i>	<i>Livelihood outcomes</i>
Socioeconomic conditions	<=> Economic, financial	<=> Existing social structures	<=> Individual conditions: psychological, social, economic	=> Stronger informational capabilities
Demographic	Natural	Level and degree of social intermediation	Informational	
Cultural context	Human			=> Stronger human capabilities
Political	Social	ICT intermediation	Political, cultural	=> Stronger social capabilities
ICT diffusion ICT policy framework	Informational			
Stages of ICT project				
Existing information systems and environments	Assessment of information needs, informational capital	Community ICT access, local and relevant content, capacity building	Local appropriation, meaningful use of ICTs	Ownership, sustainability

Note: ICT = information and communication technology.

At the same time, information in its own right is an important asset for the poor, and the combination of informational capital and a person's human agency can significantly expand a person's informational capabilities.

The capability of individuals and social groups to transform valued functionings into realized functionings depends on the combination of a person's existing livelihood resources or capital and his or her human agency. Therefore, the expansion of capabilities strengthens people's capital. What role does information play in this context, and what justifies broadening the capability approach by adding the dimension of informational capabilities?

The main argument for including this dimension in the framework is that information and ICTs can play an important role not only in their own right, but also as an "agent" for strengthening the poor's capital in multiple areas. As this review of the literature (Bebbington 1999; Kabeer 1999b) has demonstrated, the combination of stronger resources and stronger agency can enhance individual and collective capabilities. Under what conditions can the expansion of informational capability have a positive "multiplier effect" on the other capabilities? In other words, does the expansion of the poor's capability to make meaningful use of information strengthen their capabilities to achieve valued functionings in other areas?

This notion comes from Sen's concept of the role that human capital plays in enhancing a person's ability not only to generate income, but also to lead a freer

and more fulfilled life and to reach her or his valued functionings (Sen 1997). In this sense, the focus is on the role of human capabilities as an agent for bringing about social change.

Applying this framework to the field of ICTs highlights the need to assess the informational capital in communities at the outset of ICT programs. The traditional information systems and the “information ecology” within communities represent a critical factor for either enabling or limiting the ability of individuals to expand their informational capabilities (Brown 1991; O’Farrell 2001). The framework analyzes the local social context, since a common reason for the failure of ICT programs is the perception of key community members that new technologies undermine existing information systems and that ICTs challenge the “knowledge brokerage” role of community organizations (Robinson 1998).

Furthermore, the framework underscores the importance of understanding the institutional structures and processes that mediate the transformation from livelihood resources to expanded capabilities, thus contributing to the attainment of positive livelihood outcomes. Therefore, it is important to analyze the interrelationship between existing social structures and ICT intermediation. A successful mediation by an effective local intermediary is required before ICTs can contribute to expanding the livelihoods of the poor.

In addition, intermediaries play a decisive role in identifying and providing access to ICT products and services that suit the local communities’ information needs, supporting the generation of local and relevant content, and providing ongoing support in the areas of training and capacity building.

Within this process, the local appropriation of technologies and the contextualization of information provided through ICTs are required for poor communities to derive real benefits from their use. Access alone will not allow the poor to derive real benefits from the use of ICTs. In fact, a tool such as the Internet can be considered a medium of the Western elite that needs to be appropriated by non-Western and poor communities before they can derive real value. Frequently, the content on the Internet does not reflect the realities of local communities (Ballantyn 2002). In fact, the language of the Internet often represents a prohibitive barrier for communities in their use of information, as most of its content is written in a rather academic or business style and thus is not directly applicable at the grassroots level. Finally, a continuous program to build the capacity of people to use ICTs is necessary to ensure that these technologies can be used in a meaningful way and that they are being used (Delgadillo, Gomez, and Stoll 2002).

Within the analysis of the process of individual empowerment, the alternative evaluation framework distinguishes between six dimensions: informational, psychological, social, economic, political, and cultural (table 2.2). These dimensions enhance a person’s human capabilities in different ways. While the framework develops specific indicators for each of these dimensions, the analysis stresses their interdependencies and investigates whether or not they reinforce each other.

Table 2.2 Dimensions of Stronger Individual Empowerment and Human Capabilities

<i>Dimension</i>	<i>Objective</i>	<i>Outcome indicator</i>
Informational	To improve the access to information and informational capabilities	<ul style="list-style-type: none"> • Improved capacity to use different forms of ICTs • Enhanced information literacy • Enhanced capacity to produce and publish local content • Improved ability to communicate with family members and friends abroad
Psychological	To support a process of self-reflection (critical conscientization) and problem-solving capacity	<ul style="list-style-type: none"> • Stronger self-esteem • Improved ability to analyze one's own situation and solve problems • Stronger ability to influence strategic life choices • Sense of inclusion in the "modern" world
Social (human capital)	To strengthen people's human capital (skills, knowledge, ability to work, and good health)	<ul style="list-style-type: none"> • Enhanced ICT literacy and technology skills (for example, computer repair) • Enhanced leadership skills • Improved program management skills
Economic	To enhance people's capacity to interact with the market	<ul style="list-style-type: none"> • Improved access to markets • Enhanced entrepreneurial skills • Alternative sources of income • Stronger productive assets • Improved employment opportunities • Improved income through (a) lower transaction costs (fewer time constraints), (b) reduced transport needs, and (c) increased timeliness of sales
Political	To improve people's participation in decision-making processes at the community level and in the political system	<ul style="list-style-type: none"> • Improved access to government information or services (e-government) • Improved awareness about political issues • Improved capabilities to interact with local governments
Cultural	To strengthen people's cultural identity	<ul style="list-style-type: none"> • Use of ICTs as a form of cultural expression (for example, design of computer graphics, websites) • Increased awareness of one's own cultural identity

Note: ICT = information and communication technology.

Because the capability approach stresses the nonmaterial factors of well-being, the framework emphasizes the role that the psychological, social, and cultural aspects of a person's life play in her or his empowerment.

In particular, ICTs can play a direct role in enhancing well-being through a process of "self-reflection" and "critical analysis" of the critical consciousness and self-esteem of poor people (Freire 1972). Specific outcome indicators for the psychological empowerment of poor people through ICTs include the improved ability to analyze and solve problems, improved self-esteem, and greater sense of participation in the modern world. Psychological empowerment is very relevant for strengthening a person's human agency or a person's ability to influence strategic life choices, a core concept of empowerment (Kabeer 1999a, 1999b). In this sense, the potential positive impact of ICTs on the psychological empowerment of the poor not only has substantive value on its own, but also can be instrumental in empowering a person in different aspects of her or his life. For instance, in the economic realm stronger self-esteem can enhance a person's ability to find new employment.

The framework also considers six key dimensions of social capabilities identified by rural communities: informational, organizational, social development,

Table 2.3 Indicators for Stronger Social Capabilities for Community Empowerment

<i>Dimension</i>	<i>Objective</i>	<i>Outcome indicator</i>
Informational	To improve access to information and informational capabilities	<ul style="list-style-type: none"> • Stronger traditional information system • Improved information flows within community • Stronger horizontal knowledge exchanges with other communities; stronger vertical knowledge exchanges with the state, donors, nongovernmental organizations
Organizational	To strengthen organizational capabilities	<ul style="list-style-type: none"> • Transparent selection of leaders • Increased efficiency • Improved information flows • Better coordination among different organizations • Stronger networks with other local organizations
Social development	To improve access to basic social services	<ul style="list-style-type: none"> • Improved access to formal and nonformal education (e-learning) • Improved access to health services (improved knowledge about health practices and traditional medicine) • Improved knowledge and access to government social programs (e-government services)
Economic development	To promote economic opportunities	<ul style="list-style-type: none"> • Improved access to markets and commercialization of products • Improved productive activities through enhanced knowledge (better knowledge about agricultural practices) • Enhanced capacity to mobilize resources from outside donors • Improved access to remittances through improved communication with migrant workers
Political participation	To improve participation in the political system and enhance transparency within the community	<ul style="list-style-type: none"> • Improved “voice” and participation in development process • Improved transparency of political institutions (e-government) • Enhanced decision-making power in political process • Better coordination of political activities and enhanced transparency of information flows within community • Direct participation in international policy dialogue (United Nations Permanent Forum on Indigenous Issues)
Cultural identity	To strengthen the community's cultural identity	<ul style="list-style-type: none"> • Stronger local languages • Stronger indigenous knowledge • Improved dissemination of community's own culture

economic development, political participation, and cultural identity (table 2.3). In many of these areas, important interdependencies exist between the individual and collective processes. However, this separation provides a clear logical framework for breaking up the empowerment processes into smaller, more comprehensive, and manageable units.

In the theoretical framework, improved access to information through the use of ICTs has mostly indirect rather than direct effects on the livelihoods of the poor. The framework suggests that a complex process needs to take place for ICTs to have an impact on the lives of poor communities. A direct and causal relationship does not exist between ICTs, information, human capabilities, and people's well-being; rather, the relationship between these variables is much more multidimensional and needs to be seen within the broader context of sustainable human development.

Considering that the core of the research aims to assess the impact of ICTs on human well-being, the following section develops a specific “ICT impact chain” that analyzes in more detail the process and conditions under which the access

and use of ICTs can enhance people's informational capabilities and thus their human and collective well-being.

The ICT Impact Chain

This section unpacks the link between ICTs and economic development by developing an impact chain that describes both the principal factors as well as the process by which ICTs can significantly enhance people's human well-being across multiple dimensions of their lives. The impact chain separates the overall impact of ICTs on people's well-being into a five-step process that explains the conditions under which the access to and use of ICTs become meaningful for the users, the use is translated into enhanced informational capabilities, and the use improves human and social capabilities.

The first step of the impact chain constitutes an information needs assessment. This initial stage is critical because ICTs are not introduced into communities in isolation from existing information and communication ecologies; rather, they should be embedded in these existing structures in order to strengthen the community's informational capital, be accepted by the community's principal stakeholders, and be sustainable in the long term. It is thus essential first to analyze the existing "information ecologies" of a community before providing it with specific ICT services (access to Internet connectivity). As visualized in figure 2.2, the assessment should (a) analyze the community's current information and communication needs, (b) identify key local stakeholders, such as elders, who frequently are the traditional "information brokers" in a local community, (c) assess the community's informational capital, and (d) identify the channels of communication. Finally, the information needs assessment should identify critical barriers and bottlenecks that have caused mutual information and communication gaps between local communities and national policy makers and identify the mechanisms through which ICTs could promote the two-way flow of information and communications between these two actors. This first step is essential for ensuring that ICT programs are not supply driven or "pushing" a specific technology on communities, but instead are responding to real priorities and needs of local communities.

The second step of the impact chain addresses issues related to people's ability to use ICTs. In order to assess the impact of ICTs on people's well-being, it is critical to move beyond the concept of "ICT access" and to study the factors that enable people to use ICTs within their socioeconomic, political, and cultural context. Access to ICTs is not sufficient for enhancing people's actual use of them.

The presence of an intermediary organization is the most significant factor explaining poor people's use of ICTs. In fact, the intervention of an intermediary organization enables people to acquire the basic capabilities needed to use ICTs, even if they do not have access to these technologies within their community. Empirical evidence from rural Bolivia indicates that the majority of the rural poor use the Internet outside of their own community in intermediary cities or

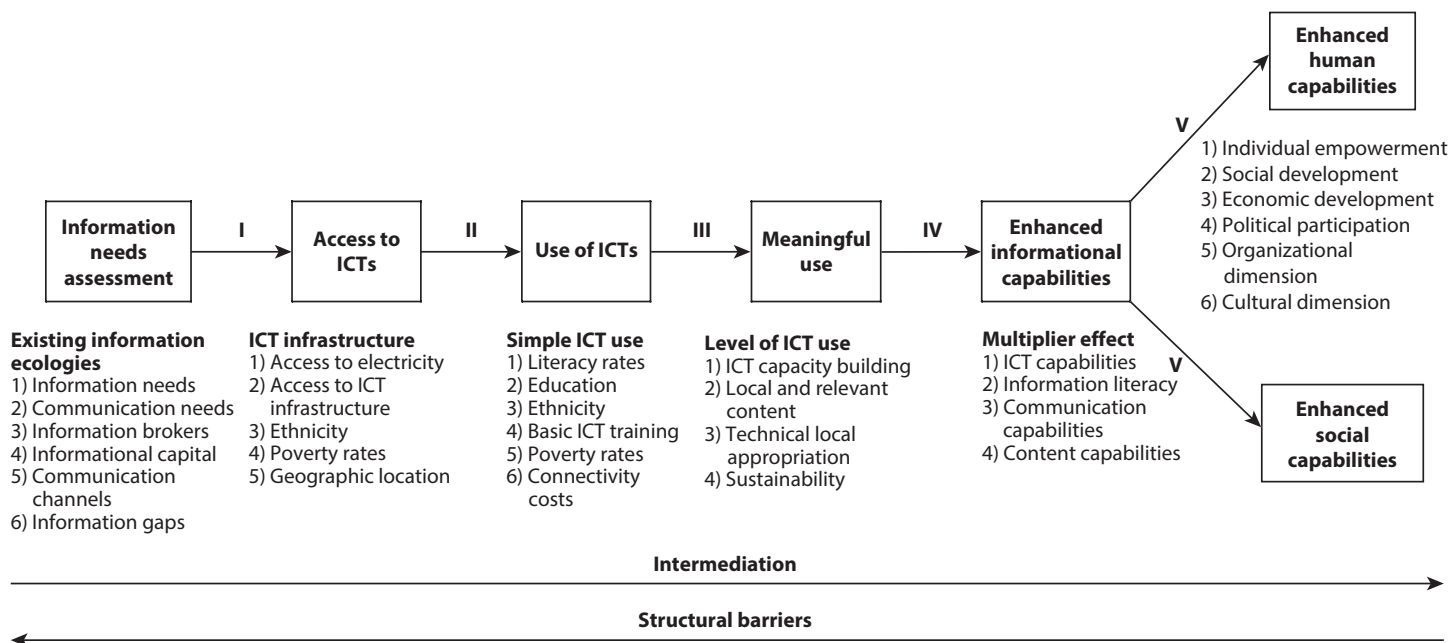
towns and that they combine their weekly visits to regional markets with a visit to a public Internet access point (Gigler 2009). This finding is intriguing because it suggests that knowing how to use the Internet is more important for poor people than having access to the technology within their community. Consequently, for ICTs to have an impact on their well-being, not only do people need to have access to the Internet, but they also need to use it. In spite of existing infrastructure constraints, the intermediation through a local and effective ICT program can significantly enhance poor people's Internet use, even if the local community lacks access to Internet connectivity. Thus there is significant room for reducing digital inequalities through targeted interventions that promote the use of ICTs in rural communities.

The third step of the impact chain highlights the conditions under which simple ICT use is converted into meaningful use. The notion of "ICT use" encapsulates the simple use of the Internet without specifying proficiency, while "meaningful use" captures the depth, usefulness, and level of expertise in Internet use, gauging use in terms of how efficient, informed, and beneficial it is. Applying this framework makes it possible to identify the factors that impede the ability of people to give their ICT use meaning and to derive real benefits from it. As figure 2.2 visualizes, four conditions have to be met if people are to make meaningful use of ICTs: (a) enhancement of their ICT capabilities, (b) availability of local and relevant content, (c) local appropriation of ICTs, and (d) financial and social sustainability of ICT programs.

The impact chain also stresses that the local technical appropriation of ICTs by the community is a critical condition in attaining meaningful use. This concept argues for the importance of providing people with the necessary space to explore and interpret technologies on their own terms, to define which tools and applications they consider suitable for their needs, and to adapt these technologies to their local economic, social, and cultural context. Frequently, programs that are implemented in an overly centralized manner deny people the opportunity to adapt ICTs to their own local circumstances and instead "impose" preconceived technical solutions on local communities. Such an approach frequently leads to the failure of projects, since in most programs the predefined technical solutions do not correspond to the local priorities of communities. Frequently, technical solutions are not based on the real need of users for information and communication; instead, they are defined in a top-down manner by centralized technocrats or project managers.

The third step also emphasizes that ICT programs need to reach financial and social sustainability in order to provide people with the opportunity to use ICTs in the long term. Sustainability is essential to attaining a meaningful level of use. Due to the lack of community ownership, ICT programs often fail shortly after the ICT infrastructure is installed or the initial phase of training is carried out. Programs frequently face significant challenges of financial and social sustainability, since they fail to base their activities on the priorities of local stakeholders and thus do not succeed in raising any local funds to support the program in the long term. Many ICT programs also fail to develop local

Figure 2.2 The ICT Impact Chain: A Five-Step Process



Note: ICT = information and communication technology.

partnerships with the community-based and civil society organizations working in their project area.

The fourth step of the impact chain analyzes the conditions that have to be met so that a person's meaningful ICT use enhances her or his informational capabilities. This step is essential because the extent to which ICT programs succeed in enhancing people's informational capabilities is the most critical factor determining the impact of ICTs on poor people's well-being. The concept of ICT capabilities encapsulates a person's ability to make efficient use of computer hardware, software, and ICT tools; the concept of informational capabilities is an information-centric approach, deemphasizing the role of technology and people's ability to use these tools. It includes four components: ICT capability, information literacy, communication capabilities, and content capabilities.

The impact chain emphasizes that the conditions under which people's meaningful uses can be transformed into enhanced informational capabilities depend on the extent to which they can (a) enhance their capabilities in all four dimensions of informational capabilities, (b) strengthen their existing informational capital, and (c) enhance their individual and collective agency in the use of information. A critical factor in reaching this step is the local appropriation of ICTs by communities, as facilitated by an effective and local intermediary.

In fact, the intermediary organization (ICT program) is the variable that has the strongest influence on people's informational capabilities. Grassroots-level programs, in particular, are significantly more successful in enhancing people's informational capabilities than are programs led by government. NGOs have often been relatively unsuccessful in reaching this objective. To succeed, ICT programs need to stress the role that information plays for development in general and thus focus on enhancing people's informational capabilities. A critical aspect of informational capabilities is the concept of information literacy, which emphasizes a person's ability to collect, process, evaluate, use, and share information with others within her or his own sociocultural context. One of the key lessons from many ICT programs is that most of the difficulties poor people have encountered in using the Internet are related to the analysis and interpretation of information rather than the use of technology itself. Grassroots ICT programs have demonstrated that it is possible for people with relatively limited formal education to enhance their information literacy skills if intermediary organizations provide hands-on support, guidance, and specific capacity-building activities on issues related to the interpretation of information instead of focusing solely on training participants in the use of technological applications.

Government programs frequently overemphasize technology itself and provide little guidance on issues related to the use, processing, and evaluation of information. These programs frequently fail to place the use of ICTs into the local sociocultural, economic, and political context and thus fail to improve people's information literacy skills (Gigler 2009).

A good example of the critical differences between ICT capabilities, meaningful use, and enhanced informational capabilities is the use of ICTs (Internet and community radio) to improve small-scale farmers' access to market prices.

While many programs are highly successful in enhancing their participants' "CT" capabilities to use the Internet to find market price information, they frequently fail to enhance their "I" capacities to interpret, evaluate, process, and share the information with others. While this type of use can certainly be considered meaningful, small-scale farmers are often not able to understand how the local and regional markets work or to analyze the underlying reasons for significant fluctuations in market prices for their agricultural goods, which are common in rural markets. Thus, improved CT capabilities and enhanced access to the raw market data, without the information literacy skills needed to interpret the data, fail to enable farmers to apply the information directly to the daily challenge of selling their agricultural products in local and regional markets.

Moreover, the enhancement of people's communication capabilities is an essential aspect of improved informational capabilities. A critical success factor is the issue of whether ICT programs significantly enhance a participant's capabilities to communicate with family members, friends, and professional contacts. In the context of rural communities, which have strong social networks, the strengthening of communication capabilities primarily enhances their horizontal communications with other communities and, to a much lesser degree, improves the vertical communication between communities and state institutions.

Furthermore, the ICT impact chain stresses the importance of enhancing people's capabilities not only to "consume" but also to produce their own local content and to share it with others. These "content capabilities" are particularly important for rural communities due to (a) their strong demand for local information and (b) the absence of local Internet content. To address this issue, ICT programs should support poor communities in developing their own websites in order to provide the poor with space to create and disseminate their own content and to share some of their experiences with other communities and the public in general.

The ICT impact chain also shows that expanding people's informational capital through the use of ICTs plays a central role in determining whether or not people enhance their informational capabilities. Only those ICT interventions that enable communities to appropriate ICTs locally, in terms of both their technical and social aspects, are successful in enhancing people's informational capital. The technical aspect of the local appropriation process focuses on creating opportunities for people to select and adapt communication tools based on their own information needs, while the social aspect of local appropriation highlights the ability of communities to adapt technologies to their own social, economic, and cultural processes.

The success of the intermediary process thus depends on the intermediary's ability to assume simultaneously the roles of a technical and a social intermediary. First, with regard to local technical appropriation, the intermediary should enable poor people to explore, use, and adapt technologies under their own terms and conditions by facilitating an open and secure learning environment. Moreover, it should provide the necessary technical support (ICT training, local

content) for the technical appropriation of ICTs and thus enable participants to make meaningful use of ICTs.

In relation to the social appropriation of ICTs, the intermediary is instrumental in providing the social space in which to explore the meaning of technologies and their applicability to their individual and collective well-being. The intermediary needs to assist communities in integrating these technologies into their existing social and organizational community structures. In this sense, ICT programs can provide a social space in which participants can come together to discuss issues relevant to their daily lives. Furthermore, a critical factor for ICT projects is the degree to which the process of introducing ICTs into a community has led to the gradual transfer of “ownership” to the participants, in particular whether they assume a leading role in the program’s management and preparation of specific activities.

Finally, ICT interventions need to enhance the participants’ individual and collective agency with regard to their use of information. This concept stresses the political dimension of information and places ICTs into the broader sociopolitical and economic context. A critical aspect of the expansion of people’s individual and collective agency is that participants gain the necessary knowledge and human capabilities to use, manipulate, and control ICTs. In this sense, the users’ ownership of and control over the use and management of ICTs and the resulting enhancement of their informational capabilities can lead to their individual and collective empowerment.

In sum, for ICTs to have a positive impact on people’s well-being, it is critical for the intermediary organization to support participants so that their meaningful use of ICTs also enhances their informational capabilities. If people are enabled to take this critical step, enhanced informational capabilities similar to literacy can enhance the human capabilities of poor people to make strategic life choices and to interact better with the formal institutions of the state and the market.

The final step in the impact chain investigates the extent to which advanced informational capabilities can enhance people’s human and social capabilities and the dimensions in which the meaningful use of ICTs can play a transformative role in their lives. The alternative evaluation framework emphasizes that the positive multiplier effect of informational capabilities on people’s human and social capabilities depends on the extent to which informational capabilities (a) enhance people’s individual and collective agency, (b) strengthen poor people’s existing capital (that is, human and financial capital), and (c) have a positive multiplier effect on the other capabilities. Consequently, ICTs have the strongest impact on people’s human and social capabilities when the effects of enhanced informational capabilities on these three aspects of people’s lives are robust. The last step of the impact chain aims to unpack the indirect effects that the enhanced informational capabilities might have on a person’s life and explains the various factors that determine the existence and strength of the ICT multiplier effect on individual and collective well-being.

First is the personal dimension and the extent to which people's uses of ICTs can result in their individual empowerment. Individual empowerment is the only dimension in which the use of ICTs can directly enhance people's human well-being. Enhanced proficiency in the use of ICTs can have a significant and direct positive impact on people's psychological well-being, particularly for people who belong to the most vulnerable groups, such as women and youth. Enhanced ICT capabilities clearly can be the source of improved individual agency and can have significant positive effects on participants' self-esteem.

Second is the social dimension of people's well-being. Enhanced informational capabilities can play an important role in improving people's human capabilities. The Internet has the greatest potential to enhance individual rather than collective capabilities in this dimension of people's lives. With respect to education, for instance, advanced informational capabilities strengthen people's individual agency by raising their awareness of educational opportunities and gaps between urban and rural areas. Enhanced informational capabilities can also significantly strengthen an individual's human capital, especially if the program focuses on building capacity in information literacy. Enhanced informational capabilities in the area of education have a strong multiplier effect, in the sense that they can significantly enhance the individual's ability to reach higher levels of education. ICT capacity-building programs also can play a critical role in adult education and vocational training. As such, ICTs can improve people's access to nonformal education.

The use of ICTs has limited positive effects on the economic well-being of rural communities. In fact, empirical evidence frequently indicates that enhanced informational capabilities (a) often have only minor effects on strengthening people's individual and collective economic agency, (b) do not enhance people's existing economic or financial capital, and (c) have only limited multiplier effects on people's economic well-being.

The main reason for this is that, although ICTs can enhance people's access to market *prices*, they cannot meaningfully alter existing market structures or make markets more competitive and transparent. Frequently, information asymmetry is only one of many factors (for example, high transportation costs, limited production capacity) that have led to significant market distortions, and improving access to market information is not, by itself, sufficient to reduce market failures. In fact, ICT program evaluations frequently find that the use of ICTs does not improve the "negotiating power" of small-scale farmers in local and regional markets, fails to reduce the high "transaction costs" that small-scale farmers face when bringing their products to market, and does not have any significant positive impact on their income.

Furthermore, ICTs have the lowest impact on the political dimension of poor people's well-being. The multiple barriers that discourage rural communities from participating in the political system at the local and central levels of government are too significant to overcome solely by the use of ICTs. In fact, while ICTs can help poor people to enhance their individual and collective political agency—for instance, by exerting their right to information—they frequently

play a limited role in enhancing the transparency of government institutions due to the absence of cultural and organizational change within government institutions themselves. While ICTs can catalyze a degree of enhanced governance, a fundamental change in behaviors and attitudes among politicians and government officials alike is necessary to enhance the accountability and transparency of government institutions. Central to the issue of good governance is lack of “information accessibility,” not lack of access to ICTs.

Finally, the impact chain illustrates that the presence of an effective and local intermediary organization is essential for enhancing people’s well-being through the use of ICTs. Such intermediaries help rural communities to interpret, appropriate, and enact ICTs in their local sociocultural context, to make the use of ICTs meaningful to their everyday lives, and to enhance their informational capabilities and ultimately improve their human and social capabilities. The ICT impact chain illustrates this critical finding by tracing the path of an ICT program from the initial stage of information and needs assessment to the enhancement of people’s human and social capabilities.

Conclusions

The chapter has argued that under certain conditions ICTs can significantly enhance poor people’s human and social capabilities and thus have a positive impact on their well-being. At the core of the process of introducing ICTs into rural communities stands the notion that ICTs can (a) enhance poor people’s individual and collective agencies, (b) strengthen their existing individual and community assets, and (c) enhance their “informational capabilities.” Similar to literacy, newly acquired informational capabilities can act as an agent of change for individuals and communities, enhancing their ability to engage with formal institutions in the economic, political, social, and cultural spheres of their lives. The enhancement of people’s informational capabilities is the most critical factor determining the extent to which ICTs can enhance people’s well-being. That is, the expansion of people’s informational capabilities has not only intrinsic value for their well-being, but also, and even more important, an essential role to play in strengthening their capabilities in multiple dimensions.

However, the chapter also has shown that there is no direct, causal relationship between ICTs and development. The impact of ICTs on the livelihoods of the poor depends to a large extent on the dynamic and iterative process between people and technology within a specific local, cultural, and sociopolitical context.

Furthermore, important differences exist regarding the extent to which informational capabilities expand people’s human and collective capabilities depending on the political, economic, and social dimensions of their lives. Frequently, the most immediate and direct impact of ICT programs on people’s well-being is the personal empowerment of the most marginalized people, particularly women; the newly acquired ICT capabilities provide people with a sense of achievement and pride, significantly increasing their self-esteem. Poor people perceive the

Internet as playing a critical role in enhancing the social capabilities of their community, but consider its positive impact on individual human capabilities as less significant. Thus the Internet is seen as having the strongest impact on the social and organizational dimension of their lives. Regarding both the political and economic dimensions, only a limited relationship exists between the enhancement of people's informational capabilities and their human capabilities. In both dimensions, the role that ICTs can play in enhancing people's well-being is significantly limited by broader socioeconomic factors.

The human development of people, rather than technology itself, should be at the center of the design and evaluation of ICT programs. As shown in this chapter, the important advantage of using the capability approach as the basis for evaluating ICT programs is its emphasis on the ability of ICTs to improve the daily livelihoods of poor communities, in contrast to more conventional approaches, which overemphasize the significance of technology itself for development.

Notes

1. For the purpose of this research, this chapter uses Hamelink's definition of ICTs: "All those technologies that enable the handling of information and facilitate different forms of communication among human actors, between human beings and electronic systems, and among electronic systems" (Hamelink 1997, 3). This functional definition of ICTs includes both new (Internet, e-mail) and traditional (community radio) forms of ICT.
2. This chapter uses the definition of sustainable livelihoods developed mainly by Chambers and Conway (1992), as quoted by Scoones: "A livelihood comprises the capabilities, assets (including both material and social resources), and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks, maintain or enhance its capabilities and assets, while not undermining the natural resource base" (Scoones 1998, 5).

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New Routes to Governance: A Review of Cases in Participation, Transparency, and Accountability

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The twenty-first century has undoubtedly witnessed a revolution (or, more accurately, many revolutions) in government-citizen interaction. Over the last few decades, the widening gap between public expectations and perceptions of government performance and a rise in political scandals involving large-scale corruption have contributed to a decline in the public trust of governments (Nye 1997; Sirker and Cosi 2007). Simultaneously, however, a movement pushing for greater transparency, accountability, and participation in governance, commonly referred to as “open government” (Lathrop and Ruma 2010), “government 2.0” (Nath 2011), or “we-government,” has been gaining momentum.¹ Furthermore and in parallel, innovations in information and communication technologies (ICTs) have created new avenues for making data transparent, accessing information, monitoring and reporting services, and organizing and engaging citizens and communities. Community radio, short message service (SMS), voice-based reporting, mobile phone apps, websites and wikis, social media, and interactive mapping are some of the technologies that are thought to play a role in creating these changes (Avila *et al.* 2010; Bertot, Jaeger, and Grimes 2010; Pina, Torres, and Royo 2009). With the heightened attention on open government and the advent of new ICTs and approaches to using them, public bureaucracies are under pressure to adapt, be more transparent, and improve how they interact with citizens (Kuriyan and Ray 2009).

The underlying assumption of this work is that technology will make information transparent, improve and provide greater access to services, and

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increase civic participation (Bertot, Jaeger, and Grimes 2010; Demchak, Friis, and La Porte 2000). Various stakeholders are employing technologies to reach these goals: governments are posting budgets online or are providing technology-based monitoring and complaint mechanisms, citizens are using the power of crowds to monitor elections or are contributing to interactive mapping of services, and nongovernmental organizations (NGOs) are educating citizens on how the government spends on public services. Broadly speaking, initiatives with these goals fall into two buckets: “supply” or “demand” and “push” or “pull,” where the supply and push relate to government-led initiatives, and demand and pull relate to citizen or nongovernmental, including private sector, efforts. While these approaches are not mutually exclusive, classifying them in this way is helpful to understanding the users of ICTs and the purpose of ICT use.

This chapter outlines the landscape of efforts using technologies to make progress toward achieving the goals of participation, transparency, and accountability. It provides a bird’s-eye view of existing methods, potential constraints on employing them, and opportunities for future work through underused approaches. We begin by unpacking the underlying assumptions of transparency, accountability, and participation and expanding on the theoretical links between them introduced by Bailur and Gigler in chapter 1. We then lay out an analytical framework for a sample of initiatives that target these goals. We present these cases according to their *end goal*—the purpose of the initiative and the eventual impact they are seeking—and the *approach*—the way in which they pursue their goal through offline techniques or use of ICTs. To conclude, we examine the enabling or constraining factors of ICT use as derived from the cases and use of the STEP (sociocultural, technical, economic, and political) framework introduced in chapter 1.

Transparency, Accountability, and Participation: Assumptions and Critiques

In chapter 1, Bailur and Gigler define participation, transparency, and accountability. To recap, public participation is a function of those who engage in collective action and decision making, communication between parties, and discussions linking policy with public action (Fung 2006). Transparency is the outcome of “any attempt (by states or citizens) to place information or processes that were previously opaque in the public domain, accessible for use by citizen groups, providers, or policy makers” (Joshi 2010, 3). Accountability is the relationship between the power holder (account provider) and delegator (account demander) and can be divided into two major components: answerability and enforcement (Schedler 1999). Answerability encompasses the obligation of public officials to inform about and explain their actions, whereas enforcement is the capacity of accounting agencies, including civil society and the general public, to impose sanctions on those power holders who have violated their obligations. Joshi (2010) offers methods for achieving accountability, including by setting internal standards, acquiring information about

actions, making decisions on the appropriateness of actions, and identifying and sanctioning unsatisfactory performance. Adding to this, Goetz and Jenkins (2001) explain the enforcement approach of formalized citizen engagement in oversight committees for greater accountability.

Unpacking Assumptions

While transparency, accountability, and participation are argued to be at the core of good governance and efficient, inclusive public service delivery (Joshi 2010), they are based on a set of assumptions that inform grand aspirations. Major assumptions include enhancing the quality of governance and supporting democratic outcomes, improving the effectiveness of development initiatives, and increasing and widening the roles for citizens in government processes (McGee and Gaventa 2010). Goals are to achieve increased state or institutional responsiveness, lower levels of corruption, new democratic spaces for citizen engagement, and improved use of resources and delivery of services (McGee and Gaventa 2010).

Unpacking these assumptions as they relate to anticipated outcomes yields some critical questions. To start, who needs to be transparent? Should government, civil society, or private firms all be expected to open up their data? What is the purpose of transparency? Is it for tackling corruption, or is it for evaluating individual and institutional performance? Or is transparency in governance simply a basic human right that should inform any democratic system? Is there such a thing as “too much transparency” that could hinder government performance and make democratic processes more complex? How can transparency be balanced with privacy rights? A more nuanced look at transparency may reveal various forms that produce different outcomes.

Accountability is a sociocultural construct, a confluence of attitudes, relationships, power structures, and norms (Mulgan 2000; Roberts 1991). As such, if accountability is an external requisite and not integrated into government processes from initiation to evaluation, it may be no more than superficial information gathering and consultation (Paul 1998, 2006; Vigoda and Golembiewski 2001). If so, accountability may require local interpretations to understanding how it can be institutionalized.

Citizen participation, the third inextricable element of efficient and effective governance (Held 2006; Hickey and Mohan 2005) can be in the form of direct, representational, or information-based (when aggregate results lead to a decision for planning) participation. Four broad assumptions underlie the participatory process: it (a) is based on dialogue and negotiation, (b) involves necessary stakeholders or actors, (c) should be equitable and active, and (d) is typically on a sliding scale from weak to strong. Arising from these assumptions is a set of questions: Who manages the dialogue and negotiation? Who defines which stakeholders can and should participate? How can we ensure equity when there is “elite capture”—those who participate tend to be those who are already politically interested, motivated, and articulate and who can afford the time to participate (Cooke and Kothari 2001). For instance,

in situations in which civic participation is inequitable, women in particular may be sidelined or treated as a homogeneous group (Gujit and Shah 1998). This enables a vicious circle through which weaker voices may not be heard and may not be motivated enough to participate again.

In addition to the isolated expectations of transparency, accountability, and participation, questions need to be asked and answered regarding the triangular causal relationship assumed to exist between them. When information is made “transparent” about the laws that govern us or the services that are provided to us, it is assumed that those who are responsible for creating and enforcing laws and delivering services can be held to account. Empirical evidence, however, does not indicate a straightforward causal link between transparency and accountability (Fox 2007). Instead it suggests a need for further clarification on varying levels. Under what *conditions* can transparency lead to accountability? What forms of transparency generate what types of accountability? For example, will easier access by citizens to knowledge about the time that a public service is set to be delivered push public officials toward efficiency? Joshi offers rationale for the possibility of a broken causal link: “Public providers may be immune to exposure of poor performance, increased citizen voice may be met with backlash and reprisals, lack of resources may constrain public officials’ capacity to respond, and accountability mechanisms may not be enough of a deterrent” (Joshi 2010, 6). One final grand assumption is that increased transparency and accountability initiatives will lead to greater citizen awareness of rights and, hence, inclusion, notably demonstrated through civic participation by the previously uninformed and excluded. This remains a hard argument to make given (a) the dearth of evidence on what kinds of transparency and accountability lead to greater awareness and (b) the lack of understanding about the extent to which the “empowerment effect” trickles down to the least empowered (Joshi 2010; McGee and Gaventa 2010).

The Role of ICTs

The 2004 *World Development Report* called for a “short route” to accountability—direct linkages between users and providers—as a replacement for the failing “long-route” mechanisms by which accountability is achieved through the intervention of public officials and elected political figures (World Bank 2004). This call to action spurred a body of literature examining how best to shorten the route by strengthening and providing a platform for voice, improving transparency, and enhancing accountability (Sirker and Cosi 2007). The outcome and general consensus was that ICTs offer great potential to this end.

In theory, technologies have the ability to improve accountability, transparency, and participation in the following ways:

- Reducing the distance between government service provider and user by providing greater access to decision makers and information through platforms for raising issues and concerns

- Enabling horizontal, downward, and upward flows of information, providing the potential for *all parties* to be transparent and accountable
- Providing multiple-platform opportunities for disseminating and interacting with information
- Providing visual tools for citizens to access government data and, as a result, simplifying traditionally presented government information (for example, budgets)
- Providing analytical tools for citizens to use (for example, to make comparisons year-on-year or with other departments or states)
- Producing real-time opportunities for citizen interaction and feedback
- Enabling discussion through platforms among geographically disparate citizen populations, governments, and NGOs
- Generating the “glare effect”: using ICTs to attract media attention to publicize causes, draw attention to government behavior, and garner immediate citizen responses.

By unpacking theoretical assumptions of ICTs for achieving accountability, we can begin to understand how we are reaching practical goals. In the next sections, we offer examples of initiatives that seek to strengthen the key pillars of governance—with the use of ICTs—in pursuit of a deeper understanding of how we can better achieve goals.

Objectives and Approaches: An Analytical Structure for Case Studies

The examples chosen for discussion and summarized in the next sections are organized in two ways: (a) by their specific goal or purpose within the broad spectrum of transparency and accountability in governance and (b) by their use of technologies. In some cases, there may be many goals and approaches; this framework does not imply that a single initiative must be limited to a single approach. For the purposes of analysis, however, efforts are classified according to major practical evidence to date, as opposed to intended or stated objective or purpose of use.

Goal

The goal of improving governance through transparency, accountability, and participation is broad. Hence, it can be difficult to measure whether desired outcomes are achieved or not. One way of tackling this issue is to focus on the specific areas of change that development projects seek to make. Evidence to date suggests six categories of intended reform (see table 3.1).

Improved Public Service Delivery

Public services, including health, education, and sanitation, are at the heart of governance, as they offer citizens access to basic needs. Citizens tend to be most concerned about their access to and the quality of public services because both have direct and immediate effects on their lives. As such, and as the evidence suggests, the improvement of public services is the most

Table 3.1 Approaches of Existing Cases, by Goal and Method

<i>Objective/method</i>	<i>Collecting, analyzing, and visualizing data</i>	<i>Disseminating and accessing information</i>	<i>Organizing or unifying communities</i>
Improved service delivery	Citizen report cards ^a ; SeeClickFix; CGNet Swara; Check My School ^b	Digital Green; health kiosks in Karnataka ^c	Map Kibera ^d ; community mapping ^a ; community scorecards ^a
New spaces for citizen voices and political engagement	Ushahidi crisis mapping ^a ; Mumbai Votes; Adote um Vereador	Jaankari; community radio ^a	
Improved budget transparency	International Budget Partnership Open Budget Index; d-Brain		Participatory budgets
Legislative Transparency and Accountability		Opening Parliament	
Lower levels of corruption	I Paid a Bribe		
Judicial transparency and accountability		Open Courts	

Note: Shading = no known cases. Cases without a footnote are discussed in this chapter.

a. Non-ICT.

b. See chapter 6.

c. See chapter 7.

d. See chapter 4.

frequently identified goal of transparency and accountability initiatives. A shared method for reaching desired outcomes is using technology tools—mobile, video, and online platforms—for making sector-based data transparent through reporting and monitoring.

New Spaces for Citizen Voices and Political Engagement

Central to an open government is participation, particularly by citizens in decision making. This necessitates safe and direct avenues for citizens to be heard and demands an environment that enables government actors to listen and respond. Owing to the understanding that political engagement is critical to reaching accountability outcomes, many efforts can be mapped to this cause. The cases to date reveal a tapered clustering around advancing voting and elections and facilitating discourse on local issues.

Improved Budget Transparency

Tracking public resources—where they come from, with whom they reside, and what they are used for—is a technique designed to track corruption, which can begin by monitoring promises made through budgets and comparing them to the allocation and use of funds. However, budgets are often difficult to obtain and interpret; as a result, many initiatives focus on making them publicly accessible and comprehensible. Budget transparency has been tackled at the national and subnational levels. The most prominent examples of successful offline approaches to accountable governance relate to budget analysis and advocacy. However, in recent years, technologies have allowed for more collaborative and timely budget transparency processes.

Legislative Transparency and Accountability

While rule of law—laws and the processes through which they are enacted—are central to government, their purpose is to serve and protect citizens, who often find them impenetrable. As a result, citizens are organizing around making parliaments more open and collaborative; however, this remains a nascent movement. Efforts that have gained the most traction have done so, in part, through online community forums.

Lower Levels of Corruption

Corruption—the use of public funds for private gain—is commonly seen as the source of poor public service delivery. Whether carried out on a large or small scale, corruption is the focus of many campaigns worldwide, with technologies altering the way we uncover and mitigate it. Journalists and civil society organizations are at the forefront of this effort, which includes mining data for corruption trends and building tools to collect citizen information on incidents of bribery.

Judicial Transparency and Accountability

Laws can only be effective if they are enforced. The processes that guide enforcement and the outcomes produced by them are not easily accessible or understood by those outside the exclusive set of experts who work within a justice system. Historically, these processes have not been called into question in a systematic way, but new technologies offer promise for enabling a timely aggregation and communication of relevant judiciary data. Even so, the efforts to increase access to judicial information for responsive and accountable courts, judges, and lawyers are minimal.

Method

Of equal importance to identifying goals of development programs is noting how they are achieved. Efforts seeking to enhance participation, transparency, and accountability in governance are using varied techniques to do so. Evidence to date suggests a concentrated set of approaches that can be classified into the three key areas discussed in the following sections. It is worth noting that these methods employ a variety and sometimes a combination of technology tools, for example mobile phones and online platforms, and approaches, such as SMS reporting or crisis mapping.

Collecting, Analyzing, and Visualizing Data

“The world contains an unimaginably vast amount of digital information which is getting ever vaster ever more rapidly ... Managed well, the data can be used to unlock new sources of economic value, provide fresh insights into science, and hold governments to account.”² To exploit this promise of data-driven techniques for governance reform, motivated actors are directing their energy toward generating and collecting data. Once gathered, data gain meaning through analysis. An increasingly popular component of analytics is visualization, which

is reflected in the growing number of new tools being built and designed to this end. To date, the vast majority of cases in transparency and accountability focus on data collection and analysis.

Disseminating and Accessing Information

Communicating the significance of data to tell a story that is accessible by citizens is critical for collaborative governance and improved public services. Tools for disseminating information from government to citizen and approaches for providing easier access by citizens to service-related information have been leveraged in a variety of efforts to date.

Organizing or Unifying Communities

While community organizing may traditionally occur through offline strategies, technologies have been integrated into participatory approaches to hasten progress and enhance effectiveness. Many projects that involve collecting, analyzing, and disseminating information also include working with communities; however, perhaps due to deep, long-term engagement required for achieving active and vocal communities and increasing citizen participation, community building can be seen more often as a by-product than as a central approach to reform.

The methodology for classification presented in this chapter makes a new contribution to research in ICT-led governance. In prior studies, the tools themselves (for example, online portals, mobile phones, and wikis) are at the center of analysis. Additionally, technology-led programs tend to be categorized by development sectors—for example, water, health, or education—or by geography. These frameworks do much to delineate the existing ICT models, but do little to inform the reasons for pursuing them and the limitations they have.

This study differs by focusing on the way in which tools (or the lack of tools) have been used to push for greater transparency, accountability, or participation. In doing this using existing evidence, it tackles questions that arose from preliminary assumptions. In the context of these assumptions, the framework illuminates which governance goals ICTs are helping to achieve and to what extent. By touching on a variety of initiatives to provide an overview of the types of approaches used and the aims of governance reforms, this chapter offers deeper insights into the specific successes and challenges experienced.

Improved Public Service Delivery

“Short-route” feedback mechanisms for service delivery include rights to freedom of information (including legislation) and non-ICT tools such as citizen report cards, community scorecards, community monitoring, public hearings, and audits (Ackerman 2005; Davis 2004; Deichmann and Lall 2007; Deininger and Mpuga 2005; Paul 2006), among others. While these continue to be used, the intervention of technology can shorten the accountability route further.

Collecting, Analyzing, and Visualizing Data

FixMyStreet and SeeClickFix: Reporting Public Service Issues

One popular ICT-led service delivery approach integrates mapping with interactive features, actively building in citizen participation. This includes FixMyStreet in the United Kingdom³ and SeeClickFix in Canada and the United States, which was inspired by the British intermediary website. Designed by the non-profit mySociety, FixMyStreet allows individuals to report a problem online and then forwards the report to the local U.K. council.⁴ The service is gradually being integrated with U.K. council websites, allowing users to click through them to arrive at the FixMyStreet site.⁵

SeeClickFix is a large-scale “free mobile phone and Web tool that allows citizens to report and document nonemergency issues [and] to communicate them to those accountable for the public space.”⁶ Started in March 2008 in New Haven, Connecticut, the website states that it is based on the principles of empowerment, efficiency, and engagement and that it encourages a “self-reinforcing loop,” as the government cannot be in all places all the time. Citizens in Canada and the United States can use the website to report problems such as potholes in roads, malfunctioning traffic lights, garbage disposal issues, lack of road marking, and many more. These issues are then passed on to the relevant party: for example, the local political representative or utility company. Citizens receive e-mail alerts with status updates on their reported issue. They contextualize their issue through access to a map of all problems reported in their neighborhood. Finally, they can set up a “watch area” and receive updates on local issues, contributing to community building. The team behind the website has released Blackberry, Android, and iPhone apps for citizen reporting.

The theory of change is that those who participate in fixing neighborhood problems and see them being fixed are more likely to become and to stay involved. Yet questions have been raised about the effectiveness of these sites. First, the traditional North American 3-1-1 phone services are also available online, so redundancies are a concern.⁷ Many U.K. councils also have multiple outlets, in addition to their own sites, such as through Twitter, Facebook, Flickr, and YouTube. However, like FixMyStreet, SeeClickFix also works with local authorities (and the more traditional 3-1-1) in cities such as Toronto and Washington, D.C., where the offline and online systems are being integrated.⁸ Second, such sites may prolong the complaints procedure by having the individual engage in this “re-intermediation” rather than contact the relevant local authority directly. In addition, they may exacerbate the digital divide, so that persons who are technologically literate and have access to websites and mobile tools get their issues resolved while others do not, enabling elite capture (Donnelly 2010). In response to this concern, Ben Berkowitz, one of the co-founders of SeeClickFix, cites reports of “traditionally underserved communities” using the tool, such as a woman who used the service to report three drug dealers working out of a low-income housing project and the New Haven police who conducted a drug raid based on that information (Donnelly 2010). Finally, such websites

may have no effect at all. Although SeeClickFix publishes stories of how quickly issues were resolved once they were reported, there has been no systematic study of causality or comparison of nondigital and digital reporting mechanisms. All of these issues deserve greater attention, particularly the question of impact. Nevertheless, one of the greatest benefits of these websites clearly is their popularization of civic participation, especially among younger generations who are ICT literate (“digital natives”) but often disenchanted.⁹

CGNet Swara: Voice and SMS-Based Journalism

CGNet Swara was conceived in 2004 and launched in Chhattisgarh, India, in February 2010 by Shubhranshu Choudhary, a former BBC journalist originally from the area. Working jointly with Microsoft Research India, the Massachusetts Institute of Technology, and the International Center for Journalists, CGNet Swara enables citizen reporters to call in and record a short update of their situation. Option one in the system allows journalists to record news. Moderators then vet and publish the story. They also send text messages informing subscribers that a new report is available. Option two allows them to hear the three most recent news stories, as selected by the moderators (Mudliar, Donner, and Thies 2013).

This approach has had some initial success. For example, when a citizen journalist reported nonpayment of wages guaranteed under the National Rural Employment Guarantee Act, the newspaper *The Hindu* paid a visit to the employer, leading to 1,000 workers getting paid six months of wages.¹⁰ Reports also led to overdue payment of a year’s wages to teachers and an official order to remove a liquor store from the vicinity of a school (Thies 2011). More than 25 percent of 110 reports analyzed by Thies (2011) concerned grievances, and just under 25 percent concerned the performance of local government.

Still a fledgling initiative, CGNet Swara holds the potential to improve the ability to measure the quality and responsiveness of service providers (Pandey 2010; Ray 2010). Nevertheless, questions arise about its ability to reach the poor. Although the technology is relatively accessible, analysis of a two-day training course in citizen journalism found that 66 percent of the 29 participants were male, 33 had a college degree, and all but 4 had finished the tenth grade (Thies 2011). About 80 percent owned a mobile phone, but less than half had sent an SMS. This suggests that SMS is relatively new even to this male, more educated, and technologically comfortable segment of the population. Second, Thies (2011) reports that most posts are in Hindi, although 10 percent are in Kurukh (the main tribal language of the area). Even fewer posts are in the tribal languages of Chhattisgarhi, Gondi, and Nagpuri. This negates Choudhary’s initial aim to have more journalism in tribal languages, because “when you are talking to someone who knows Hindi in those villages, you are talking to someone who is from the upper class of the tribal community” (Ray 2010). The implication is that the service is being used largely by Hindi-speaking persons from the higher classes. Third, out of 150 contributors, 10 percent are responsible for 45 percent of the posts. These persons are often local social activists. Those who want either

to leave a message or to listen have to pay for the service. Finally, the moderators still control the flow of information, as they choose which three stories will be heard: these intermediaries are therefore able to shape the news disseminated, and their profiles and roles need to be researched in greater detail. Lastly, as with many technology initiatives in developing countries, one could ask whether the model is sustainable, as it is currently being supported with outside funding.

Disseminating and Accessing Information

Digital Green: Agriculture Training Videos

Digital Green works with farmer communities in South Asia and Africa to build sustainable livelihoods through knowledge sharing (Governance Knowledge Centre 2011).¹¹ Specifically, members of the organization train farmers to develop short films focused on local agricultural practices. To promote collaborative learning, farmers produce videos and share them with their peers.

The impact of Digital Green is threefold: first, community members feel empowered through learning a set of technical skills; second, agricultural effectiveness and sustainability are enhanced through documentation and learning of successes; and third, agricultural production rises as training videos to introduce varied foods and processes are shared across states and countries. One example of Digital Green's impact on output is the uptake of azolla, a fodder for cattle proven to increase milk yields. Uptake of azolla spread from the southern Indian state of Karnataka to the northern state of Madhya Pradesh after local farmers watched a video demonstrating production of the crop (Padmanabhan 2013).

In the near term, Digital Green aims to reach 1 million farmers across 11,000 villages, which would confirm the ability to scale the approach and ultimately reach a broad scope of users. Sustainable impact, however, is a question to be monitored over time. For one, it is uncertain whether the production and use of videos are contingent on NGO intervention in the long term. To help with this, local community members are trained to be community knowledge holders and sharers. Second, an underlying assumption of Digital Green's theory of change is that farmers will alter their current ways or implement new ones after watching a video. While this behavioral change has been witnessed to a certain extent, it remains to be seen in new contexts.

New Spaces for Citizen Voices and Political Engagement

Elections are perhaps the most obvious non-ICT-based complaint mechanism in democracies. As the "long route of accountability" (World Bank 2004), they are also the most established mechanism for citizens to exert their options of "exit, voice, or loyalty" (Hirschman 1970) by voting for their political party, switching allegiance, or abstaining altogether. Elections also remind politicians that citizens are consumers with choices.

Elections, however, are not perfect instruments. Ackerman (2004) identifies three major problems with elections: first, elections hold only elected officials accountable, whereas corruption may also occur through appointed bureaucrats

who are not directly accountable to the public; second, because elections occur every few years and include many opinions and evaluations, citizens tend to vote for an overall perspective, not for an individual candidate; and, finally, many politicians are elected by only a small percentage of the population, and they may pander to this segment only, encouraging mutual patronage. Various technology-led accountability tools have been developed to tackle not only these electoral issues, but also problems of low or unequal citizen engagement in the political sphere more broadly.

Collecting, Analyzing, and Visualizing Data

Ushahidi: Mapping Electoral Violence

Interactive maps are being used to detect fraud, uncover discrepancies in voting, and report on human rights violations. Ushahidi, an NGO and mapping platform, allows people to send in reports via e-mail, SMS, Twitter, or Web form. The software then displays the reports on a map and a timeline. The visualization was originally used in Kenya to map reports of postelection violence. Rather than rely on national or international media, the underlying theory was to have local citizens with mobile phones report on violence and destruction and then use mash-ups (a layering of data sets) to capture these maps for posterity and provide information on possible future political hot spots.

The technology has also been used to monitor elections themselves and to map voting irregularities in several places, including Afghanistan and Lebanon. Ushahidi-based projects, such as Sudan Vote Monitor, Cuidemos el Voto in Mexico, Eleitor 2010 in Brazil, Vote Report PH in the Philippines, and Amatora mu Mahoro in Burundi, have created visuals on maps and timelines with data received from citizens and election monitors. In Sri Lanka, the Centre for Monitoring Election Violence reports election-related violence and irregularities in voting. It gathers information on the ground and publishes the names of candidates and political parties involved in any irregularities or violence. The organization uses maps, audio podcasts, and blog posts to raise awareness, incite debate, and gather information of use to voters. Similarly, mapping has been used to show discrepancies between official voting on legislative bills and electoral promises (Votenaweb in Brazil). Ushahidi has been noted as an enabling platform for electoral transparency to protect and serve voters. The evidence of change generated by use of the tool, however, can be difficult to track and measure. As a result, the outstanding question is whether or not the openness achieved through this tool has led to real and lasting change. One way of answering this is to perform time-trend analyses of elections over time.

Mumbai Votes: Tracking Political Promises

The Indian site Mumbai Votes and the Brazilian Adote um Vereador both aim to track and compare local politicians' achievements against promises made. On Mumbai Votes, a red-, orange-, and green-flag system is used to indicate poor, mediocre, and satisfactory performance.¹² As of August 2011, 1,445 politicians were being tracked through the platform. Users can click on any representative

of Mumbai's 187 constituencies to see their track record. Vivek Gilani, an environmental engineer by training, who founded the site in 2004, said that the site was inspired by his innumerable train journeys from the suburbs to the center of Mumbai, during which he had to pass through the stench of Mahim Creek. He realized, "We are the people we have been waiting for."¹³ Instead of blind voting based on perception, opinion, and gossip, he wanted voting to be more informed and based on results achieved by politicians. The website and initiative have elicited much media attention, particularly due to its online form, which makes it possible for depth, breadth, and real-time updating.

Research has revealed some threats to the success of Mumbai Votes. First, the tool lacks information on many politicians, which points to both a lack of resources for updating and perhaps a lack of demand from the general public. Moreover, the factuality of the information being posted is questionable. In July 2011, a minister accused Mumbai Votes of inaccuracies and stated that the operators should have checked the information with the local government before posting it online.¹⁴ Finally, the issue of the digital divide emerges: one user commented that while Mumbai Votes is useful for persons who have Internet access, it is the poor (specifically the large slum population of Mumbai) who are poorly informed and most vulnerable to political corruption (Chityal 2011; Knox 2009). To address this issue, Gilani stated in a 2010 interview that Mumbai Votes was producing an offline "telephone directory" guide of politicians for people without Internet access (Singh 2010).

Adote um Vereador: Monitoring Politicians

Adote um Vereador, which started in São Paulo in 2009, operates on a similar principle as Mumbai Votes but uses a wiki through which citizen "adopters" track local politicians and blog about their activities.¹⁵ One criticism of the tool is that adopters do not know what to blog about and often act as little more than public relations representatives (Angélico 2010). Moreover, politicians do not necessarily see the concerns expressed in blogs as legitimate. One suggestion has been to have adopters work in a group—for example, pick a topic on a monthly basis and work collaboratively rather than blog individually (Angélico 2010).

Disseminating and Accessing Information

Jaankari: Access to Information Hotline

"Short route to accountability" review mechanisms exist in many forms and have been used in several countries. For example, in Jaankari, India, the state government of Bihar set up a call center to tackle the problems preventing the Right to Information (RTI) Act from living up to its full potential. Call center operators are equipped with Web-based RTI application software and voice-recording hardware to assist with the direct filing of RTI applications, general inquiries about the act, and redress of grievances (World Bank 2011b).

Since its inception in 2007, Jaankari has proven to be beneficial in several ways. First, having remote access saves citizens time and money for travel to a government office. Second, eliminating direct communication between citizens

and government officials decreases the number of citizen complaints about unfair treatment. Third, using ICTs makes information accessible to a wider audience: citizens from remote and underdeveloped areas and those who are minorities or illiterate are accessing Jaankari services. Lastly, sustainable changes are happening as citizens are being educated on the act and learning how to exercise their rights in a more effective manner.

Emerging issues facing Jaankari require further notice. Intermediaries in villages are exploiting uninformed community members by charging them for assistance in contacting and working with Jaankari on their behalf (World Bank 2011b). The role that these intermediaries are playing is not clear and deserves to be analyzed in greater detail. The sustainability of the call center is another concern. Although owned by the government, it is operated by a private company. The general skepticism regarding public-private partnerships in India could dismantle the initiative; hence, a deeper understanding is needed of the relationship and terms of agreement between stakeholders.

Organizing or Unifying Communities

Community Radio: A Platform for Raising Local Voices

Radio is a low-tech option that is relatively cheap, has a wide catchment area, and is inclusive because it does not require listeners to be literate. Community radio goes a step further, as it is collectively managed by local members. Listeners can participate from their home, rather than entering a telecenter or cybercafé, which some segments of the population may feel uncomfortable doing. Participation is also live, so citizen voices are heard and responded to candidly.

Community radio programs can often be innovative. Examples include a radio play broadcast on local corruption at Uva Community Radio in Sri Lanka (Slater and Tacchi 2004) as well as anonymous polls on local politicians, a live recording of women complaining of water shortages (which the local panchayat, or governing body, then rectified), and a live local election broadcast, all on Namma Dhwani community radio in India (Nair, Jennaway, and Skuse 2006).

However, many countries strictly control the content of community radio. In India, community radio was only legalized in 2006; it can only be run by NGOs and educational institutions (thereby allowing them to define the agenda) and cannot broadcast news programs. In Mexico, content is managed and approved by the National Commission for the Development of Indigenous People. In Sri Lanka, “community radios” are strictly controlled by a government body, the Sri Lanka Broadcasting Corporation.

Improved Budget Transparency

Citizens have the right to know how their funds are being collected, how they are being spent, and what their government’s priorities are. They can rightfully ask the government for efficient and equitable delivery of well-intended services. Over the past two decades, governments have made efforts to improve their budgeting systems through the adoption of performance budgeting, single

treasury accounts, and other reforms. At the same time, interest in making government budget information publicly available has been growing. ICTs provide an excellent platform and tools for making budgets transparent and facilitating citizen participation in raising issues on accountability.

Collecting, Analyzing, and Visualizing Data

Open Budget Index: Research on National Budget Transparency

Expenditure monitoring activities have a variety of forms and methodologies. The Open Budget Index (OBI), established in 2006 by the International Budget Partnership (IBP), evaluates how accessible and transparent a country's budget documents and processes are to its citizens and rates each country accordingly. The IBP was established in 1997 by the Center on Budget and Policy Priorities to help NGOs to conduct budget analyses and make the budgetary systems in emerging democracies and developing countries more transparent and responsive. The OBI is based on the Open Budget Survey, which evaluates the content and timeliness of a country's eight key budget documents: the prebudget statement, executive's budget proposal, enacted budget, in-year reports, midyear review, year-end report, audit report, and citizens budget. The OBI provides citizens, legislators, and civil society advocates with relevant information so that they can comprehensively and practically evaluate a government's commitment to budget transparency and accountability.

The IBP has released the OBI every two years since 2006, encouraging governments to make their budget more transparent. The 2010 OBI was constructed by averaging each country's answers to the Open Budget Survey, which included 123 questions (91 questions in 2008) relating to information contained in the national budget documents that should be open to the public. The number of survey participants has been on an upward trajectory. According to Carlitz (2010, 3), the OBI is particularly notable in that it explicitly incorporates advocacy into its research design, creating a network of civil society experts who conduct the research and then participate in various coordinated advocacy activities based on the OBI findings. The 2010 Open Budget Survey report found that 74 of the 94 countries assessed failed to meet the basic standards of transparency and accountability with regard to their national budgets. Of those 74 countries, 40 did not release any meaningful budget information. However, the average performance of these 40 countries improved nearly 20 percent in a relatively short period of time, over the course of three consecutive Open Budget Surveys. This notable achievement can be attributed, in part, to this monitoring approach.

The 2010 survey has four key findings:

- The overall state of budget transparency is poor. Only a few countries can be considered to have open budgets, while many countries provide grossly insufficient budget information.
- The general trend toward open budgets is favorable. Budget transparency is improving substantially, especially among countries that provided little information in the past.

- Budget engagement by the audit institutions and the legislature is typically weak and strongly correlated with the lack of budget information made available to these institutions and the public.
- Governments are failing to undertake many simple steps to opening up their budgets. These steps can be taken by the executive branch, the legislature, and the supreme audit institution alike (IBP 2010, 3–7).

A strong example of positive impact is Mongolia, which doubled its score on the OBI from 18 in the 2006 survey to 36 in 2008 and to 60 in 2010. The remarkable improvement is due primarily to the fact that the government started publishing online budget documents that had previously not been open to the public. These included the executive's budget proposal and reintroduction of public year-end reports in 2008. Additionally, the Mongolian supreme audit institution recently began making its audit reports available to the public on a new website.

The Open Budget Survey is a strong example of a working offline approach that has been taken digital. To expedite IBP's data collection and streamline the process of highlighting usable data, the Open Budget Survey runs on the Indaba platform, a cloud-based tool, developed by the NGO Global Integrity, for gathering, discussing, and communicating around raw data.¹⁶ The effectiveness of integrating this platform into the Open Budget Survey process will be seen over time.

d-Brain: Web-Based Tool for Analyzing Budgets

The Republic of Korea ranks first in both the E-Government Development Index and the E-Participation Index from the United Nations Global E-Government Survey 2010. Backed by its strength in ICT, Korea adopted the Digital Budget and Accounting System (d-Brain) early in 2007 and has positioned itself as a leading model of innovative digital budgeting ever since.¹⁷

The d-Brain is an integrated Web-based system providing real-time analysis of the government's fiscal activities, including budget formulation, execution, account settlement, and performance management. The system helps to reduce duplicative expenditures and to validate the accuracy and reliability of budgeting records. The system also allows participatory budgeting, whereby the central government, local governments, public institutions, and the public collaboratively decide on the allocation of resources and participate in nationwide fiscal decision making.

Citizen participation takes place through various channels, including Internet surveys, an online bulletin board, online bidding, a cyber forum, a digital budget participation corner, public hearings, and so on. In addition, the Budget Waste Report Center operates both a hotline and an online system that allow citizens to report poor performance of central government agencies and local government offices. If an allegation turns out to be true, the person reporting the problem is awarded a budget-saving incentive bonus of up to US\$30,000 (Hwang 2008).

There are two main reasons for the success of d-Brain: the nationwide ICT infrastructure and Korea's high rate of ICT literacy. With strong political will to promote demand for high-bandwidth Internet access and to make large investments in supply to match demand, Korea achieved the world's highest rate of broadband Internet access and was ranked third in Internet usage in early 2000 (Choudrie and Lee 2004; ITU 2003). Since then, the Korean government has been providing most public services over the Web and now leads the world in e-government.

The d-Brain case highlights the need for government to have an active role in promoting the demand for Internet-based government activities. Demand-side policies are often overlooked in broadband policies or are limited to e-government, digital budgeting initiatives. The Korean government has engaged in multiple programs to create demand, subsidizing ICT training, ICT hardware, and broadband connectivity and incentivizing private sectors to participate in the project. Korea's high rate of Internet users as a percentage of the population (measured by the Ten Million People Internet Education Project in 2000) is due, in part, to government efforts to promote ICT literacy—for example, government support for making computer literacy a college entrance requirement. The private sector also has supported the d-Brain initiative. Samsung and LG CNS provided state-of-the-art ICT technology, which enabled the project to have a synergistic effect well worth its cost of US\$63 million.

The d-Brain enables the central government, local government, and public agencies to exchange information about their fiscal activity and provides them with information for strategic planning. It allows treasury operations to be more efficient by providing transparent real-time processing between agencies (electronic fund transfer) and making their payment-collecting process easier and faster (electronic bill presentment and payment).

Perhaps most important, d-Brain allows anyone to retrieve an accurate picture of a public institution's fiscal activity at any point in time. This information is used for monitoring progress on nationwide projects and for making improvements as the project unfolds. It also provides the public with detailed information on the government's expenditure on major nationwide projects.

Participants have expressed satisfaction with the fiscal process. Public participation in fiscal policy decision making has grown, as people see the direct link between government use of funds and taxes. The Congress is able to review budgeting and payment information for the different departments within a ministry. Lastly, the budget authority is able to make accurate budgeting decisions, due to its improved ability to review the financial statements of previous projects in detail. The ability to predict each expenditure line item of a future project helps them to manage the financial risk of a project systematically.

While d-Brain has been successful in realizing and meeting the national need for financial information, there is still room for improvement. First, the government needs to link new areas to the system and to maintain efficiency. Second, although the rate of public participation has increased, individuals tend to use

the system just for electronic payments and transfers. Public institutes need to devise a way to encourage users to become more active participants in the fiscal decision-making process.

Organizing and Unifying Communities

Participatory Budgeting: Citizen Engagement in Budgets

Although more and more governments are making their budgets transparent, there is growing acknowledgment of the need for public engagement in these processes. Participatory budgeting seeks to determine budget allocations as efficiently and transparently as possible by ensuring that budget decisions reflect consensus-determined priorities and by removing information barriers between the state and society (Ackerman 2005, 23). Participatory budgeting emerged in Brazil, beginning in the late 1990s, first in the city of Porto Alegre in 1990 and then in Belo Horizonte in 1993 (Wampler 2012). In participatory budgeting, citizens attend local meetings in which they receive information about the municipal budget. They propose policy projects and then deliberate over and vote on which projects should enter the yearly budget. The process is guided by the municipal executive. It is not a simple consultation on fiscal policies or lobbying, but direct participation in a democratic decision-making process. More important, participatory budgeting is noteworthy because it addresses two distinct but interconnected needs: improving state performance and enhancing the quality of democracy. Participatory budgeting has spread from Brazil to cities in Argentina, Canada, Mexico, the United Kingdom, and the United States, among other countries (Cabanne 2004; Wampler 2012).

In theory, participatory budgeting seeks to achieve the following impacts on transparency and accountability:

- Enhance participatory democracy
- Improve the quality as well as the quantity of budget information accessible to citizens and improve the capacity of citizens to analyze and influence government budgets
- Reduce the possibility for corruption and political use of the government budget
- Support decisions tailored to citizens' needs
- Increase budget and administrative transparency
- Enhance citizens' trust in government activity.

Although it has become a wide-reaching, global phenomenon with large potential benefits, participatory budgeting still raises concerns and faces constraints, including elite participation, co-optation, and distortion of public opinion. The civil society organizations (CSOs) engaged in participatory budgeting have often been poor representatives of the society at large. Institutional barriers include discretionary provisions and lack of time, since participatory budgeting is a relatively time-consuming “bottom-up” model (Ackerman 2004;

Cabanne 2004; Wampler 2012). Carlitz (2010) points out the preconditions for success of participatory budgeting initiatives: (a) political will (supportive local officials), (b) social capital, (c) bureaucratic competence, (d) small size, (e) sufficient resources, (f) legal foundation, and (g) political decentralization. The preconditions are many and, therefore, are difficult to meet.

Lower Levels of Corruption

The anticorruption movement has been alive and well for decades, with spikes and lulls in media attention over time and across countries. Transparency International's Corruption Perceptions Index (CPI)¹⁸ and Global Integrity's annual report on anticorruption mechanisms¹⁹ are leading sources of information on international levels of corruption. Anticorruption campaigns, such as those that arose from the Arab Spring, continue to keep the issue in the lime-light. These traditionally offline approaches have been increasingly leveraging new technologies, for example, to streamline data collection, crowdsource voices, and analyze trends.

Collecting, Analyzing, and Visualizing Data

I Paid a Bribe: Crowdsourcing Bribe Reports

Bribery is a widespread issue in India and in many countries around the world. The difficulty is in determining ways to mitigate the need for bribes. To develop a better understanding of how to combat this problem, Janaagraha (a Bangalore-based NGO) crowdsources reports on incidents of payment and nonpayment of bribes (World Bank 2011a). The goals are simple: to determine the “market price of bribery” for all to see and to push reformers inside government to act on these reports.²⁰

While the model has traveled successfully to several locations outside India, including Guyana, Kenya, and Pakistan, it has failed in others, like China.²¹ The shutdown of the initiative by the Chinese government is a reminder of existing structural barriers that keep the gap in accountability from closing. In addition to structural barriers, the model itself has limitations. For one, the platform has been argued to privilege informed and powerful citizens—those who know about the tool and have the confidence to file reports without jeopardizing their own safety. Second, the anecdotal evidence of reform in government to mitigate bribery is low. This calls into question the value of the platform for accountability and not simply transparency.

Legislative Reform

Parliamentary monitoring groups, such as Parliament Watch in Germany²² or K-Monitor in Hungary,²³ continue to play a watchdog role over legislative activities. Historically, efforts have been limited to domestic transparency, but new technologies are enabling an international movement to build standards and advocate for them.

Organizing and Unifying Communities

OpeningParliament: Collaborative Forum for Parliamentary Openness

An online forum designed to bridge the gap between citizens, parliamentary watchdogs, transparency activists, and legislative government officials, OpeningParliament is the first multistakeholder push for global accountability in the rule of law.²⁴

The initiative leads with a declaration, or a call to action, composed of a set of principles for greater openness and collaboration by parliaments around the world. Additionally, it has gathered a handful of key parliamentary monitoring case studies to showcase approaches to reform. Lastly, it has built an extensive list of partnerships among like-minded civil society organizations to spearhead the movement and propel it forward locally and internationally.

Collaborative platforms that generate horizontal accountability, like OpeningParliament aims to do, are young and limited. However, the momentum behind this movement appears to be growing.

Judicial Transparency and Accountability

A quick glance at existing evidence of transparency and accountability initiatives reveals that judicial openness is the goal least addressed. This is alarming given the evidence highlighting the pivotal need to close an “implementation gap” between laws and the practical enforcement of them (Nadgrodkiewicz, Nakagaki, and Tomicic 2012).

Disseminating and Accessing Information

Open Courts: Accessing Judiciary Information

In the Slovak Republic, Open Courts is an initiative moving boldly against this trend. It aims to improve the judiciary by (a) making information on activities and performance of courts and judges available online, (b) analyzing the data to draw out trends and links that would otherwise be hidden, and (c) providing a comprehensive search mechanism for citizens to investigate courts and judges.

The online platform’s search functionality enables a person to look at judges by hearings they have presided over and decisions they have made and at courts by relevant hearings, decisions, and judges. It also provides complete contact information. The initiative may be too new to show concrete impact, but usage is high, with “the average number of visits [November 2013] more than 10 times higher than visits to other open-data portals in the Slovak Republic—reaching as many as about 1,100 visits during each work day” (Spáč 2013).

Reaching Impact: Considerations for Achieving Accountability

Returning to the STEP Framework

The preceding examples illustrate how ICT-led initiatives have brought us *nearer* to empowering citizens and more accountable governance, but have yet to close the accountability gap to create tangible and substantial change. To understand

why efforts to improve participation, transparency, and accountability fall short of achieving their desired impact, we return to the STEP framework delineated in chapter 1. Key influences are categorized as social, technical, economic, or political. They are further deconstructed into those that are structural and hence affect all parties involved and those that are specific to citizens (demand side) or to policy makers and service providers (supply side).

Socio-cultural

On the demand side, several factors influence transparency and accountability: specifically, the capabilities of citizens and civil society organizations to access and use information, as well as their capacity to mobilize. Linking to broader forms of collective action and mobilization is key for strengthening and supporting these outcomes.

Various tools exist to include non-ICT literate populations, and they continue to be tested. For example, voice remains the primary interface for mobile phone subscribers in India, as text interfaces are hindered by low literacy (33 percent of adults in India are reportedly illiterate) and lack of transcription support, such as for tribal languages. Voice-based citizen journalism through mobile technologies (CGNet Swara) can therefore provide the ideal medium for the millions who are not comfortable using the Internet or do not have access to it, but do use mobile phones in their everyday lives.

Technical

The role of the media is a critical structural factor in the value added through ICTs for transparency and accountability. The extent to which tools will help to disseminate information and call attention to locally relevant issues will depend on the presence of a free media. However, social media is rapidly changing the media landscape, particularly by playing two key roles in publicizing information: using the power of crowds to vocalize a perspective and organizing crowds. During the Arab Spring, convening groups used Facebook and Twitter to organize their followers and spread the word about their activities. About 17 million people use Facebook in Arabic,²⁵ with 5 million users in the Arab Republic of Egypt alone,²⁶ and demand is expected to grow on microblogging sites. These platforms are enabling communities to organize, gather, and provide a singular voice of protest against government policies.

Although social media will continue to play a critical role in decentralizing power and increasing transparency and accountability, it is not a panacea. According to Bekri *et al.* (2011, 3), “Repressive regimes are not only capable of blocking access to certain Internet outlets, but also becoming increasingly adept at manipulating them to their advantage.” That is to say, the recent ICT revolution has expanded the range of topics and ability of citizens to communicate and exercise political freedoms; it has also given the government the tools to keep a close watch over its citizens. In Cairo, when Hosni Mubarak lifted the ban on mobile phone and Internet access, he sent text messages with patriotic slogans to

all registered mobile phone users in Egypt. Thus it is critical to recognize that social media can be a tool to liberate, but also to repress.

The effectiveness of ICT use is also contingent on the ICT infrastructure itself and the levels of connectivity and broadband penetration throughout a country. Digital literacy is a necessary precursor. Finally, the ubiquity (or lack) of devices can also determine who is participating and contributing to the process of accountability and transparency.

Economic and Political

According to McGee and Gaventa (2010), “Despite demands for accountability and exposure of corruption, experience suggests that the kinds of direct social accountability mechanisms discussed ... have little traction unless they are able to trigger traditional accountability.” They find that, on the state (or supply) side, the level of democratization, or the context within which demands for accountability can be made, is important. The “political will” or support for accountability and transparency initiatives, and the general political economy within which the initiatives operate, are also influential. Enabling legal frameworks, incentives, and mechanisms for imposing sanctions on public officials are all part of a political economy. For example, the quality of services provided will depend on investigations of corruption and imposition of formal sanctions or fines for delays (McGee and Gaventa 2010).

Going Forward

The case studies reviewed in this chapter suggest that technology-mediated interventions do not depend exclusively on one type of technology, but they can and often do use a confluence of technologies such as radio, mobile phones, and online platforms. Through the use of various tools, approaches work across a continuum to maximize impact and reach.

In addition, the transparency and accountability initiatives presented demonstrate how ICTs have aided in (a) collecting and analyzing data, (b) accessing and disseminating information, and (c) organizing and engaging communities, bringing us closer to our end goals of improving access to and raising the quality of public services, lowering levels of corruption, and strengthening accountability in budgetary, legislative, and judicial processes.

Some of these approaches have been used more than others; similarly, some objectives are less sought after than others. It will prove important to monitor efforts going forward regarding the tools used, approaches employed, and goals pursued. This preliminary analysis identifies gaps that can be filled, including in the fight for greater judicial and legislative accountability. It also illuminates popular approaches, particularly collecting and analyzing data, which may be best to continue or discontinue depending on needs. Finally, the review of cases notes approaches that have been minimally considered, including efforts to strengthen communities. This suggests that an opportunity exists for new and innovative ways of engaging community members to build local and lasting change.

Notes

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3. See "FixMyStreet: Report, View, or Discuss Local Problems" (<http://www.fixmystreet.com/>).
4. For FixMyStreet, see <http://www.mysociety.org/>.
5. For example, see <http://barnet.fixmystreet.com/>.
6. "Report Non-emergency Issues, Receive Alerts in Your Neighborhood," SeeClickFix (<http://seeclickfix.com/>).
7. See "311 Online: Find NYC Government Information and Services" (<http://www.nyc.gov/apps/311/>).
8. "Welcome to the 311 Online: Service Request Center" (<http://311.dc.gov/>); "City of Toronto: 311: About 311" (<http://www.toronto.ca/311/about.htm>).
9. For example, "Report a Civic Problem in Wellesley, Mass." (<http://www.boston.com/yourtown/wellesley/seeclickfix/>); "Dallas-Fort Worth Communities: News for Dallas, Texas," *Dallas Morning News* (<http://www.dallasnews.com/news/community-news/plano/problem-tracker/>); "Pothole Tracker: Philly," *Inquirer Digital* (<http://www.philly.com/philly/news/40980442.html>); "SeeClickFix South Orange," *New York Times* (<http://maplewood.blogs.nytimes.com/south-orange-seeclickfix/>).
10. See "CGNet Swara," <http://cgnetswara.org/>.
11. See <http://www.digitalgreen.org/>.
12. The criteria used for these are published on the website (<http://mumbaivotes.com/>).
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15. See http://vereadores.wikia.com/wiki/P%C3%A1gina_principal.
16. See <http://getindaba.org>.
17. For the d-Brain website, see <http://www.digitalbrain.go.kr>.
18. See <http://www.transparency.org/research/cpi/overview>.
19. See <https://www.globalintegrity.org/global-report/what-is-gi-report/>.
20. See <http://www.ipaidabribe.com>.
21. See www.ibrbery.com. See also "Censors Shut Chinese Website Blowing Whistle on Bribery," *Guardian*, June 22, 2011 (<http://www.guardian.co.uk/world/2011/jun/22/censors-shut-chinese-bribery-website>).
22. See <http://www.abgeordnetenenwatch.de/>.
23. See <http://k-monitor.hu/>.
24. See <http://www.openingparliament.org/>.
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Interactive Community Mapping: Between Empowerment and Effectiveness

Jennifer Shkabatur

The area of Kibera—located in Nairobi, Kenya—is one of the largest slums in Africa. Although multiple civil society and development organizations have been present and active in Kibera for many years, this poor community has often remained a blank spot on public maps. On some, it has even been marked as a forest (Hagen 2011). In October 2009, this dearth of geo-spatial information about the slum led a group of social activists to create Map Kibera—an interactive community map of the area. The development of this map paved the way for many other interactive community-mapping endeavors around the world and created new opportunities for participatory development.

Interactive community mapping (ICM) is a process that engages individuals in creating a map of their community.¹ By developing improved maps of roads, settlements, buildings, local businesses, and other services, the ICM process aims to help community members, governments, civil society organizations (CSOs), and development partners to harness the collective wisdom and knowledge of these communities and to become drivers of development. ICM is used to assess the needs and concerns of the mapped communities and to tailor development activities accordingly.

This chapter explores the moving parts of the ICM phenomenon and offers a framework for effective ICM endeavors. It argues that ICM endeavors aim to achieve both process- and results-oriented goals: (a) empower and build

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the capacity of marginalized groups and (b) generate a map that will be used by political and civil society actors to improve service delivery for the benefit of the community. However, this scenario rarely materializes. More often, ICM initiatives are forced to prioritize and accept trade-offs between these two objectives, prioritizing community empowerment and capacity building over effectiveness or vice versa. In this context, this chapter offers a set of enabling factors that create the conditions for process- or results-oriented interactive community maps: (a) supporting information infrastructure, (b) need for information, (c) civil society capacity, (d) government cooperation, (e) incentives to cooperate, and (f) data quality. The chapter then examines the application of this framework to four innovative case studies of ICM: two general maps to support social development (Map Kibera, Kenya, and Map Tandale, Tanzania) and two maps to mitigate the effects of natural disasters (mapping the oil spill in the Gulf of Mexico, the United States, and improving disaster preparedness in Indonesia). The chapter concludes by discussing the opportunities that ICM presents for participatory development.

From Mapping to Interactive Community Mapping

Throughout the history of cartography, professional cartographers have created maps to administer territories, establish boundaries, determine and enforce property rights, or support colonial, military, and other government projects (Pickles 2004).² Until recently, laypersons rarely took an active part in the mapping process (Perkins 2007).

Cartography, however, has been increasingly democratized since the 1980s as a result of both technological progress and the emergence of critical approaches to mapping (Crampton and Krygier 2005; Perkins 2007). J. B. Harley (1988, 1989), one of the most influential critical cartographers, emphasizes the relationship between maps and power and argues that cartography wears the “mask of a seemingly neutral science” (Harley 1989, 5). He regards maps as “authoritarian images,” stating, “Without our being aware of it, maps can reinforce and legitimate the status quo” (Harley 1989, 14). The technological advances of the past two decades helped to put this vision into practice and led to the introduction of an alternative cartographic vision.

Community mapping has emerged “as a response to conventional, elitist cartography, comprising an alternative, egalitarian counter-culture” (Parker 2006, 471). Unlike traditional maps, community mapping is a deeply inclusive and participatory process, which encourages marginalized and disempowered individuals to share their experience, values, and tacit knowledge (Chapin, Lamb, and Threlkeld 2005; Lydon 2003; Parker 2006). Such “democratized” mapping offers marginalized communities new possibilities for articulating their social, economic, political, and legal claims. It also allows CSOs, researchers, and other development partners to work closely with community members and to embrace “the multiplicity of geographical realities rather than the disembodied, objective, and technical ‘solutions’ which have tended to characterize many conventional geographic information system (GIS) applications” (Dunn 2007, 616).

By positioning local residents at the core of the mapping process, community mapping provides unique opportunities for community empowerment and engagement (Aberley 1993; Lydon 2003; Parker 2006). First, the mapping process is perceived to be valuable for building local capacity. Community mapping enables marginalized communities to highlight local resources and assets rather than succumb to “official” maps that may present the community in an unfavorable light: “By making maps, neighborhoods understand and display their own conceptions and repudiate other representations of their community” (Parker 2006, 478). It may also be instrumentally valuable for poor communities, enabling local residents to acquire cartographic knowledge and skills (Elwood 2000; Kyem 2004). Second, community mapping strengthens self-representation: “Making a parish map is about creating a community expression of values and about beginning to assert ideas for involvement. It is about taking the place in your own hands” (Clifford 1996, 4).

Aside from its value for building capacity and strengthening self-expression, community maps have also helped to accomplish a wide variety of concrete development objectives. Development organizations, CSOs, researchers, and local communities have relied on community mapping to reassert indigenous people’s rights, advance local claims to land titles, protect local flora and fauna, support legal claims over natural resources, plan local land use, reinstate lost place-names, record cultural and historical information, build community awareness, and resolve conflicts (see Chapin and Threlkeld 2001; Cronkleton *et al.* 2010; Elwood 2000; Fox *et al.* 2005; Herlihy and Knapp 2003; Kyem 2004; Mohamed and Ventura 2000; Peluso 1995; Perkins 2007; Rambaldi *et al.* 2006). In Thailand, for example, a local map developed by villagers led to new forest conservation and development activities (Fox 1998). In Honduras, the creation of a community map helped local communities in La Mosquitia to organize themselves against loggers. In Victoria, Canada, a children’s mapping initiative of an abandoned park led the town council to introduce a restoration project (Lydon 2003).

The significance and potential of community mapping have grown considerably in the information and communication technology (ICT) era. Geo-spatial data have become increasingly available and accessible; inexpensive and simple technologies have allowed local residents to produce accurate and comprehensive maps with relative ease. Furthermore, the structure of the Internet itself has encouraged collaborative production and cost-effective dissemination of geo-spatial data and maps (Benkler 2006). As a result of this new reality, many experiments with ICM have emerged in the past decade. This new approach to community mapping has several advantages over the traditional process:

- *Speed.* Developing maps using traditional cartographic methods requires several months or even years. Benefiting from innovations in geo-spatial technology and access to local knowledge, the ICM process occurs substantially faster. As examples discussed in this chapter show, interactive community maps covering large urban areas can be generated within weeks.

- *Dynamism.* While traditional maps remain static and considerable effort is required to update them, interactive community maps can be easily edited, changed, and updated at any time. Thus the initial identification of the information that will be included in the map should not be regarded as conclusive. Additional data can be collected and imported to the map at any time.
- *Costs.* The ICM process typically relies on relatively cheap and basic technological devices and employs free and open-source software. Mappers belong to the mapped community and bring to the project unique tacit knowledge of their living environment. By and large, they volunteer to participate in the process after completing basic technological training (offered by ICM experts). The costs to produce an interactive community map are therefore substantially lower than the costs to fund traditional mapmaking.
- *Granularity.* Most traditional mapping efforts focus on large-scale geo-spatial data and lack local context. The ICM process aims to provide granular information, tapping the local knowledge of community members. The dynamic nature of the ICM process allows the mapmaker to “zoom in” and “zoom out” according to the specific need for information of the community and its stakeholders—the information provided on the map may be as detailed, localized, and contextualized as the map designers wish.

Naturally, the benefits of community maps are offset, at times, by unintended negative effects. Similar to traditional mapping, community mapping risks becoming an elitist initiative that only empowers the better-off members of a community and does not spill over to its worse-off members (Chapin, Lamb, and Threlkeld 2005; Elwood 2000). This concern becomes even more pertinent in the context of interactive community maps, since individuals with prior technological knowledge may find it easier to master geo-spatial tools than individuals without such knowledge. Moreover, the empowerment logic of ICM is often difficult to implement, as the production of a community map does not necessarily lead to genuine empowerment in itself. Rather, translating a community map into tangible development outcomes requires a deep shift in power relations, favorable institutional frameworks, and an array of social, economic, political, and legal factors. The rest of this chapter delves deeper into these considerations.

The Elements of Interactive Community Mapping

The distinctive feature of ICM, compared to traditional forms of community mapping, is its reliance on information and communication technologies. However, the technological aspects of generating an ICM are often the easiest to implement. It is considerably more challenging to attain the objectives of satisfying community needs, empowering local residents, and ensuring that relevant stakeholders will use the map for the benefit of the community. However, before

examining the conditions and choices necessary for designing a successful ICM initiative, it is important to understand the typical form and shape that ICM endeavors take.

This section describes the primary elements that are typically required for ICM initiatives as they are currently implemented around the world. It discusses the major stakeholders needed for an ICM project, the ICT tools that are employed as part of it, and their typical users and audience.

Stakeholders

Four types of stakeholders typically take part in the development of an interactive community map: external ICM experts, local CSOs, local community members, and local public officials. The degree of involvement of each of these stakeholders varies from one ICM project to another.

External ICM Experts

The production of interactive community maps is typically facilitated by international civil society groups and ICM experts. These specialists often have considerable experience in the design and implementation of interactive community maps, but they are not rooted in the community being mapped. While the ICM technologies employed by these groups differ, the role they play in local communities is fairly similar. ICM experts often initiate the ICM process, attempting to implement their skills and expertise in new localities. They typically reach out to local civil society partners to learn the needs and capabilities of local communities and then collaborate with them on the design and implementation of the ICM process. These experts then lead the ICM process, training community mappers to use mapping technologies, helping them to collect and edit geo-spatial data, and producing coherent maps or aerial imagery on the basis of the data collected.

One of the most notable ICM expert groups is GroundTruth, an organization established by Erica Hagen and Mikel Maron—the team that led the creation of Map Kibera—in early 2010. Their goal has been “to build off of the work of Map Kibera and bring the tools to a wider audience by offering consulting services, trainings, and strategic advising internationally” (GroundTruth 2012).³ Since their pioneering work in Kibera, the team has expanded their ICM activities in Kenya and also worked on ICM projects in Haiti, Indonesia, Palestine, Tanzania, and Uganda, among other places. The core of GroundTruth’s approach to ICM is intuitively simple. The group trains local residents to use inexpensive global positioning system (GPS) devices to collect geo-spatial data in their community. Local mappers collect geo-spatial data in their own village or neighborhood and feed it into OpenStreetMap (OSM)—an open-source software that contains a free editable map of the world. The resulting map is often complemented by a “storytelling” platform—a Web platform where community members use social media to share news, stories, and events in the community. Two major examples of GroundTruth’s approach—Map Kibera (Kenya) and Map Tandale (Tanzania)—are discussed later in this chapter.

The Humanitarian OpenStreetMap Team (HOT) is another ICM expert that works with OSM tools. HOT specializes in humanitarian situations, facilitating “the creation, production, and distribution of free mapping resources to support humanitarian relief efforts in many places around the world.”⁴ HOT employs a two-prong strategy: *ex ante* disaster preparedness and *ex post* disaster response. As part of the former, HOT conducts extensive training for local CSOs and community members in areas prone to disasters, teaching them to use OSM tools and to collect vital data that can help to prepare for a disaster (for example, information on potentially vulnerable infrastructure). The most prominent example of this activity is HOT’s work in Indonesia, which is discussed later in this chapter. As part of its disaster response approach, HOT works with local civil society groups, relief organizations, and volunteers all over the world to collect geospatial data to support relief efforts on the ground. HOT’s operation in Haiti after the 2010 earthquake is an example of this approach.

The Public Laboratory for Open Technology and Science (PLOTS) takes a different, low-technology ICM approach. Founded in 2010 as an open-source, grassroots data-gathering and research initiative, PLOTS grew out of Grassroots Mapping—a project initiated by Jeffrey Warren while he was a graduate student at the Massachusetts Institute of Technology. According to its own definition, PLOTS is a “community which develops and applies open-source tools to environmental exploration and investigation. By democratizing inexpensive and accessible ‘Do-It-Yourself’ techniques, Public Laboratory creates a collaborative network of practitioners who actively re-imagine the human relationship with the environment.”⁵ PLOTS’s experts train local community members to use simple kites and balloons to capture aerial imagery and produce maps based on the images collected. Similar to GroundTruth and HOT, PLOTS has implemented its approach under a variety of circumstances. The ICM project in Lima, Peru, for instance, trained children who live in poor informal settlements to create an aerial map of their community. The interactive community-mapping endeavor in the Gulf of Mexico engaged more professional mappers and captured the effects of the Deepwater Horizon oil spill on the local environment. Both examples are discussed in more detail later in this chapter.

Local Partners

Typically, external ICM experts work with local communities on a temporary basis, helping them to create an interactive community map and leaving shortly thereafter. As these experts are not personally embedded in the life of the community being mapped, they need to collaborate closely with local partners. These local partners—typically, civil society groups and social activists who live and work in the community—serve as the entry point for ICM experts into the community.

Robust partnerships between ICM experts and local CSOs are important in all stages of the ICM process. In the beginning, local CSOs, public officials, or civil society activists can help to identify the information needs and demands of the community and offer guidance with regard to implementation within the

particular local context. Then, local partners can help by engaging and mobilizing the community to take part in the ICM process, organizing community forums, triggering public interest in the platform, recruiting community mappers, and supporting them throughout the mapping process. After completion of the map, local partners can serve as its “hosts,” ensuring the use and further development of the map.

While these collaborations are important for the success of ICM endeavors, they are often challenging to implement—even if the general capacity of civil society is high. In order to secure a high level of engagement, ICM projects have to be aligned with the interests, strategies, and activities of local partners. For instance, a CSO that works with poor communities on issues of water and sanitation would have direct incentives to collaborate with an initiative that aims to map sanitation services in the community. However, it would be less interested in a community-mapping initiative that aims to map education or crime. The examples discussed in this chapter show the importance of this alignment of interests and the limitations of ICM projects that do not take it into account.

Local Community Mappers

Similar to traditional community mapping, the core of the interactive community-mapping process is the engagement of local residents. The ICM process is supposed to provide local residents with valuable technical skills, help them to represent their communities to the outside world, and generally amplify their voice in areas that matter to them. However, local residents rarely initiate the mapping process. More often, ICM is a supply-driven process, introduced and championed by international ICM experts and local CSOs. As will be discussed, creating the right incentives is a challenging task, as poor community members often do not immediately apprehend the value of creating an interactive community map and cannot afford to volunteer for the task without getting paid. The examples of Kibera, Tandale, and Indonesia illuminate the intricate trade-offs that this process entails.

Local Public Officials

Government endorsement of the ICM process and the collaboration of local public officials with ICM experts, CSOs, and community mappers are key to securing the lasting success and impact of ICM initiatives. Active government engagement improves the odds that the resulting map will be continuously used to improve service provision and other government activities in the community. Government ownership of the map may also ensure the sustainability of the mapping process, enhance the incentives of local residents to engage in it, and improve the financing of it.

However, while the three other stakeholders—ICM experts, local CSOs, and local community mappers—are constant variables in all ICM initiatives, the role of local public officials and politicians varies considerably from one ICM endeavor to another. Social and political contexts play major roles in this respect. In some cases (for example, Map Kibera in Kenya or PLOTS in the Gulf

of Mexico), ICM experts and CSOs are the only leaders of the ICM process, and the map is generated without any political engagement or endorsement. In other cases (for example, Map Tandale in Tanzania or HOT in Indonesia), public officials take a relatively active role in the mapping process, collaborate with the mappers, and use the resulting map to improve their activities in the community.

International Donors

International donors rarely play a central role in ICM initiatives, and their primary contribution to the process is their convening power. In the examples of Map Tandale in Dar es Salaam, Tanzania, and HOT in Indonesia, the World Bank played an important role in bringing public officials on board, ensuring their active support of the project, and helping to coordinate and leverage the activities of all the engaged stakeholders. As the active engagement of government officials supports the long-term use of the map, it is important to ensure their collaboration from the outset of the ICM project. This task is often best accomplished by international donors and development partners.

Technology

There is no single technological approach to the production of interactive community maps. Both high-tech and low-tech tools have proved valuable for the process. Three prevalent techniques include OSM, Google Map Maker (GMM), and the Grassroots Mapping Kit.

OpenStreetMap

OSM is the most common platform employed for ICM purposes. OSM is best understood as the Wikipedia of global maps: a collaborative Web-based project that aims to create a free and editable map of the world, built entirely by volunteers. It was founded in July 2004 with the aim of “encouraging the growth, development, and distribution of free geo-spatial data and of providing geo-spatial data for anybody to use and share.”⁶ The major forces driving OSM have been the protest against licensing requirements restricting access to and use of geo-spatial information, along with the growing availability of inexpensive GPS devices. The OSM platform contains data collected from a variety of sources. First, volunteers around the world gather geo-spatial data on roads, paths, and various types of infrastructure using handheld GPS devices. OSM open-software editing tools convert GPS tracks and incorporate them in the map. The platform also contains aerial photography, satellite imagery, and other geo-spatial data collected from publicly open sources. In the past years, several commercial companies have released their data to OSM and enhanced the coverage of the map.⁷ All OSM data are available for public use under an open-database license, which allows individuals to share, modify, and use the data for any purpose, while maintaining this freedom for others.

The OSM process is decentralized and collaborative—any user can edit any part of the map (subject to approval by experienced, long-term members of

the community), similar to the editing policy of Wikipedia. The communal identity of the mappers is reinforced through a variety of online tools (for example, mailing lists, wiki discussions) and “offline” social events, such as “map parties.” As of November 2012, the OSM platform had more than 920,000 registered users (individuals who contributed at least one edit to the system), and more than 3 billion GPS points had been uploaded by volunteers. OSM’s platform covers all parts of the world with varying degrees of detail. It has proven particularly effective in regions of the developing world where accurate geo-spatial data have not been available and in areas where highly detailed, flexible, and editable maps are needed for natural disaster response efforts (this type of a map was particularly useful following the earthquake in Haiti). The open-licensing approach of OSM is particularly compatible with the idea of interactive community maps, as community mappers retain all the rights to the data they collect.

Google Map Maker

GMM is another prominent tool that allows individuals to create and edit maps. Unlike OSM, GMM does not follow the open-source approach. Instead, it encourages individuals to review and edit the satellite imagery that is available on Google Maps. GMM allows users to make three types of contributions to Google Maps: *placemarks* (points of interest, such as schools, local businesses, or hospitals), *lines* (roads, railways, and rivers), and *polygons* (boundaries and borders, parks, and lakes). Similar to OSM, the contributions of new users are reviewed and monitored by more experienced users in order to ensure accuracy. However, the data submitted to GMM are not available under open licenses for public reuse and become the property of Google. Despite the wide coverage of Google Maps, this restrictive licensing approach has made it unappealing to ICM specialists around the world. GMM has therefore been absent from major ICM projects.

Grassroots Mapping Kit

Interactive community maps can also be produced using low-tech tools. PLOTS and the Grassroots Mapping project rely on low-cost balloons and kites to collect aerial images. The Grassroots Mapping Kit provides tools to capture original aerial imagery, process the data, and create digital and printed maps. As part of the Grassroots Mapping project, mappers arrive at the location they intend to map with a kite, balloon, helium tank, digital camera with automatic shooting, and a minimum of 200 meters of string (Warren 2011). They attach the camera to the bottom of the balloon or the kite, set it up to take pictures on a 1–10-second cycle, and raise the camera to an altitude of 200–2,000 meters. After capturing the imagery, the mappers reel in the tether to retrieve the camera and upload the best resulting imagery to the Cartagen Knitter software. The software then provides tools to create a map based on the collected imagery.

Users and Audience

It may be tempting to believe that, if previously unavailable geo-spatial information reaches the public sphere, someone will make good use of it. However, this is rarely the case. More often, a map designed for general use does not satisfy the concrete needs and demands of the community and relevant stakeholders and is underutilized. An effective ICM process therefore begins by identifying the prospective users and targeted audience of the map. Typically, such users include the following:

- *Community members.* Although the interactive community map represents their living environment, members of poor and marginalized communities may have difficulty accessing (let alone using) the map in its online format. Targeting this audience therefore requires a series of offline activities that make the map more accessible and understandable to the community (printing out the map and distributing it in public places or holding community forums).
- *Civil society organizations.* CSOs are often the most likely users of the map, and they may be interested in using it as part of their own activities in the community. An ICM process that targets this audience should be structured around the information needs of CSOs and present the resulting map to them in a way that is aligned with their interests and activities.
- *Government.* Local government representatives may be the most effective users of an interactive community map, as they typically are responsible for providing public services in the community. Maps that target governments as their audience require the understanding of government needs and priorities, along with close collaboration with public officials throughout the ICM process.

Other users of ICM may include *private parties* (for example, private service providers that operate, or intend to operate, in the community and aim to improve their effectiveness or enhance the scope of their services), *international organizations*, *donors*, and *researchers*. Similar to the other audiences, an ICM that targets these users should engage them as early as possible in the design process and be structured around their information needs and demands.

A Framework for Effective Interactive Community Mapping

What counts as success for an interactive community map? What is the purpose of engaging stakeholders, experimenting with ICT tools, and targeting the needs of potential users? And what is the best way to generate an effective interactive community map? This section outlines the two primary objectives of ICM endeavors and offers a framework suggesting which factors are necessary to attain these objectives and which trade-offs are often embedded in ICM initiatives.

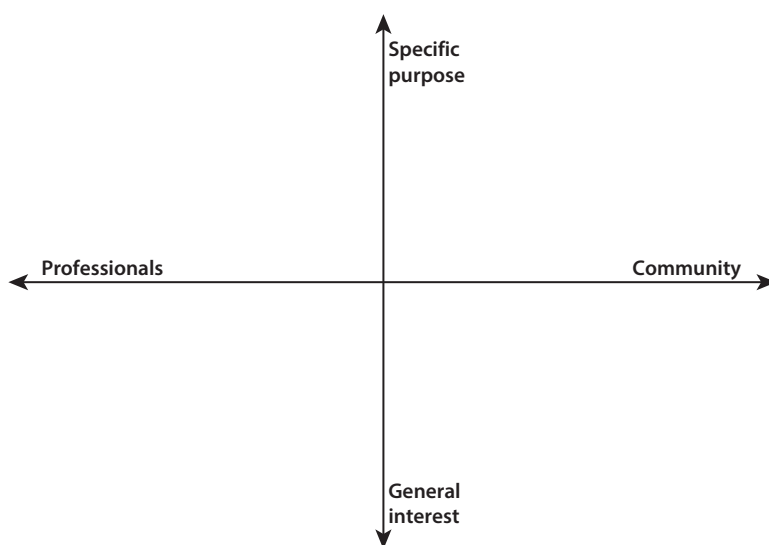
Process vs. Results in ICM Endeavors

Similar to traditional community maps, ICM pursues two major objectives: process oriented and results oriented. The *process* of creating an interactive community map can be inherently valuable for local communities. It typically starts with extensive training that provides community mappers with new technological skills and knowledge (learning to use GPS devices or getting familiar with software editing programs and social media) that can open up potential employment opportunities. In some cases, the mapping process is embedded in educational curricula in schools, aiming to provide geo-spatial skills to children as well as adults. The ICM process is also an empowering experience, providing local residents from marginalized and poor communities with the opportunity to determine how their communities are portrayed to the outside world. In some cases, this goal of “self-representation” is amplified by including a “storytelling” aspect and providing local residents with tools to share news and stories about their community on a Web platform (for example, Map Kibera).

In addition to these process-oriented objectives, interactive community maps may also be *results driven* and pursue concrete developmental goals and objectives. Such goals may include, for example, mitigating the effects of a disaster by providing accurate geo-spatial information to rescue workers, generating accurate geo-spatial information about the resilience of local infrastructure to potential disasters, identifying problems with and improving the provision of public services in the community, and more.

To illustrate this, ICM initiatives can be placed along a continuum with two axes (figure 4.1). The location of an ICM initiative on these axes reflects the explicit and implicit choices made by its initiators. The horizontal axis refers to

Figure 4.1 Continuum of Trade-Offs for ICM Projects



Note: ICM = interactive community mapping.

the primary identity of the mappers, ranging from professionals (international or local CSOs specializing in mapping, ICT specialists, researchers) to community members. The vertical axis refers to the goal of the ICM endeavor, ranging from specific-purpose maps created to fill a concrete information gap to general-interest maps created to provide general geo-spatial information.

Professionals vs. Community

Maps that are located on the far left end of the horizontal axis in figure 4.1 are created by professional mappers, who only visit the relevant community for mapping purposes and do not possess additional ties to it. These mappers may work with the community to gather information, but community members do not play a core role in producing the map. Such maps are relatively weaker on the participatory process of ICM, undermining the values of community participation, inclusiveness, or local capacity building. However, they may be advantageous in other ways.

A mapping process that relies on professionals is likely to be more efficient and results oriented than a mapping initiative that relies on community members. While outreach and mobilization efforts are often needed to attract community members and engage them in the ICM process, CSO representatives or researchers are often self-motivated, are familiar with the process, and require less preparation and training than community members. In some cases (for example, HOT in Indonesia), the engagement of professionals may also speed or scale up the creation of the map. The engagement of professionals is also likely to improve the sustainability and effectiveness of the map. The ICM project in Indonesia, which relied almost exclusively on professionals, reflects these advantages.

As the location of a map moves farther to the right on the horizontal axis, the role of community mappers grows. Maps that are created by community volunteers prioritize the objectives of community participation, inclusiveness, and capacity building over efficiency, speed, or breadth of coverage. These maps are more likely to create empowerment, as envisioned by the advocates of community mapping. They can provide local mappers with mapping skills and offer tools for representing and amplifying the voice of their community in a process that traditionally has been confined to professionals. However, their efficiency and sustainability are likely to be weaker, as constant outreach and mobilization activities may be required to sustain the community's incentives for engagement.

General Interest vs. Specific Purpose

While the horizontal axis in figure 4.1 represents a trade-off between results (efficiency) and process (community inclusiveness), the vertical axis reflects a trade-off between a map that is general interest and a map that is narrowly tailored in its shape and scope to serve the needs of specific stakeholders or fill in a well-defined information gap. Most interactive community maps are located in between these poles, and the primary distinction between them is the immediate

impact, relevance, and audience of the map. General-interest mapping endeavors put marginalized communities on the map, educate them about cartography, represent their geo-spatial realities, and give voice to their members. Specific-purpose maps fill a concrete information gap and respond to the need for specific information. These maps are usually tailored to the particular demands of CSOs, private service providers, or donors working in the community. They are more likely to be used than general-interest maps, but their intrinsic long-term value for the community is uncertain.

Enabling Factors

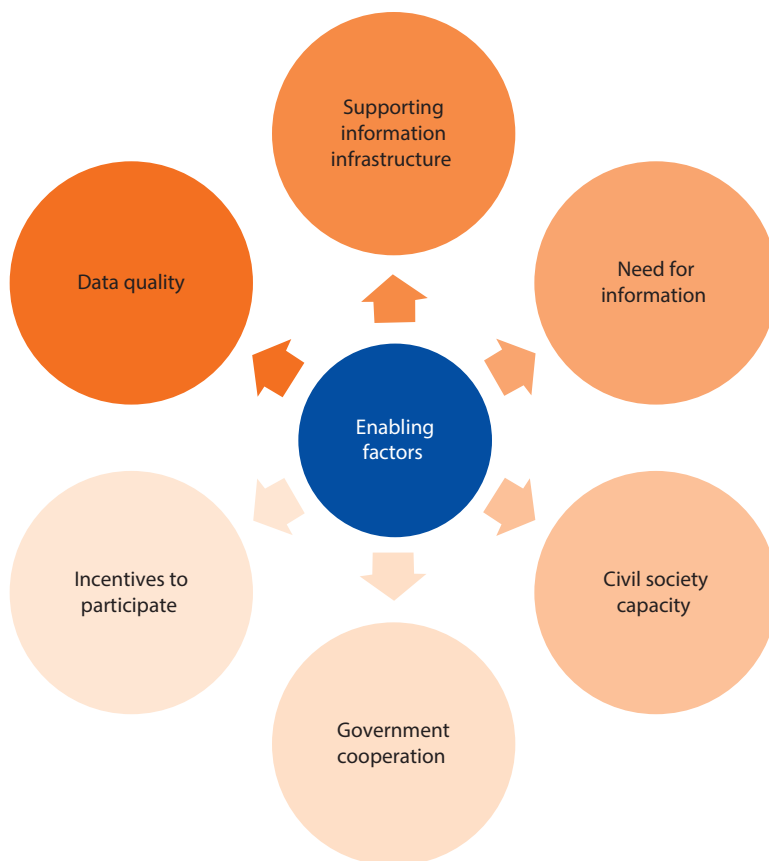
Designing ICM interventions that produce successful processes and results is often a considerable challenge, and it inevitably requires trade-offs. This section presents six factors that are needed for an ICM initiative to create a valuable participatory process and produce tangible outcomes. The first factor—information infrastructure—is usually the only one that is beyond the control of ICM leaders. The other five—identified need for information, civil society capacity, government cooperation, community's incentives to participate, and data quality—are mostly within the control of the ICM initiative and should be taken carefully into account when designing an ICM process.

The goal of the framework is therefore both descriptive and prescriptive. Descriptively, it sheds light on the major enabling factors required for the success of an ICM on both the process and results fronts. Prescriptively, it illuminates common challenges that interactive community maps encounter and suggests how to alleviate these challenges and improve performance. The framework consists of the six factors diagrammed in figure 4.2.

Supporting Information Infrastructure

The distinctive feature of interactive community maps is their reliance on ICT tools. Naturally, this implies that supporting information infrastructure is an important factor in the ICM process. One major component of this infrastructure is Internet penetration and digital literacy. The availability of Internet access facilitates the creation of interactive community maps, and widespread computer literacy enhances the pool of potential community mappers and the ease of training mappers in ICM tools. Internet access also enhances the usefulness of the resulting map for members of the community, as it enables them to access and work with the map on a daily basis.

However, while Internet access and literacy naturally facilitate the ICM process, the absence of these conditions should not dissuade ICM efforts. On the contrary, interactive community maps may be particularly important in the poorest communities, as part of an effort to prevent their further marginalization, put their problems and concerns on a map, and help them to build capacity to use technology. Even if the community will not be able to access the digitized version, such a map can be helpful for CSOs, local officials, and development organizations active in the community, while the community would use a hard copy of the map. In sum, although supporting information infrastructure naturally

Figure 4.2 Framework for Successful ICM Interventions

Note: ICM = interactive community mapping.

enhances the immediate impact of an interactive community map, the ICM process may be important even in its absence.

Need for Information

Intuitively, ICM should be most helpful in places that have not been mapped before. However, the dearth of information about a certain place does not mean that such information is needed or will be used. Effective ICM endeavors not only target blank spots on the world map but also identify specific needs and demands for information as well as concrete ways in which an interactive community map would benefit prospective users—community members, CSOs, public officials, development partners, and others.

Thus, although the lack of previously available geo-spatial information suggests that an ICM could be valuable, a more nuanced assessment of conditions on the ground is necessary for an ICM process to have an impact. Naturally, different users will need different types of data. A local CSO addressing water and sanitation needs, a public official working on security issues, and a group

of community volunteers collecting trash all need different types of mapping data. The ICM process should be designed to satisfy the needs of all these potential stakeholders.

Civil Society Capacity

The technical creation of an interactive community map is typically the easiest part of ICM. In order to ensure that the project will benefit local residents and that the map will be used meaningfully, local civil society should play a key role in the process. In fact, local CSOs and social activists are the main stakeholders of any effective ICM endeavor, taking responsibility for community outreach and engagement efforts, helping to recruit and engage community mappers, arranging the logistics for the ICM process, publicizing and distributing the map once it is complete, and using it for their own activities. The design of an ICM process should therefore be closely aligned with the interests, incentives, and activities of CSOs that are already active in the community.

Government Cooperation

Since local government typically has ultimate responsibility for the provision of public services, government cooperation with the ICM process is pivotal for the impact and sustainability of the map. Based on mapped information, public officials may allocate additional resources to particular concerns or reallocate funds that have already been assigned in order to cope better with community problems. Public officials' endorsement of the ICM process can also bring on board other stakeholders who can help to distribute and use the map when it is complete. Further, the ICM process can benefit public officials themselves, as they may gain new information about the conditions and concerns of communities under their jurisdiction. Public officials do not always recognize these benefits. Convincing them to engage with the process and aligning the ICM with government's interests and priorities are therefore important tasks that are likely to yield positive results.

Incentives to Participate

By definition, community mapping requires the engagement of the local community. However, the incentives of community members to participate in ICM are tricky. First, communicating the benefits of ICM to communities with low technological capabilities can be challenging. Since the resulting maps are largely available online and most residents of poor communities do not have stable access to the Internet, they do not necessarily see the value of the map. Moreover, local residents are intimately familiar with the geography of their community and thus may not apprehend the benefits of representing it on a map. Hence, ICM experts and local CSOs often have to engage in outreach activities and explain the benefits of interactive community maps to the community.

Second, remuneration presents a typical challenge (Berdou 2010; Hagen 2011). Most ICM initiatives are based on the idea that money should not play

a role in the mapping process: ICM experts and CSOs provide local residents with complementary training and capacity-building activities; in return, local residents volunteer their time and generate a map that benefits their community. This approach is, however, difficult to implement. Engaging committed volunteers may simply be impractical in poor communities, and volunteering for a common cause (let alone a cause supported by wealthy development partners) is not a natural decision for young people, many of whom are unemployed and in urgent need of income (Berdou 2010).

This lack of appropriate incentives on the part of community members can therefore undermine and derail the ICM process. In some cases, the technological training that community mappers receive for free as part of the ICM process may suffice to keep them engaged with mapping activities. More frequently, however, some payment or reimbursement may be required to encourage the ongoing commitment of community mappers and to sustain the project. The incentives of community members to take part in ICM should therefore be considered carefully.

Data Quality

The last enabling factor for effective ICM endeavors is the most intuitive. Interactive community maps are not likely to be useful or impactful unless they present high-quality data. The interpretation of what quality means is likely to differ from one ICM project to another. In some cases, quality simply means accuracy. The collection of accurate and up-to-date data is naturally a major component for any impactful ICM endeavor. In other cases, however, quality may also be interpreted as the scope of the data collected and the breadth of its coverage.

Applying the Framework

This section applies the framework described in this chapter to two types of interactive community maps: maps created to support general social development and maps created to mitigate the effects of disasters, providing two case studies for each category. It illuminates the practical considerations that are involved in the implementation of an ICM and sheds lights on the trade-offs between process and results that are part of the ICM endeavor.

General ICM for Social Development

A key objective of applying the ICM process to social development is to improve the provision of public services in a community. By drawing a clear picture of the social and economic conditions in an area, ICM helps government to decide what types of service provision interventions are required and how and where they should be implemented. Since community members are engaged throughout, the ICM process also encourages them to identify local solutions to the challenges facing their community. GroundTruth—the organization leading the creation of interactive community maps in Kenya, Tanzania, and other countries—is the primary representative of the social development approach to ICM.

Map Kibera

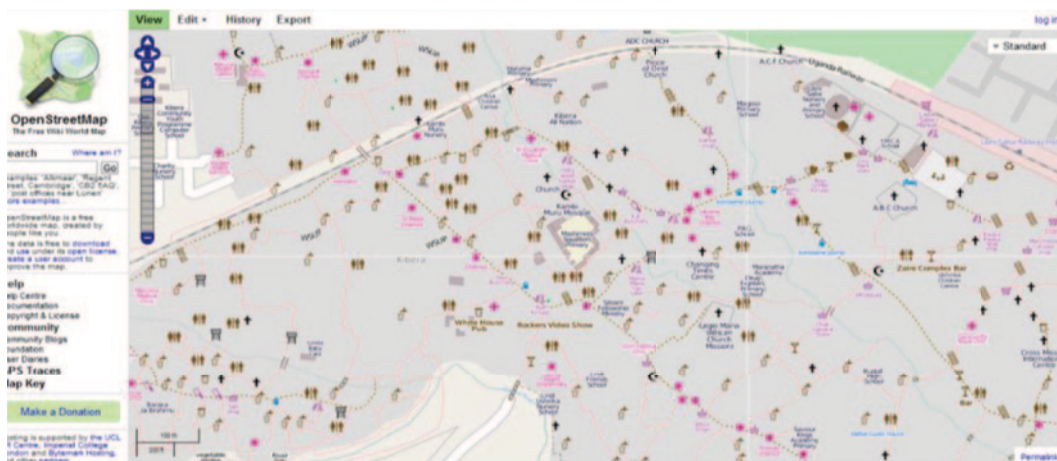
Map Kibera, a prototype for many other ICMs, is an interactive community map of Kibera, Nairobi—one of the largest slums in Africa. Although many CSOs and development organizations have been present and active in Kibera, it has largely remained a blank spot on the map. In October 2009, Mikel Maron and Erica Hagen of GroundTruth started collaborating with local partners and organizations in order to put Kibera on the map.

The underlying idea of Map Kibera is that basic geo-spatial knowledge is needed to support informed discussion on how life conditions can be improved in an area. The Map Kibera team therefore sought to cure “the glaring omission of roughly a quarter million of Nairobi’s inhabitants from mass communications and from city representation and policy decisions,” bypassing traditional information gatekeepers (Hagen 2011, 70). They expected that the provision of geo-spatial information would facilitate better coordination, planning, and advocacy efforts within the community and between the community and the government. As such, Map Kibera did not pursue a concrete, well-defined purpose. Rather, it sought to achieve two loosely defined objectives. First, it aimed to create an accurate geo-spatial representation of Kibera and its life conditions, assuming that interested parties would use this information for a variety of purposes (Hagen 2011). Second, it tried to build the capacity of local community members to use ICT tools to share information about local news, stories, and events among themselves and with the rest of the world. An online platform enabling locals to express themselves was created to balance the unfavorable bias in mainstream news coverage of the area and to allow the community to share positive information about itself (Hagen 2011).

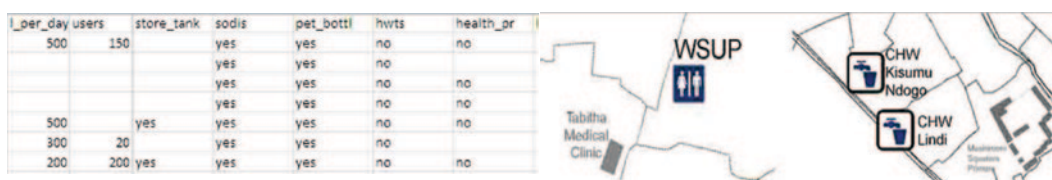
The mapping process relied exclusively on local residents, who were recruited and trained by the Map Kibera team. The team also invested considerable efforts in the “digital storytelling” layer of the map, providing local residents with social media tools to capture daily life (Hagen 2011). In the first stage of its operation, the team partnered with local CSOs and, with their help, recruited 13 volunteer community mappers residing in Kibera. It also trained participants to use GPS devices, collect and edit geo-spatial data, use video equipment, work with the OSM platform and other relevant software, and use social media and blogging platforms (such as WordPress).

After completing a brief training, community mappers started collecting data using simple GPS devices. The team guided the mappers to include “points of interest,” thus granting them discretion to decide what pieces of information should be part of the map. After one week of mapping, community mappers compared the collected data and decided that points of interest would include data about the location of clinics, toilets, water points, places of worship, and more. The whole process of data collection lasted three weeks, after which mappers imported the information into the OSM software and generated the first detailed map of Kibera (map 4.1).

The second phase of the Map Kibera project took a more contextualized approach and deepened the map’s coverage of life conditions in the community.

Map 4.1 Geo-Spatial Map of Kibera, Kenya

Source: OpenStreetMap (<http://www.wired.co.uk/news/archive/2013-08/05/slum-mapping-google-maps-cartography/viewgallery/306827>).

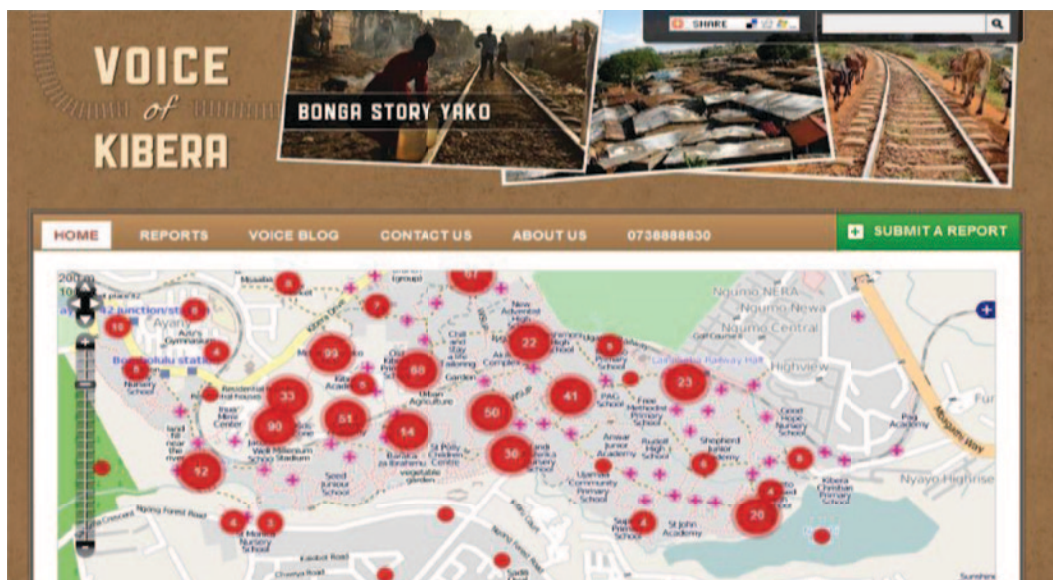
Map 4.2 Information Layers on Map Kibera

Source: Map Kibera blog (<http://www.mapkibera.org/blog/2011/09/10/engaging-community-stakeholders/>).

In response to demands voiced by local CSOs, the team collected detailed information on issues of health, security, education, and water and sanitation. In the area of health, for instance, they collected information about the working hours of clinics operating in Kibera as well as the services provided by them. As map 4.2 shows, this information was added on top of the original ICM layer, which only showed the location of a clinic.

At this stage, the team also introduced the Voice of Kibera initiative—an online news and information-sharing platform for the Kibera community (map 4.3). The website relies on geo-located citizen reporting and contains news stories, photos, videos, and messages shared by residents. It allows local residents to speak for themselves on current events and issues and creates a digital community around local information. The website is constantly updated by the Map Kibera team with videos, photos, and stories on daily life in Kibera.

While some local CSOs reportedly have used Map Kibera,⁸ there is no formal evidence of changes or improvements in service provision or other developmental policies in the slum. Map Kibera therefore scored high on the process-oriented dimension, but has been less successful on the results front. The interplay of the enabling ICM factors may be responsible for this outcome.

Map 4.3 Voice of Kibera

Source: See <http://voiceofkibera.org>.

The initiative benefited from a moderate information infrastructure—local mappers were able to use the offices of Kibera Community Development Agenda (KCODA), a local CSO, to access the Internet and use OSM software. Technical training went relatively smoothly, and local GIS specialists were available to assist community mappers in performing their tasks. Other enabling conditions were less favorable.

The initial idea of Map Kibera was to focus on the supply side of ICM—create an accurate map of Kibera and assume that interested parties would use it for a variety of purposes. However, the data remained largely untouched (Hagen 2011) because too little attention was paid to the *need for information*. This situation began to change when the team began collaborating with local CSOs and mapping information that responded to their concrete needs. In retrospect, however, the generalist nature of the map and lack of attention to the need for specific information on the part of local CSOs and other potential users limited the immediate usability and relevance of the map for organizations working on the ground in Kibera.

As a result, the *capacity* exhibited by CSOs active in Kibera did not fully translate into concrete use or impact—while CSOs helped to generate the map, they did not use it to inform their own strategies and activities.

Government participation was another challenge. Government representatives were not part of the mapping process, did not endorse the map, and apparently did not use it, which limited its usability and impact.

As in many other community-mapping endeavors, *incentivizing participants* proved difficult. Map Kibera was initially designed as a volunteer project, but attracting individuals with a genuine interest in ICT, geo-spatial mapping, and

community development was difficult. Local mappers expected to receive compensation for attending a workshop as well as money for lunch and transportation (Berdou 2010). While this aspect created some tensions in the initial mapping activities, it did not affect the ability of participants to perform the required tasks. However, lack of strong incentives to participate made it difficult to sustain the project. GroundTruth addressed this challenge by abandoning the purely volunteer approach and creating the Map Kibera Trust—an organization that now leads all Map Kibera activities and formally employs several community mappers.

Lastly, the Map Kibera team took the issue of *data quality* very seriously and conducted a series of verification activities to ensure the accuracy of the data collected. In the second stage of the project, more contextualized information was collected—for example, on crime and health—in an attempt to improve the usability of the data collected.

In sum, the interplay of the various enabling factors may explain the performance of Map Kibera: the favorable information infrastructure in Kibera, strong CSO presence, and GroundTruth's attention to the question of incentives contributed to the process-oriented objectives of the initiative. However, the lack of a concrete, identified need for information, limited use of the information by local stakeholders, as well as lack of government cooperation hindered the effective use and dissemination of the map and weakened its results.

Map Tandale

The ICM of Tandale—an informal settlement of 50,000 residents in Dar es Salaam, Tanzania—aimed to achieve goals similar to those of Map Kibera: improve the delivery of public services in the community and amplify the voices of community members. While Tandale's population has been growing rapidly, the unplanned settlement has suffered from insufficient basic services, such as water supply, drainage system, schools, and roads. Similar to Map Kibera, the underlying idea of Map Tandale is that it is important to understand the needs and concerns of the community from its own perspective before resources are allocated to improving service delivery. Contrary to Map Kibera, however, the Map Tandale project engaged a variety of stakeholders from the outset. In August 2011, the process was initiated by an array of civil society actors, local policy makers, urban planners from the local Ardhi University, community members, and development partners with support of the World Bank (GroundTruth 2012).

The Tandale ICM process consisted of 25 community mappers and 25 students from Ardhi University specializing in urban planning (the university recognized participation in the project as an internship). Students then worked alongside community members to generate a map of Tandale, including points of interest, roads, and some buildings. Students and community members were divided into six groups, with six to eight people per group, one group for each sub-ward. Each team member specialized in one of the following areas: GPS surveying, editing, satellite image tracing, and storytelling. At the end, the group imported the data into the OSM platform and also created a collaborative platform that contains reports on issues faced by the Tandale community (GroundTruth 2012).

Local CSOs and local government officials actively supported the project and cooperated with GroundTruth and the mappers. Map 4.4 portrays the amount of information collected for the map in only four weeks.

Similar to Map Kibera, Map Tandale had to cope with the *information infrastructure* available in Tandale. Internet access was relatively stable, but the organizers had difficulty storing, using, and accessing the equipment (GroundTruth 2012). On the positive side, the project was able to tap the technological capabilities of urban planning students at Ardhi University.

Map 4.4 Tandale, Tanzania

a. First day of ICM



b. After four weeks of ICM



Source: GroundTruth Initiative (<http://groundtruth.in/2011/08/22/ramani-tandale-work-in-progress/>).

Note: ICM = interactive community mapping.

Learning from the Map Kibera experience, the Map Tandale project was tailored to match existing *information needs* in the community. In preparing for the project, GroundTruth partnered with the Centre for Community Initiatives—a local savings group that had already begun mapping and collecting household data in Tandale. The group relied on a paper-based system to generate its maps and found the opportunity to create a digitized version appealing and well aligned with its own interests. This alignment of interests yielded considerable benefits. As GroundTruth notes in a 2012 report, “This partner was absolutely key to the level of interest in mapping and in sustained reporting that we found in Tandale, nearly one year later” (GroundTruth 2012, 2). The group not only supported the activities of GroundTruth, but also implemented its method in another informal settlement in Dar es Salaam, contributing considerably to sustainability of the project. In order to capture the information needs and demands of the community itself, GroundTruth also held an open community forum at the beginning of the ICM process. The forum revealed that community members were particularly interested in detailed information on water, health, education, accessibility, and security. The ICM process incorporated these demands, asking community mappers to collect detailed information about these topics.

The *civil society capacity* of both Ardhi University and CSOs working with GroundTruth were a preeminent component of the ICM process. The collaboration of these partners smoothed the introduction of ICM in Tandale, facilitated the mapping activities, and contributed to sustainability of the map.

Government cooperation was another key aspect in the production of Map Tandale. Some of the training and mapping activities were conducted in the Ward Office at Tandale, and the ward officer became a supporter of the process (GroundTruth 2012). He participated in some of the mapping activities and helped to generate community interest and involvement in the ICM effort. Such government engagement was made possible by the involvement of the World Bank, which acted as a “matchmaker” and networker, introducing city officials of Dar es Salaam to the ICM concept and helping to generate and sustain government buy-in to the ICM process.

Although Map Tandale engaged community members, university students took the lead in mapping activities (GroundTruth 2012). The involvement of these students was important for two reasons. First, it solved the challenge of providing the right *incentives to participants*, as students received university credit for participating in the project. Second, the educational background of the students (urban planning) considerably facilitated training and mapping activities and made the students inherently interested in the process. While the decision to rely primarily on university students limited the participatory and inclusive value of the process, it considerably improved the effectiveness and sustainability of the project (GroundTruth 2012). The reliance on university students and close cooperation with CSOs also improved the *quality of data* collected.

In sum, Map Tandale scored lower than Map Kibera on the process-oriented dimension. The reliance on students undermined the inclusiveness of the project (although, because community members were still involved, process values

were achieved, albeit to a lesser degree). However, Map Tandale performed better on the dimension of results. The engagement of students and other dedicated stakeholders improved the relevance and usability of the map, as the mapping activities were better aligned with the interests and needs of civil society and government stakeholders. The design also improved the sustainability of the mapping activities, as students had incentives to take part in them. It remains to be seen whether this ICM initiative will result in tangible changes and improvements in life conditions in Tandale, but its performance has been positive so far.⁹

ICM for Disaster Mitigation

In the past decade, ICT tools have been used increasingly to respond to humanitarian emergencies and to mitigate the effects of natural disasters. Mobile devices, for instance, have been used to enable individuals trapped in disaster areas to send requests for help, to facilitate the organization and coordination of volunteers and organizations seeking to provide help, and more (Harvard Humanitarian Initiative 2011; Norheim-Hagتون and Meier 2010; Shkabatur 2011). ICM has come to play an important role in supporting these efforts as well.

The use of ICM for mitigating disasters is twofold. First, the creation of an interactive community map can be helpful for disaster response and monitoring purposes. Free and collaborative maps may be particularly valuable to humanitarian work, especially when disasters occur in poor, remote areas and when geospatial data are scarce, out of date, or changing rapidly. Second, interactive community maps can improve the disaster preparedness of regions. The discussion in this section illuminates the role of ICM in disaster mitigation and examines the application of the proposed ICM framework to these cases. The ICM in the Gulf of Mexico reveals the advantages and limitations of ICM in postdisaster situations. The ICM in Indonesia shows how ICM can enhance preparedness for natural disasters.

Disaster Monitoring: ICM in the Gulf of Mexico

On April 20, 2010, a large explosion tore through the Deepwater Horizon drilling rig, owned by British Petroleum (BP). The explosion caused the rig to burn and sink, killed 11 crew members, and started a massive offshore oil spill in the Gulf of Mexico.¹⁰ The *Daily Telegraph* reported that the “BP spill spewed 4.1 million barrels of oil into the Gulf of Mexico over 87 days, making it the biggest unintentional offshore oil spill in the history of the petroleum industry.”¹¹ President Barack Obama dubbed it the “worst environmental disaster America has ever faced” (National Commission on BP Oil Spill 2011, 173).

The explosion and subsequent oil spill caused tremendous damage to the flora and fauna of the Gulf of Mexico. However, there was no publicly available, high-resolution, and accurate imagery of the affected area in the first weeks after the spill. Although the National Aeronautics and Space Administration made some satellite imagery available, it was not sufficiently detailed to expose any specific damage caused by the spill to the marine ecosystem (Warren 2011, 70).

Moreover, local authorities restricted all public access to affected areas, preventing citizens (and even journalists) from directly monitoring the effects of the spill (Peters 2010).

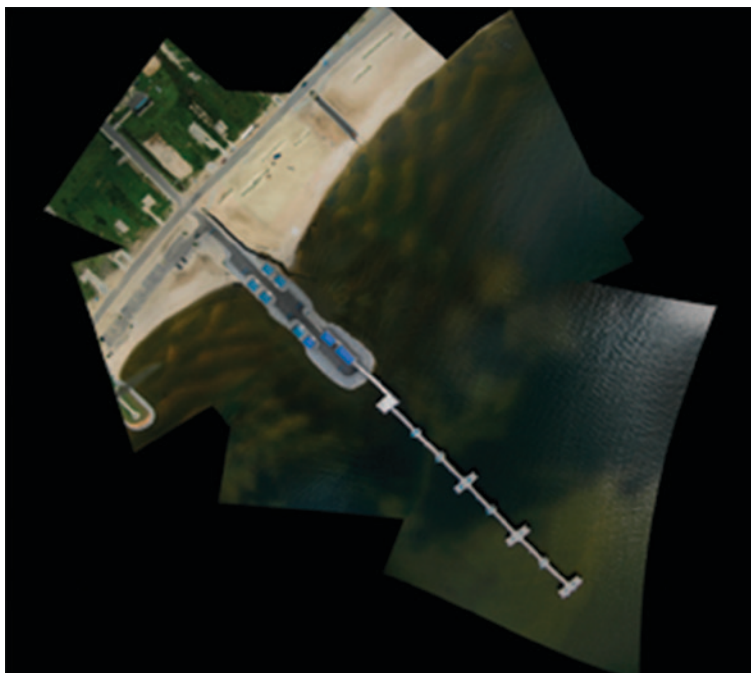
In light of this reality, the PLOTS paired with the Louisiana Bucket Brigade (LABB, a New Orleans-based environmental activist group) and other local CSOs to create a community-led effort to track the environmental effects of the oil spill. Relying on LABB's outreach capacity, PLOTS recruited community mappers who were willing to volunteer their time to track the environmental effects of the oil spill using kites and balloons. As part of this method, mastered by PLOTS in previous initiatives, mappers attached a digital camera with a string to a balloon or a kite and put the camera on automated mode to capture images every 1–10 seconds. The images were then aggregated into a single coherent map using open-source software.

In order to prepare community volunteers for the mapping activities, LABB and PLOTS organized training workshops teaching participants how to fly balloons and kites in order to capture sample data sets (Warren 2011). The PLOTS mailing list and wiki page were also helpful in facilitating the mapping effort, as permanent members of the PLOTS community helped to coordinate volunteers. After completing training, PLOTS and LABB organized daily mapping missions to coastal areas.

This method allowed mappers to acquire high-resolution imagery of specific sites, showing the ongoing effects of the oil spill in the same area. The information was detailed enough to identify individual bird species, observe corals, and track oil smears, as well as obtain “before” and “after” images, revisiting the same sites and capturing images of the same areas. As Warren notes, “The potential for a set of maps of the same site, taken at intervals, to depict progressive damage to ecosystems and economies was a powerful new dimension to the project” (Warren 2011, 71).

As the crisis evolved, BP and local authorities attempted to restrict access to the affected areas by closing public beaches, preventing boats from entering some areas, and restricting flights to a minimum of 4,000 feet, making it difficult to capture images of the spill (Peters 2010). In order to gain access to some of the restricted areas, community mappers collaborated with local fishermen: since fishing was restricted in increasingly large areas of the Gulf, fishermen were eager to document the effects of the spill and provided transportation and advice to the mappers. ICM efforts grew in importance, as the images that community mappers captured were among the best available for some of the areas (Warren 2011, 71).

Between May 7, 2010, and July 22, 2010, more than 47 participants made 36 trips to capture coastal imagery and took more than 11,000 images. According to Warren, “64% of trips returned with ‘excellent’ or ‘usable’ data” (Warren 2011, 71). A single set of photos from one kite or balloon typically included hundreds of images, and PLOTS used an online crowdsourcing tool to determine which images were of good quality and could be used. The images collected as part of the project were processed on Adobe Photoshop and uploaded to Flickr for

Aerial Image Produced as Part of the Gulf of Mexico ICM

Source: © Warren 2011.

public viewing. The imagery was also integrated into an Ushahidi-based website that was launched by LABB to collect oil spill–related reports from citizens.

While the circumstances and purpose of the ICM initiative in the Gulf of Mexico differ considerably from those of Map Kibera and Map Tandale, the ICM framework still applies. The Gulf of Mexico ICM project benefited from the highly advanced *information infrastructure* in the United States. Open-source tools were readily available to process the images and upload them to a publicly available database. No challenges were related to technological capacity—both because the mapping method is easy to master and because technological literacy is high in the United States.

Civil society capacity was also strong. Local groups and communities (primarily LABB and the University of Tulane’s School of Public Health and Tropical Medicine) were instrumental in reaching out to potential volunteers and coordinating their participation in ICM activities. The project was also funded by relatively small donations from civil society groups, including the Center for Future Civic Media, the Lafourche Port Commission, the *Washington Post*, Development Seed, and others. As Warren (2011, 75) notes, “This dense web of collaborations has formed a backbone of support for the effort and ensured its regularity and sustainability.”

The tragic circumstances that gave rise to this ICM initiative were supposed to provide natural *incentives* for local community members, such as fishermen,

to contribute to the mapping effort. However, as PLOTS and LABB did not provide community mappers with concrete incentives to participate, the scale and coverage of the activities remained relatively modest. Most of the participants only made one trip to the coast, and the ICM operation depended largely on the efforts of just six dedicated community mappers.

The performance of the initiative under the *need for information* criterion was mixed as well. On the one hand, the Gulf of Mexico initiative was driven by the need for specific information about the environmental effects of the oil spill. All mapping activities were targeted to achieve this purpose. LABB was also interested in obtaining information about the crisis and used it for its internal needs.¹² However, the lack of wide-scale public interest and little subsequent use of the data collected may indicate that the ICM process was not fully aligned with the information needs of other actors.

Lack of *government cooperation* also presented a challenge for the sustained impact of the project. According to Anne Rolfes, director of LABB, both local and federal authorities were reluctant to collaborate with civil society efforts to track the effects of the oil spill and to use the collected data. Similar to the case of Map Kibera, the dearth of government buy-in considerably limited the use and impact of the collected imagery. Further, while the PLOTS methods enabled the collection of high-quality, high-resolution imagery, the methods employed by the project and the small number of community mappers resulted in relatively limited coverage—the images captured only small and fragmented parts of the coast.

In sum, the project scored well on the process dimension. Most mappers were local community members who volunteered to participate in response to a disaster in their community. However, the extent to which this experience was empowering is unclear. The skills provided by PLOTS were highly specific and not necessarily applicable to other purposes. Further, lack of government interest in the data collected and their limited use undermined the effectiveness of the exercise and reduced its empowering potential. While some of the images were reprinted in the media, on-the-ground impacts were relatively modest (Warren 2011). Although the ICM process fulfilled a specific need for information, it did not change either behavior or policy.

Disaster Preparedness: ICM in Indonesia

In 2010 the National Disaster Management Agency (Badan Nasional Penanggulangan Bencana, BNPB) in Indonesia and the Australian Agency for International Development (AusAID) decided to develop software that produces realistic scenarios of the impacts of natural hazards in order to improve planning, preparedness, and response to disasters.¹³ Relying on the Australia-Indonesia Facility for Disaster Reduction and the World Bank's Global Facility for Disaster Reduction and Recovery, BNPB and AusAID developed the software, dubbed Indonesian Scenario Assessment for Emergencies (InaSAFE).¹⁴ To produce reliable disaster scenarios, InaSAFE requires accurate data on exposure—information about the places where people work and live and data on the construction of these structures. Lacking such information, the government of Indonesia

approached HOT with a request to use the OSM technology to collect the disaster preparedness data needed for InaSAFE.

HOT's initial pilot started in March 2011 and lasted until March 2012. It consisted of providing training, developing new software, translating various OSM materials into Indonesian, and collecting extensive data. As the Indonesian terrain consists of both sprawling cities and spread-out rural villages, HOT implemented different methods for collecting data in rural and urban areas.

In rural areas, HOT started collecting data by partnering with ACCESS—an Indonesian CSO that specializes in creating “poverty maps” in villages and helping local residents to understand problems in their area and explore possible solutions. The paper maps of poverty created by ACCESS in the past had not been accessible outside of the local community and could not be used to compare and visualize poverty information. HOT began its work with ACCESS by conducting “Introduction to OpenStreetMap” training workshops in villages where ACCESS had already been working. HOT designated two training teams for the task, each consisting of one international expert and one GIS student from the University of Indonesia, and trained 126 ACCESS staff on using OSM tools to collect data. The collaboration with HOT was mutually beneficial. ACCESS took advantage of the training to improve and digitize its own poverty maps; in turn, ACCESS staff collected disaster preparedness data that were of interest to HOT.

As HOT initially lacked partners in urban areas, its strategy for collecting data in cities differed from its strategy in rural areas. In cities, HOT decided to engage university students specializing in GIS. The idea was to train students in OSM methodologies and then hold a contest to incentivize them to map as many buildings as possible. The prize for the most prolific and accurate mapper from each university was a trip to the United States to attend the State of the Map and Free and Open-Source Software for Geo-Spatial (FOSS4G) conference to be held in Denver, Colorado.

HOT conducted one-day training workshops in partner universities in five Indonesian cities—Bandung, Jakarta, Padang, Surabaya, and Yogyakarta. These workshops, attended by 150 students overall, aimed to provide participants with OSM skills and techniques. After completing the workshop, students were requested to map as many buildings in their city as they could within six weeks. As part of the exercise, they were asked to indicate the location of buildings on the map and to collect information on building construction—type of structure, walls, and roof and number of floors. The HOT team monitored the data collected during the course of the competition and, in some cases, provided feedback and corrections via a website set up for the competition, *KompetisiOSM*.¹⁵ Overall, 44 students took part in the competition and mapped at least one building. The winners mapped between 1,000 and 12,000 each. Overall, students in the competition mapped 29,230 buildings in five major cities.

HOT employed an additional methodology to map large-scale urban areas: creating partnerships with local government authorities. The province of Jakarta, for instance, has been experimenting with different approaches to assessing the

potential impacts of floods on Jakarta's residents and infrastructure. As part of this effort, Jakarta's Disaster Management Agency and the Indonesian National Disaster Management Agency have been developing detailed scenarios that estimate the impact of future floods in order to improve contingency planning. To support these activities, HOT helped to conduct workshops in each of Jakarta's six districts and trained district representatives on how to map boundaries and major infrastructure in their district. More than 500 representatives from Jakarta's 267 villages took part in the workshops. They subsequently mapped more than 6,000 buildings (government offices, health facilities, schools, places of worship, sports facilities, fire stations, police stations, and major roads) and nearly 2,700 neighborhood boundaries.

One of the desired outputs of HOT's project in Indonesia was to integrate the OSM data sets into InaSAFE. The newly created OSM data sets fulfilled this objective. The mapping of Jakarta facilitated by BNPB enabled InaSAFE to determine how many schools, hospitals, and government buildings would be affected by a flood.

HOT's performance is promising. First, the initiative coped well with the local *information infrastructure* in Indonesia. It assisted local organizations with training, equipment, and translations and took advantage of the technological capabilities of local CSOs and university students. Further, it fulfilled the *information needs* of several key actors. HOT launched the ICM initiative following a direct request from local authorities and based on an identified demand—the operating needs of the InaSAFE program. The initiative was well aligned with the existing needs and priorities of civil society partners, primarily ACCESS. This alignment secured the close collaboration between HOT and ACCESS and enhanced the sustainability of the ICM project: ACCESS and other partners plan to use HOT's methodology to map additional locations independently. As civil society partners not only needed the information provided by HOT but also had the capacity to lead mapping activities, *civil society capacity* was also positive.

Government buy-in and cooperation was another central component. As HOT collected information as part of a government program, in response to concrete needs and in a specific format, it maximized the chances that the relevant agencies will use the collected data in meaningful and socially helpful ways. HOT's attempts to ensure the *quality and accuracy of the data* collected also played an important role in government endorsement of the project. The accuracy of the data, compared to official government data sets, was a prominent concern during pilot implementation. HOT monitored the quality of the data collected, comparing newly created OSM data sets with reference data sets (field surveys or others).

The last enabling factor—the *incentives of community mappers*—illuminates several aspects of ICM. As HOT worked with civil society representatives and public officials who were interested in acquiring geo-spatial data as part of their own activities and strategies, additional incentives were not needed. The case of student mappers was different. Although many students took part in the university competition and mapped urban infrastructure, the

competition did not create permanent mappers. After its completion, only one student continued to be involved in mapping activities. As a result of this lack of sustained engagement, HOT decided not to hold additional university competitions and to focus instead on engaging and training local CSOs and public officials.

In sum, contrary to the other examples, community members did not play a central role in HOT's ICM strategy. In its first year of operation, HOT did engage members of the community (CSO workers, planning students, and public officials), but these individuals represented the more educated and better-off segments of Indonesia's urban population. Thus the traditional, process-oriented goals of ICM as a mechanism of empowerment and capacity building for disadvantaged and marginalized groups were compromised in favor of more efficient mapping operations, larger coverage, and sustained use. This was a deliberate choice. As results-oriented objectives—effective and wide-scale mapping of urban and village infrastructure—were the primary focus of the ICM initiative, process-oriented goals had to be compromised. Indeed, HOT's decision to focus in its second year of operation on CSOs and public officials who were interested in disaster-related data and to discontinue university competitions was well aligned with this strategy.

Trade-Offs

The application of the proposed ICM framework to Map Kibera, Map Tandale, ICM in the Gulf of Mexico, and HOT in Indonesia reveals several illuminating patterns. Table 4.1 summarizes the interplay among the enabling factors for these four initiatives, scaling them as weak, moderate, or strong.

What is the meaning of a weak, moderate, or strong performance under each of the enabling factors? In other words, what constitutes a “success” in the context of an interactive community map? As suggested earlier, the response to this question depends on the process- or results-oriented goals that the ICM aims to achieve and often requires finding a proper balance between them.

Map Kibera, for instance, was envisioned as a general-interest project to capture the living conditions of a poor community on a map and actively engage local residents in this endeavor. As such, this ICM initiative was primarily *process* oriented. Within a year, the team created a digital and multilayered public map of Kibera, introduced online platforms that enable community members to share information and communicate online, and extensively trained local youth to use an array of ICT tools and platforms. As a result, participating community members gained “valuable technical skills, a greater confidence in their ability to change things for the better, and pride in their community” (Berdou 2010, 18). These achievements were made possible by the early choices that GroundTruth made—to rely only on community mappers and to create a general-interest map. Accordingly, Map Kibera scored “moderate” on the factors of information infrastructure, civil society capacity, incentives to participate, and data quality. However, these same choices inhibited the achievement of other objectives. Lack of attention to specific information needs (at least in the first stage) and absence

Table 4.1 Enabling Factors: Map Kibera, Map Tandale, ICM in the Gulf of Mexico, and HOT in Indonesia

<i>Indicator</i>	<i>Map Kibera, Kenya</i>	<i>Map Tandale, Tanzania</i>	<i>LABB and PLOTS, Deepwater Horizon, Gulf of Mexico, United States</i>	<i>HOT, Indonesia</i>
Supporting information infrastructure	Moderate. GroundTruth put infrastructure in place to create the map, but it was not available for potential users of the map.	Moderate. Internet was relatively stable, but storing, using, and accessing equipment were difficult. Resources of Ardhi University and technological capabilities of urban planning students were maximized.	Strong. Information infrastructure was highly advanced in United States.	Moderate. Although not high-tech, project infrastructure was aligned with local infrastructure.
Need for information	Weak. Need for information was not explicit (aim was to create accurate geo-spatial representation). More specific needs-based crime and health-related information was collected in the second stage.	Moderate. The GroundTruth partnership with Centre for Community Initiatives resulted in mutual alignment, as the CSO was particularly interested in data on water, health, education accessibility, and security.	Strong. Information specifically related to the environmental disaster was needed, but wide-scale public interest was lacking.	Strong. Local authorities in Indonesia and the InaSAFE program both requested the information.
Civil society capacity	Moderate. Although there was a strong CSO presence in Kibera, the project did not benefit fully from it in the first stage of implementation. The map was not sufficiently used by CSOs to inform their strategies and activities in Kibera. This partially changed in the second stage of the initiative, when data were collected based on identified needs.	Strong. Both Ardhi University and the CSO had strong capacity.	Strong. Civil society capacity was instrumental in reaching out to potential volunteers.	Strong. The project served the goals of an already active organization.

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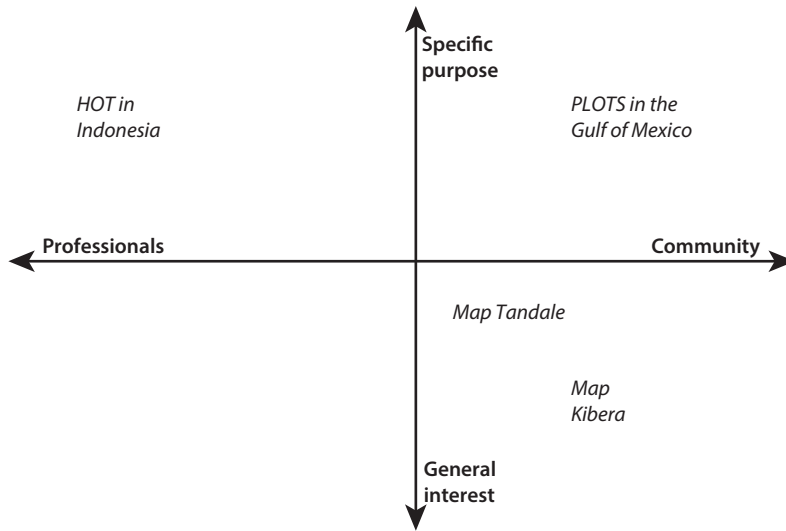
Table 4.1 Enabling Factors Enabling Factors: Map Kibera, Map Tandale, ICM in the Gulf of Mexico, and HOT in Indonesia (*continued*)

<i>Indicator</i>	<i>Map Kibera, Kenya</i>	<i>Map Tandale, Tanzania</i>	<i>LABB and PLOTS, Deepwater Horizon, Gulf of Mexico, United States</i>	<i>HOT, Indonesia</i>
Government cooperation	Weak. Government did not endorse the map and did not use it.	Moderate. Some training in mapping activities was conducted in the Ward Office, and the ward officer became a supporter of the process. The World Bank helped to generate and sustain government buy-in.	Weak. Government cooperation was lacking.	Strong. Information was collected as part of a government program.
Community mappers' incentives	Moderate. Initially, mappers were volunteers, who lacked financial motivation. The lack of strong incentives was addressed by providing mappers with some reimbursement and creating Map Kibera Trust, which formally employed community mappers.	Strong. Students received university credit for participating in the project, and educational background facilitated training in mapping activities.	Weak to moderate. Natural incentives (for example, for fisherman) were insufficient, and the process was conducted primarily by just six community mappers.	Strong. Each of the actors was interested in the geo-spatial data as aligned with its own activities and strategies, although student incentives were weak.
Quality of collected data	Moderate. Verification activities were undertaken to ensure accuracy of the data collected.	Moderate. Quality of data was improved by training students.	Weak. The amount of data collected was small and fragmented.	Moderate. Quality and accuracy were a key concern.

Note: CSO = civil society organization; HOT = Humanitarian OpenStreetMap Team; ICM = interactive community mapping; InaSAFE = Indonesian Scenario Assessment for Emergencies; LABB = Louisiana Bucket Brigade; PLOTS = Public Laboratory for Open Technology and Science.

of government cooperation led to a relatively limited impact on local service provision and weak *results*.

Some of the priorities of *Map Tandale* were fairly similar to those of Map Kibera. GroundTruth and its partners sought to create a detailed map of the settlement and to build the capacity of community members to take an active part in the endeavor. However, in order to improve the *results* of the initiative, and not focus only on the process, GroundTruth learned from Map Kibera's experience and designed the Map Tandale project to identify and respond to the specific information needs of local CSOs, public officials, and community members,

Figure 4.3 Continuum of Trade-Offs for the Four Projects

Note: HOT = Humanitarian OpenStreetMap Team; PLOTS = Public Laboratory for Open Technology and Science.

shifting it from a purely general-interest map toward a specific-purpose map (figure 4.3). Further, university students became the focal point of the mapping activities. While the students cannot be considered as pure “professionals,” they are not necessarily part of the Tandale community. These design choices directly affected the resulting map. Similar to Map Kibera, the project produced a detailed map of the Tandale settlement. It also provided valuable technical skills and encouraged knowledge sharing between university students, community members, and some Kibera mappers who joined the effort. The engagement of university students helped to solve the incentives challenges of Map Kibera, and the close partnership with local CSOs contributed to the sustained use of the map. Government buy-in was critical for raising interest in the project and sustaining its effects. However, less reliance on community members meant that the project was less inclusive or participatory. In sum, moderate or strong scores on the indicators of information infrastructure, civil society capacity, and mappers’ incentives contributed to the *process* value of the initiative, but the process was not as participatory as in the case of Map Kibera due to the reliance on professional mappers, rather than ordinary community members. Moderate or strong performance on the indicators of need for information and government cooperation made the initiative more *results* oriented.

Despite the difference in circumstances and objectives, the cases of ICM for disaster mitigation reveal a similar picture. The ICM in the *Gulf of Mexico* responded to a concrete need for information expressed by a local CSO and aimed to achieve a concrete goal—track the environmental damage of the BP oil spill. The project achieved this goal, but its overall scale and impact were modest.

As the project relied on community members, the absence of proper incentives limited the coverage and scope of the mapping activities. Further, due to the lack of government buy-in, the aerial imagery was underused. As a result, the ICM partially achieved the *process*-oriented objectives, but it performed weakly on the *results*-oriented dimension.

The case of *HOT in Indonesia* followed a different path. Targeted collection of disaster-related data, coupled with reliance on skilled, semiprofessional mappers (CSO workers, urban planning students, and public officials) produced several results. First, the scope and coverage of the ICM project were considerably larger, as the project took full advantage of the CSO's capacity and incentives to engage in the mapping activities. Second, its usability and sustainability were relatively high—data collected by HOT responded to concrete, well-defined information needs, and civil society and government stakeholders endorsed and supported the project. However, while it performed strongly on the *results* axis, HOT had to make trade-offs with regard to community engagement. By definition, its ICM process was less inclusive and participatory than the ICM in Kibera, for instance. Further, it did not necessarily empower the most marginalized or vulnerable groups in the community, thus abandoning a common *raison d'être* for many ICM endeavors.

These trade-offs point to the challenge of attaining both process-oriented and results-oriented objectives as part of an ICM initiative. As figure 4.3 shows, initiatives that pursue “general-interest” objectives, manage to mobilize community members effectively, and take advantage of the existing civil society capacity score well on the *process* dimension. However, as they do not rely on predetermined information needs and only loosely engage the government, the resulting interactive community maps may often be underused. Initiatives that pursue specific goals, respond to predetermined information needs, rely on professional mappers, and establish cooperation with government officials are more likely to score well on the *results* axis. However, as in the case of HOT, they may be weaker on the *participatory process* dimension.

Conclusion

The ICM process entails a range of trade-offs and challenges. One of the most difficult trade-offs is the need to choose between community empowerment and capacity building, on the one hand, and effective delivery and use of the map, on the other hand. As the objectives of ICM projects become defined, special attention should be placed on the enabling factors. The framework introduced in this chapter of factors for the success and sustainability of ICM outlined six broad enabling factors: a supporting information infrastructure, need for information, civil society capacity, government cooperation, community mapper incentives, and the quality of collected data.

In chapter 1 of this volume, a broad framework of political, economic, socio-cultural, and technological factors for empowerment through ICTs was introduced. These more detailed enabling factors for ICM complement the STEP

framework. In terms of the political factors, all of the case studies described here illustrate the importance of key stakeholders such as public officials, CSOs, and the broader political environment. Economically, incentives both for mappers and for CSOs to commit expenditure to these projects were a concern. Socioculturally, these projects could only be successful if interests were aligned with the CSOs, government officials, and mappers, depending on which resources were the most necessary (and the trade-offs between process and results). Finally, the technology, in many ways, was the least important factor. Although the technological infrastructure was perhaps the most sophisticated in the United States, the Deepwater Horizon project gained the least impetus given the capacity in place. The implication, then, is that the ICT element is the least critical; the overall purpose, incentives, and cooperation of ICM are more important and interdependent.

Finally, along with the trade-offs and challenges embedded in ICM initiatives, it is important to remember the powerful opportunities that interactive community maps offer to put a community on a map, provide poor and marginalized communities with valuable skills and improve their living conditions, help to mitigate the effects of a disaster, or help communities to prepare for future disasters. Even if the achievement of these objectives is difficult and uncertain at times, the ICM process is still more inclusive and empowering than traditional mapping. It is also more dynamic, less time-consuming, and less costly.

The creation of interactive community maps can therefore be viewed as a shortcut on an otherwise long path toward improved service provision and community empowerment. A thoughtful design of ICM optimizes the chances of reaching the end of this path. The next chapter addresses the paradox of how ICM is potentially both the most beneficial and yet the most challenging path in fragile and autocratic states.

Notes

1. In the context of community mapping, the term “community” describes individuals who share a geographic area, such as a neighborhood, village, or town. The term does not presume solidarity or shared values among community members.
2. Maps can be defined as “graphic representations that facilitate a spatial understanding of things, concepts, conditions, processes, or events in the human world” (Harley and Woodward 1987, xvi).
3. See <http://groundtruth.in/about/>.
4. See http://wiki.openstreetmap.org/wiki/Humanitarian_OSM_Team.
5. See <http://publiclaboratory.org/about>.
6. See www.openstreetmap.org.
7. See <http://en.wikipedia.org/wiki/OpenStreetMap>.
8. Interview with Erica Hagen, GroundTruth, October 2012.
9. According to an interview with Erica Hagen of GroundTruth in October 2012, the impact of the map is still uncertain, as it is currently being examined at the city council.

10. See the full report of the National Commission on the BP Deepwater Horizon Oil Spill (2011).
11. "BP Leak the World's Worst Accidental Oil Spill," *Daily Telegraph*, August 3, 2010 (<http://www.telegraph.co.uk/finance/newsbysector/energy/oilandgas/7924009/BP-leak-the-worlds-worst-accidental-oil-spill.html>).
12. Interview with Anne Rolfes, founding director, LABB, March 2011.
13. This section is based largely on an interview and discussions with Kate Chapman, director, HOT, September 2012.
14. See <http://www.inasafe.org>.
15. See <http://kompetisiosm.org>.

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The Role of Crowdsourcing for Better Governance in Fragile State Contexts

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The term “crowdsourcing” was first coined by Jeff Howe (2006) in an issue of *Wired* magazine. In reference to the global technology industry, Howe (2008, 99) defines crowdsourcing as “the act of taking a job traditionally performed by a designated agent (usually an employee) and outsourcing it to an undefined, generally large group of people in the form of an open call.” He states, “Technological advances in everything from product design software to digital video cameras are breaking down the cost barriers that once separated amateurs from professionals. Hobbyists, part-timers, and dabblers suddenly have a market for their efforts, as smart companies in industries as disparate as pharmaceuticals and television discover ways to tap the latent talent of the crowd. The labor isn’t always free, but it costs a lot less than paying traditional employees. It’s not outsourcing; it’s crowdsourcing” (Howe 2006). Reliant on actionable information provided by the appropriate “crowd,” which itself is identified through a self-selecting mechanism that is informed by a specific set of parameters, crowdsourcing is a collaborative exercise that enables a community to form and to produce something together. Expanding the concept to include not only data collection or product design but

This chapter elaborates on the preliminary analysis first published as a working paper by Bott, Gigler, and Young (2011) and a shorter summary paper by Bott and Young (2012). The chapter carries out a more detailed analysis and presents new evidence, data, and case studies. The authors would like to extend their gratitude to the following people, whose support, input, and collaboration were instrumental in forming this chapter: Margunn Indreboe Alshaikh, replication and policy coordinator, Crisis and Recovery Mapping and Analysis (CRMA) project, Crisis Prevention and Recovery Unit, United Nations Development Programme Sudan; Michael Gebert, cofounder of Reputeer GmbH; Nicole A. Hofmann, Standby Task Force coordinator, Task Team and Standby Task Force volunteer Libya deployment; Kaushal Jhalla, consultant, Innovation Practice, World Bank; Patrick Meier, director of crisis mapping and partnerships, Ushahidi; and Hanif Rahemtulla, consultant, Innovation Practice, World Bank Institute.

also cultivation of public consensus to address governance issues, strengthen communities, empower marginalized groups, and foster civic participation is at the heart of the new crowdsourcing movement.

This chapter offers a primer on crowdsourcing as an informational resource for development, crisis response, and postconflict recovery, with a specific focus on governance in fragile states. Inherent in the theoretical approach is that broader, unencumbered participation in governance is an objectively positive and democratic aim and that government transparency and citizen empowerment can increase a government's accountability to its citizens and correct poor performance, although not without challenges. Whether for tracking flows of aid, reporting on poor government performance, or organizing grassroots movements, crowdsourcing has potential to change the reality of civic participation in many developing countries.

This chapter is structured in the following way. In the next sections we provide an overview of the theoretical contributions of crowdsourcing to improve democratic governance. We then examine the critical factors necessary for successful crowdsourcing in general (Sharma 2010) and discuss the inherent challenges and risks, particularly in fragile states. We then provide numerous examples from important crowdsourcing and interactive mapping phenomena and initiatives in Haiti, Libya, Sudan, and Guinea among others. Most of these examples were taken from personal experience, and their accuracy was checked with key actors. We return to analyzing these cases according to Sharma's framework. Finally, we provide recommendations for donors.

Crowdsourcing: A New Panacea for Social Accountability and Governance?

Crowdsourcing has become a mega trend in recent years, fueling innovation and collaboration in research, business, society, and government alike. As Clay Shirky (2008, 105) states, "We are living in the middle of the largest increase in expressive capability in the history of the human race. More people can communicate more things to more people than has ever been possible in the past, and the size and speed of this increase, from under one million participants to over one billion in a generation, makes the change unprecedented." Global businesses like Facebook, Apple, Amazon,¹ or eBay could not have grown to cover the industrial world at such speed without making use of this powerful tool, which essentially transforms consumers into co-producers, or "prosumers,"² of their services. The business models of these companies are built on the work of their clients: Facebook's and eBay's clients, for example, produce all the content that makes their platforms valuable.

The power of crowdsourcing was first demonstrated by the open-source movement, which was able to compete successfully with proprietary software solutions by mobilizing volunteer programmers who had never met or worked together in creating the operating system Linux. The success of Wikipedia showed that collaborative creation of content can dwarf the quantity and quality

of traditional encyclopedias and the efforts of other closed groups of experts. Other kinds of content aggregation from Flickr and YouTube to LinkedIn and Twitter use the crowd to prioritize content for their individual users. Finally, the next generation of Web 2.0 applications such as search engine advertising uses massive databases to harness the collective intelligence of their users through algorithms that detect patterns and hidden meanings in the everyday activity of users (Duval 2010, xii). Computing systems become ever more connected, data rich, and adaptive.

But crowdsourced volunteering activities are going far beyond coding or simple information sharing. Today, crowdsourcing is used to create and increase collective knowledge, community building, collective creativity and innovation, crowdfunding, cloud labor, and civic engagement.³ Powered by widespread and increasing access to the Internet, mobile phones, and related communication technologies, the use of crowdsourcing for policy advocacy, e-government, and e-democracy has grown exponentially across the planet (Shirky 2008, 106).⁴ The main reason for this phenomenon is that these tools have lowered transaction costs for exchanging information, forming groups, and coordinating action. In addition, it has become much more difficult for governments to block information and collaboration, which happens without even needing to establish opponent institutions and easily traverses state borders. The right combination of social networking tools and an active audience allows any individual to inspire and coordinate collective action outside of a formal hierarchy.

The driving vision behind these phenomena is the philosophy of “open-source governance,” which advocates an intellectual link between the principles of the open-source and open-content movements and basic democratic principles.⁵ With the objective of enabling ordinary citizens to contribute directly to the formation of policy, open-source governance theoretically provides more direct means to affect change than do periodic elections.

President Barack Obama’s Open Government Initiative as well as his appeal to the young “open-source generation” is considered by many to have been a determining factor in his electoral campaign success (Duval 2010, 126, 172). “When government data is made available as a set of Web services based on open Application Programming Interfaces (for example, Code for America) rather than a set of documents, computer applications can process this data, draw meaning from it, and make it relevant to the daily lives of its citizens” (Duval 2010, xii). This enables citizens themselves to improve or develop new public services, such as SeeClickFix, a citizen-based Internet and mobile phone system for reporting vandalism or public infrastructure in need of repair directly to the relevant local government authority. Not only are social media platforms such as Facebook or Meetup⁶ and LinkedIn or XING increasingly used for political discussion and advocacy, but so are specific open-government platforms such as Data.gov, political party platforms, think tanks, or citizen advocacy groups, citizen journalism forums such as SourceWatch and NowPublic,⁷ as well as platforms for developing e-governance applications such as Metagovernment.org.

Crowdsourcing is not limited to industrial countries, where it is often characterized by high-tech data solutions and business applications. In developing countries, it is applicable in the framework of popular consultations, election monitoring, constitution-drafting processes, or anywhere it ensures that the voices of diverse ethnic, political, and minority groups will be heard. Crowdsourcing is already having a strong impact in developing countries, where it is applied to crisis and tactical mapping⁸ as well as to tracking, reporting on, and coordinating relief efforts in the context of natural disasters (Haiti, Pakistan), civil wars (Libya), and human rights abuses and violence (Kenya). By providing visualization and implementation monitoring⁹ of relief and recovery efforts, allowing for wide dissemination of information on weather and crop market prices (Mali, Uganda), crowdfunding of microcredit, and many other cases, crowdsourcing is being applied in multiple ways within the context of international development.¹⁰ When used to collect information, it can be seen as a methodology for nonprobability sampling (Meier 2010). Crowdsourcing can thus serve as a tool for participatory monitoring and evaluation, enabling development and humanitarian programs to elicit feedback directly from program beneficiaries.

Crowdsourcing's potential cannot be overestimated, especially in Africa, where mobile networks have grown exponentially, bypassing all other infrastructure development on the continent in terms of speed and widespread use. As such, crowdsourcing is increasingly seen as a core mechanism of new systemic approaches to governance. In fragile states, it can be used to address the highly complex, global, and dynamic challenges of governance, conflict, climate change, poverty, and other crises, where traditional mechanisms of democracy and international diplomacy have often failed.

How Is Crowdsourcing Expected to Improve Governance?

The availability and interoperability of communication tools make it increasingly hard to keep information secret. Since the recruitment of activists has never been easier and accessibility of amateurs to professional tools has never been greater, information security has become a critical issue for governments. The cases of Wikileaks and global hacking operations have uncovered the general vulnerability of governments' data protection systems, in contrast to the power of nonstate actors to act collectively without the need for individual, and thus assailable, leadership. This creates a general power shift: governments have become more vulnerable to attack—either technological or political—while citizen groups have become less vulnerable and more effective due to their increased ability to organize. In theory, it is believed that “transparency breeds self-correcting behavior” among all types of actors, since neither governments nor businesses nor individuals want to be caught doing something embarrassing or illegal.¹¹

The effectiveness of governance systems can be substantially increased by social media applications facilitating real-time data collection, categorization, and redistribution from crowds to crowds—for example, tactical mapping and reporting in emergencies, sharing of market information, or community planning.

The greater the numbers and the stronger the group identification with objectives, the harder it becomes for governments to ignore them.

However, there are strong cognitive limits to interactivity. As discussed in chapter 1 of this volume, causes need to be very strong and directly touch the emotions and creativity of people in order to draw their attention and keep them involved for long enough to have an impact. With a growing number of national and international causes competing for attention, rallying crowds around a specific cause is becoming ever more difficult. So far, crowdsourcing has not yet had a decisive impact on political governance systems, but the continuous rise of social media, especially among youth, and its increasing use to consolidate support for common interests and advocacy suggest that its importance will continue to grow, especially if coupled with real-life interests, needs, and commitment of its users.

Critical Success Factors of Crowdsourcing Systems

The crowdsourcing initiatives that have proven the most successful are those that succeed in empowering a disparate group of people with the tools to contribute to a larger effort. Incentives to contribute should be tailored to attract the most effective collaborators, and the motive of the crowd needs to be aligned with the long-term objective of the crowdsourcing initiative to ensure that the crowd is willing to participate in it (Eagle 2009; Lohr 2009).

In Sharma's model of the critical factors of crowdsourcing success, which is summarized in this section, aligning the motives of the crowd is the central factor, whereas the vision and strategy of the crowdsourcing initiative, linkages and trust, external environment, infrastructure, and human capital are peripheral (Sharma 2010, 9).

Infrastructure

A necessary prerequisite for crowdsourcing is the availability, acceptance, and use of crowdsourcing technologies by the users. The ease of accessibility, reliability, and quality of communication technologies and infrastructure are therefore imperative. The global spread of mobile phones has thus been the basic condition enabling the use of crowdsourcing in developing countries.

Vision

The crowdsourcing initiative needs to present a vision with a well-defined set of ideals, goals, and objectives that is flexible to the dynamics of the environment, so that the crowd can perceive the initiative as valuable and well intentioned. While government participation can add an additional factor of trust to the initiative, this is not always the case in the context of a fragile state.

Human Capital

The other key determinant of success is human capital, both at the level of the individuals or groups spearheading the initiative as well as at the level of

the crowd joining it. This includes language skills, managerial skills, national orientation, traditions, level of education, and, as an entry requirement for the crowd, the skills to use a mobile phone (Carmel 2003). In an ideal scenario, the crowd must be able to engage the crowdsourcing initiative without prior training and with minimum interventions (Sharma 2010, 12).

Financial Capital

The inherent nature of crowdsourcing initiatives makes them low cost, especially if based on existing telecommunications infrastructure such as mobile phones. Additional investments directed toward the betterment of enabling infrastructure can substantially enhance the participation of the crowd. In low-income countries, performance-based donor funding of local community development could be used to create a positive incentive for governments to allow greater citizen scrutiny and participation, for example, through crowdsourced monitoring and reporting platforms.

Linkages and Trust

Linkages between individuals, work groups, or organizations through geographic, cultural, linguistic, or ethnic connections can be used to minimize the costs of doing business. Robust linkages make knowledge transfer, sharing of best practices, and use of innovative business models easier and help in pooling the much-needed resources to develop the initiative (Sharma 2010, 13). In order to develop the necessary trust among the crowd, sufficient time has to be allocated for its emergence. Robust linkages can add a substantial aspect of trust (Brabham 2009), as can links with the diaspora or with formerly successful ventures (Sharma 2010, 13). If government support does not enhance trust, external support through donors and well-reputed international organizations can add a sufficient level of trust as well as global visibility to the initiative.

External Environment

The macroeconomic environment, composed of the political governance structure, economic and business environment, general attitudes toward entrepreneurship, general living conditions, and risk profiles, is also an important determinant of success (Farrell 2006; Oshri, Kotlarsky, and Willcocks 2009). A favorable regulatory environment and ease of doing business can encourage crowdsourcing initiatives. The tasks associated with crowdsourcing must be compatible with the prevailing practices and cultural norms. The crowd must also be able to relate the goal of the crowdsourcing initiative to their living environment. Security and regulatory risks can also play an important role in aligning the motive of the crowd toward the long-term objective of the crowdsourcing initiative (Oshri, Kotlarsky, and Willcocks 2009; Sharma 2010, 13). From another perspective, however, the lack of a conducive policy environment can fuel protests and create a strong motivation for crowds to engage in collective action to challenge the status quo. The role of traditional media can play a pivotal role in triggering massive collective action, as the role of Al Jazeera in the Arab Spring

movement impressively demonstrated. The external environment is the main factor differentiating the context of a fragile state from that of a stable state and is elaborated further in this chapter.

Motivation

Performance expectancy (that is, the extent to which an individual believes that using the system will help him or her to improve job performance), effort expectancy (the degree of ease associated with use of the crowdsourcing system), social influence (the degree to which an individual perceives that others believe he or she should use the new system), and facilitating conditions (the extent to which an individual believes that organizational and technical infrastructures exist to support use of the system) are the direct determinants of crowd motivation (Viswanath *et al.* 2003). Five of the peripheral factors affect one or more of these determinants. For example, human capital affects both performance expectancy and effort expectancy. As a result, the peripheral factors affect the overall alignment of the crowd's motive with that of the crowdsourcing initiative in different ways (table 5.1; Sharma 2010, 15–16, citing Rogers 1995).

This model expands on the innovation diffusion theory (Rogers 1995, 15), in which five independent attributes, as perceived by the early users of an innovation, are critical to success:

- Relative advantage, that is, the degree to which an innovation is perceived as being better than the idea it supersedes
- Compatibility with existing values, past experience, and the needs of potential adaptors
- Complexity
- Trialability (trial of the innovation on a limited basis)
- Observability of the results by others.

Criteria of Governance

Governance criteria for crowdsourcing include anonymous participation (via a central registrar, key public infrastructure, and a trusted central authority), decentralization of authority (thus minimizing the principal-agent problem),

Table 5.1 Effect Determination Matrix

<i>Peripheral factor</i>	<i>Direct determinant</i>			
	<i>Performance expectancy</i>	<i>Effort expectancy</i>	<i>Social influence</i>	<i>Facilitating conditions</i>
Vision and strategy	X		X	
Human capital	X	X		
Linkages and trust	X		X	
Infrastructure and financial capital		X		X
External environment		X	X	X

Source: Rogers 1995, 15.

centralization of information (via one platform and interoperability of interfaces and applications with this platform), open and equal opportunity of participation in deliberations or peer reviews (enabling self-selection of those most affected or most expert to participate on an issue), and encouragement of diversity of thought. In addition, safe operational procedures must be ensured; all actions are transparent, all contributions are recorded and preserved, all content and deliberation are structured (content management systems, fora, and moderators) and refactored by participants (via software versioning and revision control systems), and access includes remote and disadvantaged people (via mobile devices and specialized interfaces).

Process of Crowdsourcing

For the crowdsourcing process to take off, a strong connection has to be established between the people who use the initiative (crowd) and the initiators. The needs, aspirations, motivations, objectives, and appropriate incentives of the crowd to participate in the initiative are the most important considerations throughout the process. Since participation is voluntary, a community of like-minded people is the basis of successful crowdsourcing. The primary targets of crowdsourcing initiatives are groups of innovators and early adopters (Rogers 1995, 22) as well as very well-connected opinion multipliers who have a clear interest in joining the initiative and who embrace the concept of crowdsourcing itself. "Creating a vibrant community is all about creating a critical mass of good minds and spurring them to spark each other as much as possible" (Libert 2010, 42). They should be encouraged to spread the message as much as possible beyond the virtual realm. Uncovering shared interests, communicating intensively, and deepening personal bonds create mutual trust that strengthens the community. Also, the community should be large and diverse enough to improve the quality of content by collectively editing individual contributions. Most important, communal processes within groups should not be disturbed. Instead, they should be given room to be creative. Group dynamics can be initiated and supported, but should not be controlled. "The provider of the platform should not be the star of the show but the producer, working from behind the scenes to make it easy and comfortable for all community members to get involved and stay involved" (Libert 2010, 15). In addition, the community should be protected from spamming, hacking, hijacking, spying, deviating far from the main objective, and other threats to its purpose. Constructive contributions, even if they are critical, should be acknowledged and rewarded.

Sharma's critical factors can be amalgamated into the overall sociocultural, technological, economic, and political enabling or constraining factors discussed in chapter 1 of this volume. Socioculturally, there need to be both belief and motivation in the cause. Yet economic factors are also relevant, as those participating need to be able to justify their participation, particularly if it is voluntary, and to afford the technology. Technologically, there need to be sound enough infrastructure and enough security and reassurance for those participating to feel comfortable. Finally, in terms of political vision, support needs to be provided by

the governing parties or, if this is absent, by a cohesive group such as a nongovernmental organization (NGO).

Potential Role of Crowdsourcing and Interactive Mapping in Fragile States

Since crowdsourcing in its very essence is based on universal participation, it supports the empowerment of people. In a pure democracy or in a state of anarchy or civil war (Haiti after the earthquake or Libya since February 2011), there are few external limitations to its use (for example, lack of coverage or breakdown of the mobile network), which explains why most salient examples come from democracies and situations of crisis.

In a fragile state, the situation is quite different. “‘Fragile states’ is the term used for countries facing a combination of particularly severe development challenges: weak institutional capacity; poor governance; and political instability. Often these countries experience ongoing violence as the residue of past severe conflict.”¹² An authoritarian or embattled regime may tend to oppose and interfere with crowdsourcing, perceiving broad-based participation and citizen empowerment as threats to its very existence. In other words, the very context that may benefit the most from crowdsourcing is also the one that presents the most challenges.

How Can Crowdsourcing Improve Governance in a Fragile State?

Depending on the level of citizen participation in a given state, crowdsourcing can potentially support government’s or civil society’s efforts to inform, consult, and collaborate, empowering citizens and encouraging decentralization and democratization. Increasing government accountability to citizens is hereby a key determinant of improved governance.

Rosanvallón (2008) identifies three generic mechanisms through which civil society can hold the state accountable beyond and independent of electoral mechanisms:

- *Oversight.* The various means by which citizen organizations are able to monitor and publicize the behavior of elected and appointed rulers
- *Prevention.* Their capacity to mobilize resistance to or support of specific policies, either before or after they have been selected
- *Judgment.* The trend toward “juridification” of politics when individuals or social groups use the courts and jury trials to bring delinquent politicians to judgment.

As the more traditional modes of political representation decline in significance, these civil society mechanisms of indirect democracy gain in importance.

By providing the means to localize, visualize, and publish complex, aggregate data on a multilayer map and increasing the speed of generating and sharing data up to real-time delivery, crowdsourcing empowers citizens and beneficiaries of

government and donor services to provide feedback and even to provide information in their own right. A real-time map is compared to “having your own helicopter,” providing immediate situational awareness of events unfolding in time and space and catalyzing conversations between crowdsourcing actors.

This transformation can take place in three ways:

- *Top down.* By sharing, debating, and contributing to publicly available databases of governments, donors, and other major actors, which distributes data directly through customized Web and mobile applications and makes information accessible and meaningful to citizens
- *Bottom up.* By providing independent platforms for “like-minded people” to connect and collaborate, which builds potential for the emergence of massive, internationally connected grassroots movements
- *Integrated.* By establishing platforms that aggregate and compare data provided by official bodies, such as governments, donors, and companies, with crowd-sourced primary data and feedback.

Live public maps can thus have an empowering effect on all three mechanisms highlighted by Rosanvallon: near real-time tracking and mapping of data by crowds of citizens create pressure for more transparency, better social accountability, and the imposition of sanctions. In particular, the resulting live public maps can help to synchronize *shared awareness* (Meier 2011c), an important catalyzing factor of social movements according to Jürgen Habermas (1962): “The presence of a synchronized public increasingly constrains un-democratic rulers while expanding the right of that public.” Traditional media have an important role to play in broadcasting the results of such an exercise to a broader public.

Greater effectiveness of state and nonstate actors can be achieved by using crowdsourced data and deliberations to inform and monitor the provision of services.¹³ But while generating larger volumes of data and increasing the speed of transactions can be attractive to governments even in fragile states, the advent of citizen empowerment is often viewed as a serious threat (the Arab Republic of Egypt, Sudan, the Syrian Arab Republic, or República Bolivariana de Venezuela). At the same time, there is a risk that the measure of confidence built through the process will be destroyed in the absence of concurrent capacity development or facilitation of the government’s ability to respond to the monitoring reports generated by the crowd.

Digital Mapping as an Instrument for Improving Governance in Fragile States

Digital mapping platforms,¹⁴ which combine electronic networks, maps, satellite imagery, and tracking, are emerging as key instruments for improving governance in fragile states. Crowdsourcing has become a dominant method for live mapping initiatives in the area of governance due to its potential to integrate all types of information and communication channels. Real-time aggregated data can be categorized, layered, and visualized in ways that even novices can understand

with relative ease. Geo-spatial data can thus be linked with other types of data for various purposes, such as disaster risk management or urban planning (Meier 2011a).

There are two basic types of interactive mapping initiatives: initiatives coordinated with (or at least agreed to by) national governments, taking a top-down approach, and initiatives developed independently, with a bottom-up perspective. Both serve to democratize information flows and access. The determinants of these two types of initiatives differ fundamentally, but they can evolve respectively toward the other direction, ideally ending up with a comprehensive, hybrid structure that integrates government, international, nongovernmental, and locally crowdsourced data. The distinction between these two perspectives is crucial in fragile states, where governments are naturally suspicious of grassroots movements.

The top-down approach usually requires the buy-in of the national government, which may provide certain advantages, such as the ability to access critical government data, use a wider variety of communication channels, and engage the government and all other local stakeholders in a practical dialogue and even collaboration on political governance issues. However, every new service of a mapping initiative requires negotiating with and persuading government counterparts, which may slow down progress. In general, the greater the interest of government in the initiative, the easier it will be to receive the necessary approvals for rapid setup of the project. This explains the relatively huge success of crowdsourced emergency services in the aftermath of natural disasters. For a recipient government, the risk of “abusing the system for rebellion” is very low, and the benefits of coordinating a disaster response are enormous. Likewise, there is also strong interest in e-government services that facilitate trade, tax collection, and private sector development.

However, in conflict or postconflict situations, nongovernment-driven initiatives, such as the tracking of acts of violence across Kenya—the first initiative by the Ushahidi crisis-mapping project in the wake of the late 2007 elections—operated independently from government. Since then, the Ushahidi crowdsourcing platform has propagated to more than 130 countries, serving diverse tracking and planning objectives (Meier 2011a). In countries like Egypt, Sudan, and Tunisia, telecommunication services have been censored periodically or switched off completely in order to prevent uprisings and interrupt rebel communications. Also, critical statements by citizens on social media platforms have been used to identify and imprison regime opponents, as in Zimbabwe and many other countries (Masimba 2011, 254).

Few electronic mapping initiatives have made progress in situations of conflict between a government and rebel movements. One example is the Crisis and Recovery Mapping and Analysis (CRMA) project of the United Nations Development Programme (UNDP) in Sudan, which, however promising, has not yet reached the crowdsourcing stage, working instead with a “bounded crowd.”

Within interactive mapping, four processes need to be identified and examined separately: data collection, data analysis, data dissemination, and decision making.

Governments, as well as other actors, are usually more interested in data collection, analysis, and decision making than in data dissemination. It is a matter of negotiating with governments one process against the others. The CRMA project started as a small pilot to hold state and local multistakeholder consultations in the postconflict state of Kassala, with the aim of mapping conflict issues between local groups from different tribal and livelihood affiliations, in addition to collecting data on emergency and early recovery needs and on projects funded by government and donors in the state. Representatives from all major tribes, government, civil society, producer and trade associations, as well as women, youth, NGOs, and donors joined in the exercise. This map provided the first comprehensive snapshot of the main local conflicts together with their geo-spatial localizations. The participatory, conflict-sensitive approach to this exercise as well as the volume and quality of data collected impressed both government and donors to such a degree that they agreed to collaborate. The government agreed to expand the project throughout Sudan and to publish data collected by international donors in collaboration with government, while the donors agreed to share their own data in order to get a comprehensive picture of the situation in different regions of Sudan.

The breakthrough for national expansion of this mapping exercise was reached when all major data-collecting actors signed agreements to share their data in the form of map layers, making the data layers available to all of the participating actors, including the government.

Key Features of a Conflict-Sensitive Interactive Mapping Platform in a Fragile State

The incentive mechanisms for major stakeholder groups inside and outside of government, including civil society, need to be analyzed thoroughly when designing the aims and services of an interactive mapping platform.

The government counterparts need to agree with all other key partners on a clearly defined aim of the platform (such as disaster prevention, local conflict mapping, or market information) in order to prevent fears of political threat. The platform should focus on one objective and not attempt to serve many purposes at once, since this could create suspicion of abuse and confuse citizen-providers.

The services offered via the platform need to be easily understood and meet a critical need or interest that directly affects the livelihoods of the target population.

If the government is not yet ready to provide any data, a data-sharing agreement between the main international and local actors (international financial institutions, the United Nations, NGOs, and universities) can create a critical mass of information to start the platform. Of course, the government would need to approve even this preliminary data sharing if the data are to be published openly.

Strong informational asymmetries must be avoided regarding the collection, analysis, and dissemination of data; a system that generates critical data about a location and its inhabitants but is only accessible to government or local elites

can increase conflict rather than reduce it and even serve to support military actions. Therefore, the platform features need to be accessible by simple mobile phones through text-based short message service (SMS) for sending and receiving information, since mobile phones are the only device to which most citizens in fragile states have access. Where literacy is low, automatic voice transcription as well as local offline information hubs managed by neutral providers can make platforms more inclusive. Real-world volunteer systems operated by international actors (for example, crowdsourcing platform providers, United Nations volunteers, and NGOs) and by local universities are best suited to play this role. Associations of municipalities could also act as relatively neutral providers, if they possess a minimum degree of independence from national authorities. In addition, balanced participation and inclusion of local ethnic, tribal, and livelihood groups as well as women and youth need to be actively promoted through closely monitored local consultations and capacity building for stakeholder representatives as well as through traditional media, such as interactive radio shows.

The design of the administration and authorization structure is crucial. Usually, apart from the site administrators, there are at least three levels of users: first-time or temporary users who have reading access only, normal users who have the right to contribute their information and opinions, and power users who contribute content on a regular basis or provide additional volunteer services, such as editing content, mobilizing more users and linking them up with each other, networking online and offline, and even coding new platform features. The number and contributions of “power users” determine the success of a crowdsourcing platform. In fragile states, the role of these power users requires special attention in order to ensure political neutrality and inclusiveness of the platform in general.

Through increasing aid transparency, interactive mapping of aid projects can in theory also encourage healthy competition between NGOs and other implementers of humanitarian and development aid, since their activities become more visible and traceable to their sponsors, whether they are donor governments or private sponsors. However, a simplistic focus on mapping of local infrastructure can create unwanted bias and distort funding toward mappable-equals-“visible” projects, leading to more “empty shells” instead of increased capacities of vulnerable and poor populations.

The tools should be designed to strengthen the capacity of local government to respond and provide opportunities for authorities to increase efficiency, decrease cost, or adapt existing workflows.

Challenges and Risks of Applying Crowdsourcing and Interactive Mapping in Fragile State Environments

Crowdsourcing faces fundamental challenges with regard to identifying the tasks for which crowdsourcing is an appropriate solution. Regardless of the context, it is difficult to define, operate, support, and end a crowdsourcing activity; to identify and create technical means of participation that minimize barriers to use;

to establish and maintain participation through appropriate incentives; to ensure appropriate privacy and safety for the contributors (for example, when individual contributors might be identifiable and locatable); as well as to maximize the quality and benefit of the outcome (for example, through filtering, rating, cross-checking, and peer or expert moderation).

Seven issues pertain to crowdsourcing in general and crowdsourced geospatial data sharing in particular. In most cases, these issues are more critical in fragile states than in states with stable governments.

No Active Crowd

Sometimes, top-down platforms offered by government or donors fail to attract the attention of crowds because they seem too static, are too centrally controlled, or do not offer direct benefits, reputational gains, or other incentives to potential contributors. The biggest issue with government-controlled platforms is that individuals do not trust that their information will be used responsibly. The more authoritarian a government's behavior, the less trust it will inspire from its citizens. Under authoritarian regimes, it is also more difficult for NGOs and social entrepreneurs to launch a crowdsourcing initiative.

No Sharing of Data

Lack of trust also arises from the other side; the relatively slow progress of e-government in industrial countries shows that even democracies are hesitant to share their official data. The less legitimate a government feels, the more secretive it tends to behave and vice versa: "Sharing internally was a problem in the first place. That was why the parliament secretary taking a huge role was a big deal, in terms of talking to colleagues about opening up this data. Technical challenges were not where the headache was—we have plenty of skill and partners here to do that—it was in getting the data in the first place, in the form that we needed it. Plenty of data wasn't in digital form or usable and was trapped in agencies," stated Paul Kukobo, chief executive officer of the Kenya ICT Board, in a phone interview on the launch of Open Kenya on July 8, 2011 (Howard 2011).

The Wrong Crowd, a Digital Divide, or Participation Inequalities

A theoretical prerequisite for the use of crowdsourcing in participatory and democratic decision-making processes is universal access to technology. In the absence of universal access, capacity building, mediators, and transcription tools are necessary to prevent the digital divide from excluding the most vulnerable parts of the population from participation. In crowdsourced projects such as OpenStreetMap and Wikipedia, a small group of participants contributes significantly, while a very large group of participants contributes only occasionally. Educated young males are usually overrepresented, while women are underrepresented. Since governments with weak governance processes usually base their power on the support of elites, they have less incentive to reduce these inequalities. Therefore, there is a high risk of elite capture or at least strong demographic bias if not mitigated by additional measures.

Manipulation of the Crowd

Plain wikis only show “what is” and not “what should be.” More sophisticated systems aim to provide tools for meaningful deliberation by using semantic tags, levels of control, or scoring to mediate disputes. This runs the risk of unduly empowering a clique of moderators who possess no public legitimacy (similar to the wiki problem of “sysop vandalism”¹⁵ or “administrative censorship”). The simpler the processes and structures of the deliberation platform, the higher the risks that minority opposition will be drowned out. In platforms that aim to combine crowdsourced contributions with official ones, a lack of trust will accentuate these problems, especially in environments of weak governance.

Attacks on the Crowd

Contributors can be attacked, both virtually (by being spied on) and physically. Especially amid human rights violations and conflict, data based on global positioning system (GPS) information provided by individuals on the ground can be abused by government, rebels, or terrorists for military action. Crowdsourcing contributors can be incriminated by national security moles. In Libya, measures were taken to protect contributors and prevent intrusion by the Libyan military.

Ineffective Crowdsourcing Process

A general challenge of crowdsourcing is deciding how to manage contributions. Chaotic data and deliberation structures can make crowdsourcing ineffective. In order to solve this problem, crowdsourcing software has been designed with highly sophisticated management structures.

Clash of Paradigms

The problem becomes more complex if official government or donor data are to be combined with crowdsourced data that do not adhere to the same information management standards. Jackson, Rahemtulla, and Morley (2011) argue,

Crowdsourced data will only be fully adopted if the user organizations can have trust in the data being fit for its intended purpose. Uncertainty regarding the quality of such data is often cited as a major obstruction to its wider use (Goodchild and Glennon 2010). Critics argue that such informal ad hoc data collection does not typically adhere to formal standards of geometric precision or meta data consistency or even provide consistency in coverage or detail. Despite this, the volume of such data can ... acquire a density of sampling often far exceeding what can be formally acquired, and this can in turn assist in the process of validation and error reduction. Furthermore, the currency of the data ... will often be much more up-to-the-minute than formal survey data. This comparison, however, illustrates that while the content, quality, and attributes of crowdsourced and authoritative data are different and can even be apparently conflicting in detail, both have informational value. Through a considered combination, they can complement each other to provide a more complete, up-to-date, people-centric, and richer picture of such humanitarian disasters than either could provide in isolation.

What Next? Crowdsourcing = Accountability?

Crowdsourcing is only the first step toward achieving better results. The next step is to use that data to hold power to account. As Tsai (2007) acknowledges, “Formal institutions of accountability are often weak in developing countries which often lack strong bureaucratic institutions for controlling corruption and making sure that lower-level officials are doing their jobs. Democratic institutions such as elections that allow citizens to hold local officials accountable may be unreliable or even nonexistent. Yet even in these countries, some local officials perform better than others. Under these conditions, how do citizens make government officials provide the public services that they want and need?” (p. 568). According to Rosanvallon (2008), the three accountability mechanisms of indirect democracy—oversight (monitoring and evaluation), prevention (collective civil society action concerning policy), and sanctions (tracking of abuses for evidence in court)—can be strongly empowered through crowdsourcing.

To summarize, the core risks and challenges arise from the concept of trust. These challenges increase with the loss of governance capacity and legitimacy that is typical of fragile states.

The Experience of the Crisis-Mapping Community

The first and principal objective of disaster response is to obtain “situational awareness,” that is, a detailed picture of the situation on the ground, the scale of the damage, and above all the needs of affected people—in other words, to use firsthand information as fast as possible in order to plan and conduct relief efforts. Effective relief relies on valid and timely information, which is collected most commonly by assessment missions consisting of international and local experts deployed after securing funds, recruiting teams, and sometimes awaiting security permissions for personnel to access the situation in the field. Where conventional methods have been unable to provide the necessary information quickly enough, humanitarian interventions have turned to crowdsourcing.

Created in 2008, Ushahidi is one of the most important open-source platform providers for crowdsourcing crisis information. This system was initially established to report and map violence during the postelection period in Kenya. It has since been used to track a variety of crises and other issues on global, regional, and national scales. The platform gathers distributed data from the public via several media and communication channels (SMS, e-mail, and Web) and visualizes the information on a map or timeline. The objective is to facilitate better understanding of the needs of people affected by natural or man-made disasters or other issues and to create direct and immediate links between stakeholders, for example, crisis-affected people and assistance providers. The system empowers respondents to collect information together and helps to guide and coordinate humanitarian response efforts on the ground (Jackson, Rahemtulla, and Morley 2011).

This section describes actual cases of crisis mapping in fragile states. Specifically, it details the inception of crisis mapping in Haiti to aid relief efforts

following the devastating earthquake in 2010 to gathering timely information and organizing relief efforts during the recent civil war in Libya, and in participatory post-conflict mapping in Sudan.

Crisis Mapping in Haiti: Aiding Humanitarian Relief

In 2010 the most prominent crowdsourced crisis-mapping initiative to date appeared in the wake of Haiti's major earthquake. It was characterized by a high level of professionalism, which allowed relief agencies to act with unprecedented speed. Immediately after learning about the earthquake on CNN, Ushahidi set up the Ushahidi Haiti map—with a team of volunteers from the Fletcher School of Law and Diplomacy at Tufts University—and used Digicel's free SMS short code (4636) to crowdsource needs assessments from the disaster-affected community. Local radio stations disseminated information about the short code. The concept of "Mission 4636" was as simple as it was revolutionary: to make use of widespread mobile communications, highly motivated volunteers, and the most immediate source of situational knowledge—the affected local population of Haiti. During the first week, volunteers mapped some 1,500 reports based on information from Twitter, Facebook, and online news, even before they began to receive text messages. A team of graduate students at the Fletcher School mobilized an active partnership with Ushahidi within hours of the earthquake and provided a key element of volunteer support in reviewing and curating incoming crisis data.

"By creating an SMS short code, an already common approach in the entertainment industry enabling audiences to vote for America's Idol or next Top Model has been harnessed successfully for humanitarian assistance and has proven to be not only a much faster procedure for gathering information in disaster situations but also the most legitimate, as it ensures participation of the affected population, often neglected in humanitarian response due to time constraints," concludes Nicole Hofmann, task team coordinator for the Standby Volunteer Task Force for Live Mapping (SBTF), an online volunteer initiative for crisis mapping that was founded as a consequence of the various loosely connected projects for Haiti's recovery.

Both the strength and the weakness of crowdsourced information management derive from its participatory openness. Making sense of received text messages and categorizing information appropriately have been major challenges. The importance of filtering and verifying text messages or crowdsourced information in general is among the lessons learned from the Haiti experience. Most criticism of crowdsourced crisis mapping as it was conducted in Haiti refers to an overflow of information and lack of coordination with humanitarian agencies for immediate action (Harvard Humanitarian Initiative, UN Foundation, and Vodafone Foundation 2011). But the active online community has progressed immensely since then. The SBTF has already incorporated lessons learned and improved processes through simulations and trainings for deployments using a much more structured framework and taking a comprehensive, modular approach to the various steps of crisis mapping.

Another important step in creating useful crowdsourcing platforms lies in continued access to and updates of information, which are keys for sustained efforts in information management. The collaboration between Mission 4636, Ushahidi, and especially the Haitian diaspora evolved into a sustainable project, as it provided for the transition to local actors, who later contributed to project coordination and mapping. The involvement of diaspora and local participants from the outset of the Mission 4636 and Ushahidi collaboration ensured local ownership and outstanding ongoing results. Using the established process of crowdsourcing information as well as other data for planning crisis response constitutes one of the major successes of this project. Although transfer of the Ushahidi platform for Haiti to a local group was not originally planned for, in November 2010 the crisis-mapping project was reprogrammed and transferred in full to the local software company, Solutions, and is now operating under the name Noulà.¹⁶ Noulà has since established a new service number for future SMS reporting and has become further integrated with aid agencies working in Haiti.¹⁷ The transfer to local groups will probably characterize longer-term projects and initiatives and remain an afterthought in crisis response efforts.

Evolution: The Experience of Libya

In 2011 crowdsourced crisis mapping had matured to a level of reputation and professionalism that led the United Nations to acknowledge the opportunities presented by social media and their role in sharing and managing information. Several disasters have occurred since Haiti's earthquake, and volunteers involved in the Haiti mapping have supported other crowdsourced mapping initiatives, such as in the wake of the recent earthquake in Chile and floods in Pakistan. The consequences of this continued engagement have been twofold: first, it has helped to build knowledge and experience in the volunteer squad; second, it has demonstrated a reliable commitment of volunteers, proving that an organized structure could harness real-time crowdsourcing effectively when it is needed.¹⁸ The SBTF was established during the annual conference of the Crisis Mappers Standby Task Force,¹⁹ which had provided the space for exchanging information in a horizontal network, but had not set up standby teams for supporting crisis mapping.

The rationale for pushing a conventional organization like the United Nations Office for the Coordination of Humanitarian Affairs (UN OCHA) to adopt previously unconventional methods of gathering information needs to be highlighted against the backdrop of current events and lack of current, effective tools for gathering information in order to save lives. In the popular insurrection in the Middle East and North Africa region, or what became known as the Arab Spring, Egyptian activists organized protests through social media, among other outlets including Facebook and Twitter, and brought about the resignation of an authoritarian leader. Other countries followed the Tunisian and Egyptian examples, and by February a civil war had unfolded in Libya. An oil-exporting, middle-income country that had not experienced a major disaster or conflict in its

territory for decades, Libya did not have any UN OCHA presence within the country. The lack of firsthand information and the pressing need to make decisions and prepare timely relief in the crisis have been cited by Patrick Meier, cofounder of the SBTF and director of crisis mapping and strategic partnerships at Ushahidi, as the major reasons why UN OCHA requested the SBTF's crisis-mapping support for Libya. The credibility of crowdsourced information management and awareness of the relevance of social media are given as secondary reasons for the longest and most comprehensive deployment of the SBTF so far (Meier 2011b).

Yet the professionalism of this passive,²⁰ crowdsourced, crisis-mapping exercise, capitalizing on the opportunity to collect information from several conventional and unconventional sources remotely and in real time, was the key factor in the success of the Libya crisis map (map 5.1).²¹ UN OCHA (2011, §9) notes, "The Volunteer and Technical Community helped collect more information ... in 48 hours than we usually do in the first week." The SBTF used the Ushahidi platform, incorporating various processes and technologies in a way that produced comprehensive and valid results in the form of a real-time crowdsourced map comprising interlinked geo-spatial and other data.

Various teams were responsible for individual steps: addressing technology issues concerning the platform and features, monitoring the media and translating as well as categorizing information, approving reports and verifying information and sources, and conducting geo-location and analysis. Almost 500 volunteers from more than 50 countries committed to support the Libya deployment,

Map 5.1 Libya Crisis Map



Source: www.libyacrisismap.net (no longer operational).

providing a tremendous amount of relevant information on events, food or medical needs, destruction or existence of infrastructure, and humanitarian responses. This information was consolidated in analytical reports and used to facilitate ad hoc tasks such as coordination. This real-time availability of information was unprecedented, especially considering the limited resources. Furthermore, the direct link between crisis-mapping results and humanitarian responders, often criticized as the major flaw of crowdsourced activities, was ensured in this project because UN OCHA itself requested the SBTF deployment and thus was involved directly in the process, matching the gathering of crowdsourced information with the needs of humanitarian responders.²²

Whereas the Haiti team faced several challenges for which no plan was in place, the Libya crisis map team was better prepared to embrace the challenges. Dealing with sensitive information that could either have been abused for tactical purposes or have endangered the people who supplied the information, the map was only accessible via secure log-on procedures to volunteers working for the deployment and to partner agencies. Nicole Hofmann, SBTF task team coordinator and active volunteer in various teams, recalls virtual team meetings in which confidentiality versus open access was discussed: "It was due to Patrick Meier that this was realized with a time delay between adding reports and being able to view them in the public map, so that information was available first to those who would act according to the code of conduct established."

The Libya crisis map represented the first full-fledged cooperation between crowdsourcing online initiatives and conventional international organizations. For team coordination, on-the-job training, and the spirit of group work, Skype chat groups became a key method of communication for home-based online volunteers involved in crowdsourced crisis mapping. Hofmann is convinced that this mode of communication played a major role in the success of the SBTF's performance: "Although work flows were generally provided, ... new volunteers often have questions which require instant clarification in a live crisis-mapping process. During deployments, the Skype group chat window was active 24/7 for live support, and volunteers guided and informed each other simultaneously. If anything important needed to be clarified, coordinators reacted immediately ... on valuable inputs concerning creation or re-definition of information categories. ... The SBTF follows a very cooperative, low-hierarchy teamwork approach that is very effective in the fast-paced environment live crisis mapping has to cope with."

The SBTF (2011) summarizes the most important lessons learned from this collaboration with UN OCHA as follows. First, it is of pivotal importance for the motivation of volunteers to provide feedback to them on how their work is making a difference, in this case through daily updates on exactly how the live map is being used to inform decision making and response. To this end among others, there is a need to dedicate more official UN project staff to distribute tasks and provide feedback to volunteers, to better categorize information, to further standardize communication procedures, to provide translation services for local languages, and to better train volunteers. Duration of the SBTF

deployment needs to be agreed upon and respected *ex ante*. Protocols on exit strategies should be devised. It is very problematic to change the rules of the game during project implementation: the decision to transfer from the initial private map to a public map introduced security concerns that ultimately limited the recruitment of volunteers with crucial local knowledge. In its own report on lessons learned, UN OCHA additionally emphasizes the importance of recognizing the efforts and results of volunteers and the need to protect individuals, for example, by omitting data that could be used for military reconnaissance, by not soliciting or storing information that could be personally compromising, and by using open-source standards and applications that are accessible to everybody (UN OCHA 2011, §3, 4).

Participatory Postconflict and Recovery Mapping in Sudan: Building Peace and Stability

The transition from an emergency to a postemergency situation is always highly complex.²³ On the one hand, the population is still severely affected and in need of humanitarian support; on the other hand, local actors usually call for a longer-term perspective on peace building and recovery. In most cases, government wants to take the lead, but is still facing severe capacity or legitimacy deficits. Sudan, both during and after the Comprehensive Peace Agreement period,²⁴ is one of the best examples of the manifold challenges arising from such a transition. Sudan's security, political, and socioeconomic situation is extremely intricate, constantly shifting, and subject to regional crises. Many groups have been working on poverty reduction and peace building: two UN peacekeeping missions, almost all existing UN agencies, more than 300 international aid agencies, and more than 2,000 national NGOs work in partnership with the governments both north and south to deliver critical humanitarian and development aid. These challenges and complexities call for effective tools to assist in identifying, prioritizing, and coordinating interventions that can enhance peace and stability.

The UNDP Sudan CRMA project has been working since 2007 with key international, government, and community actors across the country's conflict-affected areas to enhance the coordination and prioritization of their efforts. The core objectives of the CRMA are to build local capacities for crisis mapping, conflict analysis, and strategic planning; to institutionalize evidence-based and conflict-sensitive planning across the UNDP portfolio; to enhance knowledge management and coordination for the UN Delivering as One initiative; as well as to explore innovative geographic information system (GIS)-enabled platforms and participatory methods for early warning and conflict prevention. The project is based on four principal, interconnected mechanisms.

First, a core component of the support has been to establish an Information Management Working Group (IMWG) of the UN Country Team, the first of its kind at the country level, to facilitate the development of a coherent information management approach for UN agencies and international NGOs working in cooperation with local authorities and institutions. The IMWG has developed

a formal information-sharing platform that provides all participants in recovery and development with a common, basic package of relevant baseline information for their individual analysis, planning, and programming efforts.²⁵ Every quarter, the IMWG produces a state-by-state digital atlas containing multisectoral and geo-referenced information from all participants. Data sets are sourced and dated to facilitate queries and temporal analysis. Maps can be exported, saved, and printed.

Second, the CRMA has worked with government and community actors to develop a blueprint for state- and community-level participatory mapping workshops that capture community perceptions of priorities and emerging risks. Priorities and risks are grouped along socioeconomic and security lines and are identified for specific geographic and thematic areas. Qualified participants are drawn from a socially and culturally diverse group of people, seeking to ensure as wide representation as possible. The aim is to capture the full spectrum of dynamics in any given locality or state. Participation has included youth representatives, cultural and religious leaders, women's unions, and pastoralists' and farmers' unions, among others. This community-level process provides a link between the state and the population, with the findings feeding directly into state policy.

Third, the community perceptions of threats and risks with regard to crisis and recovery are fed into a process of analysis and planning support. Making use of the interactive community-mapping process as well as the baseline data collected through the information management platform, the CRMA supports the efforts of state governments, UN agencies, and NGOs to ensure that their strategic planning, design, and targeting of interventions are evidence based and conflict responsive. Working together with state governments, the CRMA supports the development of a state situation analysis using a mixed-methods and participatory approach. This joint analysis, in turn, becomes the backbone and base of evidence for the government's own development and revision of its five-year state strategic plans. Further, it facilitates coordination and collaboration among all major actors in designing joint needs assessments, disaster risk reduction programs, early warning systems, as well as monitoring and evaluation.

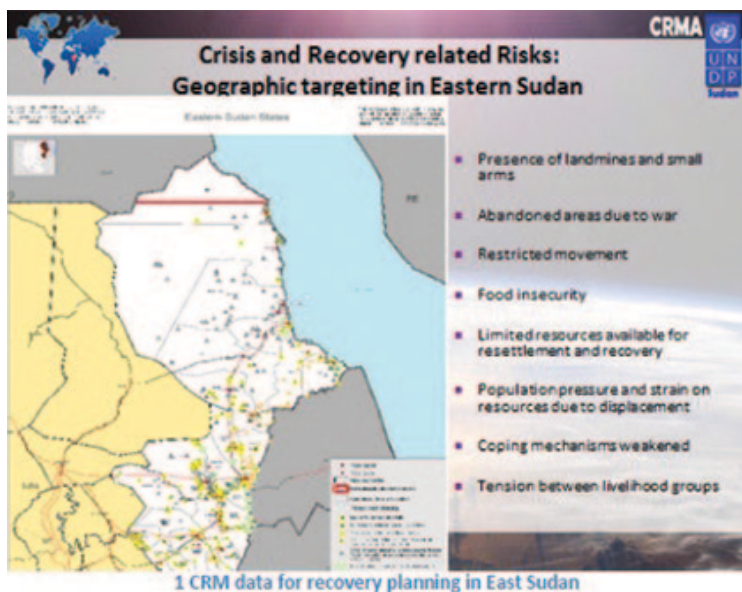
Fourth, a comprehensive program of capacity development focuses mainly on developing the capacity of local authorities and ensuring that the processes, skills, and tools needed for continued data collection, knowledge management, and analysis for evidence-based and conflict-responsive strategic planning are institutionalized.

The participatory mapping and analysis of community perceptions of threats and risks serve multiple purposes. They can help to identify priority areas for intervention across sectors in a crisis and recovery setting by localizing concentrations of threats and risks pertaining to a particular issue, such as community security, access to health services, or environmental degradation. As all threats and risks are located at the village level, the community can provide detailed contextual information about a specific location of interest, shedding light on

how different threats and risks interact and affect the community locally. Beyond collecting grassroots information, this process creates an important opportunity for diverse communities to come together in the aftermath of a crisis to discuss their challenges, perceptions of the situation, and views of the future. This process fosters open dialogue in a safe setting, where opinions are heard and valued rather than silenced and criticized. Although peace building and indeed state building per se have not been articulated as discrete focuses of the CRMA, the crisis- and recovery-mapping process has become an important tool in bringing communities and local authorities together, gaining a broader understanding of the situation, and jointly developing priorities for the future. The process has thus contributed to strengthening the relationship between state and society, building trust, and improving the legitimacy and accountability of the state.

Realizing the potential for combining participatory methods with innovative GIS-enabled tools and new technologies, the CRMA is exploring the possibility of designing an early warning system for its local government partners. This system would be based on the continuous monitoring of a carefully selected set of minimum essential indicators from the crisis and recovery mapping (CRM) data, updated via an SMS reporting tool, and integrated into a specifically tailored database, whether online or offline, using a combination of crowdsourcing and trusted networks of community-based reporters (map 5.2). This information would provide the foundation for thematic and area-based conflict analyses that

Map 5.2 Example of Geographic Targeting Based on CRM Data in East Sudan



Source: United Nations Development Programme Sudan, Crisis and Recovery Mapping and Analysis (using Information Management Working Group data).

Note: CRM = crisis and recovery mapping.

would, in turn, inform the targeting and design of conflict prevention and peace-building interventions. The ownership and management of the early warning system would be firmly embedded within the local institution, which could request support from international bodies for the particular interventions identified and designed, if needed.

Several factors were important to the success of the CRMA project.

Its *diverse professional staff* had experience in a range of techniques for collecting, processing, and analyzing data, from traditional GIS to participatory community security workshops, using a variety of new and established data-processing and data-mapping technologies, with a strong focus on volunteered GIS data.

Its *design and rollout of an incentive mechanism* for all major actors helped the project to achieve framework agreements with both the northern and southern Sudanese governments at the federal and state levels, on the one hand, as well as data-sharing agreements with all major UN agencies, large NGOs, and donors, on the other. Its key selling point was its usefulness for all actors involved as well as the neutrality of the UNDP as the convening power behind it. In addition, the joint analysis brought all major actors together and provided a solid platform for coordinated and evidence-based designing and targeting of programs.

The *implementation modality* also was a key factor in its effectiveness. The project design was adaptable, context driven, client oriented, and easily replicable. Data layers provided through the IMWG range from hydrology, soil types, and land cover to demography (including internally displaced persons and returnee populations) and distribution of basic services and who-does-what-where-when.

A *participatory and consultative approach* to ensure leadership and ownership of the process was firmly embedded in the project's counterparts. The inclusiveness of the CRM process was at the core of implementation; while validating and updating available layers of IMWG data, two-day participatory mapping workshops carried out at the state and local levels generated new grassroots information related to accessing essential resources like water, land, and basic services as well as monitoring small arms proliferation, counterproductive behavior, rule of law deficits, ecological hazards, and livelihoods-related issues. With 25 to 35 participants each and inclusive in terms of gender, age, livelihood groups (for example, farmers and nomads), government, traditional, and religious leaders, as well as civil society representatives, workshops brought together widely representative groups.

The CRMA data analysis followed an *inductive approach*. Important themes were grounded in the data instead of developed from a preexisting framework. This approach sought to explain perceived threats and risks to communities by identifying key characteristics, relationships, and processes. The categories used throughout the workshop were chosen by the participants themselves and derived from the topics of discussion brought forward. These categories were then fed into an overall human security framework in the CRM database, with indicators derived from the data. The CRMA's methodology was informed by participatory rural appraisals, participatory learning action, and participatory

postconflict needs assessment, the UNDP's conflict-related development analysis, conflict vulnerability assessments, human security frameworks, and mixed-methods research. According to Margunn Indreboe Alshaikh, UNDP CRMA replication and policy coordinator, "Through our participatory approach and close collaboration with state authorities and local communities, CRMA has gained the trust of its counterparts and opened doors to topics of discussion hitherto silenced and delegitimized. Using innovative technologies and GIS, sensitive issues are contextualized and depoliticized through novel correlations and visualizations, allowing previously contesting actors to jointly identify priorities for intervention and response. Participatory mapping has become a key tool in managing complexities in peace building and planning for postcrisis settings."

Interoperability was achieved. The information management support tools were based on GIS-enabled, open-source software and were compatible with DevInfo, UN OCHA's ProMIS, and other GIS platforms to ensure full interoperability with key partners' internal databases and tools. Additionally, the standardized digital atlas package produced through the IMWG was based on ArcReader GIS software, which was not restricted by current embargos. The digital atlases were distributed on compact discs to government, donors, and NGOs.

From the onset of the project, *mobile applications*, through Nokia Data Gathering, were explored as alternatives to paper forms, palmheld devices, or laptops for collecting data from remote locations. In designing an early warning system, the CRMA is also evaluating various SMS reporting tools, adding a feature to the database tool developed in-house for this purpose, and allowing for crowdsourcing of information as well as basic information sharing within a trusted network of rapporteurs.²⁶

Local government ownership was crucial for achieving the desired impact on government policies. To ensure local ownership of the process, the CRM and the analysis and planning support processes were organized at the request of and in collaboration with local authorities. The current products, such as the state situation analyses, are nationally owned and have become milestones in and of themselves.

Other Applications of Crowdsourcing

This section details other applications of crowdsourcing, including efforts to improve transparency through election monitoring in Guinea, to improve governance through transparency in Kenya, to harness international pressure for accountability in fragile states, and to support economic development.

Elections Monitoring in Guinea: Crowdsourcing for Transparency and Civil Rights

In 2009 a crowdsourcing and citizen-reporting platform was established by the civil society group Alliance Guinea in the aftermath of massacres, mass rape, and political suppression carried out by soldiers loyal to then president Dadis Camara (Charbonneau 2009). Only after Camara left office did Guinea begin to

reestablish democracy, albeit on shaky foundations and amid much public tension, skepticism, and fear. The atrocities committed under Camara's direction occurred on September 28, 2009, and Alliance Guinea was founded the next day in response. The main objectives of Alliance Guinea were to promote transition to full democracy by providing a platform for information sharing and advocacy and to serve as an informational resource for international agencies, analysts, human rights groups, and activists. In addition, Alliance Guinea was established in part to provide a crowdsourcing system for citizen reporting on elections, and, due to Camara's unexpected removal from power, it served to do just that. After many months and several delays, a relatively transparent and free election was held on September 7, 2010.²⁷

Guinée Vote 2010 Témoin (GV10), the contribution primarily of Alliance Guinea, was based on the Ushahidi platform following the success of Ushahidi's implementation in Kenya. Using a combination of SMS, e-mail, Web form, and Twitter, GV10 collected information on the electoral process. Both positive and negative incidents were categorized in eight ways: violence, harassment, campaign events, polling stations, "what went well," counting and results, and reporting of material problems.²⁸ Between the launch of the program and late November 2010, after the election, GV10 had collected more than 2,000 reports from around the country. The associated map indicates that participation was generally widespread and more concentrated in areas with higher population density, which may suggest an encouraging trend of unbiased representation.

GV10 was erected in partnership with the African Elections Project, an independent election monitoring and information group,²⁹ the National Independent Election Committee, and major telecom companies (Vasdev 2010). Several key factors were present to make GV10 operable. A central information platform was provided, and participation was made widely available through a variety of mobile technologies. Every citizen with access to a phone was able to send in text reports. However, GV10 also fell short in many critical areas of effectiveness: it did not have sufficient moderators or the capability to verify the majority of reports; it did not have the means or the authority to respond to reports; its access to mobile communications was at the mercy of the government; and it was exposed to potential measurement error and "poison data," for example, people committing false reports in order to discredit a competing group or politician (Vasdev 2010).

The posture of state authority in Guinea and its will to suppress GV10 through various means were inconsistent. After the massacres, aimed at peaceful demonstrators protesting Camara's rise to power via a coup d'état, the government was in a weak position to block SMS and other communications infrastructure, due in part to uncertainty over leadership and intense international pressure. Mobile communication services were blocked for a short while, but they were reactivated quickly amid widespread public outrage.³⁰ The massacres, later coined Bloody Monday, also marked one of the earliest and most significant uses of mobile telephone cameras to broadcast information about human rights abuses in Africa, although the suppression of information and confiscation of

cameras and mobile devices followed.³¹ More recently, in the wake of the more successful 2010 election, the government again blocked SMS after violence broke out in response to initial results.³² This action severely hampered the ability of GV10 to collect reports from concerned citizens. It is clear that the Guinean government, whether military in character or not, has perceived mobile communications and crowdsourcing as a threat to general stability as well as to the domestic and international legitimacy of the government.

Another fundamental question is whether or not crowdsourcing data for an election constitutes election monitoring or whether genuine election monitoring requires the data to be actionable and for some intervention to take place, if needed, based on that information. In short, does the efficacy of the data and coordinating institutions inform whether the task at hand is “citizen reporting” or “election monitoring” in a technical sense? As a discipline, election monitoring involves deploying trained monitors to polling stations and having them report structured information back to the monitoring body. Furthermore, the presence of election monitors instills a stronger sense of procedure, discourages intimidation, and deters fraud and irregularities.³³ Citizen reporting and the presence of a system such as GV10 may serve to empower citizens and encourage better government behavior, deter fraud, and make those who may disrupt elections more cautious. But the argument can also be made that, as an informal process with limited capabilities to respond to allegations of tampering, intimidation, or worse, citizen reporting should not replace formal election monitoring. Nonetheless, the two disciplines are highly complementary, and more crossover between the two would yield better results. In particular, it would allow for better triangulation of data from official monitors with crowdsourced data. For example, if GV10 included data provided by independent election monitors, citizens and agencies would have more structured and verifiable information with which to design interventions and political or advocacy campaigns.

Guinée Vote 2010 Témoin demonstrates that Guineans want broader participation in governance, more transparency, and more consistent democratic rule. Furthermore, the posture of the government relative to civil society activities, coordination, and crowdsourcing makes a difference, and institutional and technical linkages to crowdsourced information are needed to ensure the efficacy of such an effort.

Open Data Initiative and Huduma in Kenya: A Paradigm Shift for Governance?

In July 2011 the government of Kenya officially made available its statistics and data on government spending, health and poverty indicators, public service delivery³⁴ including primary schools, and much more. By releasing its data to the public, the government opened the possibility for developers, statisticians, civil society groups, and researchers to analyze, engage, and criticize state management, budgeting, and welfare in entirely new and empirical ways. It also opened the doors to evaluation and criticism more than ever before. With significant support from the World Bank and the Mapping for Results Program of the

World Bank Institute, Kenya took the first steps toward empowering citizens through openness of information. A desired outcome of the Open Data Initiative is to crowdsource independent developers who can create new and useful tools, applications, and analyses for institutions, companies, and the general public, making use of new resources to hold government more accountable.³⁵ Ideally, greater transparency through open data on government spending, parliamentary proceedings, and public service delivery could also have a dampening effect on corruption in the country.

Several elements of governance are present in this new environment of openness and the types of data made available. Self-selection of participants is evident, as citizens with expertise in statistical analysis will be motivated to make use of raw government data. Other applications being built around or in concert with the Open Data Initiative could cater to broader segments of Kenyan society. A central platform for information dissemination, Kenya Open Data could function as a neutral hub for citizens of all kinds to use. While it is unclear whether the government will be able to provide timely, accurate, or consistent data, all of these steps are encouraging. Of course, observers and Kenyan citizens alike hope that the government's new commitment to transparency will breed self-correcting behavior and improve the quality of life of citizens and responsiveness of government to the needs of the people.

So far, there has been significant demand for data, a hopeful trend for proponents of crowdsourcing new applications and uses of government data for improving governance and development. As of August 17, 2011, Kenya Open Data had received more than 100 individual requests for specific data sets, often accompanied by brief justifications or proposals for the development of new applications. It is encouraging that the government has recognized the demand for data and responded appropriately. However, not all sections of the Kenyan government have been equally supportive of this move.

In concert with the Kenyan government's Open Data Initiative, an Ushahidi-based crowdsourcing platform called Huduma (Swahili for service) was launched in February 2011. Huduma employs SMS, e-mail, and Twitter to allow citizens to submit reports on infrastructure needs, supply or utility shortages, and other problems with government services and conduct. The system is modeled after the U.S. community service SeeClickFix. There are six categories for reporting: education, governance, health, infrastructure, water, and justice. Contributions can be submitted anonymously, but must show the location of the sender.

Several Kenyan ministries attended the launch of Huduma,³⁶ but the extent and quality of their participation and willingness to use Huduma in their operations have yet to be proven. Huduma was scheduled to become fully functional nationwide in August 2011.³⁷ However, as of that date, Huduma had not become operative beyond a pilot phase. The slow take-up demonstrates the importance of crowdsourcing prerequisites as elaborated by Sharma. It will be interesting to see when the government will engage in dialogue with its citizens by handling their reports, which, it is hoped, will make specific local issues and needs visible to the global public for the first time.

Avaaz: Crowdsourcing Political Pressure on a Global Scale

Avaaz, launched in 2007, is an international campaigning tool to generate support or pressure around international and transnational issues and influence governments and institutions to act in the interest of human rights, peace, environmental protection, and other causes. Fragile state governments such as Sudan, Syria, and Republic of the Union of Myanmar are prominent campaign targets.³⁸ Avaaz is a strong example of universally participatory crowdsourcing, as anyone with an e-mail address and an Internet connection can participate; the issues that Avaaz takes on are identified (in part) by member polls taken on a yearly basis.³⁹ Anyone can become a member, log in, and sign an Avaaz petition, in a show of issue solidarity with others around the world. There are ongoing campaigns to end violence afflicting the people of Darfur in Sudan,⁴⁰ to stop the practice of “corrective rape” in South Africa,⁴¹ and to highlight many other affronts to basic human rights. By demonstrating that hundreds of thousands of people worldwide can collaborate and have meaningful, effective collective voice, Avaaz has revolutionized how people think about difficult international issues.

Many of the issues that Avaaz campaigns for are highly emotionally charged and carry significantly broader resonance in the developed world than in developing countries. The vast majority of Avaaz’s membership is found in developed countries. The map provided in 2010, when Avaaz had 5 million members (more than 9 million, as of August 2011), shows a concentration of people with access to the Internet, wealth, consistent and good health care, as well as other indicators of high levels of development. To illustrate the point, after major campaigns in 2009, including an online petition against violence, disease, and hunger in Zimbabwe, an online petition against the 2008 Mumbai terrorist attacks, and an online petition against the Anti-Homosexual Bill in Uganda, citizens of the countries whose interests are represented by the campaigns are significantly less active in them than are citizens in nontarget and more developed countries. For example, in 2010, there were 398,798 members from Canada (1.2 percent of the population), but only 1,293 members from Nigeria (0.0008 percent of the population).⁴²

While this fact in no way diminishes the point that Avaaz genuinely does crowdsource public sentiment to provoke political change, it does indicate the self-selection aspect of Avaaz’s online petitions (in-country demonstrations are a much different story), which attract persons with ample stability to be concerned with “what is affecting others” and less need to be concerned with “what affects me.” It can thus be seen as an external complement to in-country campaigns as well as to “speaking out for the oppressed” and creating international pressure where internal opposition is being silenced (for example, Sudan and Syria), which, of course, is particularly relevant in fragile states. A similar, albeit smaller, role is played by online diaspora networks, such as the Facebook group “Sudanese in support of Sudanese protests,” to mention just one of many examples.

Web-based activism has been the subject of pointed criticism, despite its apparent benefit to international causes, crowdfunding for disaster relief, and

successes in changing legislation, pressuring the United Nations, and becoming a major player in progressive international campaigning. One of the most consistent criticisms of Avaaz is that it makes activism too easy. The term “clicktivism” has been coined in reference to the ability of regular people to participate in serious international issues from a distance and at little personal cost.⁴³ But despite criticism, Avaaz has had a real impact and demonstrated the value of collective voice. It is completely funded by its membership and thus is a powerful tool for crowd-funding. The organization’s budget for 2009 was US\$4,328,357,⁴⁴ with which it carried out several campaigns and made significant charitable donations.

As expected of a crowdsourcing tool, the Avaaz site does not reflect a high diversity of political views; it represents international mainstream opinion with a Western bias. However, there is no geographic barrier to participation, which means that any citizen with the right access to technology, regardless of political thinking, can participate.

Avaaz is generally not a resource for launching start-up political movements, not useful for organizing movements on a small scale, and not useful for introducing entirely new issues to the general public. Avaaz campaigns focus on issues that are widely known among internationalists, veritable “household-name” conflicts, crises, chronic abuses of human rights, and environmental issues. But Avaaz does have grassroots appeal; its strength derives from its immense membership and the power of collective action and petition. In this way, Avaaz represents crowdsourcing for political action in the broadest sense possible.

Crowdsourcing for Economic Development and Good Governance

Crowdsourcing not only is useful in directly addressing governance issues, but also can indirectly influence governance by increasing market efficiency as well as by offering additional income sources, thus empowering small-scale producers and poor workers. These types of crowdsourcing could offer an acceptable entry point to crowdsourcing for fragile states, even when authoritarian governments block initiatives that directly address governance issues. In addition, donors and development program implementers can use crowdsourcing as a cost-effective tracking and monitoring tool.

Crowdsourcing Market Information

Better awareness of market prices reduces low-income farmers’ risks when deciding whether to plant a particular crop as well as where to sell it. mCollect is a trade-in-hand initiative started in 2006 by the International Trade Centre with the intention of fostering an integrated pro-poor value chain by enhancing export opportunities and trade throughout West Africa (Livingston 2010). Using crowdsourcing, mCollect makes it easier for the information collectors to gather domestic prices straight from the local agricultural markets. The information is then distributed via SMS to interested farmers and businesses in the region. mCollect has been implemented in Burkina Faso, Liberia, Mali, and Senegal. Another trade-in-hand initiative, Mobile Marketplace, enables small-scale

producers to advertise their products to wholesalers and exporters via mobile phone. This greatly expands the opportunities to connect buyers and sellers beyond farmers' or traders' immediate locales (Livingston 2010). TradeNet/Esoko, RESIMAO, and Community Knowledge Worker by the Grameen Foundation are similar programs in Africa that aim to collect and make market data and agricultural information, crowdsourced from farmers, available on the Web and via mobile phones in order to enhance market efficiency.

txtEagle/JANA: Generating Additional Income for Low-Income Populations

Based on the concept of Amazon's Mechanical Turk,⁴⁵ txtEagle enables mobile phone users to earn small amounts of money by completing simple tasks on their mobile phones for corporations. The corporations pay these ad hoc workers either in airtime or in mobile money. The tasks range from translation, transcription, marketing surveys, and software localization. The txtEagle (now rebranded JANA) was established in 2009 and provides an additional source of income for rural and low-income populations in Kenya and Rwanda.

Crowdsourcing for Monitoring and Evaluation

Beyond tracking human rights abuses and monitoring elections, crowdsourcing can also serve as a complementary monitoring and evaluation tool for development and humanitarian programs by providing a direct feedback loop from the beneficiaries. This is of particular interest in fragile states, where access to target areas and the presence of unbiased national partners are rarely guaranteed. Concerns about the validity and representativeness of crowdsourced data neglect to appreciate the fact that any local organization that selects participants for a survey or focus group or for training deals with similar criticism. Although it cannot provide perfectly unbiased sampling, crowdsourcing has the potential advantage of being open to anyone with access to a mobile phone. Where organizations need to have situational awareness, they rely on ad hoc sources, which allows the objectivity and credibility of the information to be scrutinized. Crowdsourcing platforms have already installed methodologies to cross-check information, minimizing the possibility of error or abuse.

The UNDP Sudan produces threat and risk maps that assess spatial risks that can inform programmatic response in Sudan's postconflict states. The use of such spatial risk assessments, updated over time, is an even more compelling use of crisis maps to support decision making. Due to a changing postconflict environment, projects designed six months ago may no longer have the intended impact, as the situation may have changed rapidly on the ground. Regular updates on the changing context allow donors and government to adapt their programming. Crisis mapping can play a pivotal role in this decision making. Patrick Meier (2009) proposes "base mapping" for monitoring and evaluation, using three types of mapping: the current situation (baseline), the ideal situation (intended impact), as well as ongoing mapping to measure progress from the baseline to the intended impact (Meier 2009).

An Analysis of Crowdsourcing Success Factors

To what extent do the cases illustrate Sharma's model of critical success factors? Table 5.2 offers a preliminary analysis. We have allocated scores to each case against Sharma's critical success factors, while accepting the limitations of this subjective ranking. The highest-ranking cases have the lowest scores within each success factor. Avaaz ranks highest, offering the largest scale of participation and level of activity. Second come the Haiti cases, providing the fastest response, high levels of linkages and trust, and clearly defined crowdsourcing process. The first Ushahidi pilot (postelection violence monitoring) comes third, due to its pilot character and smaller scale. Fourth is txtEagle/JANA, ranking lower due to its nonparticipatory governance. Its overall rank is still quite high, because its business model could become a best practice for commercial crowdsourcing (especially for market research and data validation) in developing countries, including fragile states. The crisis-mapping example of Libya comes fifth, due to its use of a limited, bounded crowd and its strong separation between trusted and non-trusted sources. Still this model derives from its use in an extreme-conflict environment and was successful in rapidly collecting valuable data at much lower cost than would have been possible through other means. The GV10 case attracted much interest during the elections of 2010 and is still accessible online. However, the platform does not generate long-term motivation of a crowd, and during its early implementation in 2010, many errors were made in the governance and crowdsourcing process. The Huduma case is ranked quite low, mainly because its full-fledged implementation was still pending. The CRMA mapping project is not based on crowdsourcing, but on a "bounded" crowd, and its model is very costly. However, it provides a reference for the cost-effectiveness of crowdsourcing for governance improvement. Finally, mCollect is not accessible online, and the International Trade Centre, its initiator, has not reported its current level of participation.

Finally, we ask, to what extent does crowdsourcing contribute to empowerment, transparency, accountability, and participation? The direct advantage of ICTs in developing countries is that they provide a widespread telecommunications infrastructure as well as common tools and applications, such as crowdsourcing software, that allow crowds of users—citizens—to communicate with each other as well as with government, civil society organizations, and businesses at a relatively low cost, especially compared to the cost of traveling to another city to communicate with each other. Through matching of crowdsourced with official "open" government data, crowdsourcing enables public service provision or elections to be publicly monitored and documented, which helps to increase government transparency.

In a next step, government institutions publicly responding to and taking action on crowdsourced citizen reports can significantly improve their downward accountability to their citizens. In turn, government's effective response can incite more citizen participation. This interaction between government, on the one side, and citizen crowds, on the other side, can create a spiral of citizen empowerment,

Table 5.2 Rating of Cases Using Sharma's (2010) Model of Crowdsourcing Critical Success Factors

<i>Project</i>	<i>Infrastructure (available vs. needed)</i>	<i>Vision (shared within the crowd)</i>	<i>Human capital (available vs. needed)</i>	<i>Financial capital (needs)</i>	<i>Linkages and trust</i>	<i>External environment</i>	<i>Motivation (crowd alignment with long-term goals)</i>	<i>Criteria of governance (of the system)</i>	<i>Process of crowdsourcing</i>	<i>Score (and ranking among cases)</i>
First Ushahidi pilot in Kenya	2	2 (short term)	2	1 (small initiative)	3 (high trust among initiators and by donors, but little trust in government)	2 (high interest due to crisis; no government blockage)	3 (high intrinsic motivation, but short-term oriented)	1	2 (relatively small scale)	18 (3)
Ushahidi in Haiti	3	2 (short term)	1	1 (in-kind sponsoring)	2 (high level of trust among initiators, but less with international NGOs)	2 (same as previous)	3 (high intrinsic motivation, but short-term oriented)	1	1	16 (2)
CRMA in Sudan	2	3 (limited target group)	1	4 (UN and donor financed)	4 (little trust between civil society and government) and no crowdsourcing!	3 (UN and donor facilitated, but little or no trust in or by government)	4 (long-term oriented, but no crowdsourcing; motivation more extrinsic)	5 (no crowdsourcing; risk of biased selection of stakeholder representatives)	5 (limited participation, no public view of the map)	31 (8)
SBTF crisis mapping in Libya	2	3 (differences between core group and volunteers)	1	3 (UN and donor financed plus volunteers)	4 (high trust between volunteers, but low trust in crowd data and no trust in government)	3 (UN and donor facilitated, but little or no trust in or by government)	3 (short-term orientation; limited participation and crowd)	3 (limited crowdsourcing, risk of bias)	3 (complex rules, lack of training of volunteers)	25 (5)
GV10 in Guinea	3	3 (very heterogeneous)	2	3 (donors, crowd)	3 (donor funded, low government trust)	3 (UN and donor facilitated, but little or no trust in or by government)	4 (long-term goal, limited crowd)	3 (unclear rules of participation)	3 (limited, varying interest)	27 (6)

table continues next page

Table 5.2 Rating of Cases Using Sharma's (2010) Model of Crowdsourcing Critical Success Factors *(continued)*

<i>Project</i>	<i>Infrastructure (available vs. needed)</i>	<i>Vision (shared within the crowd)</i>	<i>Human capital (available vs. needed)</i>	<i>Financial capital (needs)</i>	<i>Linkages and trust</i>	<i>External environment</i>	<i>Motivation (crowd alignment with long-term goals)</i>	<i>Criteria of governance (of the system)</i>	<i>Process of crowdsourcing</i>	<i>Score (and ranking among cases)</i>
Huduma in Kenya	2	1 (long-term oriented, with government as key partner)	2	3 (government, donors, crowd)	3 (government buy-in, but low trust because of delays in launching the platform)	2 (government buy-in)	5 (platform not yet operational beyond pilot)	5 (platform not yet operational beyond pilot)	5 (platform not yet operational beyond pilot)	28 (7)
Avaaz	1	1	1	1 (very high number of supporters; crowdfunding)	3 (relatively high trust in initiators, but due to scale; anonymous, less collaboration within the crowd yet)	2 (international advocacy rather than relationship with fragile state governments)	2 (high altruistic motivation from developed countries, but less interest from developing-country citizens)	1 (transparent, simple rules for issue selection and participation, crowdfunding)	1 (see Criteria of governance)	13 (1)
mCollect	3 (weaker infrastructure in partner countries)	3 (externally driven)	2	3 (high long-term funding needs; donor-sponsored)	3 (UN and ITC support, but unclear if local actors and clients involved in setup)	3 (potential to make markets more efficient, but unclear business driver)	4 (unclear long-term business driver)	5 (no live view of the platform)	5 (no information on data collection process found online)	31 (9)
txtEagle (now: JANA)	2	1 (entrepreneur driven)	2	3 (high start-up, scale-up needs; business funded)	2 (initiative supported by large telecoms)	2 (local government support, serving real demand)	2 (business model: crowd receives micropayments)	3 (business driven, but no crowd participation in design)	2 (see entry under Motivation)	19 (4)

Note: 1 = very good; 5 = nonexistent or very bad. CRMA = Crisis and Recovery Mapping and Analysis; GV10 = Guinée Vote 2010 Témoin; ITC = International Trade Centre; NGOs = nongovernmental organizations; SBTf = Standby Task Force; UN = United Nations.

whereby public accountability and civic participation incentivize each other. While assumptions and challenges are evident in each of these stages and link to each other to some extent, these cases show how crowdsourcing has the potential to enable empowerment, transparency, accountability, and participation equally. Yet, as Sharma's model and our analysis of the cases also show, some sociocultural, technological, economic, and political factors are necessary, and the more factors are present, the more successful a crowdsourced initiative is likely to be.

Recommendations for Donors: Applying Crowdsourcing and Interactive Mapping for Socioeconomic Recovery and Development in Fragile States

Crowdsourcing systems present donors with an opportunity to promote local ownership and facilitate broader participation in development and governance. "The default position for many people working in ICT4D [information and communication technology for development] is to build centralized solutions to local problems—things that 'integrate' and 'scale.' With little local ownership and engagement, many of these top-down approaches fail to appreciate the culture of technology and its users. ... My belief is that users don't want access to tools, they want to be given the tools. There's a subtle but significant difference. They want to have their own system, something which works with them to solve their problem" (Banks 2009).

Crowdsourcing requires significant contributions by volunteers. Yet processes driven by volunteers are less predictable and less controllable than formal processes, which in a fragile state can support the credibility of information rather than undermine it. Is institutionalizing crowdsourcing (as in the case of national elections) always the best option? Fragile states are often characterized by a lack of trust in public institutions. Therefore, ownership of the crowdsourcing, as in the case of Kenya's Open Data Initiative, becomes a key issue, both on the side of government and on the side of potential users. The willingness and personal engagement of volunteers is based on a vision or specific objective that an official donor or government institution may not have. An initiative that is perceived to be externally driven will only work in an emergency, crisis, or similar short-term context. However, donors can play a pivotal role in facilitation.

Donors can maximize the impact of crowdsourcing for better governance in fragile states in meaningful ways. Exploring the role of donor and government institutions in reactive and proactive crowdsourcing, the focus should first be on creating awareness among officials to foster an understanding of the opportunities arising through this new mechanism. Crowdsourcing tools first need to be acknowledged by a wider group of professionals and become a valid input to guide decision making for these institutions. Rather than establishing crowdsourcing mechanisms in isolation from initiatives on the ground, official institutions need to find ways to cooperate with the existing online communities and to provide information and facilitate crowdsourced processes. The principle for the use of country systems in partner countries is equally applicable to civil

society mechanisms, including traditional as well as virtual forms. In order to transform reactive crowdsourcing into proactive peace building, democratization, and development programs, community engagement is indispensable to ensure transition from short-term projects to sustainable processes with broad-based ownership. Freedom of the press as well as the capacity and role of the media—especially radio—cannot be underestimated in helping crowdsourcing initiatives to reach a critical mass of contributions. Media can act as “data intermediaries,” translating the results of crowdsourcing data to the general public (USIP 2011). Of course, donors can provide funding, training, and technical advice to local institutions or groups setting up a crowdsourcing initiative as well as media training and coverage of the crowdsourcing initiatives.

In a fragile state, donors can make a crucial contribution at the level of the enabling environment. Donors are well equipped to expand the political space for crowdsourcing by presenting the opportunities and advantages of crowdsourcing and interactive mapping to government authorities and by considering the government’s interests in improving development planning, reducing transaction costs, adding value to e-government services, increasing aid transparency, and improving relations with the public. Donors can thus suggest incentives for governments to support, or at least permit, crowdsourcing processes.

Donors possess the convening power to bring all major stakeholders to the table. In addition, donors can offer financial incentives for local governments to collaborate, such as performance-based investment funds. Local governments’ implementation and performance then can be effectively monitored and evaluated by a civil society-based crowdsourcing mechanism.

The case of Sudan demonstrates that donor-supported offline participatory mapping continues to play an important role in breaking down ethnic-social divisions and engendering inclusiveness—and thus conflict sensitivity—in community recovery and development planning. The process of collaborative governance and decision making is a factor in preventing and mediating conflict, the importance of which cannot be overestimated. After the map has been agreed on, the mapping results can be digitized by donors or governments and thus made available to the public. Furthermore, participatory mapping can be used to train communities and authorities at a later stage and can be enriched by using mobile phone-based crowdsourced tracking of development progress by local community members. An innovative design of the planning process that combines traditional one-time participatory community mapping for planning and evaluation with continuous interactive mapping for tracking and monitoring creates a (typically absent) feedback loop to and from the local level. Such a design can help to build social capital and prevent the emergence of parallel institutions—for example, crowdsourcing by youth versus offline representation by traditional leaders.

Crucial conditions for success are to design the intervention as a process, not a project, and to allow the data generated through participatory mapping and crowdsourcing to guide overall planning decisions. The inductive approach used

in Sudan illustrates how mapping categories were developed by stakeholders, instead of being dictated by facilitators. Planning data generated through such processes can legitimately inform state-level and national development and poverty reduction strategies. In general, platforms that start at the community and local levels—for example, for collaborative community planning—seem to be the most promising, since their lower initial level within government reaps more immediate benefits and presents a weaker political threat to government leadership.

The cases presented in this chapter outline opportunities for donors to encourage governments to share information with the public, to foster inclusive access to telecommunications, to prevent harassment of crowdsourcing activists, and to create critical links with civil society and the private sector for the inclusion of population groups hitherto subject to the digital divide. Such advocacy could be part of the political dialogue within a budget support program or a significant multidonor program. The willingness of donors to gather and share their data, making them publicly available through an open-aid mapping process with crowdsourced feedback loops involving beneficiaries, can be an important incentive for governments to become more open. Ideally, crowdsourcing initiatives for development will be closely linked to an open government program, as attempted by the Kenyan government.

However, open government programs cannot be driven by donors; they need to possess strong ownership by government leaders in order to have a chance of success. Last but not least, by means of their reputational impact, donors can create linkages with and trust of a crowdsourcing initiative, especially in a fragile state where strong initial government support may not be an option. By supporting local crowdsourcing activities, donors as well as international campaign platforms such as Avaaz can link interactive mapping with other media and thus help to focus the international community and mainstream media on human rights violations and other important issues. The sheer potential of doing so could discourage abuses, prevent conflicts, and increase government accountability in the future. If a divisive situation develops into a crisis, donors can provide technologies and systems and mobilize external support that help to protect crowdsourcing activists and platforms from government abuse, as shown in the case of Libya.

In fragile-state contexts, crowdsourcing can be made more difficult by government regulations and actions, but it can also draw more attention and motivations from the crowd, especially if the options to express opinions are otherwise limited. As the early experience has shown, crowdsourcing and GIS-based interactive mapping are already widely used by citizens within fragile states. Whether they will have a significant impact on governance depends largely on how governments relate to this emergent phenomenon. Embracing its potential, especially for participatory development planning and monitoring of issues by citizens, could increase governments' accountability and ultimately their legitimacy, while efforts to stifle crowdsourcing initiatives could further destabilize regimes.

Notes

1. "When Jeff Bezos opened Amazon's database to savvy outsiders, he didn't tell them what to do with it. He announced, 'We're going to aggressively expose ourselves!' He left it to the crowd to figure out how best to use the site, and he profited mightily" (Libert 2010).
2. Marshall McLuhan and Barrington Nevitt introduced the concept in their book *Take Today* (McLuhan and Nevitt 1972, 4). In *The Third Wave*, Alvin Toffler coined the term "prosumer" when he predicted that the role of producers and consumers would begin to merge (Toffler 1980).
3. Categorization proposed by Carl Esposti on www.crowdsourcing.org.
4. E-government is the use by government agencies of information technologies (such as wide area networks, the Internet, and mobile computing) to transform relations with citizens, businesses, and other arms of government. These technologies can serve a variety of ends: better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, or more efficient government management. The resulting benefits can be less corruption, more transparency, greater convenience, more revenue growth, and lower costs. See <http://go.worldbank.org/M1JHE0Z280>. E-democracy is the use of information and communication technologies and strategies by "democratic sectors" within the political processes of local communities, states, regions, nations, and the global stage. See Clift (2003).
5. See the Wikipedia page on open-source governance, http://en.wikipedia.org/wiki/Open-source_governance.
6. Facebook has about 750 million users, out of which 250 million are mobile users (www.facebook.com). With 9.5 million members and 92,000 groups in 45,000 communities, Meetup is one of the world's largest networks of local groups (www.meetup.com).
7. For a party platform, see the 2004–05 Green Party of Canada Living Platform or the Swedish Active Democratic (Aktiv Demokrati) Party. For a think tank or citizen advocacy group platform, see the global policy campaign platform, Avaaz.org. For a citizen journalism forum, see the Participatory Media site, with more than 190,000 contributors and about 10 million page views per month.
8. According to the organization New Tactics in Human Rights, tactical mapping is "a method of visualizing the institutions and relationships sustaining human rights abuses and then tracking the nature and potency of tactics available to affect these systems, ultimately serving as a tool to monitor the implementation of strategy." See www.newtactics.org/en/tactical-mapping.
9. For example, see www.movements.org.
10. For an example of crowdfunding of microcredit, see www.Kiva.org.
11. Duval (2010, 40), citing Vice Admiral Thad Allen, in charge of the U.S. Coast Guard during the second half of the Hurricane Katrina rescue operation.
12. For the World Bank's definition of fragility and conflict, see <http://go.worldbank.org/6B4932MAV0>.
13. For example, through Web-based deliberation platforms (such as Discourse DB) that apply frameworks for issue-based argument instead of simple polling.
14. See www.en.wikipedia.org/wiki/Human_rights_defender.

15. Sysop vandalism or wiki administrator vandalism is the destruction of content by people who have wiki administrator or “system operator = sysop” privileges that other editors do not have. Because of the unequal power relationship, such individuals are thought to behave worse than ordinary users when it comes to editing content. See <http://openpolitics.ca/tiki-index.php?page=sysop+vandalism>.
16. See <http://www.noula.ht>.
17. See “Collaborating Organizations and History,” Mission 4636 (<http://www.mission4636.org/history/>).
18. Interview with Nicole A. Hofmann, July 7, 2011.
19. See www.crisismappers.net.
20. Crowdsourced volunteers analyzed social and public media data, not data submitted by individuals on the ground, as was the case in Haiti.
21. According to UN OCHA (2011, §39), there were problems only with 5 out of 500 volunteers.
22. From interviews with Nicole A. Hofmann, July 7, 2011.
23. Summary of sources provided by Margunn Indreboe Alshaikh, CRMA replication and policy coordinator, UNDP Sudan, and the authors’ own experience.
24. The Comprehensive Peace Agreement was established in 2005 and officially ended with the declaration of independence of the Republic of South Sudan on July 9, 2011.
25. The success of this working group at the national level has led to the setup of a regional IMWG for Darfur and now an independent one in the Republic of South Sudan.
26. The project can be followed on Twitter at @undpcrma.
27. “Guinea Sees Big Turnout in Presidential Run-Off Poll,” BBC News, November 2010 (<http://www.bbc.co.uk/news/world-africa-11705147>).
28. “Guinée Vote 2010 Temoign,” Alliance Guinea (<http://www.allianceguinea.org/ushahidi/>).
29. See <http://www.africanelections.org/aboutus.php>.
30. “Guinea Blocks Citizens from Sending SMS Messages,” Alliance Guinea, November 2010 (<http://www.allianceguinea.org/2010/11/guinea-blocks-citizens-from-sending-sms-messages/>).
31. “Bloody Monday,” Human Rights Watch, December 16, 2009 (<http://www.hrw.org/en/reports/2009/12/16/bloody-monday>).
32. “Guinea Blocks Citizens from Sending SMS Messages,” Alliance Guinea, November 2010 (<http://www.allianceguinea.org/2010/11/guinea-blocks-citizens-from-sending-sms-messages/>).
33. “Cutting through the Hype: Why Citizen Reporting Isn’t Election Monitoring,” MobileActive, May 2010 (<http://mobileactive.org/cutting-through-hype-why-citizen-reporting-isnt-election-monitoring>).
34. See <http://huduma.info/>.
35. See <http://opendata.go.ke/>.
36. “Update on Huduma,” SODNET, July 2011 (http://www.sodnet.org/index.php?option=com_content&view=article&id=139%3Ahuduma-a-step-ahead-in-the-journey-of-reforms&Itemid=1).

37. "Kenya Open Data Initiative: A Developer Perspective," Afrinnovator.org, July 2011 (<http://afrinnovator.com/blog/2011/07/20/kenya-open-data-initiative-a-developer-perspective/>).
38. See <http://www.avaaz.org>.
39. "About Avaaz.org", Avaaz (<http://www.avaaz.org/en/about.php/>).
40. "Sudan: Enough Is Enough," Avaaz (http://www.avaaz.org/en/sudan_enough_is_enough/?slideshow).
41. "South Africa: Stop Corrective Rape!" Avaaz (http://www.avaaz.org/en/stop_corrective_rape_6/).
42. See "CIA World Factbook," Central Intelligence Agency (<https://www.cia.gov/index.html>); see "Membership Map," Avaaz, May 2010 (http://www.avaaz.org/en/5_million/?press).
43. See "What Is Clicktivism?" (<http://www.clicktivist.org/what-is-clicktivism/>).
44. See "Expenses and Financial Information, 2009 Fiscal Year," Avaaz (http://www.avaaz.org/en/avaaz_expenses_and_financial_information).
45. One of the first successful large-scale commercial crowdsourcing marketplaces, Amazon's Mechanical Turk provides a platform for computer programmers to coordinate a crowd of workers to perform tasks that computers are unable to do yet, such as translating, writing product descriptions, or identifying performers on music compact discs. The workers can browse among existing tasks and complete them for a monetary payment.

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Check My School: A Case Study on Citizens' Monitoring of the Education Sector in the Philippines

Jennifer Shkabatur

Check My School (CMS) is a community-monitoring project that aims to promote transparency and social accountability in the Philippine education sector by tracking the provision of services in public schools. The project uses a blended approach, which combines on-the-ground community monitoring with the use of information and communication technology (ICT). CMS was initiated and designed by the Affiliated Network for Social Accountability in East Asia and the Pacific (ANSA-EAP), a nonprofit foundation hosted by the Ateneo School of Government at the Ateneo de Manila University. With funding from the World Bank's Development Grant Facility and support from the World Bank Institute, ANSA-EAP provides opportunities for civil society organizations (CSOs) and local and national governments to learn from one another's experience in implementing social accountability initiatives. CMS is its flagship project.

Although CMS is a young project (the pilot began in early 2011), it has already attracted the worldwide attention of governments, CSOs, international donors, and the media (box 6.1). CMS is often cited as a "good practice" in the field, and the governments of several countries, including Indonesia, Kenya, and Moldova, have shown interest in adapting the CMS model to their country contexts. The major lessons learned by CMS during its first pilot year can be

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Box 6.1 Media Coverage of Check My School

Check My School (CMS) has received an array of international coverage, including references in the *Guardian*, a recent TEDGlobal talk, and many blogs related to development, technology, and innovation. Caroline Anstey, former managing director of the World Bank, considers CMS to be a key example of how civil society organizations have innovated with technology to achieve better and more efficient service delivery (Anstey 2011).

useful both to other countries wishing to replicate the CMS approach and to entrepreneurs, who are generally interested in ICT for social accountability interventions. This case study sheds light on the design and implementation of the first pilot cycle of CMS in public schools across the Philippines, which took place during the school year of 2011–12.

The main findings of this case study are as follows. First, impactful ICT for social accountability initiatives requires a *dedicated CSO leader*, who would tailor the intervention to local sociopolitical conditions, customizing the ICT design of the initiative, building capacity, addressing technological challenges, mobilizing resources, leading implementation of the project, and ensuring its sustainability. Second, while civil society initiatives often take an adversarial stance by attempting to expose government faults, a *constructive engagement approach*, which emphasizes the need to engage public officials and civil society groups in a sustained dialogue and collaborative problem solving, can have more of an impact for the long term. Third, *capacity building* should be an integral part of the project design, development, and implementation. One cannot assume that potential partners or counterparts engaged in an ICT-based initiative would have the necessary capacity to design, implement, and sustain the project. Fourth, the *ICT-related components* should be considered carefully. Although ICT presents a great opportunity for developing countries, it can also pose considerable implementation challenges. The incorporation of ICT in societies with low rates of Internet penetration and lack of technological skills is particularly difficult, and the CMS experience shows the need for versatility and flexibility in integrating ICT tools in citizen-monitoring projects. In the case of CMS, ANSA-EAP benefited from strong local networks and added the online CMS component only later.

This chapter is structured as follows. It begins by introducing the CMS approach, outlining the roles of the main stakeholders responsible for the CMS project, and discussing the enabling conditions that have made CMS possible. This is followed by a review of the technological aspects of CMS, a step-by-step analysis of the first CMS project cycle in 2011, and an examination of the project's accomplishments and challenges. It then provides lessons from the first year of operation, outlines the next phase of CMS, and offers recommendations. A final section concludes.

Introduction to Check My School

CMS is an innovative social accountability platform that uses open data to promote citizen participation in the monitoring of public school performance in the Philippines. It aims to improve the provision of services in public schools across the Philippines by pursuing three major objectives:

- *Data validation.* Enhance the integrity and accuracy of Department of Education (DepEd) school data by gathering information in schools across the country and comparing the data collected to official DepEd data.
- *Community engagement.* Increase community awareness and involvement in the provision of education services by monitoring the conditions of public schools and engaging community members in collaborative problem solving around issues of concern identified by schools.
- *Information provision.* Facilitate public access to accurate information about the public education system. As part of this objective, CMS aims to present educational data in a consolidated and easily accessible format on an online platform, enabling citizens to comment on the data and identify issues of concern.¹

CMS is based on the “constructive engagement” principle of ANSA-EAP: engage citizens and government agencies in monitoring public service provision, facilitate dialogue, and use collaborative problem solving. It combines community mobilization and monitoring activities with an online platform enabling information on service provision to be easily accessed, shared, and monitored.

The method of operation is fairly simple. DepEd provides all of the available data on public schools in the Philippines, and ANSA-EAP consolidates and publishes these data in a user-friendly format on the CMS website. Simultaneously, ANSA-EAP recruits and trains “infomediaries”—community leaders and socially active individuals—from all over the country. These infomediaries establish contacts with schools and local DepEd officials and mobilize volunteers from the local community. They then visit the selected schools and validate the official DepEd data; that is, they gather new data, compare the official data to the actual conditions of the school, talk to school administrators, and encode the collected data. The validated data are then published on the CMS website, and discrepancies between the official data and the newly collected data are highlighted. This information reveals the needs and shortages experienced by schools and the areas in which service provision can be improved.

The CMS model assumes that community-driven data validation and easy access to data via the Internet will enable government officials and citizens to highlight issues of concern and identify potential solutions. Specifically, CMS provides DepEd with (a) a data validation tool that complements its Basic Education Information Services (BEIS) system and (b) a problem identification mechanism that can assist DepEd in improving its performance in public schools across the country. It also provides local community members with accurate

information about the quality of service provision and the performance of public schools. This information may help CSOs and community members to understand the major issues of concern in the education sector and to develop collaborative solutions.

Stakeholders

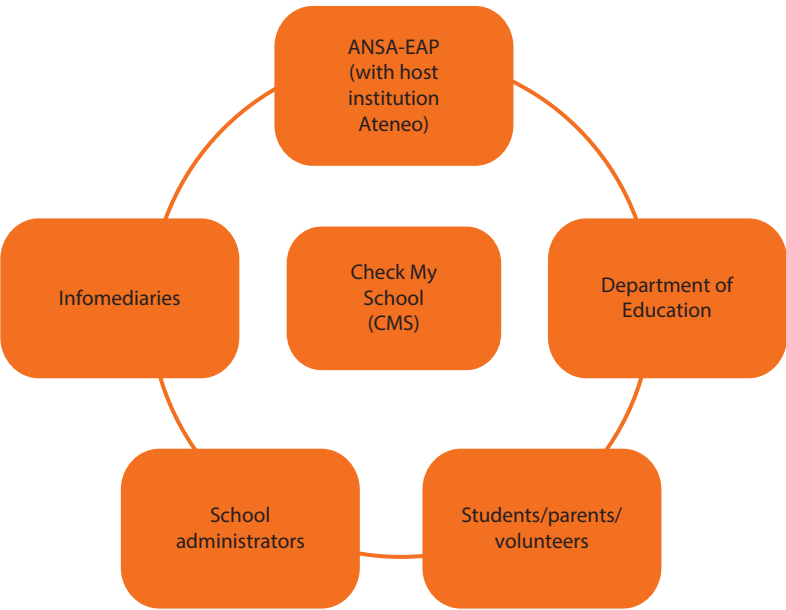
Figure 6.1 outlines the major stakeholders in the CMS initiative.

ANSA-EAP

ANSA-EAP is a regional network that supports activities that provide opportunities for CSOs and local and national government agencies as well as other interested stakeholders to learn from one another’s experience of implementing social accountability initiatives. Dissemination of country experiences and lessons is central to the network’s effort to link communities of practitioners across the region. ANSA-EAP develops cross-country collaboration on social accountability and demand-side governance initiatives, provides technical assistance to enhance the quality of social accountability initiatives in a country, delivers training programs on specific tools and techniques, and shares country experiences and lessons from social accountability and demand-side governance initiatives regionally and globally.

ANSA-EAP pursues the principles of the *World Development Report 2004* (World Bank 2003), which defines the deficient provision of public services as a social accountability challenge. Therefore, the monitoring efforts of ANSA-EAP

Figure 6.1 Major Stakeholders in CMS



Note: ANSA-EAP = Affiliated Network for Social Accountability in East Asia and the Pacific.

revolve around the delivery of public services in a variety of areas. ANSA-EAP serves as the nexus between government and its citizens and is the link between stakeholder groups that rally around the social accountability approach to good governance. The network's primary approach has been to build the capacity of its partners through learning-in-action programs, which are customized to fit the needs and context of each partner group and are focused on building a competency or skill set for social accountability.

As part of its activities, ANSA-EAP develops innovative ways to integrate ICTs into social accountability projects. Innovative, cutting-edge technologies—such as the use of mobile phones, interactive digital mapping, geo-referencing, and visualization of data—enable citizens and CSOs to link directly with service providers and public resource managers, as well as to access and share available data. The goal of ANSA-EAP's ICT ventures is to bring about greater government responsiveness to citizens, more widespread and open sharing of public data, and improved service delivery. Projects like CMS demonstrate how ICT endeavors can support the implementation of ANSA's four pillars of social accountability.

Ateneo School of Government

A recognized center for research and policy work, the Ateneo School of Government has strong experience with social accountability tools and programs, strong links with agencies, civil society, and governments engaged in governance work, and a reach beyond the Philippines. The school has played an important role in the CMS project. Because the Ateneo School of Government is widely known for its pioneering and promising social accountability initiatives, the affiliation with the school has helped ANSA-EAP to establish partnerships and connections with DepEd officials, CSOs, youth organizations, and others.

Department of Education

ANSA-EAP and the Philippine DepEd signed a Memorandum of Agreement in June 2011 defining the CMS project as “a joint social accountability undertaking of the DepEd and the ANSA-EAP.” DepEd committed to provide the school data held by the following units and offices: BEIS, Procurement Service, Physical Facilities and Schools Engineering Division, National Education Testing and Research Center, Instructional Materials Council Secretariat, and Budget Office. These data include information on budgetary allocations, enrollment, number of teachers, number of textbooks delivered to schools, number of computers and chairs available in schools, number of classrooms and restrooms, and a variety of test results.

DepEd helped ANSA-EAP to establish relations with the schools where CMS validations would be conducted, coordinated closely with ANSA-EAP in analyzing the information collected as part of CMS validations, and ensured the cooperation of DepEd officials in the regional, division, and district offices. Furthermore, it committed to receive, respond to, and act on feedback, comments, and recommendations made by citizens through the CMS website.

Infomediaries

“Infomediaries” recruited by CMS to organize and lead validations in schools across the country played a central role in implementing the CMS initiative.

ANSA-EAP recruited 20 infomediaries for its first CMS pilot in 2011—8 men and 12 women, ranging from 19 to 51 years of age. By and large, these were university students who were active in student organizations, leaders of youth organizations (such as the Boy Scouts), employees in education-centered non-governmental organizations, coordinators of parent-teacher associations (PTAs), and program officers of good governance programs in colleges and universities.

According to the original design of CMS, infomediaries were to serve as a bridge between the online CMS platform and local communities, posting information on behalf of communities and helping them to establish their online presence. However, because of the limited functionality of the website during the pilot validation, the actual responsibilities of infomediaries were more substantial: they were entrusted with preparing and organizing the entire CMS validation process.

After completing a three-day training provided by ANSA-EAP, infomediaries selected schools for CMS validations, coordinated the necessary details with school administrators, mobilized volunteers, conducted CMS validations, consolidated the data, reported the data back to ANSA-EAP, and took part in some of the online CMS activities. Some of the infomediaries took part in Operation Thank You (a problem-solving mechanism) and attempted to help schools to solve problems identified during the validation process.

CMS Infomediaries



Source: © www.checkmyschool.org.

Although their work was time-consuming, infomediaries were not compensated. They received only a small amount of money to cover some expenses. Hence they were motivated to participate by something other than financial reward. Infomediaries who were interviewed for this chapter cited as reasons for participating in the project their interest in the education sector, their willingness to gain leadership and organizational skills, their intention to start a public service career in the education sector, and their sense of social responsibility toward public schools in their communities.

School Administrators

School principals coordinated the validation activities of infomediaries and volunteers, helping them to collect information about school facilities and conditions and to identify problems. Interviews conducted with principals showed that school administrators were generally willing to cooperate with CMS because of DepEd's endorsement, their hope that the assessments would lead to more resources, and their perception that the project would improve the existing channels of communication between principals and DepED officials:

- *DepEd's endorsement.* Infomediaries initiated their contacts with school principals by presenting them with a written endorsement of CMS activities signed by a DepEd official. Because school administrators are subject to multiple reporting requirements, principals regarded CMS as simply another DepEd monitoring exercise. As such, the majority of principals did not question the CMS initiative and felt obliged to cooperate with it.
- *Shortage of resources.* Although schools want to play a larger role in managerial decisions, they often lack the funds necessary to implement those decisions. Maintenance and operational budgets are often insufficient, and schools are under constant pressure to engage local stakeholders—parents, alumni, students, teachers, local CSOs, and local political representatives—in raising funds and helping to solve the school's problems. The principals interviewed explained that they were willing to open the doors of their schools to "anyone who might offer help," even if such help was not guaranteed.
- *Improved channels of communication.* Existing communication channels between school principals and DepEd officials are often ineffective, lengthy, and cumbersome. Formal reports that are prepared by school administrators are first sent to local division offices and only then forwarded to regional and national offices. Because the results of CMS validations were to be reported directly to DepEd, school principals regarded CMS as a way to improve their communications with DepEd officials. Principals saw no harm in cooperating with the CMS process.

Enabling Conditions and Methods

CMS was designed and implemented in the midst of two large-scale developments in the Philippine education sector: (a) decentralization of the public education system and (b) a general move toward policies that improve the transparency and accountability of public service provision. These two general developments created an environment conducive to the CMS project and facilitated the collaboration between DepEd and ANSA-EAP. In addition, several civil society-led initiatives paved the way for CMS: Textbook Count (for textbook delivery), Bayanihang Eskwela (for school building construction), and Bantay Eskwela (for furniture inventory). The social accountability approach promoted by ANSA-EAP was also conducive to the success of the initiative.

Decentralization

DepEd is one of the biggest bureaucracies and public service providers in the Philippines. It employs more than half a million teachers, administrative officials, and school personnel and oversees a significant procurement budget. After long struggles with inefficiencies and leakages, the Philippine public education sector has been undergoing a major decentralization process in the past decade. As part of this change, DepEd has been implementing the Basic Education Sector Reform Agenda (BESRA) since 2006 (see Philippines, Department of Education 2005). BESRA uses a decentralized, participatory, and community-centered approach to improve the performance of the public education system. It pursues two major objectives:

- *Empower schools.* Empower school administrators to identify education priorities and make independent decisions related to designing curriculum, hiring teachers, maintaining facilities, and handling other management tasks. Along with this delegation of responsibilities to the local level, BESRA introduced monitoring mechanisms that enhance the transparency and accountability of school administrators to DepEd and local division superintendents.
- *Engage communities.* Involve those who are directly affected by the performance of a school in its management. BESRA aspires to engage the stakeholders of each school in its decision-making and problem-solving processes. Stakeholders may include students, parents, teachers, administrators, local politicians, local businesses, local CSOs, and other interested community members.

Transparency, Accountability, and Data Inaccuracies

DepEd has also been supporting various initiatives that aim to make its own performance more transparent and accountable to the public. In particular, the BEIS system collects and consolidates a variety of data on service provision in public schools and makes the information accessible online to the public. However, this system is not fully functional, and data are difficult to access. The department was therefore interested in collaborating with CMS to improve

these functionalities. Accordingly, DepEd stressed in its Memorandum of Agreement with ANSA-EAP “the need for a systematic Web-based public information facility on education services that is easily accessible and user-friendly and facilitates citizens’ engagement with government to improve such services.”

Under the current system, school administrators are required to complete numerous time-consuming forms and reports about the condition of their schools. These forms and reports are then submitted to local division offices, which consolidate and send them to the regional and national offices. This process is inefficient, cumbersome, and prone to mistakes and errors (especially in parts of the country where it is not fully computerized). Acknowledging that the official school data in its possession may be incomplete or inaccurate, DepEd recognized the need to have independent third parties validate these data.

Prior Civil Society Initiatives

DepEd has welcomed civil society efforts to provide complementary, third-party monitoring of service delivery programs. For example, CMS builds on the work of Government Watch (G-Watch), an anticorruption project launched by the Ateneo School of Government in 2000. G-Watch aimed to improve the provision of a variety of public services by establishing CMS partnerships with relevant government departments, obtaining official procurement data from them, and using the data as a benchmark for monitoring the delivery of public services. As a result of its monitoring activities, G-Watch exposed a range of procurement problems, including missing textbooks, unfinished school buildings, overpriced medicines, and delayed road construction.

The Textbook Count project, launched in 2002, was the most effective component of the G-Watch program. The project mobilized volunteers, who monitored the delivery of textbooks to public schools throughout the country. Textbooks were delivered to schools on a predetermined schedule, and volunteers at the schools checked and counted the number of books delivered. Although Textbook Count assumed responsibility for training, organizing, and overseeing the activities of volunteers, its partner CSOs were responsible for mobilizing them. The project collaborated with election watchdogs and youth organizations, such as the Boy Scouts and Girl Scouts of the Philippines. Furthermore, to improve the delivery of textbooks to far-flung villages, Textbook Count collaborated with the Coca-Cola Company and used its distribution vehicles to transport books.

Textbook Count tracked tens of millions of textbooks. It reduced the price of textbooks by 40 percent, improved the accuracy of textbook deliveries, and shortened the DepEd’s procurement cycle from 24 to 12 months (Parafina 2006). Despite these considerable accomplishments, the Ateneo School of Government found the project difficult to sustain.

Social Accountability Approach

ANSA-EAP regards the link between civil society and state agencies at the national and subnational levels as crucial because social accountability efforts that *engage* state agencies are more likely to yield positive outcomes—that is, to achieve the objectives of participatory governance and build the capacity of both civil society and government (box 6.2).

The process of constructive engagement involves two key components: sustained dialogue and collaborative problem solving. In line with these principles, ANSA-EAP links citizen groups in a network that advocates and practices social accountability. The social accountability approach is based on four pillars: organized and capable citizen groups, government champions who are willing to engage, appropriate context and cultural conditions, and access to information.

- *Civil society capacity.* ANSA-EAP regards the capacity of civil society actors to be a key factor of successful social accountability initiatives. The level of organization of citizen groups, the breadth and scope of their membership, their technical and advocacy skills, and their capacity to mobilize resources and effectively use media are all central to the success of a social accountability action. In many cases, a social accountability initiative begins with a capacity-building effort, aiming to ensure that groups possess sufficient tools to organize themselves and voice their concerns.
- *Reform champions.* Government's responsiveness to citizen participation depends on the particular political, legal, social, and economic environment in which the social accountability initiative takes place. According to ANSA-EAP's vision, space for citizen participation is opened in government institutions that have reform champions. An important part of social accountability initiatives is therefore finding and nurturing those champions from the ranks of bureaucrats, government officials, and public servants.
- *Attention to context.* The parameters for social accountability are determined largely by contextual and cultural conditions. To a large extent, social

Box 6.2 Social Accountability

According to the Check My School (CMS) approach, social accountability has two elements: constructive engagement and citizen monitoring. Constructive engagement advances the outcomes of citizen monitoring—for example, by institutionalizing monitoring initiatives as government policy over the long term. In the same way, citizen monitoring opens more arenas for constructive engagement, whether by expanding monitoring initiatives to other government processes (for example, public financial management, procurement, and budget monitoring) or by expanding them to other agencies and sectors. Both constructive engagement and citizen monitoring are fundamental to the practice of social accountability, and social accountability is not possible if either is absent.

accountability action must respond to and operate within the larger context and framework of a sector, nation, or region. The appropriateness of the social accountability approach—including tools, techniques, and other mechanisms—is determined by a variety of political, sociocultural, legal, institutional, economic, and technical factors. Any social accountability initiative should therefore be based on careful analysis and nuanced understanding of the enabling and restraining conditions within which the initiative will have to operate.

- *Availability and reliability of public data.* Public data, analyzed and interpreted correctly by competent citizen groups, lie at the core of constructive engagement. Social accountability fails when data and information are either absent or willfully denied. In this respect, access to information can mean both (a) physical access to source documents and (b) availability of information in a format that is understandable to users. Because not all information originates in documents, access may include access to people who possess the information (such as public officials).

Technology

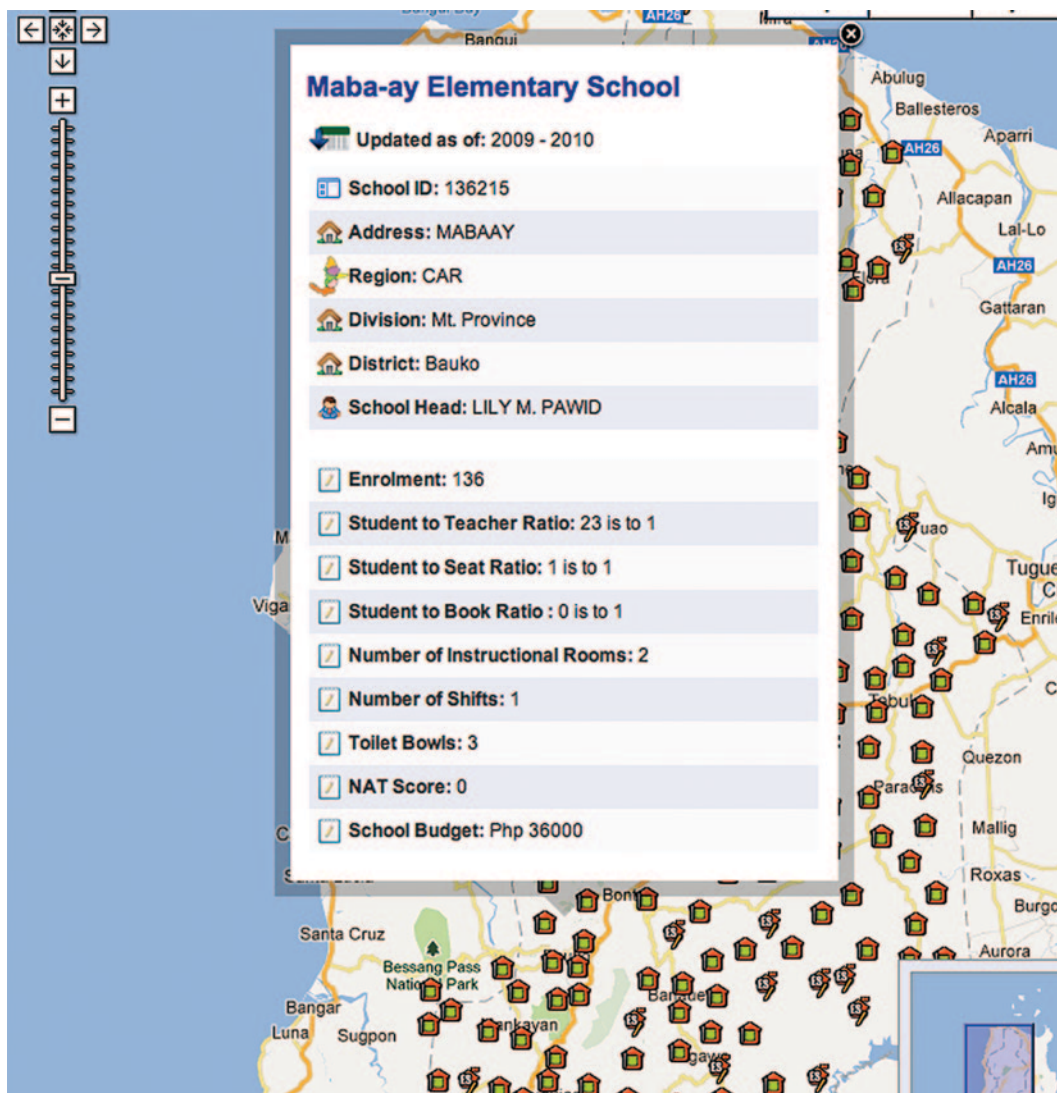
The CMS project offered ANSA-EAP an opportunity to explore the integration and use of ICT tools in citizen monitoring: “The advent of Internet technology has given the government another facility to fulfill its mandate of properly collecting, storing, disseminating, and using information for public benefit. Various government agencies in the Philippines, however, have not yet taken advantage of this facility in a more programmatic and systematic manner” (ANSA-EAP 2011, 5). Checkmyschool.org, the online CMS platform, aimed to fill this gap. ANSA-EAP created a platform consolidating all of the available government data on the public education system in the Philippines, posted the data it obtained from DepEd, and instructed infomediaries to upload the information they collected during school validations.

Overall, these data covered more than 44,000 public schools in the Philippines. However, because DepEd did not possess GPS (global positioning system) coordinates for all these schools, the interactive map contained only 8,684 schools—the ones for which GPS coordinates were known.² The platform was supposed to include key indicators and measures of performance and present official data from DepEd alongside data validated by CMS in an easily accessible and user-friendly way. In addition, the CMS platform aimed to facilitate community engagement around education issues, encouraging users to post feedback about different schools and respond to emerging issues.

As part of this vision, the original CMS website contained the following features:

- An interactive map of the Philippines giving the precise location of schools and the data DepEd possessed on each of the schools (map 6.1)
- A search engine for locating specific schools through geographic filters

Map 6.1 Interactive CMS Map



Source: www.checkmyschool.org.

- A “services” tab allowing users to contribute to the CMS project, encouraging them to “volunteer to update information,” “send us your feedback,” “join monthly polls,” “respond to issues,” “send GPS,” and “participate in special programs”
- A “communities” tab providing the names and contacts of organizations and individuals active in the public education sector
- An “archives” tab containing a variety of CMS-related documents, such as DepEd reports and relevant news

- A “FAQ” tab containing general information about the purpose of CMS and the functions of the website
- An SMS (short message service) function allowing users to send reports directly to the website.

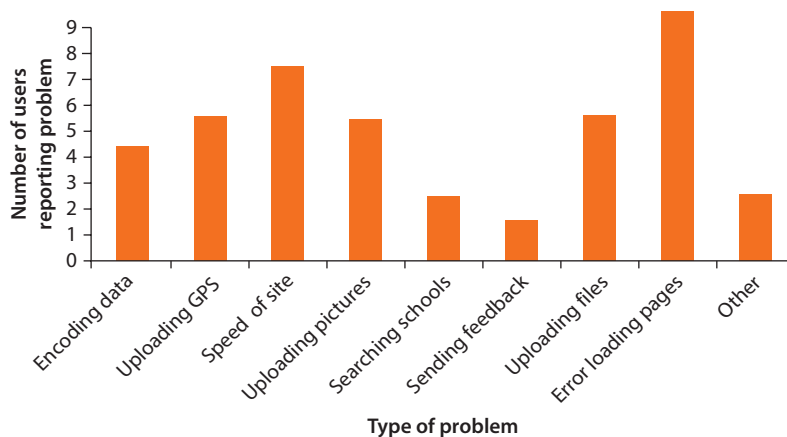
Using ICT in pilot activities proved to be especially challenging. Internet penetration in the Philippines is estimated at around 30 percent, and ICT literacy is relatively low. The extent to which local communities—the targeted audience—would be able (and willing) to use the platform to voice their concerns and to which the information provided on the platform would satisfy their needs and demands was not clear. ANSA-EAP was aware of this challenge and attempted to prepare local communities to use ICT tools for social accountability purposes. It is too soon to evaluate the effectiveness of these efforts.

Furthermore, the website encountered numerous technical challenges and was underused during the CMS pilot year. As figure 6.2 indicates, technical problems prevented infomediaries from using the website effectively (for example, difficulties in uploading data and errors in loading pages, slow speed, and lack of user-friendliness). Furthermore, the SMS feature was only activated late in the pilot year and encountered technical glitches.

In light of the difficulties encountered with the CMS website, ANSA-EAP encouraged infomediaries to use the CMS Facebook page for updates. The Facebook page proved to be easier to use than the CMS website. During the three months in which validation activities were conducted, the posts that appeared on the Facebook page were viewed almost 75,000 times, and more than 430 feedback comments were posted. These statistics do not indicate the number of unique users who viewed the posts, the amount of time they spent on each post, or their identity. Nevertheless, infomediaries used the Facebook page

Figure 6.2 Problems Encountered in Using the CMS Website: Results of a Survey Completed by CMS Infomediaries, October 2011

N = 20

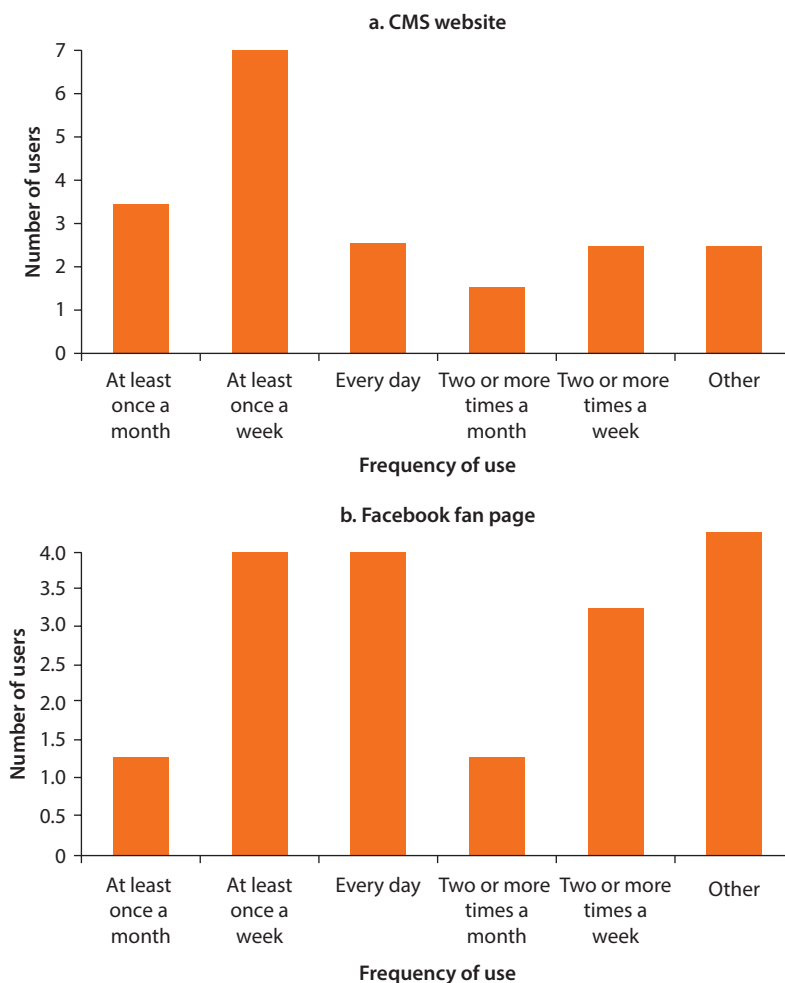


Source: Courtesy of Dondon Parafina.

Note: CMS = Check My School; GPS = Global Positioning System.

Figure 6.3 Use of the CMS Website and Facebook Page: Results of a Survey Completed by CMS Infomediaries, October 2011

N = 20



Source: Courtesy of Dondon Parafina.

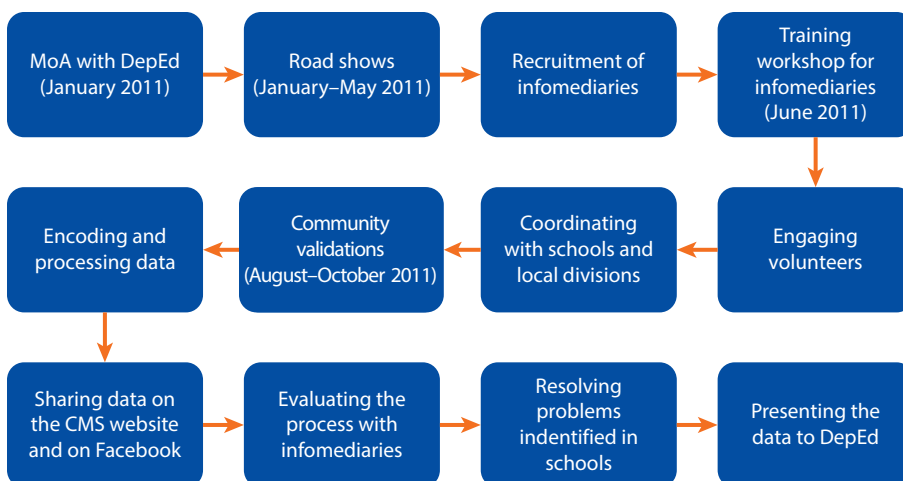
Note: CMS = Check My School.

actively in August and September 2011 and preferred it to the CMS website (figure 6.3).³

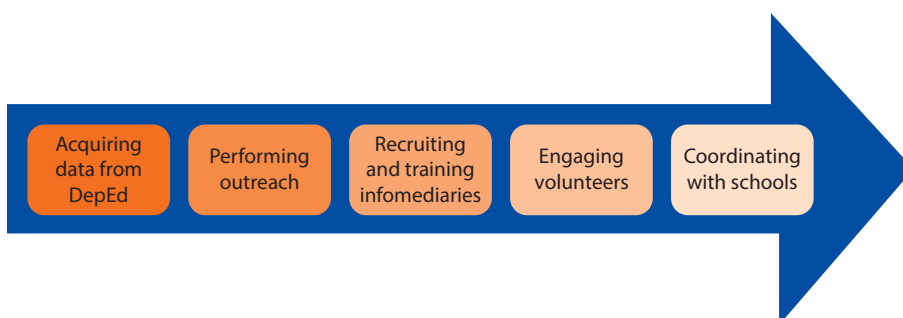
The ANSA-EAP team has been looking for a more sustainable solution, inviting CMS infomediaries to reflect on how the website could be improved. In light of their suggestions, the team decided to revamp the original website in advance of the second cycle of CMS validations.

The 12-Step Implementation Cycle of CMS

The full cycle of CMS pilot activities was undertaken from January 2011 to May 2012 (figure 6.4). These activities can be presented in 12 steps. Steps 1 through 6,

Figure 6.4 First CMS Pilot Cycle

Note: CMS = Check My School; DepEd = Department of Education; MoA = Memorandum of Agreement.

Figure 6.5 Preparatory Process for CMS Validations

Note: CMS = Check My School; DepEd = Department of Education.

pictured in figure 6.5, constitute the preparations for conducting CMS validations. Steps 7 through 12 constitute project activities.

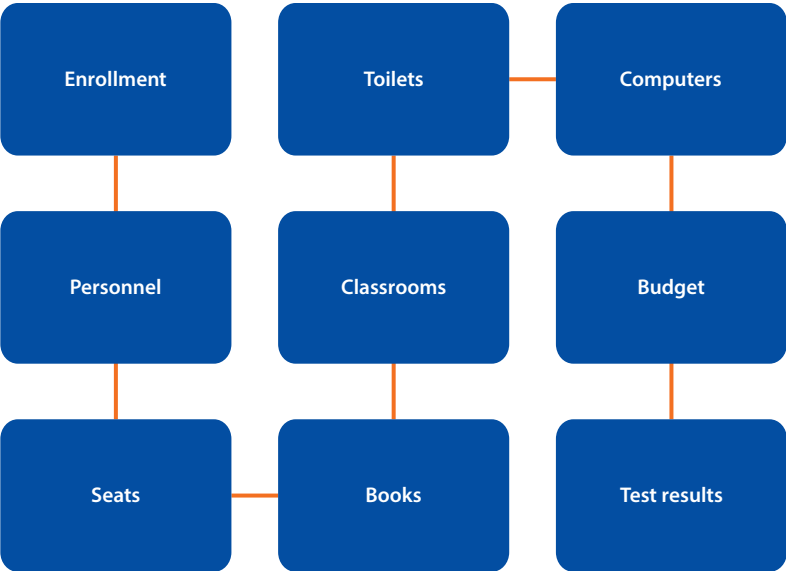
Step 1: Acquiring Data from DepEd

ANSA began acquiring data from DepEd and posting it on the CMS website in 2011. These data covered the following topics for each school: budgetary allocations, enrollment, number of teachers, number of seats, toilets, classrooms, textbooks, computers, and performance on National Achievement Tests (figure 6.6).

Step 2: Performing Outreach

After securing DepEd's cooperation and obtaining the necessary data, ANSA-EAP started its outreach efforts. Road shows were the main activity. Between January and May 2011, ANSA-EAP conducted road shows in four locations: National Capital Region, Baguio-Benguet, Tacloban-Leyte, and Zamboanga-Pagadian.

Figure 6.6 Data Acquired from the Department of Education



CMS Road Show in Zamboanga City



Source: © Check My School.

The road shows had three objectives: (a) introduce the vision and principles of CMS and describe how it operates, (b) encourage potential infomediaries and volunteers to apply, and (c) start planning CMS validations in schools. The road shows featured presentations by the ANSA-EAP team, along with remarks and speeches by politicians, DepEd officials, and other public figures.

Participants came from a variety of schools in the region and consisted of students, teachers, school administrators, regional and local DepEd representatives, parents and PTA members, and school staff members. The attendance rate varied from 67 participants in the Zamboanga-Pagadian road show to 245 participants in the Baguio-Benguet road show.

According to the infomediaries interviewed for this case study, road shows had a very positive effect on schools' subsequent cooperation with the CMS validation process. Because school administrators and stakeholders were already familiar with CMS and witnessed high-profile endorsements of the platform, they welcomed infomediaries and were eager to help them.

Steps 3 and 4: Recruiting and Training Infomediaries

To ensure wide national coverage for CMS validations, ANSA-EAP selected infomediaries from different parts of the Philippines by tapping its networks across the country. These networks included a long-standing relationship with the Boy Scouts and Girl Scouts of the Philippines as a result of the Textbook Count project, Ateneo de Manila University's relationships with other universities such as the Ateneo de Zamboanga University and Ateneo de Naga University, and non-governmental organizations such as Ecolink in Mindanao, Integral Development Services in North Cotabato, Igorota Foundation in the Cordilleras, and Public Services Labor Independent Confederation.

Once infomediaries were selected, ANSA-EAP invited them to participate in a three-day training workshop.⁴ The workshop, conducted in June 2011, was divided into three parts.

The first day discussed the state of public education in the Philippines and explained the structure of DepEd. Officials from DepEd spoke on various aspects of DepEd's operations, and participants were invited to reflect on the accomplishments and challenges of the public education system. The second day involved an exercise simulating a CMS validation at the Eliseo Belen Elementary School in Pampanga. Accompanied by the ANSA team and several school stakeholders, infomediaries conducted a trial data validation. Following the exercise, the infomediaries were requested to reflect on their experience and discuss the implementation of CMS in their communities. The third day was dedicated to planning various CMS activities. In particular, ANSA-EAP provided the infomediaries with detailed guidelines and instructions for the validation process.

Step 5: Engaging Volunteers

After completing the training, infomediaries returned to their regions to engage volunteers and coordinate CMS activities with local schools. The infomediaries operated in 14 areas and recruited 1,053 volunteers overall. However, the rates

of volunteer engagement varied dramatically from one area to another. Conducting road shows in advance of the validation process facilitated the mobilization of volunteers. In Leyte, for example, three infomediaries conducted validations in six schools and recruited more than 200 volunteers. Depending on the size of the school, validations included between 20 and 80 volunteers. Also helpful were collaborations with local colleges and universities (box 6.3) and affiliations with large, established membership organizations such as the Boy Scouts and Girl Scouts. In Dumaguete, the designated infomediary validated 19 schools with the help of 40 volunteers. In places where infomediaries lacked the support of an organizational network and could not benefit from road show publicity,

Box 6.3 The College of Saint Benilde, Manila

Dr. Antonio Levy Ingles Jr., a theology professor at the De La Salle-College of Saint Benilde in Manila, learned of Check My School (CMS) on Facebook. He found the project interesting and contacted ANSA-EAP (the Affiliated Network for Social Accountability in East Asia and the Pacific) for further details. After learning more about the project, Dr. Ingles decided to include CMS validations as a community service requirement for his course on morals.

Validation Visit



Source: © Check My School.

box continues next page

Box 6.3 The College of Saint Benilde, Manila (*continued*)

In March 2012, ANSA-EAP conducted a one-day training for Dr. Ingles and his students and coordinated their visits to two public schools in Manila (Marcella Agoncillo Elementary School in Binondo and Rafael Palma Elementary School in Vito Cruz). One hundred students participated in the validation activities, conducting two rounds of visits to each school.

volunteer engagement was more challenging. For example, in Iloilo, infomediaries were students in a local university, and they often visited schools alone or in the company of two or three friends.

Step 6: Coordinating with Schools

Infomediaries selected schools in their area and coordinated the CMS validation activities with them. The selection of schools for the first CMS validation was based largely on two factors: the availability of GPS data on a particular school (8,684 of the country's 44,000 schools had this information) and the presence of infomediaries in a particular area and their ties to the schools (for example, many infomediaries conducted validations in their local elementary and high schools). Validations were eventually undertaken in 14 pilot areas (Baguio, Benguet, Cebu, Cotabato, Dumaguete, Iloilo, Leyte, Manila, Pagadian, Pateros, Rizal, Tacloban, Taguig, and Zamboanga) and 243 schools.

As part of the coordination process, infomediaries contacted both local education officials (division supervisors and superintendents) and administrators of the selected schools. ANSA-EAP provided infomediaries with a DepEd endorsement letter tailored to each of the 14 pilot areas. The endorsement letter encouraged "all school heads, school district supervisors, school division/city superintendents, and regional directors ... to be actively involved in this validation activity."

The official DepEd endorsement created a favorable environment for implementation of the CMS project. The reaction of school administrators and local DepEd officials to the CMS project was therefore largely positive.

School administrators were generally supportive of CMS activities—either because they wanted to cooperate with a DepEd-endorsed project or because they foresaw benefits for their school. Only one principal was uncooperative, and the principal of a school located in Dumaguete City declined to participate without the presence of the local superintendent. Because the superintendent could not attend the validation, it had to be canceled.

The *DepEd* endorsement of the project helped infomediaries to gain the general approval of the local DepEd officials for CMS activities. Whereas some officials simply approved the validation activities, others actively collaborated with infomediaries. The local superintendent in Dumaguete, for instance, enthusiastically endorsed the project and agreed to accompany the designated infomediary to all of his validation activities in schools. This cooperation considerably facilitated the coordination activities of the infomediary and helped him to conduct validations in 19 schools.

Step 7: Conducting Community Validations

The original idea was to conduct “synchronized CMS validations” in all 14 pilot areas during two weeks in August 2011. The synchronized validations were supposed to start with launching ceremonies resembling the activities of Brigada Eskwela (box 6.4). However, this plan could not be realized because infomediaries had varying coordination and scheduling constraints. Eventually, validation activities were conducted in 243 schools between August and October 2011.

Infomediaries and volunteers arrived at each school equipped with the official DepEd data for that school and the CMS validation form.

Infomediaries received the following instructions:

- Inquire whether the official DepEd data should be updated and, if necessary, help to gather new data

Box 6.4 The Brigada Eskwela Project

The Brigada Eskwela project is implemented every year in schools throughout the Philippines. Shortly before the beginning of the school year, all of a school's stakeholders (parents, teachers, students, local politicians, local civil society organizations [CSOs], youth groups, and the like) gather and help to prepare the school for the new year. They take days off from work to repair and clean the school's facilities and donate a variety of items (paint, furniture, computers, and more) to the effort.


The Brigada Eskwela project is widely advertised on radio and television and is enthusiastically endorsed by DepEd officials and local politicians. It is launched every year in May with a festive ceremony attended by high-profile public figures. Check My School validations and problem-solving activities could be held in schools as part of the Brigada Eskwela events.

Brigada Eskwela Project Kickoff



Source: © Jennifer Shkabatur.

Check My School Validation Form for the J. Lukban Elementary School in Manila

 **Checkmyschool.org** **FORM 3B: CONSOLIDATION OF ALL SCHOOL CLASSROOMS DATA BASED ON COMMUNITY VALIDATION**
(School Year 2011-2012), page 1

School Name: Justo Lukban Elem. School
Address: G. Aparible, Pace, Manila

PLEASE PROVIDE ACCURATE DATA AND WRITE CLEARLY.







A. ENROLMENT			
Enrolment	Male	Female	Total
Grade 1/ 1 st Yr HS	257	232	495
Grade 2/ 2 nd Yr HS	224	203	427
Grade 3/ 3 rd Yr HS	212	183	395
Grade 4/ 4 th Yr HS	223	186	409
Grade 5	224	207	431
Grade 6	204	230	434
Repeaters			
Grade 1/ 1 st Yr HS	6	4	10
Grade 2/ 2 nd Yr HS	7	3	10
Grade 3/ 3 rd Yr HS	0	0	0
Grade 4/ 4 th Yr HS	2	0	2
Grade 5	0	0	0
Grade 6	0	0	0
Transferees			
Grade 1/ 1 st Yr HS	0	0	0
Grade 2/ 2 nd Yr HS	21	16	37
Grade 3/ 3 rd Yr HS	13	26	39
Grade 4/ 4 th Yr HS	21	7	28
Grade 5	13	18	31
Grade 6	8	10	18
Balik Aral			
Grade 1/ 1 st Yr HS	2	1	3
Grade 2/ 2 nd Yr HS	3	2	5
Grade 3/ 3 rd Yr HS	10	0	10
Grade 4/ 4 th Yr HS	4	2	6
Grade 5	0	1	1
Grade 6	0	5	5

B. SEATS	
Item	Quantity
Desks	150
Armchairs	1,550
Total seating capacity	418
	2,118

C. TOILETS	
Item	Quantity
Toilet bowls for boys	14
Toilet bowls for girls	20
Shared toilet bowls for boys and girls	0
Urinals	3
Total (Bowls + Urinals in all classrooms)	37

SUMMARY OF COMMENTS
There are enough classrooms for the pupils. However, several classrooms need major repair.
- Fourteen classrooms of the primary building need repair of its walls, dividers, ceiling, and roof.
- Its ground floor is always flooded during heavy rainfall. Upgrading is needed.
The school quadrangle also needs upgrading because it is lower than the road in front of the school. It gets flooded easily when it rains.

Name and signature of volunteer: Brent De Mesa
Mobile phone #: 09107665899 Email Address: _____

A joint initiative of:    Supported by:   

Source: © Jennifer Shkabatur.

- Validate the official DepEd data by manually checking and counting the different items covered by CMS (ANSA-EAP provided infomediaries with precise guidelines as to how this should be done)
- Discuss the findings with teachers and school administrators
- Fill in CMS forms and posters and hang the posters in schools.

Check My School Validation Forms Posted at the J. Lukban Elementary School in Manila



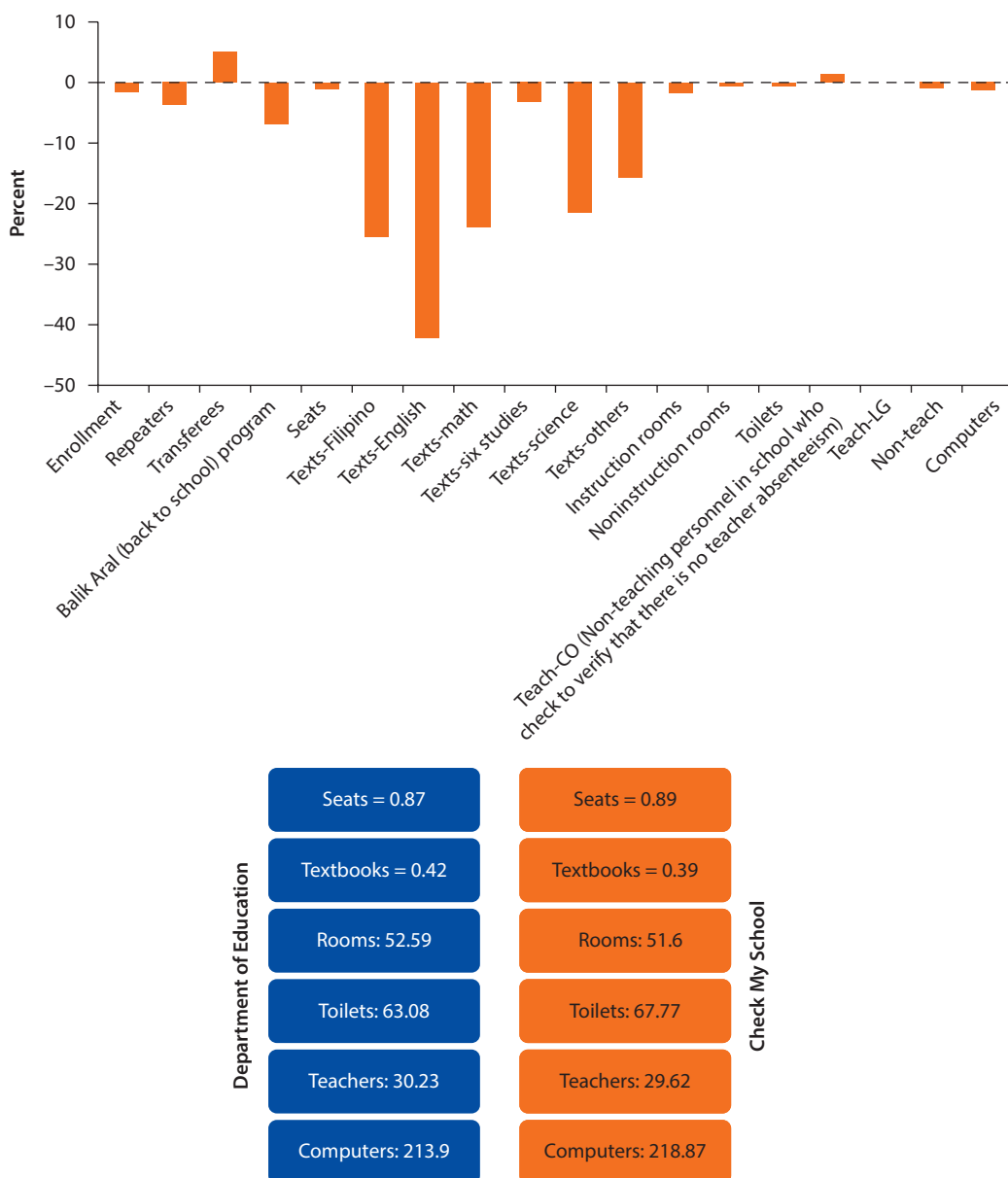
Source: © Jennifer Shkabatur.

Although these instructions were fairly concrete, infomediaries were not always able to follow them. The variation in how validations were conducted from one school to another raised concerns with DepEd officials regarding the quality and integrity of the data collected.

Almost all validations identified discrepancies between the official school data provided by DepEd and the data collected as part of the validations (figure 6.7). As Assistant Secretary Reynaldo Laguda notes, the reasons for the discrepancies were not always clear, and this was a cause for concern:

- In some cases, discrepancies may signal that DepEd's data are inaccurate and need to be updated.
- In other cases, they may result from counting errors committed by infomediaries or volunteers.
- In yet other cases, discrepancies may be the result of differences in the methodologies used by ANSA-EAP and DepEd. For example, DepEd officials only count the latest editions of textbooks, whereas ANSA-EAP instructs volunteers to count all serviceable textbooks.

Figure 6.7 Discrepancies between DepEd and CMS Data: Results of the First Cycle of CMS Validations, August–October 2011



Source: Courtesy of Dondon Parafina.

Note: "Teach-CO," "Teach-LG," and "Non-teach" refer to the presence of teachers and nonteaching personnel in school (they check to verify that there is no teacher absenteeism).

Overall, the challenges encountered by infomediaries as part of the validation process included primarily time constraints, financial limitations (infomediaries had to pay for the expenses incurred by volunteers), low volunteer engagement, difficult weather conditions, and uncooperative teachers in some

schools. Infomediaries did not mention any large “systemic” problems with the validation process.

Steps 8 and 9: Encoding and Processing the Collected Data and Sharing the Data

After completing the validation, infomediaries were supposed to encode the data collected and upload the information to the CMS website. This task was challenging due to problems with the website. As a result, ANSA-EAP became much more involved in the encoding than originally planned. Infomediaries would send the data they collected via e-mail to ANSA-EAP and then upload photos taken during validation activities to the CMS Facebook page.

Step 10: Evaluating the Process

In October 2011, ANSA organized a two-day workshop in which infomediaries shared their experiences and assessed the effectiveness of the CMS validation process. Each infomediary presented the results of his or her validation activities and discussed the challenges encountered throughout the process. The main concern was the malfunction of the CMS website. As a result of discussions with

An Outdoor Class at Esteban S. Javellana Memorial High School, Calinog, Iloilo



Source: © Check My School.

infomediaries, ANSA-EAP decided to revamp and relaunch the website for the second cycle of CMS validations.

Step 11: Resolving Problems

The original concept of CMS focused on community monitoring of service provision in schools. Because the primary goal of the project was to validate and improve the integrity of DepEd's data, the assumption was that the collected information would be valuable on its own. However, as part of the validation activities in schools, infomediaries identified a variety of shortages and issues of concern. Many of these problems did not result from a discrepancy between the official DepEd data and the data collected by infomediaries. Rather, they were well-known issues that had not received a satisfactory response from DepEd officials or local divisions.

Infomediaries identified 231 issues that required resolution in 84 schools. Typical problems included lack of classrooms, lack of textbooks, and facilities in need of repair.

Following the evaluation workshop with infomediaries that was conducted in October 2011, ANSA-EAP decided to enhance the scope of the CMS project and help schools to resolve these issues. Operation Thank You, as Dondon Parafina, CMS coordinator, explained, was a "way to express gratitude to participating schools for their collaboration with CMS." Under Operation Thank You, ANSA-EAP, the infomediaries, or both would report the identified problems to DepEd and other authorities in writing. If the authorities did not respond, up to two follow-up letters would be sent, and then the issue would be brought to the media. Second, ANSA-EAP, the infomediaries, or both would approach CSOs and private sector organizations and ask them for help. In the majority of cases, infomediaries reported only a handful of problems to the authorities; typically, the authorities did not respond, and the infomediaries did not send follow-up letters. Still, several issues were resolved:

- The validation conducted in the Putik Central School in Zamboanga City revealed serious cracks in one of the school's buildings. Infomediaries, together with the school principal, documented the situation and reported it to ANSA-EAP, which sent the report to the Department of Public Works and Highways. Although the department did not respond immediately, it eventually sent a team to inspect the building and then recommended immediate renovation.
- A CMS validation in the Araullo High School and in the Epifanio Delos Santos Elementary School in Manila exposed the bad condition of school toilets. The infomediary who validated the schools was familiar with DepEd officials from her previous work with PTAs in Manila, and she sent a formal complaint to the responsible departments in November 2011. Both departments responded, and one of them conducted inspections. In January 2012, the department allocated funds and started renovating the toilets.

Condition of Toilets at Lt. Andres Calungsod Elementary School in Cotabato



Source: © Check My School.

- A community validation that was conducted in the Lt. Andres Calungsod Elementary School in Cotabato exposed the poor conditions of one of the toilets. The infomediary who validated the school was an alumnus, and he mentioned the problem to former classmates in an alumni meeting in the fall of 2011. As a result, the alumni group independently collected money and funded renovation of the toilet.

Operation Thank You offers potential, and CMS would benefit considerably from taking a more institutionalized approach to solving problems. ANSA-EAP could develop a detailed strategy to identify problems in schools and help to resolve them, turning the identification and solution of problems into an independent activity not necessarily tied to data validation in schools. Several factors support moving in this direction:

- The accomplishments of Operation Thank You show that the connections of the ANSA-EAP team and the CMS infomediaries with DepEd officials and local representatives can be of considerable value for schools without imposing a large time commitment on ANSA-EAP or the infomediaries.
- Interviews with school administrators and infomediaries reveal that the prospect of getting help with some of the school's problems is a major incentive for school administrators to cooperate with CMS validations.

- In line with the general “school-based management” policy, local communities and the private sector can serve as an important resource for schools and a promising asset for future CMS activities.
- Because DepEd directs schools to become more self-reliant and to solve problems on their own by engaging community stakeholders, the online CMS platform could serve as a valuable problem-solving tool in the hands of school administrators.

Step 12: Presenting Results to DepEd

The CMS team presented the results of the validation process to DepEd officials and other leaders in the education community in January 2012. They shared the validated data, deliberated over the findings in different schools, and discussed the ongoing Operation Thank You.

In the next validation cycles, the CMS findings will be similarly shared with DepEd officials, offering them constructive feedback about the state of public schools and inviting them to respond to identified issues. Then, the findings will be presented to an even larger audience of stakeholders—policy makers, CSOs, school representatives, and community members—to ensure that the CMS project is accountable to the general public.

Lessons from the First Phase: CMS 1.0

At the time of writing, the CMS project had been active for a little more than a year; it was still in a growing and learning phase. However, some preliminary lessons can be drawn from its first year of implementation.

Enabling Conditions

The four pillars of social accountability articulated by ANSA accurately capture the major enabling conditions for CMS (and other projects of its type): organized and capable citizen groups, government champions willing to engage, appropriate context, and access to information.

The mobilization of committed and diligent infomediaries and volunteers is a major hurdle for any community monitoring initiative, but ANSA-EAP was largely immune from this problem. The affiliation with the Ateneo School of Government and its own local networks allowed ANSA-EAP to publicize CMS effectively in road shows and then engage infomediaries from all over the country. ANSA-EAP's ability to tap local networks of CSOs, youth groups, and socially active individuals made it uniquely suitable for implementing projects such as CMS.

The support of DepEd was important not only in obtaining official school data, but also in gaining the cooperation of school administrators and local superintendents. DepEd's support opened the doors of multiple schools across the country to infomediaries.

All of the DepEd officials, school administrators, and infomediaries interviewed for this case study said that communities should be more involved in the management of schools. DepEd's efforts to implement its decentralization reform

and the pressure on school administrators to engage community stakeholders in their school's management create a highly conducive environment for community monitoring projects.

Finally, the CMS project would not have been possible without the availability of official data. Although the ANSA-EAP team still had to process the data, clean it up, and consolidate it on a single online platform, the ability to access numerous data sets containing relatively reliable and complete information about the public education sector was a major enabling factor for the project. Such access was possible even though the country did not have right-to-information legislation or a comprehensive open-government policy.

Successful Aspects

CMS had some notable success in its first year of operation:

- *Cooperation with DepEd.* ANSA-EAP's cooperation with DepEd was solid. This relationship was critical to success of the pilot.
- *Creation of new connections.* The vertical connections among local government bodies (including schools), community-based citizen groups, and CSOs were as important as the horizontal links between government agencies. The engagement of principals, teachers, and parents was an important part of building multistakeholder relationships.
- *Community mobilization.* ANSA-EAP's connections and prior experience allowed it to publicize the CMS project in several pilot areas and to mobilize infomediaries and volunteers.
- *Selection of local infomediaries.* CMS was implemented as a nationwide project in public schools that differ widely from one another. To account for these idiosyncrasies, ANSA-EAP recruited infomediaries who were familiar with the schools they validated, and this local knowledge helped them to approach the schools and to conduct validation activities.
- *Capacity building and training.* The capacity-building and training activities conducted by ANSA-EAP were successful. According to infomediaries, CMS trainings not only prepared them for school validations, but also gave them valuable knowledge, organizing ability, and leadership skills.
- *Simple design.* The validation system was easy for volunteers to follow on the ground and for the CMS team and DepEd officials to monitor.
- *Flexibility.* The ANSA-EAP team adjusted to a variety of unforeseen developments and took advantage of new opportunities. When the website did not perform as expected, ANSA-EAP turned its attention to Facebook. When infomediaries identified problems in schools, ANSA-EAP launched and supported Operation Thank You.
- *Self-assessment.* ANSA-EAP was constantly engaged in self-assessment, attempting to learn from mistakes and improve the system for future validations. Although CMS (in particular, its online component) did not perform as expected during the pilot year, the flexible and open-minded approach endorsed by ANSA-EAP is likely to improve the project in its subsequent iterations.

Challenges

Naturally enough for a pilot phase, the first CMS validation encountered several challenges in implementation. Some of the major issues are discussed here.

Data Quality and Verification

Some DepEd officials expressed concerns regarding the quality of the data collected by CMS. Because DepEd officials did not understand the reasons for the discrepancies between their own data and the data collected by CMS, they could not fully trust the data presented to them. In preparing for the second validation cycle, CMS has collaborated with DepEd on the development of mutually acceptable standards, a process that is likely to alleviate DepEd's concerns.

DepEd officials also expressed concerns about the substance of the data collected. For instance, Assistant Secretary Reynaldo Laguda noted that quantitative data may not be sufficient to understand the problems of the schools. He urged CMS to collect qualitative as well as quantitative data.

ICT Use and Capabilities

The use of technology during the first pilot year was limited for various reasons. First, the CMS website encountered technical challenges. Because Internet penetration in the Philippines is estimated at around 30 percent and the general technological capabilities are relatively low, effectively incorporating ICT into pilot CMS activities was challenging.

ANSA-EAP is in the process of redesigning the CMS website, aiming to adjust it to the reality of ICT use in the Philippines. As of this writing, the website is still under development, and school profiles are largely unpopulated. Even if the website becomes more user-friendly, the extent to which community members will be able and willing to use the platform to voice their concerns and stand up for their rights as part of their ongoing relations with school administrators, local officials, and DepEd executives is not wholly clear. In many cases, the challenge may be one of capacity: local communities may not have sufficient Internet access or technological skills to access and use information on the platform. Even if technological capacity exists, communities may be unaware of their rights or reluctant to use the information to confront persons in authority or engage in negotiations with them.

Skillful and organized collective action therefore is a prerequisite for the effective use of information provided on the CMS platform. Given this reality, ANSA-EAP's approach of iterative self-assessment and experimentation with different ICT tools is promising and should be pursued in the next cycles.

Problem-Solving Mechanisms

The original objective of CMS was to validate the official DepEd data and not necessarily to help schools to solve their problems; therefore, problem-solving mechanisms were not embedded in the original design. Problem solving was an additional benefit that grew out of the process. Building on this opportunity, ANSA-EAP launched Operation Thank You on an ad hoc basis as a "gift" to the validated schools. For this reason, most infomediaries were less persistent in reporting and following up on schools' problems than in conducting the "official"

validation process. Nonetheless, Operation Thank You achieved several successes and helped to resolve some of the problems identified in schools.

In light of this experience, incorporating problem-solving mechanisms more systematically in the CMS project should be considered. Such mechanisms can be particularly important because many school principals collaborated with CMS with an expectation that the project would help them to resolve some of their problems. Moreover, the basic framework of Operation Thank You (contacting authorities or potentially helpful community members and following up with them until the problem is solved) was apparently effective. Hence, if ANSA-EAP is interested in pursuing this direction, problem-solving mechanisms should be better structured and institutionalized.

Sustainability of CMS and Partnerships among Stakeholders

In general, the strategy of structuring activities around local networks of volunteers is very promising. However, ensuring the sustainability of CMS may prove challenging.

During its pilot phase, CMS relied largely on infomediaries who volunteered to participate in the project. Because infomediaries self-selected, their mobilization capacities differed dramatically: those who represented established organizations or had sufficient experience with community organizing were more likely to recruit volunteers and conduct rigorous validations than those who lacked institutional support or experience. Furthermore, in the future, the long-term commitment of infomediaries who are not compensated by ANSA-EAP and who are likely to have other time-consuming responsibilities may be difficult to sustain. To deal with this challenge, for its next cycle ANSA-EAP has decided to recruit only infomediaries who represent organizations or who have a proven community mobilization record. Although this strategy may be promising, it does not necessarily secure the long-term commitment of these individuals.

Despite some reservations regarding the quality of data collected, DepEd officials seem to support CMS. Because this support is central for the sustainability of the project, ANSA-EAP should make sure to preserve it, even if doing so requires changing how validations are conducted.

The ANSA-EAP team played a central role in all CMS-related activities during the pilot year. The data collected by infomediaries were sent to the ANSA-EAP team, which compiled, processed, and analyzed the information. Furthermore, the team played a central role in implementing Operation Thank You, sending letters to and following up with relevant authorities. Although this dependence on ANSA-EAP may be natural for a pilot year, it seems problematic from a sustainability perspective, especially if substantially more schools take part in the next phases of the project.

The Next Phase: CMS 2.0

Learning from the accomplishments and challenges of the first CMS pilot, ANSA-EAP has chosen several strategic objectives for the next phase: systemizing

the CMS process, revamping the structure to meet scale, fully realizing the ICT potential of CMS, and enhancing the sustainability of CMS.

Systemizing the CMS Process

ANSA-EAP is creating detailed guidelines and protocols that capture the essence of the CMS process. The objective of this effort is twofold: to share the “CMS know-how” with interested actors in other public sectors or in other countries and to respond to DepEd’s critique regarding the quality of the validation process.

The ANSA-EAP team has already started to develop uniform and detailed protocols of procedures that area coordinators, infomediaries, and volunteers should follow. These protocols outline concrete procedures about how the CMS project should be put into operation. The protocols explain how to coordinate school visits, how to establish relationships with local superintendents, which forms to bring to the school on validation days, and what items to count in each school.

The CMS is undertaking considerable steps to improve the quality of its validations and to respond to DepEd’s concerns. CMS and DepEd have agreed to improve the tools and methodologies used as part of the validation activities in schools, thereby ensuring that CMS data are aligned with DepEd’s standards and minimizing errors.

Revamping the Structure to Meet Scale

To scale up the activities of CMS and make the project less dependent on the ANSA-EAP team, ANSA-EAP has begun to decentralize the project by delegating several responsibilities to area coordinators. Area coordinators will now recruit infomediaries in their respective areas, train them, and oversee their validation activities. They will also establish and maintain connections with local education officials—the division superintendent and district supervisor. These connections should help area coordinators to solve the problems identified in schools in their areas. Under the new scheme, infomediaries will be responsible only for validations in particular schools. To ensure that area coordinators are capable of performing these functions, ANSA-EAP intends to recruit individuals for this position who represent established CSOs or groups (such as the Boy Scouts) or who have proved that they can independently mobilize volunteers and engage communities (for the most part, community leaders experienced with the first CMS pilot).

Fully Realizing the ICT Potential of CMS

Another major strategic objective pursued by CMS in preparing for the second cycle is realizing the full ICT potential of the project. The new CMS website will feature the following functions:

- *Interactive map* showing all public schools for which GPS data are available
- *Detailed profiles* for each school, containing basic contact information, DepEd official data for the school, data collected by CMS, photos and videos of the school, and the school’s major management documents (for example, school improvement plan and school report cards). Furthermore, the school profiles

will contain a tab named “variance,” which will highlight discrepancies between official DepEd data and CMS data, with accompanying notes explaining the possible reasons for the variance, and another tab dubbed “needs,” which will describe the particular needs of the school.

- *News section* featuring stories and photos from recent CMS activities
- *Archive section* storing BEIS and other DepEd data.

As the new CMS website is being developed, ANSA-EAP is considering the addition of more ICT functions and tools, aiming to expand the range of potential users of the website, facilitate the ways in which the website can be accessed, and realize the full potential of social media (figure 6.8).

Currently, the new website is designed to satisfy the needs of two major stakeholders:

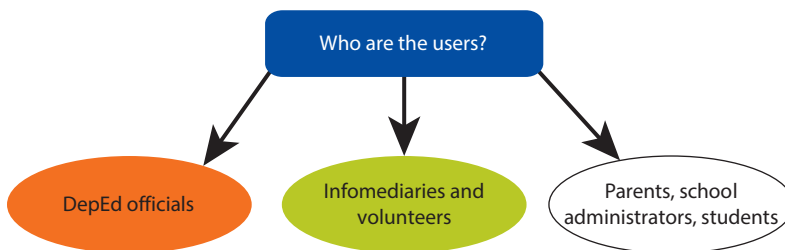
- *DepEd officials*, who want to have easy access to the data collected by CMS and to resolve discrepancies between CMS data and official DepEd data
- *Infomediaries*, who want a fast platform and user-friendly interface that will enable them to upload the collected data quickly and share their photos and videos from the validation activities.

To attract users to the website and satisfy the needs of additional types of users, ANSA-EAP is considering the incorporation of the following functions:

- *School administrators*, for instance, might be attracted to the website if it features the contact details of CSOs or community members who are willing to help the school or provides information about other types of community resources.
- *Parents* might benefit from the website if it includes concrete calls for action, discussion forums with teachers, or other helpful materials.
- *Students and volunteers* might be attracted to the website if it features activities that are of personal interest to them—social activities in schools, class and exam materials, discussion forums, and the like.

Because Internet connectivity is still low in many regions of the Philippines, the challenge of providing access can be addressed in at least two ways: social mobilization and mobile penetration.

Figure 6.8 Expanding the User Base



ANSA-EAP currently assigns the responsibility for online updates to the intermediary who conducts validations in the community. Another possibility is to assign this responsibility to the school governing council or the PTA of each school. Because these entities are organized and have clearly defined stakes in management of the school, they may be well positioned to undertake this effort (although schools in better-off locations are clearly better positioned for such an exercise than schools located in areas with poor Internet access).

ANSA-EAP is also incorporating easy-to-use mobile features that would strengthen the website performance and enhance its audience. Because mobile penetration is close to 100 percent in the Philippines, this direction may yield promising results.

Enhancing the Sustainability of CMS

ANSA-EAP is considering several steps to enhance the sustainability of CMS:

- *Entering partnerships with established institutions.* ANSA-EAP has been building partnerships with established CSOs and universities. This strategy helps to mobilize volunteers and ensure long-term support for the project. ANSA-EAP's collaboration with the College of Saint Benilde is particularly promising in this respect. The inclusion of CMS validations as part of course curricula provides students with ample incentives to excel in validations and ensures a sustainable flow of volunteers to the CMS project.
- *Further incorporating CMS into established community activities.* DepEd has been supporting a variety of community-driven activities in schools. Some of these activities, such as the Brigada Eskwela, are well established and have been ongoing for several years. ANSA-EAP is exploring how CMS-related activities can be incorporated into these larger community events.
- *Tapping into the private sector.* To generate revenues, ANSA-EAP may consider turning to the private sector. Because private sector engagement in school management has been commended in interviews with both DepEd officials and school administrators, private companies may be willing to sponsor CMS activities in different localities as a way of advertising, without compromising the integrity and rigor of the CMS project. ANSA-EAP is well positioned to pursue this direction.
- *Sharing CMS know-how.* Although CMS is a very young pilot project, several governments have already expressed interest in replicating it in their own countries. ANSA-EAP is considering sharing with them its know-how and general expertise in social accountability-focused projects.

As part of this process, ANSA-EAP is well positioned to offer advice in three areas: general assessment framework, blended approach, and implementation guidelines.

Although the CMS framework is well suited for the Philippines, it may be less appropriate for other countries. A valuable service provided by CMS can be an assessment framework that would help replicating organizations to understand

which features of CMS are likely to work in their countries, which aspects should be altered, and which procedures should be abandoned.

The CMS project combines robust citizen monitoring strategies with the incorporation of ICT tools. Because creating a balanced integration of these two components may be challenging, the experience of ANSA-EAP in this sphere can be very helpful for other countries replicating the initiative. Aside from sharing its CMS expertise, ANSA-EAP could also share its knowledge on capacity building and help replicating bodies to pursue its “blended approach.”

For its second validation cycle, ANSA-EAP is developing detailed guidelines with concrete instructions and procedures that explain the implementation of the CMS project. Replicating parties can benefit greatly from such guidelines, especially if they are customized for local needs.

Recommendations for Replicating CMS in Other Countries

CMS has already captured considerable attention from governments, CSOs, and donors around the world. This attention results in part from increased interest in engaging with civil society, growing commitments of governments worldwide to release data and increase transparency, and amplified use and declining costs of ICT tools.

Over the past year, the Open Government Partnership (OGP),⁵ the central multilateral initiative encouraging governments to become more transparent, has created impetus for participating governments to view CMS favorably. For example, as part of its Open Government Initiative, the Kenyan government has been releasing data to the public and streamlining various databases. To facilitate use of this information within the education sector, the government has been considering adapting the CMS model to its own context. A similar process has been taking place in Moldova as the country has sought to use data innovations to transform governance. In Indonesia, ANSA-EAP provided technical and strategic support for development of the Indonesian adaptation of CMS, which is called Cek Sekolahku. In each country, interest in CMS stems from the government's interest in advancing open-data innovations under the OGP umbrella. Nonetheless, although the CMS framework is well suited for the Philippines, it may be less appropriate for other countries. Fitting the CMS framework into a new political and social context requires careful analysis. However, given the high enthusiasm for CMS, the opportunities for scaling up and implementing it in other countries should not be missed.

The lessons learned by CMS during its first pilot year therefore can be useful for other countries wishing to replicate the CMS approach. First, successful adaptation of CMS requires a *dedicated CSO leader* to assess the suitability of CMS to a particular country context and adjust the CMS approach to the local sociopolitical conditions. As part of this process, the CSO should customize the design, build capacity, address technological challenges, mobilize resources, lead the implementation of the project, and ensure its sustainability. Second, the *constructive engagement* approach should be pursued. Whereas civil society initiatives

often take an adversarial stance by attempting to expose governmental faults, the CMS vision emphasizes the need to engage public officials and civil society groups in a sustained dialogue and collaborative problem solving. The constructive engagement component of CMS needs as much attention as the technical component. Third, *capacity building* should be an integral part of the project design, development, and implementation aimed at adapting CMS to another context or country. One cannot assume that potential partners or counterparts engaged in a CMS adaptation will have the necessary capacity to design, implement, and sustain the CMS project as continuing, action-oriented advocacy. Fourth, in line with ANSA-EAP's *social accountability* approach, the CMS project was made possible by four major enabling conditions: organized and capable citizen groups, government champions, appropriate context, and access to information. These conditions are necessary for CMS-related projects in replicating countries as well.

- *Organized and capable citizen groups.* ANSA-EAP's ability to engage local networks of CSOs, youth groups, and socially active individuals made CMS activities possible, and the existence and commitment of local networks are necessary for replication of the project. However, the absence of such networks does not imply that the project is doomed. Rather, it means that CMS replicators should invest considerable effort in identifying potential partners, building the capacity of potential local collaborators, forming alliances with existing CSOs, and looking for promising entry points to reach youth groups or other active individuals. Furthermore, after civil society collaborators have been identified, CMS replicators should invest resources in training and familiarizing them with the design and implementation principles of the project.
- *Government champions.* The support of DepEd was important not only in obtaining official school data, but also in gaining the cooperation of school administrators and allowing infomediaries to conduct intrusive validations. Any replication of CMS should therefore identify a government partner that would support the project's activities and collaborate closely with the project throughout implementation.
- *Appropriate context.* All DepEd officials, school administrators, and infomediaries who were interviewed for this report emphasized that communities should be more involved in the management of schools. This attitude toward community engagement and decentralization created fertile ground for CMS implementation in different localities in the Philippines. A similar sociopolitical environment could be favorable in replicating countries as well.
- *Access to information.* The CMS project would not have been possible without the availability of official data about public schools in the Philippines. The existence of digitized and accessible government records is therefore a necessary precondition for replication. As the experience of CMS shows, ad hoc

releases of information may be sufficient for this purpose, and the lack of right-to-information legislation or a coherent open-data policy will not necessarily prevent the project's implementation.

The *ICT-related components* should be considered carefully. Although ICT presents a great opportunity for developing countries, it can also pose considerable implementation challenges. The incorporation of ICT in societies with low rates of Internet penetration and lack of technological skills is particularly difficult. The CMS experience shows the need for versatility and flexibility in integrating ICT tools in citizen-monitoring projects. Whereas ANSA-EAP benefited from strong local networks and added the online CMS component only later, many CMS replications start differently: replicating organizations first obtain data and launch an online platform and only then try to establish their offline presence and create connections with local partners and networks. Because ICT-enabled civil society initiatives are relatively new around the world (particularly in developing countries), no single toolkit explains how to incorporate ICT tools into social accountability projects. Replicating parties should learn from the experience of ANSA-EAP and take into account its accomplishments and difficulties, including its plans for CMS 2.0.

Replicating parties may also consider expanding the scope of CMS as part of their *adaptation and customization activities*. Data on public schools provide a unique advantage that should be realized in full. Thus, although validating data is an important goal, the data can be used for additional purposes, such as monitoring budgetary allocations and expenditures per school.

Conclusion

CMS represents an innovative example of community monitoring of service delivery in Philippine public schools. This chapter has explored CMS's current setup and suggested how it could be improved and replicated. CMS had just completed its first pilot year when this study was completed, and the project was still in its growing and learning phase. Therefore, evaluating its effect on service provision in public schools is premature. With these caveats in mind, the major findings of the case study follow.

First, DepEd fully endorsed the CMS and committed to sharing with ANSA-EAP all of its available data on public schools and to helping it to establish relations with schools. This cooperation is one of the most important and promising features of CMS.

Second, ANSA-EAP took full advantage of its partnerships and networks in various locations in the Philippines. The ability of the CMS team to tap into local networks of CSOs, youth groups, and socially active individuals made implementation of CMS possible. The effectiveness of ANSA-EAP's networking approach is also promising as part of the scaling-up efforts for CMS.

Third, the CMS project fits well within the current sociopolitical environment in the Philippines. DepEd's efforts to implement its decentralization reform and

the pressure on school administrators to engage community stakeholders in their school's management created an environment highly conducive to community-monitoring projects such as CMS.

Fourth, the offline components of the project and its online implementation diverged. The offline strategy of CMS was largely effective and has already yielded positive results. The online strategy has been difficult to implement. Because the main CMS website was less functional than expected, ANSA-EAP experimented with various ICT tools throughout the pilot year, aiming to adjust the ICT components of CMS to the reality on the ground. In the context of a developing country with low rates of Internet penetration and relatively limited technological capabilities, this approach is promising. The effort to identify the best-fitting ICT strategy for CMS is expected to continue throughout the next cycles of CMS validations.

Returning to the sociocultural, technical, economic, and political enabling or constraining factors used as the broader framework for this volume, the CMS pilot presents a mixed picture. On the one hand, the involvement of donors, such as the World Bank, as well as the political climate of the Philippines (decentralization of the public education system, greater emphasis on transparency and accountability, and the need for accurate data about school conditions) encouraged the government, specifically the DepEd, to be receptive to the project. The department allowed access to data and encouraged local administrators to cooperate with CMS. On the other hand, CMS relied greatly on the participation of civic-minded volunteers and intermediaries as well as the Ateneo School of Government. The school's solid reputation also helped to convince stakeholders. However, the economic and technological factors were more problematic. First, the volunteer aspect of CMS meant that, for intermediaries and their own volunteers, there had to be some motivation other than financial. Similarly, technologically, the online initiative was not as pervasive as initially conceived, due to low Internet penetration and technical issues. However, the project did attract national and international attention on the transparency and accountability of public education administration. In sum, the strongest components of CMS were not necessarily related to its ICT components, but rather to the robust grassroots presence of its volunteers and the strategic relations it managed to develop and maintain with a variety of stakeholders.

Annex 6A: Sources

The following individuals were interviewed in May and June 2012 in preparation for this case study.

ANSA-EAP

Tin Aquino, governance and communications coordinator

Jecel Censoro, network associate

Angelita Gregorio-Medel, executive director

Dondon Parafina, ANSA coordinator for CMS

John Aldrich Telebrico, network researcher
 Paul Thomas Villanueva, infomediary coordinator

Department of Education, Philippines

Abram Abanil, executive assistant III
 Reynaldo Antonio D. Laguda, assistant secretary and chief of staff
 Jesus Lorenzo Mateo, assistant secretary for planning
 Rizalino D. Rivera, undersecretary for regional operations

School Administrators

Novella M. Caraso, principal, Esteban S. Javellana Memorial High School, Guiso, Calinog, Iloilo
 Rosario Clarabel Contreras, campus administrator, West Visayas State University, Calinog, Iloilo
 Victoria Maquiling, principal, North City Elementary School, Dumaguete City
 Lourdes Miranda, principal, Malitbog National High School, Malitbog, Calinog, Iloilo
 Antonio Pavia, Calinog National Comprehensive High School, Calinog, Iloilo
 Vecelina A. Tan, principal, J. Lukban Elementary School, Paco, Manila
 Cynthia Visperas, principal, Dumagsaisai Elementary School, Dumaguete City

World Bank

Adarsh Desai, program manager, Innovation Practice, World Bank Institute
 Josefina Pinky Esguerra, senior operations officer, World Bank, Philippines
 Björn-Sören Gigler, senior governance specialist, World Bank Institute
 Meg McDermott, CSO networks team, World Bank Institute
 Luiza Nora, CSO networks team, World Bank Institute
 Lynnette Dela Cruz Perez, senior education specialist, World Bank, Philippines
 Hanif Rahemtulla, consultant, Innovation Practice, World Bank Institute
 Michael Trucano, senior ICT and education policy specialist, World Bank

Infomediaries and Volunteers

Radelie Allado, Iloilo
 Racel Ta-asan Carcillar Cabral, Iloilo
 Sanie Joel Cagoco, Dumaguete
 Jennifer Gonzalez, Iloilo
 Antonio Ingles Jr., Manila
 Emma de Mesa, Manila

Others

Amado S. Bagatsing, representative, Fifth District, Manila
 Rick Bahague, national coordinator, Computer Professionals' Union
 Susan Carandang, National Economic and Development Authority

Notes

1. See www.checkmyschool.org.
2. When the CMS project was initiated, DepEd sought ANSA-EAP's help in tracking the GPS coordinates of the missing schools. However, the local CMS networks were unable to fulfill this request.
3. The usage statistics for the CMS website confirm these findings. According to Google Analytics, the website had a total of 8,262 visits and 5,221 visitors over the course of nine months. Each visitor stayed on the website for an average of six minutes and viewed three pages. The website experienced the peak of its popularity in August 2011, when infomediaries attempted to upload information about their validation activities.
4. ANSA-EAP offers eight modules on social accountability and good governance covering both theory and practice, as well as a "training for infomediaries."
5. For more information, visit <http://www.opengovpartnership.org/>.

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Information Tools for Improving Accountability in Primary Health Care: Learning from the Case of Karnataka

Shirin Madon

The lack of accountability in public service delivery has been recognized as a serious concern for poverty alleviation efforts (World Bank 2004). The proposed solution, as articulated by the World Bank and supported through empirical study (Deininger and Mpuga 2005), has been to establish a “short route to accountability” that relies on a decentralized model of service delivery in which ordinary citizens and community development workers participate in holding service providers to account where traditional mechanisms of political accountability have largely failed to deliver. This focus has prompted a growing number of government initiatives that involve citizens in the service delivery chain through mechanisms such as participatory budgeting, social audit, and community monitoring. A central assumption driving these initiatives is that greater transparency of information about service delivery procedures and outcomes can improve accountability.

This chapter describes efforts made in Karnataka State in southern India to promote information tools for improving primary health care accountability. The concept of information tools is used to reflect a situation in which a variety of information and communication technology (ICT)-based legacy systems and new technological solutions coexist with non-ICT-based mechanisms for improving accountability. Karnataka, with a population of approximately

The author thanks the British Academy for funding her research on primary health care accountability over the past three years, which she has conducted in collaboration with Professor S. Krishna from the Indian Institute of Management, Bangalore. The author is grateful to the Karnataka government and to the Karuna Trust for their support and interest in this work. The author also acknowledges her two field researchers, Mr. Lakshmana and Mr. Rudresh, for their input into data on the Village Health and Sanitation Committees.

70 million people, is divided into 26 districts and composed of four natural regions, each with its own distinctive characteristics. Karnataka's model of development has been driven by two ideologies—technology-led growth and decentralized governance. The rate of growth in the state over the past 15 years has been approximately 5–6 percent higher than in the rest of India. Much of this prosperity can be attributed to growth in the information technology industry in Bangalore, with a few spillovers to the government sector and outside urban areas.

Moreover, while Karnataka ranks among the better-performing states, it includes 4 of the 100 most backward districts in the country. It is India's second most arid state, with high levels of poverty and ill health in many areas. The scale of unemployment, particularly the highly fluctuating situation in the informal sector, is due to continued droughts and poor infrastructure, for example, related to irregular supplies of electricity, which affect the employment of casual laborers in construction and other industries (India Planning Commission 2007). The Government of Karnataka has actively promoted decentralized governance structures throughout the state. In fact, Karnataka was the first state to comply with the changes proposed in the 73rd Constitutional Amendment to increase the participation of weaker segments of the population in the formulation and implementation of policy in different sectors, including health (Rajasekhar and Veerasheekharappa 2004). In addition, the state has introduced e-governance initiatives aimed at promoting a short route to accountability such as panchayat-level computerization and the much-acclaimed Bhoomi land records project (Nayak, Bhargava, and Subha 2007). While the Bhoomi project has enabled land records to be in the public domain and easily verified by anyone, eliminating the role of the village accountant, who used to serve as a crucial intermediary for accessing government schemes and bank loans, has meant a loss for small farmers and landless laborers (Prakash and De 2007).

This chapter presents a case study of accountability initiatives in the primary health care sector in Karnataka, where the author has been conducting research over the past few years in collaboration with the Indian Institute of Management, Bangalore, and the nongovernmental organization (NGO) Karuna Trust. The case draws on primary and secondary data sources to describe four initiatives launched by the Karnataka government to increase transparency of operations in the primary health care sector. These initiatives, which are presented in chronological order, reflect a mix of ICT- and non-ICT-based tools aimed at improving accountability of primary health care.

The chapter is organized as follows. First, it reviews the concepts of participation, transparency, and accountability that underlie recent efforts to reform the delivery of basic services, providing an overall framework within which to locate the case study. Second, it describes Karnataka's overall rural health strategy and the National Rural Health Mission (NRHM). Third, it presents four key initiatives: the Health Management Information System (HMIS) for reporting, the Community-Monitoring Report Card Initiative and the formation of the Village Health and Sanitation Committees (VHSCs)—the two non-ICT-based accountability measures introduced by the Karnataka government—and the Beneficiary

Verification System (BVS), which has recently been piloted in Karnataka with a view to statewide implementation. It concludes by synthesizing the overall experience gained from the four initiatives with reference to the conceptual framework.

Unpacking Concepts: Participation, Transparency, and Accountability

Understanding the concepts of participation, transparency, and accountability and how they are related is important to understanding how they can be used to improve service delivery. The term “participation,” which has for decades been at the heart of development thinking, continues to be widely discussed and debated in policy and academic circles. Earlier discussions centered around whether participation in development projects was weak or strong and the extent to which participatory approaches were able to address issues of power and politics (Cooke and Kothari 2001). More recently, there is increasing evidence to suggest that participatory approaches are being directed toward changing the power balance between citizens and the state (Hickey and Mohan 2004). In other words, assuming that citizens are willing and able to participate in various aspects of public service delivery, this participation is seen as effective only if operationalized by strengthening the capacity of institutions that mediate between users and service delivery agents.

An important aspect of strengthening the capacity of institutions is assumed to relate to making data more transparent, which is made increasingly possible through the deployment of new information tools such as computers and mobile phones. For example, computerized information systems are assumed to increase transparency of data by improving the accuracy, timeliness, and completeness of data. This improved “revealing of data” is then assumed to lead to greater accountability, as the performance of organizational actors is put under scrutiny. Indeed, the relationship between transparency and accountability has been conceptualized as a linear relationship dependent on the quality of data made transparent and the institutional mechanisms in place to administer sanctions, compensations, or remedial actions (Fox 2007).

This interpretation of the relationship between transparency and accountability can be contrasted with that of other scholars who focus more on the human and social aspects of the relationship. For example, several scholars have written about the negative impact of transparency exercises in organizations, which tend to serve as a mere spectacle for showcasing performance but are quite far removed from the reality they are trying to mirror (Roberts 2009; Strathern 2000). For example, George (2009) describes how pressure on health officers in India to demonstrate progress to higher-level bureaucrats and politicians results in a singular focus on the achievement of targets and a failure to address real problems experienced by health workers, resulting in a lack of motivation and confidence among health workers and poor-quality service delivery.

Research has been conducted in several domains identifying the multiple systems of accountability that coexist in any human organization. For example, in

a compelling study, Yakel (2001) shows how the formal radiological report is shaped by a variety of socializing processes. The radiologist is accountable for conducting a specific test, while the clinician, who is ultimately accountable to patients for providing health care, must interpret the report. In the context of public service delivery in developing countries, the term “civil accountability,” coined by Newell and Wheeler (2006), refers to local or “self-help” forms of accountability identified as crucial for communities to realize their entitlement to basic services. Civil accountability has been discussed as a local self-help strategy in situations in which the formal system of accountability has broken down. For example, Pare and Robles (2006) identify the strategies that indigenous communities have used to exercise their right to water when the municipality’s formal system of watershed use and management has failed. Similarly, Veron *et al.* (2006), coining the term “community accountability,” refer to a system of accountability based on social obligations felt by members of village-level committees.

In recent years, there has been growing interest in the possibilities of using new technologies such as mobile phones and other handheld devices to enable more long-term systemic changes in accountability structures for delivering primary health care, with many m-health experiments conducted in developing countries. This policy drive is part of a larger discourse concerning the role of mobile devices in improving service delivery—for example m-services are beginning to expand into areas of health and education as a way to provide a complementary monitoring and evaluation tool for development programs (Bott and Young 2012). In the context of health care, this policy drive has resulted in many recent experiments in which mobile devices have been provided to local health workers with the intention of obtaining more reliable field-level data that can be input at source, providing a greater sense of empowerment for these frontline government workers. For example, based on a cost-benefit analysis, Rashid and Elder (2009) found that, in Uganda, having health workers use mobile devices to communicate between district offices cost 24 percent less than having workers use traditional methods to collect and transmit data manually. Apart from improving data transparency, these applications also may empower frontline health workers, who can use the devices to improve the organization and coordination of their work at the field level.

The recent policy focus on increased participation, transparency, and accountability in public service delivery has resulted in the implementation of a variety of information-based tools and technologies sometimes within a period of only a few years. The next section describes four accountability initiatives that have been deployed for improving primary health care accountability in Karnataka.

Karnataka’s Rural Health Strategy

Karnataka has developed a widespread network of health services. The state capital, Bangalore, has many specialty hospitals, but the state as a whole is following the national system of primary health centers (PHCs) and subcenters. Karnataka has a large number of NGOs and voluntary organizations

involved in health care delivery, community health training, research, advocacy, and networking. Since the 1970s, the state has negotiated and received various grants and loans from international funding agencies for implementing national programs focused on malaria, leprosy, tuberculosis, blindness, and acquired immunodeficiency syndrome (AIDS). At the level of primary health care in Karnataka, there are 1,800 PHCs and 8,143 rural subcenters. Each PHC covers a population of approximately 30,000 dispersed in 35–40 villages and provides both preventive care offered by field-level health workers, who administer immunizations and drugs, among other services, during household visits, and curative care offered by auxiliary nurse midwives (ANMs) and doctors, who provide outpatient care in clinics.

In 1999 a task force was set up by the Karnataka government with the aim of improving the management and administration of the Department of Health and Family Welfare. In April 2001 the task force submitted its final report. In addition to recommending hiring additional health personnel and increasing the allotment of medicines for the PHCs, the report highlighted many organizational issues, such as the difficult working conditions of ANMs and the highly bureaucratic monthly exercise of reporting. The report also addressed policy-related themes that went beyond medicine and public health, such as the lack of focus on equity, the widening gap between the intent and implementation of policy, the decline in motivation among health system professionals, and the widening cultural gap between the providers and beneficiaries of health services (Task Force on Health and Family Welfare 2001). Since the 2001 report, the Government of Karnataka has initiated several processes to improve the management of public health care in the state. In 2005 the World Bank commissioned the Indian Institute of Management, Bangalore, to develop an information systems strategy plan,¹ which highlighted weaknesses related to the information flows between various tiers of the health system and how those weaknesses affected the decision-making process. Lack of information was identified as affecting inventory control, resulting in giving the same amount of drugs to all 1,800 PHCs, regardless of their specific needs. Data generated by the PHCs were of poor quality, and the government or bilateral agencies had to conduct independent surveys for their statistical reports. The strategy plan made recommendations for improving management procedures at the PHC level and for introducing health information systems. Initial pilot studies for computerization at the PHC level were conducted from 2005 onward, and the first version of the Health Information Systems Program (HISP) software (called District Health Information System or DHIS) was implemented around that time in three PHCs in Karnataka.² DHIS 1.0 was not server based, and each personal computer had its own copy. The server-based systems were introduced in DHIS 2.0, using server space hired from a service provider. Although individual officers were supportive of computerization efforts, there was little overall support from the Karnataka government for these initial efforts.

The strategy report also recommended improving the management of health care provision by building partnerships with the private sector and

with NGOs. Indeed, Karnataka has a history of partnerships with the NGO sector in managing public health facilities. In rural areas, partnerships were formed with NGOs and with approval of the zilla panchayat (district council) to create new management structures for the poorest-performing PHCs in the state. In Karnataka, a formal policy document was formulated in 2000 in which the management of 26 PHCs (one in each district) was handed over to the Karuna Trust.³ The main impetus for this partnership was to improve access to basic health care, including essential drugs, to create better facilities, and to foster a clean environment free of bribery. The government pays 90 percent of salaries, administrative expenses, and drug costs, while Karuna Trust pays for the rest out of its own funds and is responsible for recruiting health staff and providing 24/7 services, 24-hour emergency facilities, and other essential health services. The Karuna Trust also has been instrumental in supporting early efforts to implement information systems at the PHC level. Under NRHM, personal computers were provided in practically all PHCs in Karnataka, and health workers were trained. For a while in 2010, it was possible to access computerized data on most PHCs in Karnataka, but this situation was short-lived, as the government did not build its own structures for supporting health information systems and did not want to fund work by NGOs on a continuing basis. As a result, the reporting system was only partially automated.

NRHM Accountability Initiatives in Karnataka

The NRHM was launched in 2005 to improve the health of the population and the delivery of health services in rural India. It seeks to provide universal access to equitable, affordable, and quality health care that is accountable and at the same time responsive to the needs of the people. In doing so, the NRHM aims to achieve the United Nations Millennium Development Goals.⁴ Under the NRHM, various initiatives were launched to promote improved accountability in primary health care.

Integrated Health Management Information System

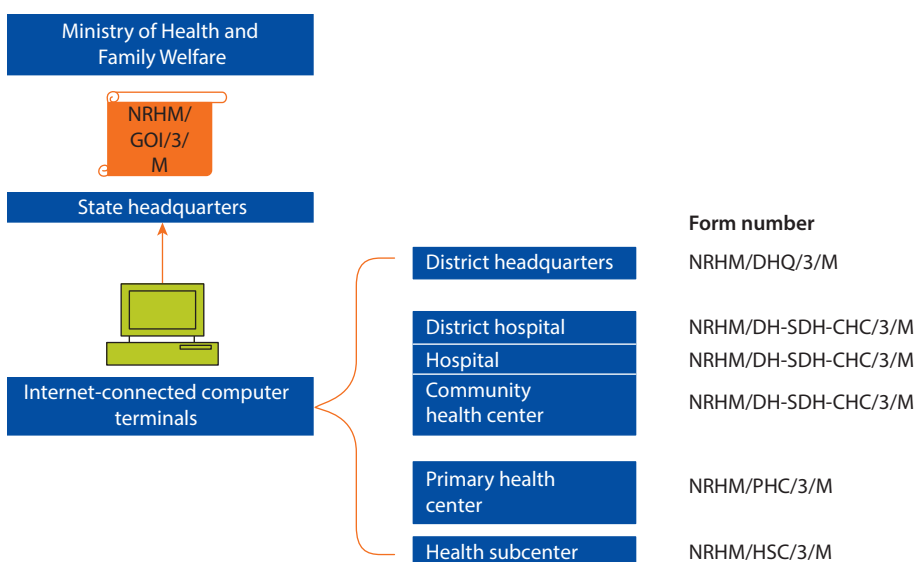
Accurate, relevant, and up-to-date information is considered essential so that health service providers at all levels can initiate action to close gaps in the system based on evidence and information. Recognizing the need for an information base, one of the core strategies of the NRHM has been to strengthen the capacity to collect, assess, and review data to support evidence-based planning, monitoring, and supervision. Before the NRHM, computerization at the PHC level had been piloted using the DHIS.⁵ In Karnataka, DHIS was modified to offer Kannada text and voice interface, and the software was installed in Gumballi PHC in 2003 on a stand-alone basis. Between 2003 and 2006, the system was implemented at all the Karuna Trust PHCs through an externally installed server. However, frequent technical problems resulted in ad hoc use of the system for reporting.

The Ministry of Health and Family Welfare (MoHFW) addressed the situation by establishing a dedicated portal for all public health-related information. The HMIS portal, which went live in 2008, captures data in the revised HMIS formats on a Web-based system enabling information entered for each facility to be aggregated easily for reporting to higher levels of the health administration (figure 7.1).

Monthly reports generated at the PHC level constitute the central means by which the primary health care system demonstrates accountability. At the PHC level, 17 reports are generated, which begin their life in the three to four subcenters within each PHC. Manual reports at the subcenter level are input into the PHC computer and subsequently combined into taluk (subdistrict), district, state, and national reports, which are scrutinized by the central government and by donors, which supplement the rural health budget and provide strong incentives for the health system to achieve its target outputs. However, the report of the Second Common Review Mission (NRHM 2009) pointed out that, although computers have been made available at least up to the block level and in many states up to PHC level, there is a shortage of trained personnel to maintain the HMIS (Jacucci, Shaw, and Braa 2005). In some places, severe shortages of electricity and lack of good Internet connectivity have been common hurdles in the successful implementation of HMIS (NRHM 2009).

Throughout India the validity and reliability of data are poor, with most states relying on manual preparation of reports and frequent changes in reporting formats to respond to the demand of vertical programs (Sharma 2009). Table 7.1

Figure 7.1 Health Management Information System Portal



Source: Ministry of Health and Family Welfare.

Table 7.1 Missing Data on Diarrhea, Malaria, and Tuberculosis in Chamarajnagar District, Karnataka, Various Years

<i>Month</i>	<i>Diarrhea, 2011</i>	<i>Malaria, 2009</i>		<i>Tuberculosis, 2007</i>	
	<i>New cases</i>	<i>Blood smears collected</i>	<i>Positive cases</i>	<i>Sputum tests collected</i>	<i>Positive cases</i>
January	18	128	—	4	—
February	16	137	—	6	1
March	15	134	—	10	—
April	4	106	—	7	—
May	3	226	—	7	—
June	—	—	—	9	1
July	—	—	—	6	—
August	—	205	—	6	—
September	2	254	—	7	1
October	—	303	—	4	—
November	4	227	—	6	—
December	3	275	—	5	—

Source: Nanigian 2012.

Note: — = none recorded.

presents examples of missing data and data anomalies in a PHC in Chamarajnagar District, Karnataka.

The manual preparation of reports is hampered by the lack of readily available preprinted registers, which are used to collect data from the subcenter level upward. For example, the 2009 concurrent evaluation exercise in Karnataka, which was conducted in seven districts, reported a shortfall in many of the registers (table 7.2).

George's (2009) study in Koppal District of Karnataka reveals how various formal mechanisms, including HMISs, staff meetings, and sanctions, perpetuate a system of accountability in which reports are seldom complete or accurate and staff merely check their numbers against predefined formulas. Underlying these formal mechanisms, George identifies complex informal relations in which the force of disciplinary action is corroded when supervisors and elected representatives use their authority to transfer, demand, and siphon off money in a nontransparent way.

Community-Monitoring Exercise

An integral part of the NRHM's overall strategy to improve accountability in primary health care is community monitoring aimed at eliciting citizen feedback through various community engagement mechanisms. These initiatives are designed to create a higher level of responsibility from the government as well as foster a spirit of ownership in the community. Karnataka has been the focus of several innovations related to "communization" in public health and other social sectors and has had a generally positive environment for civil society activism. The community monitoring shows the perceptions of community members on various health status and service delivery parameters according to low/poor,

Table 7.2 Concurrent Evaluations in Karnataka, 2009*Number of PHCs, unless otherwise noted*

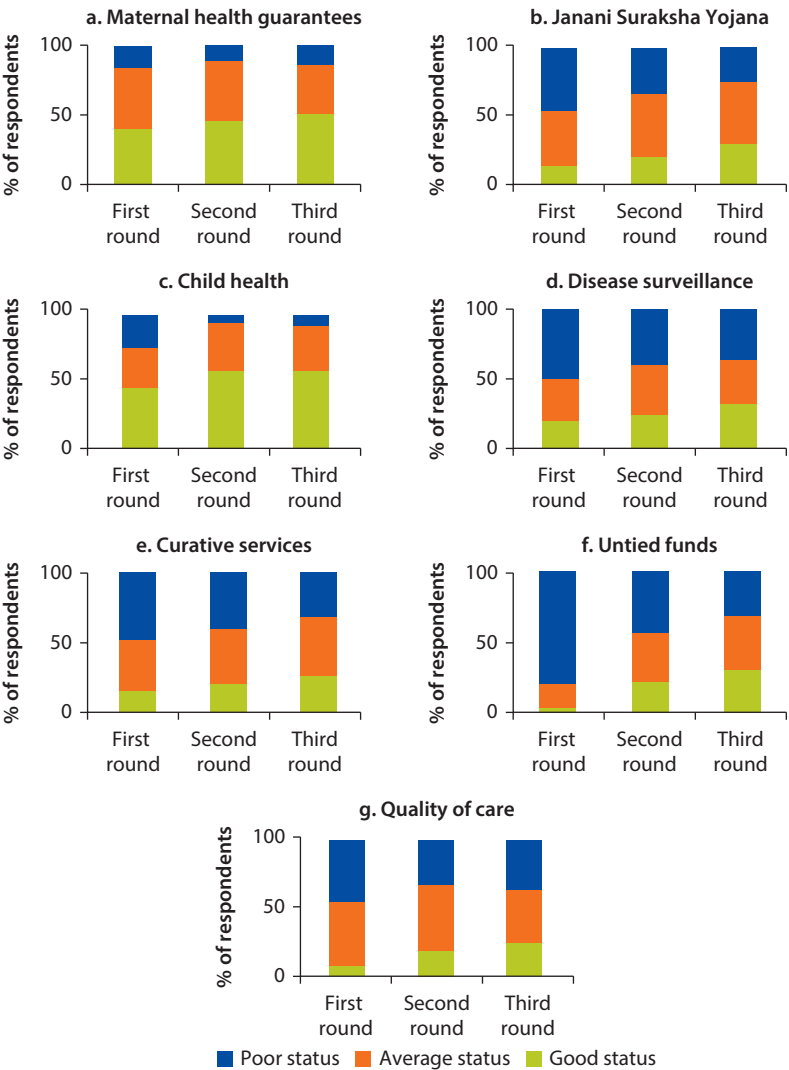
Record maintenance	District							Combined	
	Bijapur	Chamarajnagar	Davanagere	Mandya	Mysore	Raichur	Uttar Kannada	Number	%
Eligible couple register	2	4	1	1	3	2	2	15	53.6
JSY register	4	4	4	4	4	4	4	28	100.0
Antenatal care register	4	3	2	4	4	4	3	24	85.7
Postnatal care register	3	3	2	2	3	3	3	19	67.9
Immunization register	4	4	4	4	4	4	4	28	100.0
Family planning register	4	4	4	3	4	4	4	27	96.4
Adolescent health clinic register	0	1	1	1	1	1	2	7	25.0
Meeting register	4	4	4	3	4	4	4	27	96.4
Untied funds register	4	4	3	4	4	4	4	27	96.4
Birth register	3	4	3	4	4	4	4	26	92.9
Death register	2	4	2	3	4	3	4	22	78.6
Adequate preprinted registers available									
Eligible couple register	0	1	2	1	3	1	0	8	28.6
Antenatal care register	1	3	3	3	2	2	1	15	53.6
Immunization register	1	3	0	1	2	2	1	10	35.7
Adequate preprinted cards available									
JSY	2	1	0	1	4	0	0	8	28.6
Maternal and child health	4	1	3	3	4	4	2	21	75.0
Immunization	3	4	3	2	4	2	2	20	71.4

Source: NRHM 2009.*Note:* JSY = Janani Suraksha Yojana; PHCs = primary health centers.

medium/satisfactory, and high/good indicators. Karuna Trust analyzed cumulative data from four districts following three rounds of community monitoring, as presented in figure 7.2.

Analysis of the scorecards collected over a period of six months in 2008–09 shows the perceptions of community members on various health and health service parameters as recorded by Karuna Trust (Sudarshan *et al.* 2009). The bar charts show an overall decrease in low/poor scores and an increase in high/good scores over the three rounds, although this is more pronounced for maternal and child health than for other parameters.

Figure 7.2 Village Report Cards (Cumulative of Four Districts)

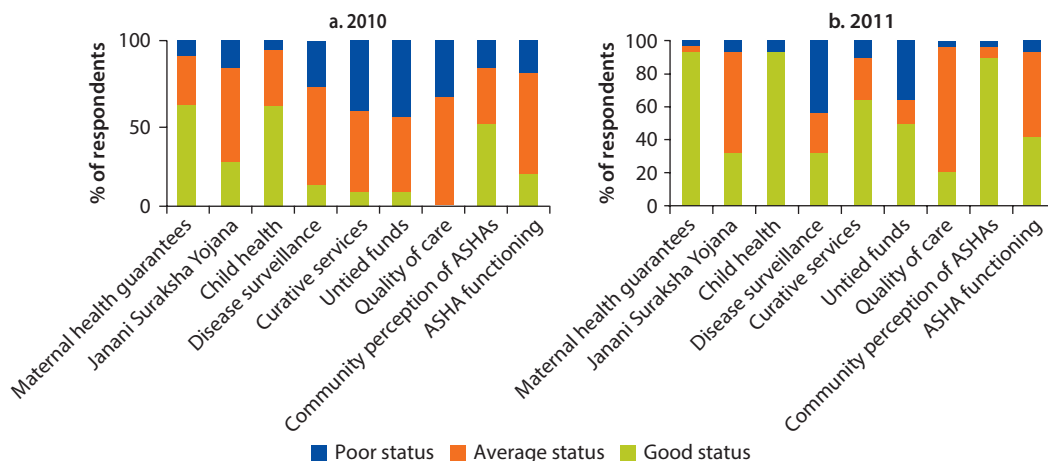


Source: Sudarshan et al. 2009.
Note: Janani Suraksha Yojana is a Government of India scheme launched in 2005 that aims to decrease neonatal and maternal deaths by promoting institutional deliveries.

However, the trust did not analyze more recent, disaggregated data, which meant that raw data from the report cards had to be input into an electronic format. This was done only for 2010 and 2011, although not all village information was available and many report cards were missing. Despite glaring gaps in the data, a composite PHC report card was composed in order to compare the four PHCs of Gowdahalli, Gumballi, Honnur, and Mamballi in Yelandur taluk from 2010 to 2011 as well as to compare the scores given to each health indicator over that time span (figure 7.3).

Figure 7.3 Composite Health Indicators in Four PHCs, 2010 and 2011

Percent



Source: Nanigian 2012.

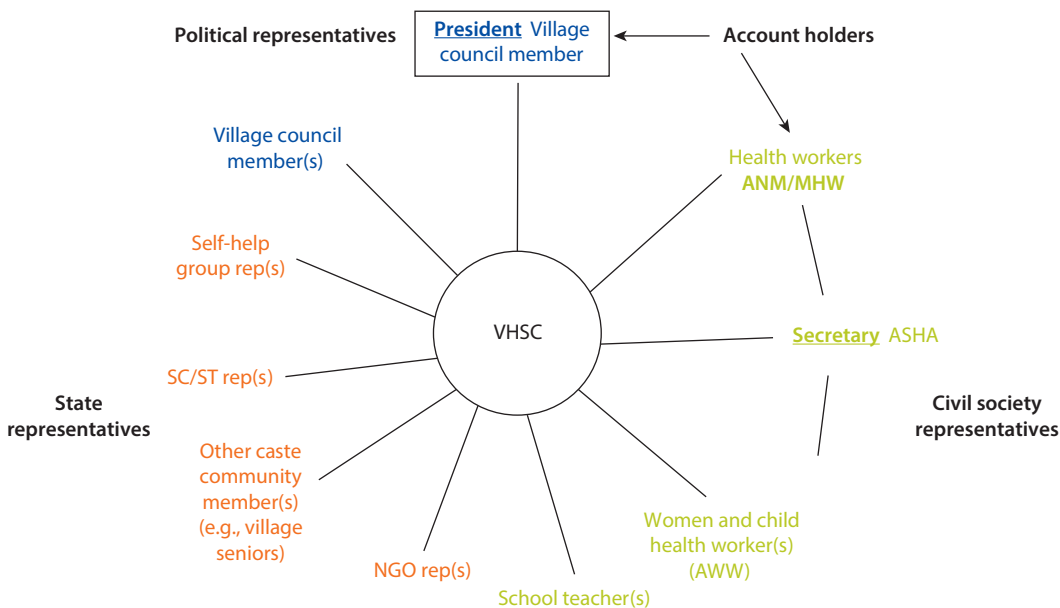
Note: ASHAs = accredited social health activists; PHCs = primary health centers.

From 2010 to 2011, apart from the disease surveillance and untied fund parameters, which reported nearly 50 percent of villages as low/poor, there has been a significant increase in the percentage of villages with a high/good score for maternal and child health and for community perceptions of ASHAs (accredited social health activists). ASHAs were introduced in 2005 as a core element of NRHM's strategy to improve accountability for delivering primary health care. ASHAs are local women trained to act as community health educators and promoters in their village, while serving as a key mechanism for communicating between the health care system and the rural population. According to NRHM guidelines, one ASHA is deployed in every village in India. Described by the MoHFW (2005) as activists in the community who will create awareness of health and its social determinants, ASHAs are charged with various duties, including motivating women to give birth in hospitals, bringing children to immunization clinics, encouraging family planning, treating basic illness and injury with first aid, keeping demographic records, and improving village sanitation. Evidence shows that the use of health care services has improved since the introduction of ASHAs (Shrivastava and Shrivastava 2012).

Village Health and Sanitation Committees

A more recent accountability initiative introduced under NRHM is different in nature to the two initiatives already described. The VHSCs reflect a form of accountability based on self-help and communization in which transparency and accountability are important for building trust and cooperation between members of the committee.

In 2009 the NRHM constituted VHSCs as village-level forums for conducting the community-monitoring exercise and enabling the community to take the lead on health and its determinants, such as sanitation, nutrition, and health awareness.

Figure 7.4 VHSC Structure

Note: ANM = auxiliary nurse midwife; MHW = male health worker; ASHA = accredited social health activist; AWW = anganwadi worker; NGO = nongovernmental organization; SC/ST = scheduled castes/scheduled tribes; VHSC = Village Health and Sanitation Committee.

The VHSC, an official committee of the gram panchayat (village council), is mandated to include 15 members composed of a mix of state, political, and civil society representatives. All VHSCs in the country receive a monthly allocation of Rs 10,000 (US\$167) in untied funds from central government in three installments. The president of the VHSC, a gram panchayat member, and the ANM are joint account holders for allocation of the fund. Figure 7.4 illustrates the membership of VHSC.

State employees hold four seats on the VHSC. Anganwadi workers (AWWs) have a long tradition of providing basic health care. Belonging to the community in which they work, they are able to understand the real issues behind community health care (Mahanty *et al.* 2008). ASHAs are also local women, but, unlike AWWs, they are not trained to distribute public health goods or services to citizens and are unsalaried, receiving only incentives for achieving targets. ANMs represent the state and are frontline community health workers; they are regarded as a crucial link between clinical health care providers and citizens (Malik 2009). Finally, teachers are state employees who may be represented on the VHSC; as nonmedical members of the VHSC, they can serve as a bridge between the VHSC and other state-sponsored village-level committees, such as village education committees. In order to ensure that citizens with the least power and voice are represented, VHSC guidelines state that representatives from marginalized groups such as self-help groups and scheduled castes/scheduled tribes (SC/ST) should serve on the VHSC (Government of India 2005).

While VHSC members remain part of existing accountability structures linked to their parent department, new accountability structures have emerged among VHSC members, as they now share responsibilities for identifying village development priorities that can be met using the untied fund. This study has examined the minutes for more than 90 VHSC monthly meetings since 2010 in 11 villages in Gumballi PHC, Chamarajnagar District. Table 7.3 provides details

Table 7.3 Details of VHSC Meetings, Gumballi Village, December 2010–December 2012

<i>Date</i>	<i>Attendees</i>	<i>Issues discussed</i>
2010		
December	Gram panchayat member (president), ASHA (secretary), SC representative, AWW helper, JHA, ASHA, Shrishakthi group, three community members (seven signed, three thumbprint)	Weighing machine, thermometer, wristwatch, torch with carrier. Rs 500 for ASHA for emergency services, water filter purchase. For all items discussed, quotations will be obtained. Discussion about the upcoming pulse polio program due to start in January 2011
2011		
January	Gram Panchayat (President), ASHA (VHSC Secretary), health worker, AWW, SC representative, Shrishakthi representative, 3 community members	Decision to clean drains, improve drinking water facility, and purchase sari uniforms for ASHA workers, watch for ASHA workers, slippers for pregnant women, bleaching powder for water tank
February	Gram panchayat member (president), ASHA (VHSC secretary), SC representative, JHA, ASHA, Shrishakthi group, two community members	Items agreed for purchase at last meeting were displayed. Remaining funds to be used to purchase saris for ASHA workers and slippers for pregnant women; training to be run by Udhbava for VHSC members
October	Gram panchayat member (president), ASHA (secretary), AWW helper, four community members	Recap of last month's purchase decisions and remaining balance; discussion on how to use further release of Rs 3,000 from VHSC fund on 13 footwear for eligible pregnant women, photocopy of women and childbirth entry form for record keeping, and purchase of saris for ASHAs
December	Gram panchayat member (president), ASHA (VHSC secretary), junior maternal health worker, JHA, ASHA, two community members	Details of last meeting's decisions and purchase details. 15 footwear for pregnant women, Rs 500 for buying books, file, pens, and Xerox items for ASHA
2012		
January	Gram panchayat member (president), ASHA (secretary), AWW helper, four community members	Details of last meeting and purchased goods. 16 footwear distributed to pregnant women, and 1 sari distributed to ASHA. Decided that ASHA would be in charge of arranging VHSC and maintaining records
March	Gram panchayat member (president), ASHA1, ASHA2, AWW1, AWW2, maternal health worker, AWW3, two community members	Purchase of weighing machine for AWW to observe children's health condition agreed because of identified malnourished children; purchase of Nokia phone for ASHAs for emergency contact. Purchase of blood smear instrument for ASHA to help to test blood at village level. Cleaning of village overhead water tank and mini tank, which have not been cleaned for a long time. Quotation for above items to be taken first. VHSC fund below Rs 2,000, so some work may have to be done in future

table continues next page

Table 7.3 Details of VHSC Meetings, Gumballi Village, December 2010–December 2012 (*continued*)

<i>Date</i>	<i>Attendees</i>	<i>Issues discussed</i>
2012 (cont.)		
April	Gram panchayat member (president), ASHA (secretary), AWW helper, four community members	Discussion of last meeting's purchase decisions. Three mobile phones, which were approved in last meeting, were distributed. Distribution of weighing machines for two AWW centers. Decision taken to purchase lime powder to avoid insects inside the water tank
September	President did not attend; maternal health worker, ANM, ASHA1, ASHA2, AWW, two community members	No VHSC fund left, so no decisions taken. Cleanliness in village was discussed with reference to gram panchayat, as cleaning drains, bore well surroundings, and blocked water removal concerns the gram panchayat. Another matter related to gram panchayat is repair of water tanks. In the village, two mini tanks have been damaged, and a letter has been written by the VHSC to gram panchayat about this
December	Gram panchayat member (president), ASHA (secretary), ASHA, AWW, three community members	Rs 7,000 fund released and deposited in VHSC account. Slippers for pregnant women, uniform for ASHA; one set to be purchased as funds not enough for more. Purchase of water filter candle for AWW center

Note: ANM = auxiliary nurse midwife; ASHA = accredited social health activist; AWW = anganwadi worker; JHA = junior health assistant; SC = scheduled caste; VHSC = Village Health and Sanitation Committee.

Table 7.4 Results from VHSC Meetings

<i>Local strategy</i>	<i>Description</i>
Hold meetings and attendance	More frequent since mid-2011 in all villages; explicit drive to encourage attendance of members
Use untied funds for cross-cutting purchases	More cross-cutting use of funds since mid-2011
Initiate planning and monitoring functions	Monitoring of PHC data, village cleanliness, water quality, and health camps; help for destitutes in village
Demand the disclosure of untied fund accounts	No more blank check signing; committee approves expenses, and item is distributed at next meeting
Serve as a space for political negotiation	PHC interest in health equipment; VHSC approaches gram panchayat with request for sanitation expenses

Note: Summary results of VHSC meetings from 11 villages since 2010–11 (90 meetings). PHC = primary health center; VHSC = Village Health and Sanitation Committee.

of the VHSC meetings that took place in Gumballi village from December 2010 until December 2012.

A variety of local self-help strategies have emerged since 2010 from the regular conduct of VHSC meetings. These relate to improving accountability of primary health care at the local level and are presented in table 7.4.

The VHSC has developed into a key institution that mediates between citizens and the state on a variety of critical and hitherto neglected local priorities that cross over between health, sanitation, nutrition, and overall village development. However, the extent to which the VHSC signals a new phase in accountability for primary health care ultimately depends on the extent to which it integrates with the formal system of reporting discussed earlier. In other words, much depends on whether the “voice” of the VHSC is taken seriously within

the overall architecture of the health system. High-level political support for community engagement in primary health care remains strong, as reflected in the NRHM 12th Plan Period document:

Further, in the 12th Plan Period, a system of constructive accountability is envisaged with the aim of bringing about improvements in the public health system rather than holding people accountable in order to reprimand them or take other punitive measures. An accountability framework needs to be built with clearly identified responsibilities for all stakeholders at all levels. Involvement of communities should be strengthened to ensure that the accountability framework is implemented effectively.⁶

Beneficiary Verification System

The BVS was implemented as a pilot in February 2011 as part of a larger health project of the World Bank called the Karnataka Health System Development and Reform Project (KHSDRP), which was launched in December 2006 under the auspices of the NRHM. The mandate of KHSDRP is to provide better public health care services, particularly maternal health, in remote and underserved areas of the state by focusing on the following:

- Improve access to and availability of essential health services
- Build institutional capacity to manage for results and accountability
- Encourage evidence-based decision making by policy makers
- Strengthen monitoring capacity to identify systematic weaknesses in public health service delivery
- Build local capacity to address service delivery and accountability issues, improve key stakeholder participation, and obtain feedback throughout the project
- Conduct continuous monitoring of progress toward output and outcome indicators
- Strengthen existing government health programs and achieve more effective and equitable service delivery
- Converge data collection from various sources to improve usefulness and effectiveness
- Harness public pressure from local governments and civil society organizations and create more opportunities for the “voice” of the people to be heard.

The BVS pilot project currently operates in the districts of Dharwad and Belgaum in northern Karnataka. It serves a population of approximately 6.5 million, with pregnant women and children as the intended beneficiaries. The BVS is intended to capture antenatal and postnatal data at PHCs to facilitate routine data collection, program implementation, and strategic planning. An important component of the project is to establish a mechanism for obtaining feedback from beneficiaries regarding service delivery.

One of the aims of the BVS pilot is to experiment with multiple technologies. Hence the device has touch screen, magnetic swipe cards, and smartcards for

identifying beneficiaries, fingerprint for authentication purposes, global positioning system (GPS), and an external camera. These technological features, designed to improve accountability, have the following objectives:

- *Beneficiary authentication.* Cameras, fingerprinting, and GPS are used to provide evidence that a particular beneficiary is receiving services, enabling service delivery to be monitored more effectively at higher levels of the health administration.
- *Facility status check.* Cameras are used to capture the condition of facilities.
- *Beneficiary monitoring.* Built-in alarms warn when a beneficiary is not receiving regular checkups and generate automatic reports on the failure to deliver services, which health workers can use to investigate why the beneficiary is not receiving services.
- *Junior health assistant (JHA) monitoring.* Monitoring captures the attendance and daily activities of JHAs. While it is technologically possible to use GPS to track all the field visits to identify where workers go, how many antenatal care patients they register, or what services they give, such close scrutiny can have negative effects on health workers.
- *Beneficiary participation.* Swipe cards, fingerprinting, local language interface, and voice input involve beneficiaries and JHAs more actively in the service delivery process. An interactive voice system and smileys encourage feedback from citizens.
- *Dashboard functionality.* Capturing metrics enables the analysis and monitoring of key health service outputs, such as key performance indicators, beneficiary feedback loop, facility and asset verification, and demographic distribution by various levels of the health administration: taluk, district, and state government.

The BVS project was initiated with a feasibility study in January 2011. The pilot phase commenced in early February 2011. The enrollment of beneficiaries began in mid-April 2011, and the distribution of swipe cards began in mid-May 2011. The project went live in October 2011, was extended until October 2012, and recommenced in February 2013. A three-member team involved in evaluating the BVS pilot in Karnataka led by the London School of Economics and the Indian Institute of Management, Bangalore, visited a selection of PHCs and sub-centers in the two pilot districts of Belgaum and Dharwad in northern Karnataka for a period of five days in early January 2013. Since the pilot phase of the project was completed, a retrospective evaluation was conducted through interviews with doctors and focus groups with health workers and other health staff, including ASHA workers and beneficiaries. Audio and video recordings were undertaken. The team also observed an evaluation meeting at the district level.

This evaluation found that the system collected real-time data on performance outputs and outcomes for use by health supervisors in order to ensure that services reach the intended beneficiaries. Data that serve to authenticate beneficiaries, identify delivery or nondelivery of services, document the status of

health facilities, and obtain feedback from beneficiaries provide crucial support for health planning and resource allocation.

However, improved transparency of data achieved through the BVS pilot may not in itself lead to improved accountability of primary health care delivery. Much depends on the extent to which the new technological solutions such as mobile phones and handheld devices are able to give voice to ASHAs and JHAs who form the foundation of the health system. This observation implies that initiatives designed to improve accountability for service delivery need to involve both beneficiaries and frontline service providers. JHAs have identified both the collection of data and use of mobile phones as valuable for communicating with beneficiaries and other health workers and supervisors. The provision of dedicated mobile devices (rather than shared devices, as is currently the case under the Mother and Child Tracking System) provides flexibility for health workers in their daily field visits. While the BVS offers considerable scope for capturing beneficiary feedback, the procedures involved in conducting the exercise and interpreting the results need to be strengthened.

Discussion and Conclusion

This chapter has described four types of initiatives aimed at improving primary health care accountability in Karnataka since 2005. Although they have evolved chronologically, multiple systems of accountability coexist, as depicted in table 7.5.

Drawing on the conceptualization of the participation-transparency-accountability nexus, this concluding section reflects on each of the four initiatives presented with regard to the form of accountability at play and the extent to which ICT and non-ICT artifacts are used.

The formal system is the NRHM HMIS, which still constitutes the main form of accounting for the delivery of primary health care services, although the automated reports may be supported by manual records. A basic assumption driving this initiative is that transparency of data can be enhanced with the use of ICTs and that this can lead to improved accountability of health care. The routine reports serve to legitimate the allocation of resources to health agencies at different hierarchical levels, although the quality of data is poor. The institutional mechanisms in place for learning from the data are weak, with meetings often used to gloss over local problems and challenges facing health

Table 7.5 Systems of Accountability

<i>System</i>	<i>Year of launch</i>	<i>Status</i>
National Rural Health Mission, Health Management Information System	2008	Ongoing
Community monitoring	2008	Completed
Village Health and Sanitation Committees	2009	Ongoing
Beneficiary Verification System	2012	Ongoing

workers in the delivery of services and local priorities at the village level related to health and sanitation.

The community-monitoring exercise was carried out over a period of around 12–18 months based on the assumption that health planners would use data about citizens' perspectives on health to improve service delivery. While the exercise was concluded after three or four rounds, there are proposals to include further rounds in the program implementation plans of different state governments, including Karnataka. Although computers have assisted in analyzing scorecard data, the initiative was executed manually, with citizen responses enumerated on paper scorecards. Transparency of data was poor, as analysis was only conducted at the aggregate level rather than at the PHC level. Questions were not asked about why certain health parameters scored high, while others scored low, reflecting a more deep-rooted endemic problem.

The use of VHSCs is becoming more frequent, and momentum has been created for them to become a regular forum for discussion of health and cross-cutting priorities among state, political, and civil society representatives. The form of accountability in this initiative is different from that in the three other initiatives in that no assumption is held about increased transparency of data leading to greater accountability. On the contrary, accountability is understood from a human and social perspective and identified through self-help, local negotiations.

The BVS piloted in Dharwad and Belgaum continues, and there are plans to roll out the project across the state of Karnataka as well as in other states. This initiative relies exclusively on ICTs, as many of its features are driven directly by its design. With regard to accountability, BVS subscribes to the assumption that greater transparency of data will make the primary health care system more accountable to beneficiaries.

This case provides evidence that multiple systems of accountability coexist, each with its own logic. The logic that drives the NRHM HMIS is that improved management procedures and streamlined information processing are fundamental to achieving organizational transparency and to providing data that can be used for making public servants accountable. Yet the lack of accurate data and a centralized information system that allows little opportunity for citizen participation render the objectives of increasing transparency, accountability, empowerment, and participation through the HMIS questionable.

The community-monitoring exercise, in contrast, is intended to encourage citizens to participate by providing feedback about service delivery, although it is unclear as to what action, if any, is taken based on this "revealing of data." Second, poor transparency of data also challenges accountability. In addition, the empowerment and participation of the ASHA workers who collect data are questionable, as it is not clear how much their participation and knowledge of ground-level realities have improved the information system. Moreover, for this kind of exercise to have relevance beyond the collection of community perceptions, it needs to be conducted regularly over a period of time with careful analysis of data.

In terms of the VHSC, a nontechnical and less overtly visible accountability form is emerging that deserves policy focus. Here, one sees an attempt to support the participation and engagement of local health and other development workers, local politicians, and civil society players—all of whom are instrumental in shaping village life. As with the original formulation of PHCs in the 1970s, health issues faced at the village level are discussed in relation to other social welfare issues, thereby maintaining relevance for its members. It is therefore interesting that this completely non-ICT-based form of transparency and accountability potentially offers the most opportunities for participation and empowerment, as it occurs at a local and accessible level.

And finally, the logic that drives the BVS is again one of citizen participation at various stages in the service delivery chain. The technological capability exists to make the data visible via the dashboard, although increased transparency of data may not influence current ways of working and decision-making structures that have evolved over time within the health bureaucracy. In this case, while the rationale is to promote transparency and accountability, there are few opportunities for citizens to participate (for example, in designing and implementing the software or interface rather than just using it).

In returning to the sociocultural, technological, economic, and political factors necessary for empowerment through ICTs, we again find that technology is the least relevant factor. Socioculturally, the users of the health information mechanisms discussed here need to trust the relevance and accuracy of the data. Moreover, transparency needs to be seen as actionable: in Schedler's terms, attempts at transparency need to be both answerable and enforceable (Schedler 1999). This is related to the economic incentives for participation and perceptions of the greater political environment. In this comparative analysis, the least technical mechanism (VHSC) is found to be more relevant and accepted than the most technological one (BVS), with the caveat that both are at early stages.

In conclusion, this case holds wider implications for rural health policy in Karnataka as well as in other states and country contexts. First, while a variety of "short route to accountability" initiatives seek to improve the delivery of basic primary health care, at a strategic level there is a need to consolidate the learning that derives from each of them. So far, too little attention has been paid to this exercise. Second, while learning from individual initiatives is a must, a higher-level strategy is needed to integrate these disparate initiatives in order to support each other. Although efforts fall under the mandate of the NRHM, little higher-level integration is being attempted. Finally, an important lesson from the experience in Karnataka can be equally relevant to other developing-country settings: while a variety of technological solutions continue to be promoted for improving accountability of service delivery, these solutions should not overshadow the need to nurture socializing forms of accountability, such as the VHSC, that draw strength from the actual practices of those who deliver services and are closest to the community.

Notes

1. See www.janaarogya.org/English/Janaarogya%20-%20Our%20Work.htm.
2. See www.hisp.org.
3. The Karuna Trust is a public charitable trust affiliated with the Vivekananda Girijana Kalyana Kendra, which has been providing basic health care, education, and livelihoods to tribal communities in Karnataka for the past 27 years.
4. Millennium Development Goals 4, 5, and 6 relate to improving health outcomes.
5. DHIS is an open-source software developed by the University of Oslo for monitoring health indexes at the facility level. DHIS was established as a pilot project in South Africa in 1994 and has since been rolled out to several states in India as well as other countries in the developing world.
6. See the NRHM website (<http://nrhm.gov.in>).

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Closing the Feedback Loop: Can Technology Amplify Citizen Voices?

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Strengthening civic engagement in the planning and implementation of development assistance is not a new aspiration. It has been part of the international development dialectic since the late 1960s and 1970s. However, translating this ideal into reality has proven to be elusive. International development agencies, governments, and nongovernmental organizations (NGOs) have been hampered by time, cost, distance (Kapur and Whittle 2009), and their own organizational cultures (Easterly 2006) in bridging the gap between hearing and responding to “the voices of the poor” (World Bank 2000). Citizens also experience challenges to providing feedback due to information asymmetries (Cecchini and Scott 2003), fear of retribution (IRIN 2008), high perceived costs relative to benefits, and inaccessible channels of participation (Baer *et al.* 2009).

The rapid proliferation of information and communication technologies (ICTs) raises the possibility of harnessing increased connectivity to amplify citizen voices in the development process, thus enhancing local ownership, accountability, and results (Chambers 2010; Gigler 2004). At the same time, low penetration rates for newer technologies (United Nations 2012) and

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high barriers to access with regard to cost, literacy, and hardware indicate that additional considerations must also be addressed. Thus technology-enabled citizen feedback poses not only possibilities, but also drawbacks that must be managed. Addressing the challenges and opportunities presented by ICTs requires consideration of not only platforms, but also processes of stakeholder engagement and the enabling institutional environment (Morris 2011; North 1990).

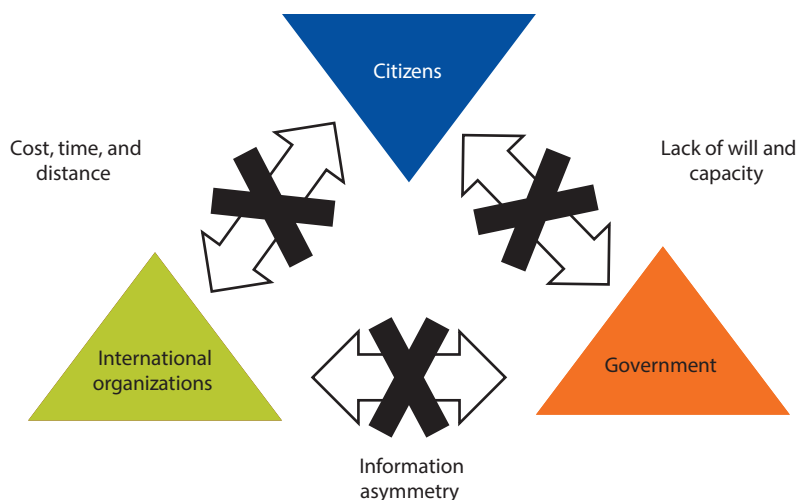
This chapter asks, to what extent are ICTs capable of ameliorating a “broken feedback loop” in development assistance by strengthening civic engagement throughout the project cycle? It has four sections. The first clarifies the broad concepts of citizen feedback, participation, and civic engagement, which tend to be used interchangeably in the literature, and describes the complex role of intermediaries and third-party actors. The second constructs a five-point systems framework to derive a more holistic approach to integrating technology into citizen feedback mechanisms. The third analyzes primary research collected from surveys and interviews with World Bank staff and other development experts to assess the current understanding of, use of, and demand for ICT-enabled feedback. A final section points to the future for technology-enabled feedback.

Conceptualizing Citizen Feedback in Development Assistance

Development practitioners and aid critics alike recognize a fundamental dilemma in development assistance: distance, including both geographic distance between provider and recipient as well as political distance arising from power imbalances between providers and recipients (Baer *et al.* 2009; Barder 2011; IRIN 2008). The problem with distance is that it perpetuates information asymmetries, weakens accountability, and reduces the ability of international donors to hear the voices of citizens. This distance has given rise to what has been termed a “broken feedback loop” in development assistance, in which those who receive assistance are geographically and politically separated from those who fund and provide it, making it challenging for citizens to engage with funding and implementing agents in the development process. This has given rise to gaps in the transparency, accountability, and effectiveness of development assistance (Martens *et al.* 2002; Milner 2006). While many development agencies and governments are committed to seeking robust interaction with beneficiaries and citizens, several barriers give rise to the broken feedback loop. These barriers are visualized in figure 8.1.

Attempts to repair the broken feedback loop tend to invoke the broad concepts of citizen feedback, participation, and civic engagement. Before proceeding, we distinguish between these terms and the understanding employed in this chapter.

The concept of a *citizen feedback loop*, as captured by Jacobs (2010, 57), is “a systematic approach to collecting the views of [beneficiaries] and other key stakeholders about the quality and impact of work undertaken by

Figure 8.1 The Broken Feedback Loop

Source: Samantha Custer, adapted from Custer, Novin, and Palumbo 2011.

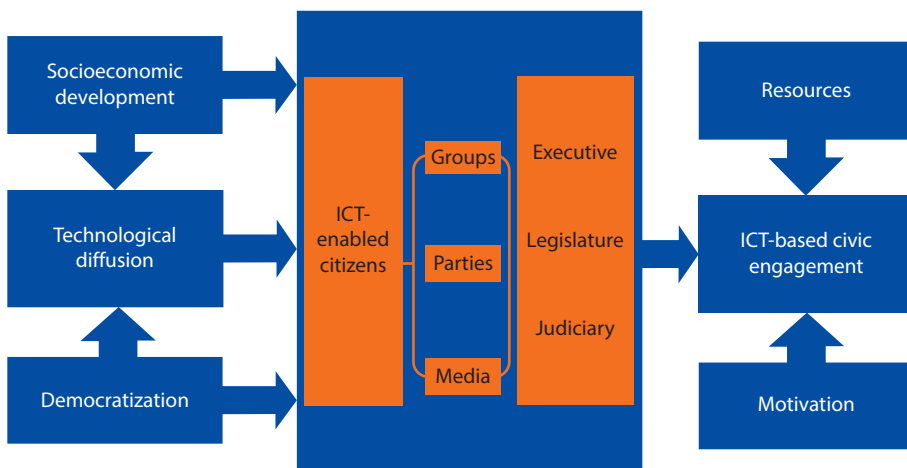
a development agency.” The process of citizen feedback in development has been seen as comprising “three, interconnected steps: (1) sharing information, (2) giving feedback, and (3) taking action and communicating back” (Custer and zum Felde 2012; World Bank Institute 2011). The rationale is that feedback will contribute to successful planning, management, and evaluation of development projects. From this perspective, citizen feedback is typically not the end goal in and of itself. Rather, it is instrumental to improving the results of development interventions and achieving other goals, such as social accountability, good governance, and citizen empowerment, that are the driving forces for why development actors invest resources.

Citizen participation—another commonly used but vague notion—has broader governance connotations. More than 2000 years ago, the Greek philosopher Aristotle defined citizens as *all* who share in the civic life of ruling and being ruled in turn (cited in Mansbridge 1999). Modern definitions of citizenship build on Aristotle’s understanding of citizenship as “the rights and responsibilities” of individuals who plead allegiance to the constitution of a country. In development, participation is a complex, contested notion (Hickey and Mohan 2004; Mohan 2001), with discourse addressing beneficiaries both as stakeholders participating in project decision making (Bhatnagar and Williams 1992; Paul 1987; World Bank 1996) and as citizens participating in political processes to inform public policies (Parry, Moyser, and Day 1992). Participation viewed from a social accountability perspective differs from the more narrowly defined instrumental participation in two respects. First, the shift in focus from “participation” to “accountability” implies a shift in power from citizens participating in a project *owned* by someone else to citizens holding donors or governments responsible as duty bearers for their actions (Fox 2007). Second, the issue of *who* participates

changes from direct project beneficiaries to an entire citizenry. This broader conceptualization moves closer to the definition of civic engagement.

Civic engagement implies a broader process that includes not only citizens but also intermediaries and state and nonstate third parties. Ehrlich (2000, vi) sees it as “working to make a difference in the civic life of our communities and developing the combination of knowledge, skills, values, and motivation to make that difference. It means promoting the quality of life in a community, through both political and non-political processes.” Engagement also connotes exchange and interaction. Participation typologies connect civic engagement to various objectives, such as “enhancing citizen power,” fulfilling public consultation requirements, “improving problem solving to avoid disputes,” “engaging continuous involvement of citizens in planning processes,” and enabling citizen “self-mobilization” (Cornwall 2008; Pretty 1995; Schlossberg and Shuford 2005). For Ehrlich (2000, xxvi), “A morally and civically responsible individual recognizes himself or herself as a member of a larger social fabric and therefore considers social problems to be at least partly his or her own; such an individual is willing to see the moral and civic dimensions of issues, to make and justify informed moral and civic judgments, and to take action when appropriate.” In addition, Norris (2003, 171) defines civic society as “the multiple organizations buffering between citizens and the state, including [political] parties, ... news media, traditional interest groups such as trade unions and professional associations, ... [and] alternative social movements such as environmental organizations, the women’s movement, human rights groups, and peace activists.” The emphasis is therefore on a society comprising citizens, state, and nonstate actors. Norris makes a distinction, shown in figure 8.2, between citizens, civic engagement, and the use of ICTs.

Figure 8.2 Distinction between Citizens, Civic Engagement, and the Use of ICTs



Source: Norris 2003, 15.

Note: ICT = information and communication technology.

We make the distinctions between these terms intentionally because they are often used interchangeably both in the literature and, as will be seen, in our primary research. However, it is important to distinguish between these concepts as they relate directly to the questions we discuss as well as help to unpack the overall purpose and objective of feedback in development. Are we discussing citizen feedback on already designed projects? Is the aim of feedback to ensure successful projects? Or is it broader, to build stronger capacity for participation and civic engagement? And in the distinction between citizens and a broader society (the implication of *civic engagement*), what is the role of intermediaries or third parties? While ICTs were originally thought to bring about “*disintermediation*,” as is increasingly realized, in fact, they necessitate “*reintermediation*”—new intermediaries (or new roles for existing intermediaries) to address persistent information asymmetries and bridge digital inequality resulting from high costs, low ICT penetration, low literacy, and low ICT literacy skills, among other factors. What new dynamics and negotiations are created here? These are deeper questions on the critical role of ICTs in propelling social change, as we are witnessing worldwide. While these questions connect with some of the discussions in this chapter, we focus specifically on analyzing citizen feedback mechanisms within the broader political economy context of civic engagement and participation (boxes 8.1, 8.2, and 8.3 describe several approaches being taken at the World Bank). At the same time, we recognize that this lack of conceptual clarity is one of the challenges to understanding what citizen feedback is and what purpose it serves.¹

Box 8.1 Integrating Feedback from Civil Society and Beneficiaries into Project Implementation: The E-ISR+

Since 2005, the World Bank has used Implementation Status and Results (ISR) reports to track progress of a project from inception through implementation. Historically, such information was available exclusively to project staff; however, the launch of the World Bank's Access to Information Policy in July 2010 provided an opportunity to make these reports available to the public. Consequently, the World Bank's Africa Region, as part of its commitment to enhancing project effectiveness and results, initiated the External Implementation Status and Results Report Plus (E-ISR+) in 2010. The E-ISR+ is a systematic mechanism for incorporating external feedback on project performance and evaluation. As designed, it is intended to “disclose current project information to external stakeholders, to obtain feedback from non-state players on project progress and results, and to systematically reflect external feedback in implementation reporting” (Kalathil and Wilson 2013, 3). It integrates multiple aspects of citizen feedback, including social accountability, third-party monitoring, and participatory monitoring and evaluation.

Originally piloted in five African countries (Burkina Faso, Ghana, Kenya, Nigeria, and Zambia), E-ISR+ activities were then implemented in Burkina Faso, Ghana, and Zambia.

box continues next page

Box 8.1 Integrating Feedback from Civil Society and Beneficiaries into Project Implementation: The E-ISR+ (continued)

The methodology for eliciting feedback from third parties varied by country. For example, in Zambia, feedback was collected from direct and indirect beneficiaries through in-depth interviews and focus group discussions. In Ghana, feedback was collected primarily through focus group discussions with civil society organizations (CSOs) and direct project beneficiaries.

E-ISR+ solicits citizen feedback via third-party organizations, such as civil society or private research companies, in order to “add [another] layer of transparency, accountability, local ownership, and stakeholder participation to ongoing Bank operations. . . . The E-ISR+ Initiative has proved to be extremely useful in providing Bank staff with a credible source of nonstate actor feedback on various projects. In some cases, this data has been used to improve some of the projects and has had a particular bearing on the development of subsequent demand-side mechanisms” (Kalathil and Wilson 2013, 16).

Box 8.2 Complementing Existing Feedback Mechanisms with ICT Platforms: OnTrack

Under the Open Development Technology Alliance (ODTA),^a OnTrack is a platform that supports short message service (SMS) and Web-based feedback loops between citizens, civil society, government, implementing agencies, and World Bank staff around World Bank-funded projects. The platform enables stakeholders to provide feedback as well as to view, monitor, analyze, and act on the feedback and inputs provided. Enhancing the capacity of implementing agencies to communicate project objectives should empower beneficiaries and civil society organizations (CSOs) to engage with project implementation in their locality. Streamlining the adoption of information and communication technology (ICT) tools should also enhance the collection and resolution of feedback and facilitate reporting on and iteration of project design and implementation. The ultimate goal is to improve project implementation.

OnTrack is being developed in four countries and nine projects: Bolivia (two), Ghana (four), Nepal (one), and Zambia (two).

In *Bolivia*, it is being implemented in two World Bank-financed projects: the Rural Alliances Project (PAR) and the Bolivia infrastructure program, Barrios de Verdad (PBCV).

The PAR seeks to “improve access to markets for poor rural producers in selected areas of the country by implementing a productive rural partnership model.” This is achieved by promoting economic partnerships, strengthening farmers’ organizations, improving access to productive assets and technology, and promoting better practices among local service organizations. OnTrack enables rural producers to provide feedback using broad-based technologies, such as mobile phones. It also serves as a means of communication between beneficiaries, the public, and government implementation agencies. OnTrack is now integrated into

box continues next page

Box 8.2 Complementing Existing Feedback Mechanisms with ICT Platforms: OnTrack *(continued)*

the official website of the PAR.^b So far, beneficiaries have submitted 146 messages, and more than 70 beneficiaries have participated via either the platform or text messages.

The PBCV works with residents on the outskirts of La Paz on projects to improve physical infrastructure as well as to strengthen community participation and improve the quality of life for the poorest households. By 2015, the program aims to upgrade 200 (190 urban and 10 rural) neighborhoods of the 539 neighborhoods in the Municipality of La Paz. OnTrack facilitates direct communication between residents via SMS, social media, and the Internet, reducing the time and resources needed to submit a comment or a grievance. According to a neighborhood leader, “It takes time to write a letter, take it to the SITRAM offices, and follow up on the status of the case. We lose time and spend money on transportation. Now the system makes this process take much less time.”^c

In *Ghana*, OnTrack augments the E-ISR+ pilot described in box 8.1. The E-ISR+ surveys use innovative, cost-effective, efficient, and culturally appropriate approaches, including mobile telephony, to collect and track feedback from communities on seven projects. The information collected is fed directly into the ISR reports for projects in small and medium enterprise development, rural water and sanitation, transportation, nutrition, and malaria.

Feedback is gathered from respondents through the use of unstructured supplementary service data (USSD) and interactive voice response (IVR). The USSD platform is in English only, targeting relatively educated groups where texting is not a barrier to use. The IVR platform is in English, Dagbani, Hausa, and Twi, ensuring that language is not a barrier to use.

Respondents provided 4,608 individual responses to 48 sets of questions under four thematic areas. Because many of the respondents did not use Web-enabled mobile handsets, the IVR and USSD platforms will remain the most effective means of generating feedback. In the future, OnTrack will be a key component in the monitoring and evaluation of World Bank-financed projects in Ghana.

In *Nepal* OnTrack is being implemented within the Poverty Alleviation Fund (PAF), a community-driven development project targeting the needs of the poorest. OnTrack provides a space for citizens to share feedback, submit suggestions, and report issues with pictures or documents and for project implementation units to manage and track issues as well as publish project information in real time. The platform was recently tested in the district of Kapilvastu and was expected to be launched and extended to 39 more districts in 2013.

In *Zambia*, OnTrack is being used by the Irrigation Development and Support Project, implemented by the Ministry of Agriculture and Livestock, and by the Promoting Innovative Approaches to Periurban Sanitation Improvement Project, implemented by the local utility Lusaka Water and Sewerage Company. Both projects provide direct services to poor rural and urban communities. OnTrack is used to improve project monitoring and help implementing agencies to respond to the needs of citizens.

a. The ODTA aims to enhance accountability and improve the delivery and quality of public services through technology-enabled citizen engagement. An initiative of the World Bank, it is anchored by the World Bank Institute, the ICT Sector Unit, and the Social Development Department. See <http://odta.net>.

b. See www.empoderar.gob.bo.

c. The PBCV refers to OnTrack as Barrios Digitals, which can be found at www.lapaz.bo.

Box 8.3 Initial Challenges of Integrating Mobile Technology in Feedback Mechanisms: Nigeria's Third National Fadama Project

The Third National Fadama Project (Fadama III, following Fadama I and II) is a World Bank–assisted agriculture and rural livelihoods project aiming to increase the incomes of *fadama* users on a sustainable basis. *Fadama*—irrigable land—has been a source of conflict among farmers, fishermen, and pastoralists. This project adopts a community-driven development approach to empower local community organizations to develop, implement, and monitor their own development plans. The US\$450 million Fadama III is being implemented in 35 states and the Federal Capital Territory (World Bank 2010).

In 2012, as part of the World Bank Institute's information and communication technology (ICT) for Social Accountability Program, Fadama III piloted the use of a short message service (SMS)–based feedback mechanism, called MyVoice, in two states (Nasarawa and Federal Capital Territory). The SMS-based mechanism aims to complement the ongoing engagement with beneficiaries through community associations and user groups. It enables local farmers' organizations to answer satisfaction surveys, send in grievances, and respond to follow-up questions from state governments via SMS. For example, it asks, How is your project going? If it's good, send "1." If you are not satisfied, send "2." (Reboot 2012). In an effort to incentivize citizens to participate, the SMS tool is also being used to communicate information back to farmers' groups, such as information on program processes and events, best practices in farming, and local weather conditions. The SMS feedback is then integrated into the project's monitoring and evaluation efforts. The issues identified in this way are addressed by World Bank, government, and civil society stakeholders and used to inform the design and administration of the project in the future. This is combined with a Web-based dashboard to assist local and state government agencies in tracking, processing, and responding to the feedback they receive in a much more systematic way than before. In the words of the World Bank's Merrick Schaefer, the intention was to create an approach that moves beyond "grievance collection ... to actual redress" (Custer and zum Felde 2012). This pilot is intended to be scaled up to other states where Fadama III is operating.

An early evaluation found that the rate of mobile penetration in Nigeria is relatively high (expected to reach 79 percent by 2015), but the technological literacy of potential users is low. Only a fraction of participants in the pilot (24 percent) could use the SMS tool without external support, while 57 percent required support and 19 percent were deemed "not suitable for [using] the system." For example, "Only 15 percent of testing participants knew how to use the Reply function on their phone to respond to text messages [and] generally did not use the phone's Address Book application." Moreover, of those users identified as able to use the system independently, 81 percent were men, and most resided in the Federal Capital Territory, a largely urban area, reflecting a common gender and socioeconomic imbalance (Reboot 2012).

An additional challenge was the limited ability of users to comprehend the nature and content of the system as well as their unmanaged expectations regarding the system's outcomes. During the pilot, many users texted their unstructured thoughts, which did not constitute actionable information. There was also significant variation in the expectations of participants regarding who would receive their feedback as well as how and when it would be addressed.

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Box 8.3 Initial Challenges of Integrating Mobile Technology in Feedback Mechanisms: Nigeria's Third National Fadama Project *(continued)*

It is important to manage the expectations of respondents in an effort to avoid disillusionment, apathy, or reporting fatigue. To address this risk, the system is now designed to send follow-up responses within a certain amount of time regarding whether a complaint was resolved and to ask whether the user is satisfied with the outcome or process, with a recommended monthly check-in.

The role of intermediaries or “infomediaries” in ICT-mediated feedback initiatives must be examined in more detail. By enabling citizens to make sense of project data, infomediaries can facilitate the link between individual citizens and communal “civic” action (box 8.4). As Norris (2003) notes, these infomediaries may include news media, trade unions and professional associations, religious, environmental, women’s, and human rights groups, political parties, and peace activists. In addition, infomediaries can include informal networks, such as friends, colleagues, and family. However, while infomediaries may minimize the risk of elite capture and facilitate inclusion, they also bring their own biases and perspectives (Bailur and Masiero 2012; Sein and Furuholt 2009). The manner in which they translate ICT-based feedback mechanisms on the ground must be observed and supervised.

Overall, evidence suggests that technology can support civic engagement through the creation of new avenues for citizen participation, but the open question is, How do we use these tools to best achieve outcomes? For inclusive participation, citizen feedback mechanisms should ideally adopt a combination of new technologies (Internet and mobile phones) for expansive reach, older technologies (community radio), and no-tech approaches (in-person consultations). Furthermore, it is imperative for the architecture of feedback mechanisms to situate the choice of technology and platform within a broader discussion of citizen feedback as a set of interlinked and mutually reinforcing components. The next section presents a five-point systems approach to feedback applied in the context of World Bank-funded projects.

A Five-Point Systems Framework

What are the essential components needed to amplify the voices of citizens in development, and what is the appropriate role of ICTs within such a framework? Drawing on lessons learned from the literature and World Bank practice, this section identifies five interlinked and mutually reinforcing components that collectively constitute a systems approach to the design and implementation of technology-enabled citizen feedback initiatives. The five components of this framework are purpose, people, process, tools, and environment.

Box 8.4 The Challenge of Digital Inclusion and Incentivizing Participation: Daraja's Maji Matone Project in Tanzania

In many developing countries, efforts to improve rural access to water are hampered by geographic distance, dispersed populations, and lack of information regarding rural water supply (Thomson, Hope, and Foster 2012). Traditional monitoring mechanisms are costly and infrequent, often requiring field visits to remote areas. Mobile-enhanced technologies provide a promising platform for enhancing monitoring and evaluation of rural water service delivery sustainably and cost-effectively. At the same time, significant challenges remain to implementing information and communication technology (ICT)-enabled citizen feedback initiatives. Daraja's project to improve rural water supply in Tanzania using mobile telephones demonstrates how such initiatives can fail to mobilize citizens to provide feedback.

Daraja, a Tanzanian civil society organization (CSO), initiated the Raising the Water Pressure/ Maji Matone Project in 2009 to encourage citizens to use mobile telephones to provide feedback on access to water in rural areas. As of 2011, only 40 percent of Tanzania's rural population had access to a water source and only 54 percent of public water points were functioning (Taylor 2011). To address this challenge, Daraja, with primary support from Twaweza and its funders,^a developed short message service (SMS) tools to enable citizens to report the status of water point functionality in their area. The specific objectives were to "(a) share information about water point functionality with the public in accessible formats, (b) enable citizens to update functionality information in real time via SMS, and (c) analyze and publicize responsiveness of government to citizen notification."^b

In 2010 the Maji Matone Project was piloted in three districts in the south of Tanzania, and the SMS feedback collected was integrated into a water point map. Although considerable resources were spent to promote the program through posters, leaflets, and radio broadcasts, the six-month pilot received and forwarded to district water departments only 53 messages (compared to a target of 3,000 messages).^c Although the project resulted in the repair of several water points across the three pilot districts, progress was hampered by the lack of citizen engagement. The evaluation attributed this to "the lack of mobile access for women in rural areas who are the primary household member to collect water [and] the challenge of supporting a project without any certainty of a result or change in the individual's water supply situation."^d This supports the potential exclusivity of ICT-enabled feedback mechanisms, particularly in rural areas.

As the Maji Matone Project demonstrates, "Systems relying on user feedback are not purely technical and reside within existing social and political structures ... where crowdsourcing may either challenge or inadequately address existing and established social norms and power relations" (Thomson, Hope, and Foster 2012). In this case, it could not be assumed that the lack of citizen feedback implied that water points were functioning well. Instead, many people did not send messages because they were afraid that doing so would bring retribution or "earn them a reputation for being a troublemaker,"^e despite the fact that users could send messages anonymously. The review also uncovered low user expectations regarding government responsiveness to feedback, particularly given "a long history of unfulfilled promises

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Box 8.4 The Challenge of Digital Inclusion and Incentivizing Participation: Daraja's Maji Matone Project in Tanzania (*continued*)

from politicians, government, nongovernmental organizations (NGOs), and others ... in relation to water supply services.”^{ff} The Maji Matone Project failed to demonstrate the connection between citizen feedback and improved service delivery, lowering the incentives of citizens to participate and unintentionally excluding a large portion of the population of interest (women) through its reliance on mobile technology.

a. The Swedish International Development Authority, the U.K. Department of Foreign and International Development, the Hewlett Foundation, the Netherlands Development Organization, and the Dutch International Humanist Institute for Cooperation with Developing Countries.

b. “Daraja: Raising the Water Pressure,” Twaweza, February 10, 2010 (<http://twaweza.org/go/daraja-raising-the-water-pressure>).

c. “Maji Matone Hasn’t Delivered: Time to Embrace Failure, Learn, and Move On,” Daraja, December 14, 2011 (<http://blog.daraja.org/2011/12/maji-matone-hasnt-delivered-time-to.html>).

d. “Monitoring Report 2011: Daraja; Raising the Water Pressure,” Daraja (<http://twaweza.org/uploads/files/Daraja%20Monitoring%20Report%202011.pdf>).

e. “Monitoring Report 2011: Daraja; Raising the Water Pressure,” Daraja.

f. “Why Did Maji Matone Fail? 3. Citizens’ Engagement, Risk, and Apathy?” Daraja, February 20, 2012 (<http://blog.daraja.org/2012/02/why-did-maji-matone-fail-3-citizens.html>).

Purpose: Articulating the Broader End(s) That Feedback Seeks to Facilitate

Four common drivers that are evident in the citizen feedback initiatives of World Bank–funded projects are likely to be broadly applicable: social accountability, demand for good governance, project effectiveness, and citizen empowerment.

Accountability is a state “whereby information about desirability, quality, or impact of an activity [is shaping] the behavior of decision makers” (Kapur and Whittle 2009). Implicit in the notion of accountability are relationships based on mutual obligation, standards of behavior, and expected consequences of misconduct (Bovens 2007a, 2007b). Social accountability emphasizes the involvement of citizens or civil society in exacting accountability directly from governments and other actors. Citizen feedback contributes to this through improved transparency and reduced information asymmetries.

Governance is “the use of power exercised through a country’s economic, political, and social institutions” in the setting of policies, provision of services, and rule of law (World Bank 2012a). Good governance is characterized as addressing issues of professionalism, effectiveness, transparency, participation, and accountability (World Bank 2012b). Citizen feedback is relevant to demand for good governance, as it bolsters the ability of citizens and nonstate actors to hold the state accountable, redresses information asymmetries, and supports enforcement.

Project effectiveness has evolved as a concept from simple efficiency calculations of impact per development dollar and avoidance of malfeasance to a multifaceted understanding of projects that are sustainable, locally owned, and appropriate to particular contextual challenges. Whether viewing project effectiveness

narrowly as reducing waste from corruption or broadly as communities owning and sustaining their own development, citizen feedback serves a monitoring or grievance function to catch wrongdoing as well as increase the understanding of local preferences, opportunities, and constraints. Finally, *citizen empowerment*, interlinked with ideas of “voice” and “choice,” views citizen feedback as a vehicle for enhancing the involvement and ownership of beneficiaries in project decision making and evaluation by establishing a two-way flow of information.

While individual drivers may be evident to different degrees, the motivations to seek citizen feedback are typically complex, and projects are likely to employ multiple drivers. The extent to which initiatives identify and make explicit the purpose of citizen feedback for all stakeholders is a critical component in achieving their intended objectives. Clarity of purpose is instrumental to shaping performance expectations for those providing and responding to feedback, evaluating the efficacy of the mechanism in achieving broader goals, and informing the architecture of the feedback system so as to facilitate the objectives. However, this component is frequently neglected, resulting in initiatives that are poorly integrated, insufficiently communicated, or ill-suited to the purpose.

People: Weighing Trade-Offs of Inclusivity and Complexity in Choosing Who Participates

Who participates is a second important component of a systems approach. Citizen feedback initiatives should clearly identify the roles and responsibilities of all stakeholders within the feedback loop. This involves consideration of not only who is involved, but also their roles with regard to providing, monitoring, responding to, or acting on the feedback. There are trade-offs in the degree of inclusiveness of feedback mechanisms and the complexity of managing them. Determining the breadth of actors involved has far-reaching sociopolitical implications regarding who is involved and who is left out, potentially altering the power dynamics or “deepening exclusion” (Cornwall 2008; Mohan 2001). This study identifies five groups interested in feedback systems: direct project beneficiaries, implementing agencies or host governments, domestic third-party organizations, the wider citizenry, and donor agencies (Custer, Novin, and Palumbo 2011).

Who Provides the Feedback?

Traditionally, the vast majority of feedback on development projects has been provided by implementing agencies, third-party organizations, or a representative sample of beneficiaries, rather than an entire citizenry. The use of such intermediaries has been viewed as a necessity because barriers of cost, distance, and time limit the utility of interacting directly with a broad base of citizens. However, the vulnerability of these groups to conflicts of interest around funding sources or “elite capture” may create perverse incentives to skew feedback (World Bank 2000).

At issue is the reality that intermediaries do not simply channel feedback, but interpret what is relevant, deciding how to aggregate and present information. That being said, in developing countries where civic literacy and information capabilities of the citizenry are nascent, civil society organizations (CSOs) continue to play a vital role as intermediaries, helping to track, analyze, and communicate information on public and private sector performance (Gigler, Custer, and Rahemtulla 2011).

Technology-enabled citizen feedback is seen as democratizing development by broadening the base of those participating in designing, monitoring, and evaluating development projects. In determining who provides feedback, projects may focus narrowly on hearing from representative subsets of beneficiaries or more broadly on hearing from a larger number of beneficiaries or even an entire citizenry. Projects prioritizing breadth of participation seek to ensure a minimum degree of involvement by many people. Participatory budgeting initiatives typify projects seeking a very broad scope of participation with large numbers of citizens providing input directly through open processes. In contrast, projects prioritizing depth of participation contend that the number of people involved is not as important as the degree to which they participate. Such projects may emphasize having a smaller number of specially trained citizens who provide input in concrete ways. In between these two poles are other permutations, such as representative participation through organized committees of elected or appointed beneficiaries or mechanisms by which individual beneficiaries could elect to report a grievance.

Optimally, it is best to engage the views of individual citizens to expand, not replace, the contribution of civil society in order to capture a comprehensive and balanced picture. Individuals and organized civil society may assume distinct, but complementary, participation profiles, illustrated by the World Bank's experiences of participatory budgeting in Latin America. Assessing lessons learned from participatory budgeting initiatives worldwide, Wampler (2007) notes that citizens are more likely to participate in discussions of specific public works projects, whereas CSOs are more willing to engage in dialogue around general spending policies and trends (Shah, Thompson, and Zou 2004). Applying this to feedback more generally, individual citizens will be more motivated to provide feedback on projects that are highly visible, proximate, and of shorter duration, while CSOs will be better positioned, at least initially, to engage on less-visible, nationwide, and longer-term projects (box 8.5).

Who Monitors, Responds to, and Acts on the Feedback?

The most fundamental accountability relationship is a "social contract" in which citizens pledge to recognize the legitimate authority of the state in return for the assurance of public goods. In the context of governance, domestic governments are the legitimate and responsible actors ultimately accountable to their citizens. Therefore, to sustain feedback mechanisms and ensure local ownership, domestic governments should be responsible primarily for processing and responding to citizen inputs. Yet governments are not monolithic entities. The challenge is to

Box 8.5 Engaging Citizens and Civil Society to Improve Governance through Mobile Technology: The Democratic Republic of Congo's ICT4Gov Project

In the Democratic Republic of Congo, governing institutions have been weakened by many years of conflict and corruption, and local and national governments suffer from limited legitimacy and weak capacity to provide basic services. In an effort to improve the quality of governance and service delivery, in 2006 the government mandated the transfer of revenue and government functions from the central to the local level. However, government mistrust remains problematic due to “asymmetry in information, low level of understanding of budget procedures, and low engagement with civil society” (Balbo Di Vinadio 2012, 2). According to the World Bank's Tiago Peixoto, “It became very clear early on that a great deal of mistrust stemmed from budgetary issues. When money did reach the grassroots level, community members felt they had no say in how it was spent” (Custer and zum Felde 2012).

To facilitate decentralization, the government launched the information and communication technology for Governance (ICT4Gov) Program in 2009 in the conflict-affected province of South Kivu. ICT4Gov integrates mobile technology into participatory budgeting to enhance citizen, government, and civil society engagement as well as provide greater access to information. While many citizens in South Kivu lack electricity or running water, many have access to mobile phones. Mobile penetration (16 percent in 2013) is rising rapidly and is expected to reach 47 percent (Estefan and Weber 2012). Building on in-person consultations and assembly meetings with citizens on budget priorities, the project uses short message service (SMS) messages, word of mouth, and community postings to invite citizens to assemblies, where they vote on community projects in which they would like government to invest, hear the voting outcomes and decisions of local government, and provide feedback on project implementation and outcomes. Local governments then direct a percentage of the local budget to the projects selected.

Unequal access to mobile technology could limit the inclusiveness of the project's ICT-enabled approach and reinforce gender or other inequalities, but the risk is mitigated by the use of face-to-face meetings. As Peixoto explains, both approaches are needed because “participatory budgeting goes into a level of detail in deliberation that you can't get through the characters of an SMS” (Custer and zum Felde 2012).

Crucially, the ICT4Gov Project targets activities to multiple local stakeholders, including provincial and local governments, citizens, and civil society organization (CSOs). CSOs monitor local projects and communicate this information to local communities in person and using SMS, helping to ensure sufficient buy-in for the program. Developing close partnerships with government and other local stakeholders is crucial. As Peixoto explains, “Without local knowledge we wouldn't last two days ... from identifying stakeholders and inviting them to the workshop. They wouldn't have come otherwise; [these local partners] brought everyone to the table” (Custer and zum Felde 2012).

As a result of the pilot, 54 classrooms were repaired, a bridge was built in Luhindja, a health center was created, the sewage system was repaired in Bagira, and a water fountain and toilets were built in local markets in Ibanda. An external evaluation found that, since implementation, local tax collection has increased up to 20 times in some cases, suggesting that citizens

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Box 8.5 Engaging Citizens and Civil Society to Improve Governance through Mobile Technology: The Democratic Republic of Congo's ICT4Gov Project *(continued)*

might be more willing to pay taxes if they can see the link to improved service delivery and outcomes (Balbo Di Vinadio 2012). In the words of a citizen in Bagira, South Kivu, "What I like the most about participatory budgeting is the participation ... and the transparency. Before I did not know how much money our city made. Now I know how much we have collected in tax, how much we have spent. And we have a say in how this money is spent" (Custer and zum Felde 2012).

More than 250,000 text messages were sent (Estefan and Weber 2012), but rigorous evaluation is needed to verify the accuracy and content of SMS messages received and to ensure that the approach is relatively immune to elite capture or exclusivity.

Local governments and communities are working to implement another round of participatory budgeting without substantial external support. In late 2012, the Parliament of South Kivu passed a law institutionalizing participatory budgeting throughout the province. The initial success in South Kivu has encouraged other provinces to replicate the approach. Moreover, it has been adopted and implemented in Cameroon, and several African countries, including Kenya, Madagascar, and Mali, have expressed interest in replicating it. Facilitated by the ICT4Gov, local governments signed the African Charter of Citizen Participation at the Africities Summit in Dakar, Senegal, in December 2012.

identify reform-minded champions within government and empower them to achieve gradual change. Which agencies and levels of government should be involved and in what way? Numerous studies point to the benefits of decentralization for improved service delivery (Dickovick 2010; Work 2002; World Bank 2004). By extension, local governments, with whom citizens most frequently interact, should be the first line of response for citizen feedback initiatives. However, higher levels of government should be involved in oversight in order to create vertical accountability, especially in contexts of constrained civic space or low citizen capacity to hold local governments accountable for acting on their concerns (Dickovick 2010; Shah, Thompson, and Zou 2004). Specialized regulatory or anticorruption agencies may also be well positioned to monitor the responsiveness of local government to citizen feedback.

In developing countries with weak governance and limited resources, accountability relationships are complicated by the presence of development assistance and external donors. A persistent question in discussions with World Bank staff and external experts concerns the appropriate role of international donors, such as the World Bank, that fund, but do not own, development projects. Donors and other international actors are interested in capturing citizen feedback in the context of the projects they fund, as well as more broadly in the interest of building civic space and improving governance in developing countries. Their involvement can help to create incentives or build capacity for the government to launch or sustain a feedback mechanism. In cases where public trust is low, the involvement of international actors could give citizens confidence to participate.

However, these actors must avoid undercutting the citizen-state accountability relationship that endures beyond a project cycle or loan term.

International actors may instigate or support development of citizen feedback mechanisms; however, they should not usurp the primary responsibility of governments. This raises two difficult questions. First, to what extent should international actors use their resources to create exogenous pressure for borrowing governments to seek and respond to citizen feedback? Second, if a government is neither sufficiently capable nor committed to closing the loop, should citizen feedback be avoided altogether?

Navigating the political economy of reform and addressing the constraints on who is participating and their respective roles are critical to shaping the expectations of stakeholders, facilitating accountability of government and international agencies, and ensuring the sustainability of citizen participation and organizational capacity to respond. This lays essential groundwork for the third feedback component: process.

Process: Navigating Project Cycles and Avoiding a Tyranny of Participation

Citizen feedback initiatives should intentionally codify the rules and norms by which the project will engage with those providing, monitoring, and responding to feedback. This involves considering what type of feedback will be solicited and with what frequency, how the feedback will be integrated within the project cycle, and what additional organizational capacity is needed to manage the feedback mechanism.

What Type of Feedback and with What Frequency?

Feedback should not be viewed as a monolithic concept, but rather as a typology of the types of information or interaction being requested of the citizen (table 8.1). One typology identifies four types of feedback: complaints, suggestions, monitoring, and satisfaction (World Bank Institute 2011). While this typology shows that feedback mechanisms go beyond complaint or grievance mechanisms, it is important to stress the importance of soliciting individuals' perceptions about the services they have obtained. A key idea is that methodologies such as "customer satisfaction surveys" that are applied in the private sector should also be applied in the public sector and in international development (Bonbright, Campbell, and Nguyen 2008).

Table 8.1 Feedback Typologies

<i>Type of feedback</i>	<i>Description</i>
Complaints	Ask users to identify problems with service delivery
Suggestions	Ask users to generate free-form ideas to improve services
Monitoring	Ask users to assess project performance against predetermined indicators
Satisfaction	Ask users to assess their happiness with levels of service provision or their involvement in project decision making

Source: World Bank Institute 2011.

In differentiating types of feedback, there is a need to take into account unique challenges that are likely to manifest with each type of feedback. For example, asking citizens to submit complaints regarding service delivery or malfeasance of project staff may run into “cultural barriers” regarding the acceptability of “complaining” or fears of retribution (IRIN 2008). Other types of feedback such as suggesting project improvements and priorities or monitoring project performance against indicators may require higher-order critical thinking skills, constituting a barrier to entry for those unfamiliar with these activities.

Citizen participation is desirable throughout the life span of a project (Estrella and Gaventa 1998); however, there is no consensus on the extent or form of that participation. “Participation ladders” present citizen involvement as degrees of increasing contribution of time, effort, and influence with each rung (Schlossberg and Shuford 2005). The ladders convey “implicit normative assumptions,” as lower rungs of participation are less desirable and higher rungs are preferable (Cornwall 2008). Burkey (1993) proffers a related conception of a continuum from “weak” to “strong” participation, the latter characterized by increasing autonomy on the part of participants to “identify problems ... mobilize resources, and assume responsibility.” Regardless of the typology, the decision-making burden of citizens increases with higher forms of participation. In fact, the expectations of “strong participation” (Gavin and Pinder 1998; Gosling and Edwards 2003) may evolve into an unhelpful “tyranny of participation,” without regard for power struggles or citizen cost-benefit calculations (Brett 2003; Cooke and Kothari 2001; Heeks 1999).

Higher frequency of interaction has implications not only for citizens, but also for the parties responsible for monitoring and acting on the information gathered. The more feedback a government or development actor seeks, the more human resources it will need to devote to responding to and acting on it, which increases the danger of feedback outstripping capacity to respond (this example draws from Martin 2009). This danger was exemplified by the experience of Femina HIP, a “multimedia civil society initiative” in Dar es Salaam that launched a short message service (SMS)–based feedback mechanism to solicit citizen input on its sexual health interventions. This mechanism catalyzed an “overwhelming response” from citizens, generating a sufficiently large number of text messages that the organization was unable to manage the response. Lacking adequate internal ticketing, management information systems, and human resources, Femina could not respond in a timely manner, decreasing citizen motivation to participate.

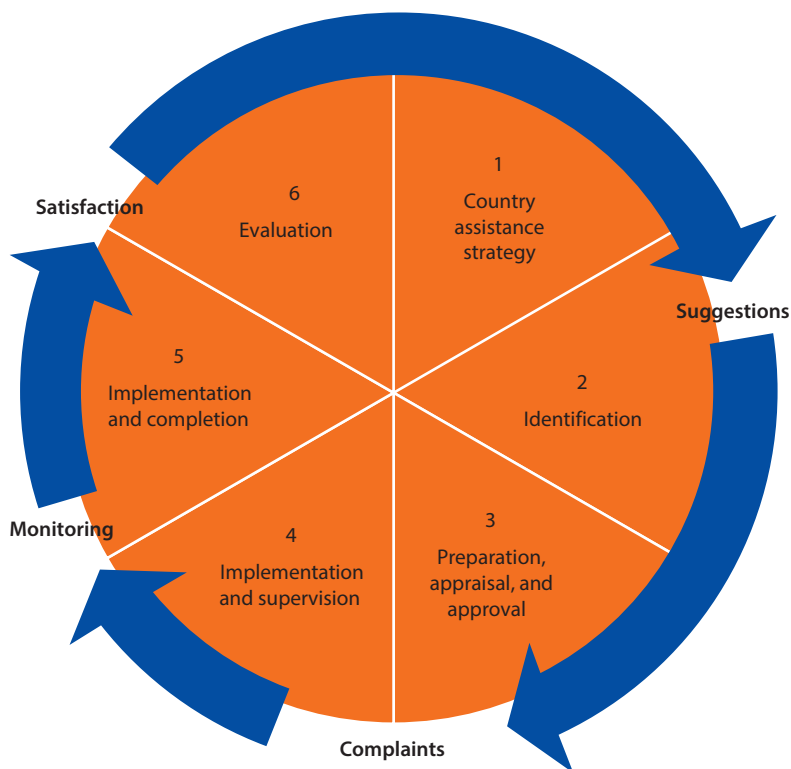
Integrating Feedback within the Development Project Cycle

While international donors publicly aspire to harmonize aid, diverse project cycles are still very much a part of development assistance. The complexity of the aid landscape is such that a single country may have numerous donors with their own project phases, despite the presence of multidonor trust funds that pool contributions. This gives rise to a fundamental dilemma between aligning feedback mechanisms with standing project cycles and recognizing that the

multitude of international actors may make a common feedback mechanism implausible. The unintentional by-product of feedback mechanisms unilaterally initiated by international donors could be to increase the burden on citizens and their governments to engage with a plethora of uncoordinated initiatives. This lends further credence to the importance of government ownership of feedback mechanisms.

To facilitate broader applicability, it is helpful to view citizen feedback in light of three generic stages of project management: preparation, implementation, and completion (World Bank Institute 2011). Ideally, citizens would be involved in shaping an entire project from conception through implementation and evaluation, providing various types of feedback (that is, suggestions, complaints, monitoring, and satisfaction). This idealized view may prove problematic to operationalize, with trade-offs between obtaining richer information to act and increasing the burden of participation. For this reason, the types of feedback solicited may vary at different stages of the project cycle, as illustrated in figure 8.3. Suggestions are particularly relevant in the early stages of project preparation. Complaints and monitoring become important during

Figure 8.3 Types of Feedback during the Project Cycle



Source: Adapted from the World Bank project cycle.

implementation and continue until project completion. Satisfaction is most prominent after the project is well under way and as part of ex post evaluation. These boundaries are porous, and numerous types of feedback may be collected at various stages.

For example, explicit community-driven development projects that feature many small-scale subprojects are likely to include more substantial engagement with citizens early in project preparation. The Tamil Nadu Empowerment and Poverty Reduction Project is emblematic of this. According to the World Bank's Samik Sundar Das, the project seeks feedback "not only in project implementation, but also [in its] design. ... [For example, the project develops] a community operation manual for activities, then we take it to the community to go through the entire thing [together], ... then the feedback comes [regarding] what will work, [and we revise accordingly]." Financing community institutions directly further cements ownership on the part of beneficiaries by prioritizing their needs, designing locally appropriate solutions, and managing the allocation of resources to achieve their goals (Custer and zum Felde 2012).

There is no definitive answer regarding whether some projects are more conducive to direct citizen feedback than others. That said, as discussed in the previous component, the participatory budgeting experience implies that citizens are most motivated to provide feedback on projects that are highly visible and proximate, are of short duration, and have direct benefits.

Organizational Capacity to Manage Feedback

Substantial human and financial resources are needed to sustain direct citizen feedback mechanisms, which require organizational commitment and capacity to interact with large numbers of individual end users rather than a limited number of third-party organizations. As closing the feedback loop is critical to motivating citizens to participate, governments and development actors should carefully consider the amount of feedback they can feasibly respond to and act on, perhaps prioritizing the quality rather than the quantity of feedback. Failure to devote adequate attention to follow-through erodes trust and negatively affects future participation.

Establishing clear rules and norms to govern the feedback mechanism is critical to harmonizing expectations between those providing and responding to feedback, ensuring consistent implementation of the process, and allocating adequate resources to support the feedback loop. While the impetus for creating a citizen feedback mechanism may be greatest at the start of a project, ultimately its efficacy will only be realized over time, as a culture of feedback emerges that endures beyond the project cycle. Paying adequate attention to the process is essential to sustaining citizen participation and government commitment for the long term. Communication tools for promoting information sharing and feedback collection can either enhance or detract from meaningful participation in these processes. This possible effect should be considered in designing feedback mechanisms.

Tools: Leveraging Technologies to Expand Reach, While Ensuring Inclusive Participation

Soliciting and responding to citizen feedback are primarily an issue of communication. Individuals and groups draw on a “repertoire” of mediums to access and share information. The resulting flows of information and communication form a “communicative ecology” as people make choices regarding the tools that best fit their needs and context (Tacchi, Watkins, and Keerthirathne 2009). In selecting technologies for citizen feedback initiatives, project staff should consider what conventional tools are already being used to collect feedback, what new options are available and their comparative value added, and the degree to which the options are appropriate to the context. Careful consideration of these components is critical to achieving an optimal balance between two important values: (a) expanding reach by leveraging new technologies in citizen feedback initiatives and (b) ensuring inclusivity of participation so as not to reinforce existing inequities.

For the purpose of discussion regarding citizen feedback, communication tools can be categorized as using no, low, or high technologies (table 8.2). The no-technology mediums rely primarily on in-person interactions. Low-technology mediums, while once new, have become ubiquitous over time and are rapidly approaching complete penetration. Community radio, for example, is available in rural and urban areas with relatively low barriers to access in terms of cost, literacy, and hardware (for example, Heatwole 2011; Kuriyan *et al.* 2011; Martin 2009). As a result of technology leapfrogging, developing countries are frequently bypassing traditional landlines in favor of cellular phones, mobile phones, and SMS technology and straddling the categories of low and high technology (for example, Gigler, Custer, and Rahemtulla 2011; Martin 2009; United Nations 2012). High-technology mediums are comparatively newer, with lower penetration rates and higher barriers to access (for example, Baer *et al.* 2009; United Nations 2012). At present, these include various Internet-based mediums, including specialized websites and social media.

In the context of civic engagement, the boundaries between the categories of no-, low-, and high-technology mediums are increasingly blurry. Services such as FrontlineSMS use a hybrid cell phone–Internet platform to aggregate individual

Table 8.2 Spectrum of ICTs

<i>Technology category</i>	<i>Description and barriers to access</i>	<i>Examples</i>
No tech	Relies on in-person interactions; negligible barriers to access ^a	In-person site visits, interviews, community meetings
Low tech	Increasingly ubiquitous and rapidly approaching complete penetration; low barriers to access ^a	Community radio or television, mobile phones (straddles low, high)
High tech	Comparatively new with lower penetration rates; higher barriers to access ^a	Internet, social media, mobile phones (straddles low, high)

Note: ICTs = information and communication technologies.

a. In terms of cost, literacy, and hardware.

text messages and sync them with an Internet site (Custer, Novin, and Palumbo 2011). Citizen feedback mechanisms increasingly include an “e-option,” with the proliferation of electronic citizen scorecards, virtual town hall meetings, and mobile phone-based surveys underscoring the porous boundaries separating categories (Baer *et al.* 2009; Heatwole 2011; Heeks 2010; Holzer, Zhang, and Dong 2004). Ideally, citizen feedback mechanisms should leverage new technologies (that is, Internet and mobile phones) for expansive reach and use older technologies (community radio) or in-person approaches for inclusive participation. In order to realize which is appropriate and how, it is important to understand the environment in which the ICT is introduced (box 8.6).

Box 8.6 Complementing Existing Feedback Mechanisms with ICT Platforms: Nepal’s Poverty Alleviation Fund

One of the greatest challenges to alleviating poverty in Nepal is ensuring equitable access to public resources and services. The Poverty Alleviation Fund (PAF), financed by the World Bank, aims to address this challenge by empowering local communities to design, implement, and manage their own development projects. According to World Bank senior economist Gayatri Acharya, “The PAF was set up to support the poorest, most marginalized, most geographically remote, and most socially isolated communities in the country” (Custer and zum Felde 2012).

The PAF adopts a participatory approach to development by collaborating with local government and civil society organization (CSOs) to mobilize communities and form community organizations. The PAF is working with 14,831 community organizations and 418,000 poor households in the poorest 40 districts in Nepal. Contrasting the PAF with centralized approaches to development, Acharya explains, “The government uses a block grant system. They build a road because they hear that a community wants it ... [but instead] the community [should] receive the money and then [it would be up to them] to buy the materials and build the road. [The reason this works is because the community] will be there and watch it every day” (Custer and zum Felde 2012).

Although regular community meetings are the primary avenue for collecting and communicating feedback, the PAF also leverages a variety of information and communication technology (ICT)-enabled platforms to ensure that citizens can communicate grievances or concerns at multiple levels and to monitor and evaluate the performance of CSOs in mobilizing communities. A grievance-handling mechanism, launched four years ago, includes a telephone hotline that beneficiaries can call or a website where they can post a message. A radio component allows beneficiaries to call or write in complaints or suggestions, to which a PAF spokesperson will respond on the air. This was intended to ensure inclusivity, given that access to phone and Internet is limited in many areas of the country. In an effort to streamline the process further, the PAF, with support from the World Bank Institute, is supplementing its existing approaches with a customized, online platform (OnTrack) that will enable beneficiaries to engage with project implementation units and public officials online and via short message service (SMS). OnTrack provides a space for citizens to share feedback, submit suggestions,

box continues next page

Box 8.6 Complementing Existing Feedback Mechanisms with ICT Platforms: Nepal's Poverty Alleviation Fund *(continued)*

and report issues using pictures or documents and for project implementation units to manage and track issues as well as publish results, project information, pictures, and documents in real time. The platform was recently tested in the district of Kapilvastu and was expected to be launched and extended to 39 more districts in 2013. In the future, OnTrack will also enable citizens to provide voice-based feedback.

These mechanisms are not intended to substitute for traditional monitoring and evaluation, conducted through household surveys and visits by board members, World Bank missions, and government officials; instead, they are intended to serve as complementary avenues. The performance of CSOs is evaluated by the PAF as well as by the citizens and community organizations that receive their support, each accounting for 50 percent of performance evaluation. The citizen feedback provided goes first to the community organizations and then to the district level, to the PAF, and up to the World Bank. A recent impact evaluation found that the PAF has had a measurable impact on household consumption, school enrollment, food insecurity, and the number of community organizations operating in PAF program areas.

Environment: The Institutional and Cultural Contexts

Citizen feedback occurs within an environment of formal and informal societal norms that enable or constrain it, such that “a combination of channels might increase the inclusiveness of processes, [but] by no means guarantees it” (World Bank Institute 2011). Creating an enabling environment to support broad-based participation, including but not limited to the selection of feedback modalities, is ultimately the best way to ensure inclusivity. This necessitates understanding and influencing the cost-benefit calculus of project stakeholders to facilitate greater citizen participation.

Formal and informal norms guide the interactions between citizens, their government, and outsiders and inform the “transaction costs” of participation (North 1990). The costs of increasing citizen participation are often assumed to accrue exclusively to power brokers, who lose decision-making autonomy or financing, while the benefits are seen to accrue to citizens, who gain increased voice. However, the costs to citizens of lost anonymity, exertion of time or money, and potential for retribution are often considerable (box 8.7). The perceived benefits are uncertain and based on the unknown commitment of project decision makers to act. Costs associated with previously proprietary information and the introduction of a new technology with ICT-enabled feedback adds further complexity.

Catalyzing and sustaining the motivation of citizens to participate are among the greatest challenges associated with feedback mechanisms. It cannot be taken for granted that citizens, when given the opportunity to provide feedback, will desire to do so. Yet many initiatives assume just that, resulting in low levels of participation. Citizens may lack time, money, or the informational

Box 8.7 Engaging Citizens to Reduce Corruption: The Punjab Government's Model of Proactive Governance

The Pakistani government of Punjab's Model of Proactive Governance harnesses information and communication technologies (ICTs) to gather citizen feedback on the incidence of petty corruption in basic service administration. Traditionally, information bottlenecks have allowed bureaucrats to request bribes without detection or retribution from senior officials. ICTs can "provide a powerful means of removing information bottlenecks that allow officials to underperform and to request bribes" (Callen and Hasanain 2011).

The Punjab model is structured in three stages. First, government offices record cell phone numbers of beneficiaries and details of transactions when a basic service is rendered. This information is transmitted to a call center via short message service (SMS) or online, and a random subset of numbers is sent to senior officials to allow them to contact beneficiaries directly. Beneficiaries are then contacted by the call center via SMS or a phone call and asked to provide feedback on the transaction and whether any bribes were solicited. Finally, feedback is aggregated and analyzed for patterns indicating multiple instances of corruption involving one individual or office. The World Bank's Zubair Bhatti describes the impetus for seeking citizen feedback as follows: "It's a pretty simple idea, but it has immediate impact. ... You start today, collect the [cell] numbers tomorrow, you start making calls, and ... corruption levels [decrease] ... Why? Because ... you can reach the citizen right away; the distance is gone. There is a great deterrence [effect] in the fact that [civil servants know you are calling to check on their performance], and if something happens you can find out and take action" (Custer and zum Felde 2012).

As of June 2013, the program had recorded nearly 2 million transactions, with more than 1.7 million citizens contacted via SMS regarding a transaction. These high numbers could be due to the proactive nature of the program: the government initiates the feedback rather than the citizens themselves. The program also identified instances of underprovided service delivery and bribery. For instance, the following text messages were received as part of the program: "They treated us fine, but no medicines were provided. They provided us only prescriptions for drips, injections, and tablets to fill out privately," and "My brother got a 10 marla plot transferred in his name, and the Patwari [village-level revenue officer] took more money than acceptable" (Callen and Hasanain 2011, 35–36).

Nevertheless, negative feedback was extremely low relative to the total number of messages received: 6,895 cases of corruption were reported, representing only 0.4 percent of citizens contacted by the program; nearly 10 percent of citizens contacted via SMS reported positive feedback. These findings are somewhat puzzling. As Callen and Hasanain (2011, 35) suggest, "There [may be] some stage at which the process is not yet successful in eliciting the truth from a large section of respondents."

The political and cultural context of the program could be significantly influencing its outcome. Citizens might feel a sense of gratitude toward the government for undertaking such an initiative: "Glad to see the government waking up," and "I've faced no problem. Thanks for your concern" (Callen and Hasanain 2011, 33). Furthermore, the Punjab model has attempted to personalize its outreach to citizens by playing a message from the chief minister whenever

box continues next page

Box 8.7 Engaging Citizens to Reduce Corruption: The Punjab Government's Model of Proactive Governance *(continued)*

citizens receive a call and by having district coordination officers call some of their constituents directly “as a signal to proactive means to improve governance” (Callen and Hasanain 2011, 10). By bridging the distance between high-level officials and their constituents, the program could be generating a more positive attitude toward government. However, citizens could also feel “fearful of the official and report positively despite the repeated and sincere advice of the official to speak freely,” particularly because citizens who report bribery are complicit in the crime (Callen and Hasanain 2011, 39). Finally, there may be strong political incentives to publicize the positive feedback received, given that the program was timed closely with national and provincial assembly elections. For this reason, the overwhelmingly positive feedback received was disseminated among the media as a sign of public endorsement for those in office.

These findings call attention to the potential for inaccurate or skewed reporting, even in cases in which the use of ICTs affords users a certain degree of anonymity. Although the program assumes that citizens have incentives to report bribes, this might not be the case. Feedback collected from citizens does not always reflect the reality on the ground, particularly if there are incentives not to disclose information. For this reason, rigorous evaluation is needed of the feedback mechanism, stakeholder incentives, as well as the information collected to assess the program's underlying assumptions and design.

capability to participate (Brett 2003; Custer, Novin, and Palumbo 2011). Alternatively, they may participate broadly *for a time*, but lose interest and suffer from “participation fatigue” if their participation is not reflected in the final policy or product (Cornwall 2008). While the feedback mechanism may be inclusive in theory, those participating may not be equally representative in practice, which exposes governments and development actors to information skewed by self-selection bias, as only literate, tech-savvy, or more assertive individuals step forward (Reinikka and Svensson 2005). This creates two obligations for governments and development actors: (a) incorporating measures of tracking the representativeness of those providing feedback and (b) aligning incentives to reduce costs and increase the benefits for citizens to participate in a nondistortionary manner (box 8.8).

Although critical to the success of a citizen feedback mechanism, considerations of design and implementation may disregard government and donor project stakeholders who have their own cost-benefit calculus of whether and how to respond to feedback. The timing of feedback at project close, lack of standards and processes outlining responsibilities for responding to citizen feedback, and nonexistent punishment for failure to act are all disincentives for duty bearers to move from only soliciting citizen opinions to also acting on them. These are among the many issues that arise in the primary research, discussed next.

Box 8.8 A Context-Driven Approach to Multichannel Crowdsourcing in Brazil: The “Government Asks” Initiative

The “Government Asks” Initiative is a multichannel approach (Web, mobile, and offline) to crowdsource policy solutions in the state of Rio Grande do Sul in Brazil. Via the Internet, mobile phones, and face-to-face events, the initiative deploys a system of wiki surveys to collect input from citizens on policy alternatives and, subsequently, to vote for different proposals.

The initiative asks citizens not only to provide feedback, but also to codesign policies and the delivery of public services. The impact of citizens’ participation can be seen in outcomes in the health sector:

- Increase in the allocation for primary health care of 166 percent
- Allocation of US\$44 million for the family health program
- Increase in the number of Mobile Emergency Service bases from 85 to 151
- Financial support to three regional hospitals
- Implementation of a specialized network for prenatal and childbirth care.

The ever-growing levels of participation indicate the success of the initiative: to date, more than 360,000 citizen votes have been cast for 3,600 policy proposals drafted by citizens themselves. The tangible results achieved through the process provide citizens with an incentive to participate. Furthermore, this initiative motivates widespread participation by providing multiple channels of participation (Web, mobile, and face-to-face), thus reducing the transaction costs associated with traditional feedback mechanisms.

The context of Rio Grande do Sul was taken into account and reflected in the design of the project. The multichannel approach (including offline meetings) enabled citizens to participate in various ways. A strong education campaign was deployed to sensitize citizens about the process and issues at stake. Finally, both the communication material and technological tools used were intensively tested and adjusted to ensure that they were aligned with the population’s cognitive skills and usability requirements.

Moreover, specific outreach initiatives were carried out to ensure inclusiveness. For instance, vans equipped with Internet access and trained personnel traveled across the state collecting feedback from the least-privileged sectors of society, and complementary face-to-face meetings for the elaboration of policy proposals were held in the poorest regions of the state.

The “Government Asks” Initiative uses the latest version of All Our Ideas (AOI), a freely available citizen engagement tool that combines the best features of quantitative and qualitative methods of data collection. AOI has been used in different environments and for different purposes, from collecting feedback from slum dwellers in Rio de Janeiro to engaging in the collaborative development of New York City’s long-term sustainability plan. AOI has the following features:

- *Easily deployable.* Creating and running a wiki survey through the tool is quick, easy, and free. It showcases results in real time through innovative data analysis.
- *Tested and scalable.* It is currently hosting 2,934 surveys with more than 3.8 million contributions from citizens and stakeholders.

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Box 8.8 A Context-Driven Approach to Multichannel Crowdsourcing in Brazil: The “Government Asks” Initiative (*continued*)

- *Backed by research.* A research project based at Princeton University, it is dedicated to creating new ways of collecting social data.
 - *Multilingual.* It is available in 10 languages, including Arabic, French, Portuguese, and Spanish. New languages can be added in less than a week.
 - *Packed with features.* Powerful features are built into the tool. For example, users can embed their wiki surveys in different websites, geo-reference results, download raw data for offline analysis, and integrate the survey with an analytics application.
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Primary Research

To take a closer look at field evidence in support of the five-point systems framework for designing and implementing citizen feedback mechanisms, this section analyzes surveys and interviews with World Bank staff and other development experts. Primary research was conducted with the goal of assessing the understanding of, demand for, and use of ICT-enabled feedback. The methodology and the findings are followed by an in-depth analysis that illuminates reasons for and barriers to success.

Methodology

In order to ground the framework within the context of current practices, we undertook both quantitative and qualitative research. The quantitative research encompassed two surveys on citizen feedback mechanisms, the first with 26 World Bank task team leaders (TTLs) working in the Africa Region and the second with 81 attendees at the Citizen Voices Conference organized jointly by the World Bank, InterAction, and Civicus in March 2013. Annex 8A contains the questions for both of these surveys. The first survey was designed specifically to capture the views of World Bank project managers. The second was designed to capture the views of diverse stakeholders and experts outside the World Bank, including members of government, representatives of NGOs, as well as the private sector. It was not targeted specifically to ICT-enabled citizen feedback and therefore focused on the end benefit of ICTs rather than on the technological mechanisms in and of themselves. While both surveys reveal preferences and trends with regard to type of feedback, they lack the detailed and personal perspectives that can be captured in qualitative research; for this reason, the surveys were triangulated with interviews. Although neither survey undertook random sampling, which limits inference, the findings are generally consistent with the results of our interviews.

While quantitative research answers the question of *how many*, qualitative research probes deeper into the granularity of the big picture, the *how* (Silverman 2009). Thus the qualitative research comprised in-depth semi-structured interviews with 10 TTLs. These were recorded with the permission of

the interviewees and transcribed. Pseudonyms are used throughout (reflecting the gender of each interviewee). The questions (presented in annex 8A) solicited the interviewees' perspectives loosely structured around the five factors of the systems approach: purpose, process, people, tools, and environment. A "snowball approach" was used when deciding on interviewees, seeking input from people deemed critical (Haklay 2002). While this method may result in self-selection bias (Moser and Kalton 1971) and not represent TTL perspectives overall, it may facilitate "emergent and sequential" discovery (Lincoln and Guba 1985). As such, this is an exploratory case study. A final point needs to be addressed in future research: we were unable to gain direct access to citizen perspectives, other than indirectly through interviewee responses or the compilation of project snapshots. Thus the responses are mediated, diluting citizen voices. This is not ideal, given the focus of this research (citizen feedback), and a follow-up should seek to redress this limitation.

Overall Findings

First, it is important to underscore that soliciting citizen feedback, particularly in the context of World Bank-funded projects, is not new. However, there is no systematic way to integrate feedback mechanisms into project preparation, implementation, and evaluation. Often the existing feedback mechanisms are carried out in an ad hoc manner, are not continuous, and are not broad based or inclusive enough to be optimal. Respondents revealed that current feedback mechanisms depend disproportionately on in-person interviews and surveys. Perceived as time-consuming and costly, these modalities constrain the frequency and reach of feedback collection. As a result, most feedback is collected from implementing agencies, third-party organizations, or a representative sample of beneficiaries rather than from a broader set of citizens. The majority of those interviewed or surveyed said that they want to capture a broader range of feedback more frequently, including not only complaints, but also suggestions about service delivery, reports on mismanagement, and indications of satisfaction with project deliverables.

Second, despite the rapid proliferation of ICTs, most citizen feedback is obtained using low-technology means. The vast preponderance of those surveyed collect feedback through in-person site visits, surveys, or interviews. Only a small percentage of respondents use the next most popular options: mobile applications and a specialized project website. While respondents raised concerns regarding poor penetration of Internet and mobile phones, overall there was cautious enthusiasm for technology that enables recurring interaction with citizens and reduces the cost, time, and distance that constrain the current efforts to collect feedback. The choice of technology matters, however. Presented with various scenarios, respondents demonstrated a clear preference for a hybrid platform allowing participants to give feedback via multiple streams such as SMS, Internet, as well as traditional, no-tech mechanisms. This reflects a consistent theme of balancing trade-offs: although ICT has catalytic potential, ICT infrastructure continues to be constrained and unevenly accessible on the ground.

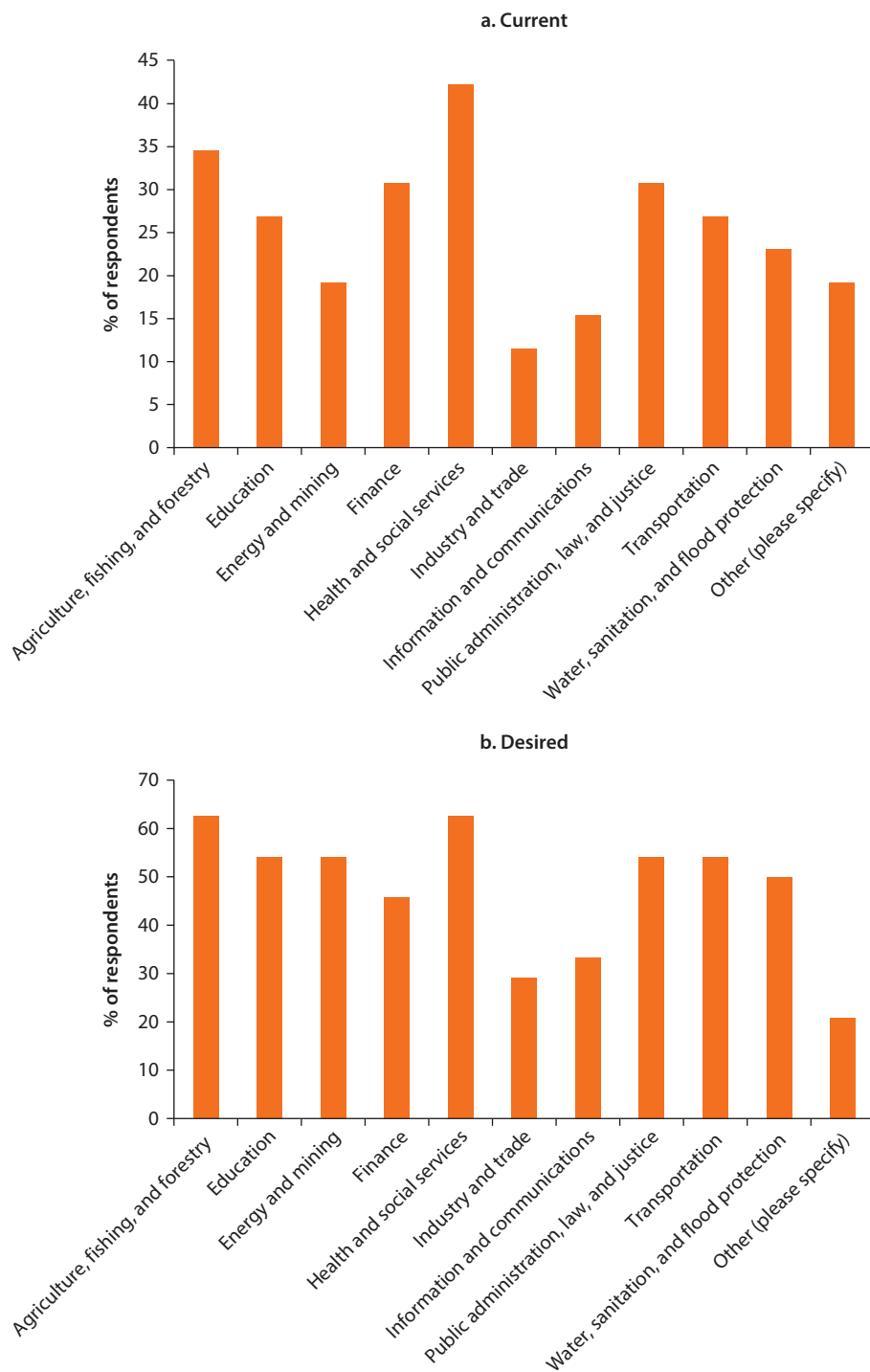
Using parallel platforms pairing new technology (mobile phone or Internet) with older technology (community radio or television) was frequently raised as a possible way to expand reach, while mitigating exclusion for those unable to afford the requisite hardware or lacking the necessary technology literacy or information capabilities.

Third, sustaining the motivation of citizens to participate was considered one of the greatest challenges. It cannot be taken for granted that citizens, when given the opportunity to provide feedback, will have the incentives and the time to do so; yet many initiatives assume just that, resulting in low levels of participation. Both project staff and subject matter experts attested to the importance of understanding what drives citizens to engage in development projects and how governments and international donors might align incentives to encourage their participation in a nondistortionary manner. A critical aspect in this regard is that people must have trust in feedback mechanisms and be convinced that, by providing feedback, they can influence positive social changes. Furthermore, initiatives should seek a balance between providing people with individual incentives to provide feedback and appealing to citizens to act collectively and contribute to a public good, whereby the individual benefits are difficult to identify. Respondents provided some ideas on how to reduce the perceived cost for citizens to participate, such as phone credits and phone “beeping” (where participants dial a call center and the operator returns the call at no charge), and increase the perceived benefits, such as having friendly operators who provide a listening ear, sending notifications via text message when feedback is received and acted on, as well as using community radio to broadcast aggregate results. Another possible way to incentivize individuals is to hold competitions whereby individuals who provide the most feedback receive prizes or are acknowledged at an award ceremony. We now turn to the specific results of the surveys and interviews to delve more deeply into the current state of and demand for citizen feedback among World Bank staff and external stakeholders.

Survey of World Bank Staff

For the ICT-specific survey, 26 responses were received from project team leaders in the Bank’s Africa Region who participated in the E-ISR Program. The survey was conducted by e-mailing a list server of the Bank’s Africa Region project leaders. Although the use of nonrandom sampling limits the generalization of results, views were obtained from all important sectors—agriculture, fishing, and forestry; education; energy; finance; health and social services; public administration; and transportation. Project staff were asked questions related to the current and desired level of feedback.

Figure 8.4 depicts current and desired levels of feedback collection for different sectors. Results suggest that in the current scenario feedback collection is highest in the health and social services, agriculture, and finance sectors. Feedback collection remains low in the industry and trade, energy and mining, information and communications, as well as infrastructure sectors. The trends are similar for the desired level of feedback collection. An important finding is that, in the

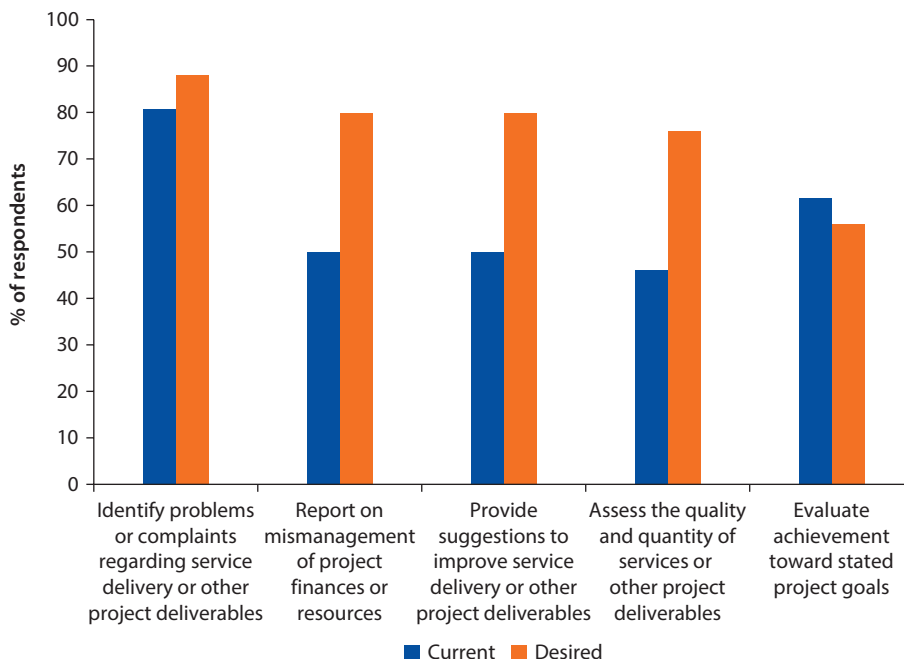
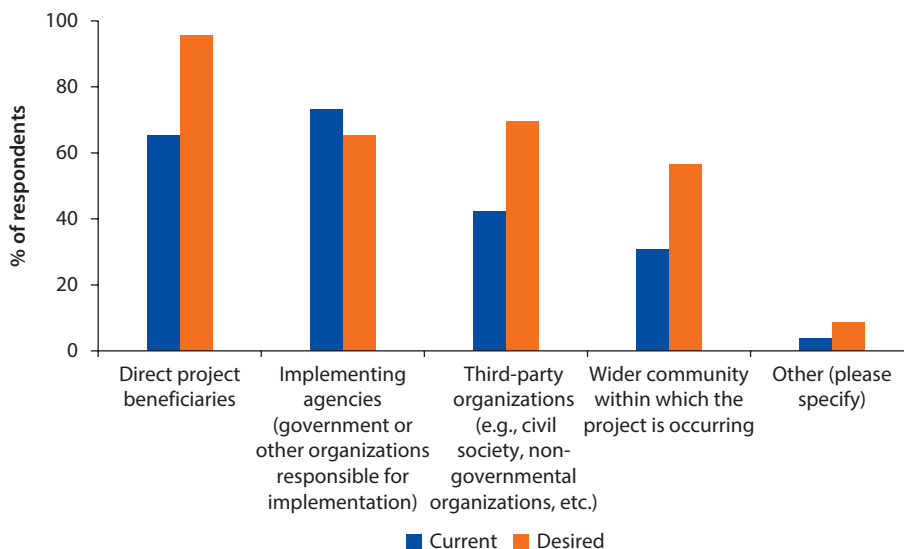
Figure 8.4 Current and Desired Levels of Feedback Collection across Sectors

future scenario, the gap is much smaller between the high-feedback-receiving sectors such as health services and low-feedback-receiving sectors such as energy and transport. One plausible explanation for the relatively lower level of feedback collection in the energy, information and communications, water and sanitation, and infrastructure sectors is that the participation of CSOs and beneficiaries is often relatively limited in these sectors. Furthermore, government officials often place more emphasis on ensuring that the project results are met in terms of physical implantation than on ensuring that consultative processes are held with project beneficiaries and stakeholders.

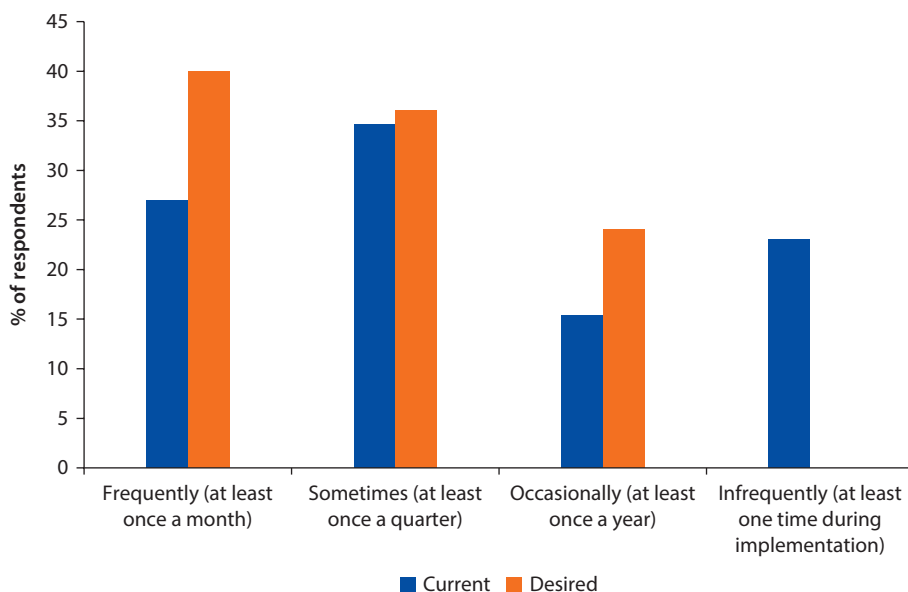
Some of the key findings that emerge from this analysis are that respondents clearly prefer to expand the types of feedback collected in areas, such as transportation, that currently collect a low level of feedback. The majority of respondents in 6 out of 10 sectors would like to see more feedback integrated into their project work. Particularly in the agriculture, fishing, and forestry and health and social services sectors, nearly two-thirds (63 percent) of respondents reported that they would find feedback helpful.

Currently, TTLs collect several types of feedback; in the current scenario, feedback collection focuses on identifying problems and complaints. TTLs said that they need to increase citizen engagement in all areas, including reporting mismanagement, offering suggestions for improving the project, assessing the quality and quantity of services, and evaluating achievement of goals. They also expressed a clear preference for collecting citizen feedback during different stages of the project cycle. For example, while only 50 percent of the respondents said that they collect feedback on financial mismanagement, 80 percent said that they would like to do so. Thus an important factor to consider is that, although feedback collection currently focuses on redressing grievances, respondents would like to go beyond this and include mechanisms such as assessing “beneficiary satisfaction” or providing suggestions for improvement. Figure 8.5 displays the current as well as the desired levels of feedback collection during all project phases. As pointed out, one of the benefits of using ICTs is the ability to collect frequent feedback at multiple points in the project cycle.

Furthermore, respondents expressed a clear preference for increasing citizen participation in more project activities. There is a desire to shift from collecting the majority of feedback from implementing agencies to collecting more from direct project beneficiaries, third-party organizations, and the wider public. As shown in figure 8.6, 65 percent of the respondents said that they collect feedback from direct project beneficiaries, while 96 percent said that they would like to do so. With regard to collecting feedback from implementing agencies, the desired level is much lower than the current level. Another important factor is the desire to collect feedback from the wider community. This confirms one of our key arguments: citizen feedback mechanisms need to go from solely consulting project beneficiaries to involving a much broader process of civic engagement whereby the voices of all stakeholders can be heard—those who benefit as well as those who do not benefit from the project activities or might even be negatively affected by them.

Figure 8.5 Current and Desired Areas of Feedback Collection**Figure 8.6 Current and Desired Levels of Feedback from Providers**

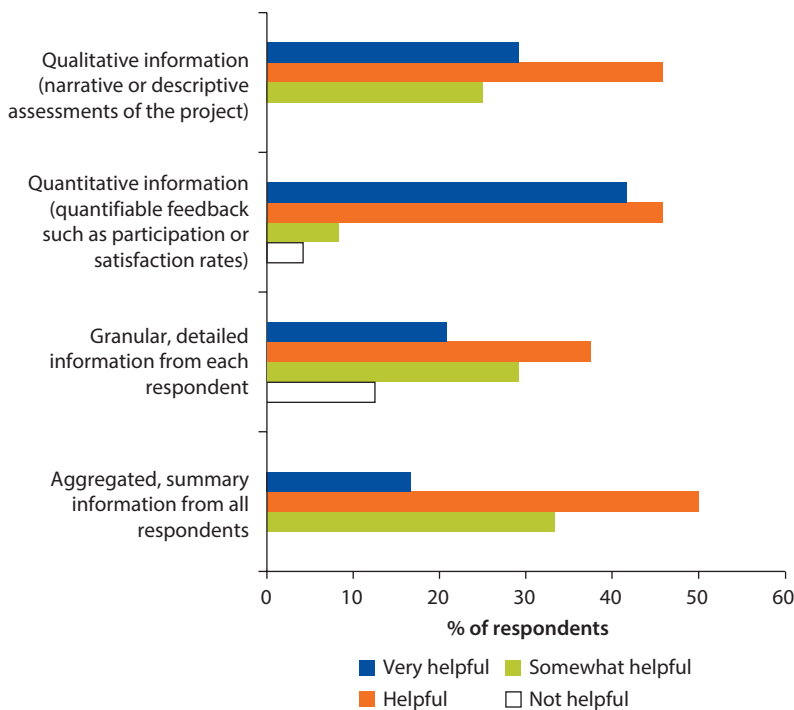
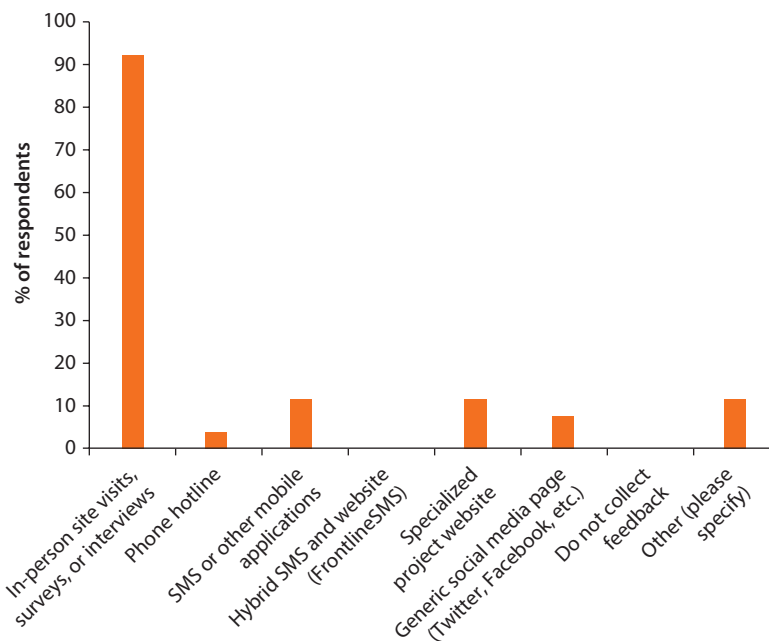
While respondents said that they find the frequency of current feedback to be helpful, they clearly would prefer to collect more frequent feedback (figure 8.7). In particular, they would like to collect feedback at least once a month. Currently only 27 percent of the respondents said that they collect feedback once a month, while 40 percent said that they would like to do so.

Figure 8.7 Current and Desired Frequency of Feedback Collection

In addition to the frequency of feedback, data were also collected on how helpful the respondents find each form of feedback. The survey asked about four forms of feedback: aggregate summary information, granular detailed information from each respondent, quantitative information on satisfaction rates, and qualitative information such as narratives from citizens. As presented in figure 8.8, respondents said that the following would be very helpful: quantitative information on satisfaction rates (42 percent), qualitative information (29 percent), granular information from each respondent (21 percent), and aggregate information (17 percent). This issue was also discussed extensively during the Citizen Voices Conference in March 2013, at which many government and donor representatives said that they would like to apply customer satisfaction surveys, which are commonly used in the private sector, to development programs and the provision of public services.

The survey also evaluated the types of feedback platforms currently used by project leaders. As shown in figure 8.9, most TTLs continue to rely on traditional no- or low-tech feedback platforms. Almost all of those surveyed said that they use in-person site visits, surveys, or interviews to collect feedback, while only a minority said that they use mobile phones, Internet, or hybrid platforms to do so. However, it is likely that the percentage of project leaders using low-tech, high-tech, and hybrid platforms will increase in the future to reflect the stated preferences of many for collecting more frequent feedback and using a greater diversity of methodologies.

In addition, the survey also evaluated the pros and cons of respondents' current methods of collecting feedback in order to highlight constraints and as well

Figure 8.8 Desired Form of Feedback Collection**Figure 8.9 Current Use of No-, Low-, and High-Tech Feedback Platforms**

Note: SMS = short message service.

as reflect on the potential to use ICTs in their projects. The responses to these questions were open ended. Most TTLs said that they collect feedback largely through surveys that take place annually or every two years. A much smaller percentage use specialized project websites or mobile applications. Even fewer use telephone hotlines or social media.

Many project leaders seem to be looking for a more systematic and rigorous common approach and methodology to incorporating citizen feedback into their programs. The current feedback mechanisms remain a function of the perceptions of the individual project leaders. Thus the extent to which citizen feedback mechanisms are incorporated into the project cycle depends largely on their perceived value for each project leader and his or her commitment to implementing them in spite of the current barriers of relatively high costs and time. These results suggest that feedback mechanisms are currently ad hoc and poorly structured (box 8.9).

Regarding the constraints, a recurrent theme in the open-ended responses is that there is a lack of frequent and cost-effective feedback collection mechanisms. One respondent also mentioned concerns regarding the dissemination of data as well as the target of projects. The factors that they said are “very important” are commitment of the TTL, anonymity of respondents, and visibility of

Box 8.9 Uganda’s U-Report: SMS-Based Polling Mechanism or Citizen Feedback Platform?

Traditional monitoring mechanisms are often too infrequent or not timely enough to be of use in cases warranting rapid responses. Responding to the demand for real-time monitoring of social indicators, the United Nations Children’s Fund (UNICEF) developed the U-report platform in 2011 to harness crowdsourced local information to enhance social monitoring. U-report uses RapidSMS, a free and open-source short message service (SMS), to enable Ugandan youth and other citizens to provide feedback on pressing development issues in their communities using mobile technology. In order to use the free service and become a “U-reporter,” respondents simply text “join” to a toll-free number and submit a few personal details. Anyone with access to a mobile phone can use the service to send in text messages, respond to polls, and receive relevant information as well as poll results.

UNICEF currently partners with nine nongovernmental organizations (NGOs), including Uganda Scouts Association, World Vision, and BRAC, which assist in outreach and recruitment. Each week, two or three SMS polls are sent to U-reporters requesting information, feedback, or opinions regarding development outcomes or issues in their area. UNICEF’s U-report team and partner organizations meet to determine which issues to discuss. Once the topic is chosen, UNICEF’s U-report team texts U-reporters, who can select a list of preselected replies or text their own response. The topics covered have included “female genital mutilation, outbreaks of disease, safe water, early marriage, education, health, and inflation” (UNICEF 2012a). “The UNICEF team analyzes and interprets the responses, sharing the results and often following

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Box 8.9 Uganda's U-Report: SMS-Based Polling Mechanism or Citizen Feedback Platform?*(continued)*

up with additional questions or suggestions" (UNICEF 2012b). These responses can then be mapped to each district and aggregated nationally on the U-report website.^a

More than 200,000 registered U-reporters participate across Uganda. Every month, U-report results are published in national media outlets and communicated to Parliament. By March 2013, more than 200 polls had been posted on the U-report website. One of the latest polls generated more than 27,000 responses, which encompassed approximately 13 percent of all registered U-reporters. The platform has been used for multiple purposes, including raising awareness of an issue, sharing information with citizens and government, supporting community-led development, and engaging in policy advocacy at the national level (Bukenya 2012). U-reporters can also pose questions to members of Parliament, which are publicized in the national press or on television. For instance, when "nodding disease," a relatively unknown illness affecting children, broke out in northern Uganda, the U-report team sent information to affected communities regarding the symptoms and treatment of the disease (UNICEF 2012b).

The program specifically targets youth and citizens living in remote areas of the country through its recruitment activities, outreach, and publicity. Given that Uganda has one of the youngest populations in the world, with a median age of 15 (Blaschke *et al.* 2013), the U-report platform has the potential to reach large portions of Ugandan society. At the same time, the U-reporter community is not a random sampling of the population.

In many ways, the U-report platform resembles a public survey more than a two-way feedback mechanism intended to enhance social accountability. U-reporters typically have little influence over the topic of each poll, which is determined largely by the U-report managers and NGO partners. Individual U-reporters who send messages independent from polling generally "have no way of knowing whether the message is read, much less acted upon, unless they receive a response" (Cummins and Huddleston 2013, 65), which is rare. While certain sessions have experts respond to questions from U-reporters, a recent review of the initiative recommended that the platform should engage more with U-reporters to ensure that pertinent questions are being asked and acted on. Nevertheless, although U-reporters may not receive a specific response to their personalized messages, many of the polls have resulted in "concrete actions being taken," providing incentives for U-reporters to share their views (Cummins and Huddleston 2013, 65).

a. <http://ureport.ug>.

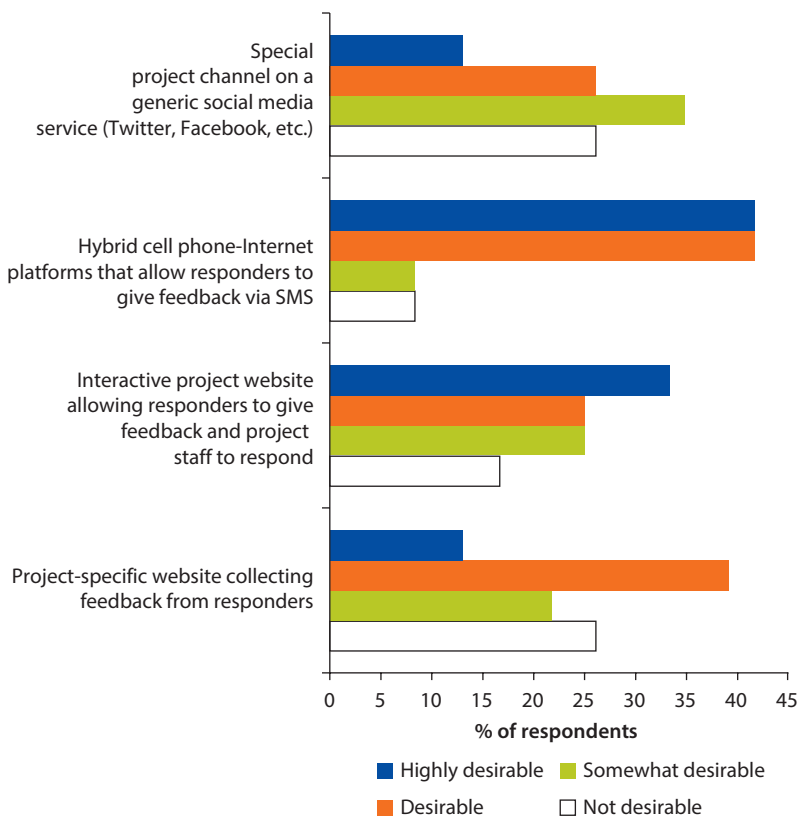
projects to the community. The factors that they said are "important" are the geographic dispersion of beneficiaries, the diffusion of beneficiaries, access to technology, and amount of time that lapses until project benefits are visible.

As a follow-up to the previous question, respondents were also asked what would be the most desirable tool in terms of existing ICT-enabled feedback mechanisms. The respondents were presented with four options: a project-specific website collecting feedback, interactive websites allowing citizens to provide feedback and project staff to respond to it, a hybrid

platform allowing citizens to give feedback through SMS, or a project channel on existing social media. As shown in figure 8.10, respondents said that the hybrid platform (42 percent) and the interactive website (33 percent) would be highly desirable, while only 13 percent each said that a project-specific website or a project channel on existing social media would be highly desirable.

In addition to the choice of platform, respondents were asked about the factors to consider while implementing a technology-based citizen feedback mechanism. Some of the respondents mentioned infrastructure-based factors such as technology penetration rates and access to technology. Some also pointed to deeper factors linked to the political economy and the overall enabling environment. One mentioned that it is important to consider who will own the platform, particularly who will be looking at it and whether there will be a conflict of interest regarding the responses displayed on it—for example, whether the platform will display more positive than negative feedback. Another respondent pointed to the political environment and the political will of the implementing partner as a very important factor to consider. Several

Figure 8.10 Desired ICT-Based Platform for Feedback Collection



Note: ICT = information and communication technology; SMS = short message service.

respondents said that sampling is a challenge, as is ensuring that the feedback obtained is broad based and does not represent only the views of a small group of people or a particular interest group.

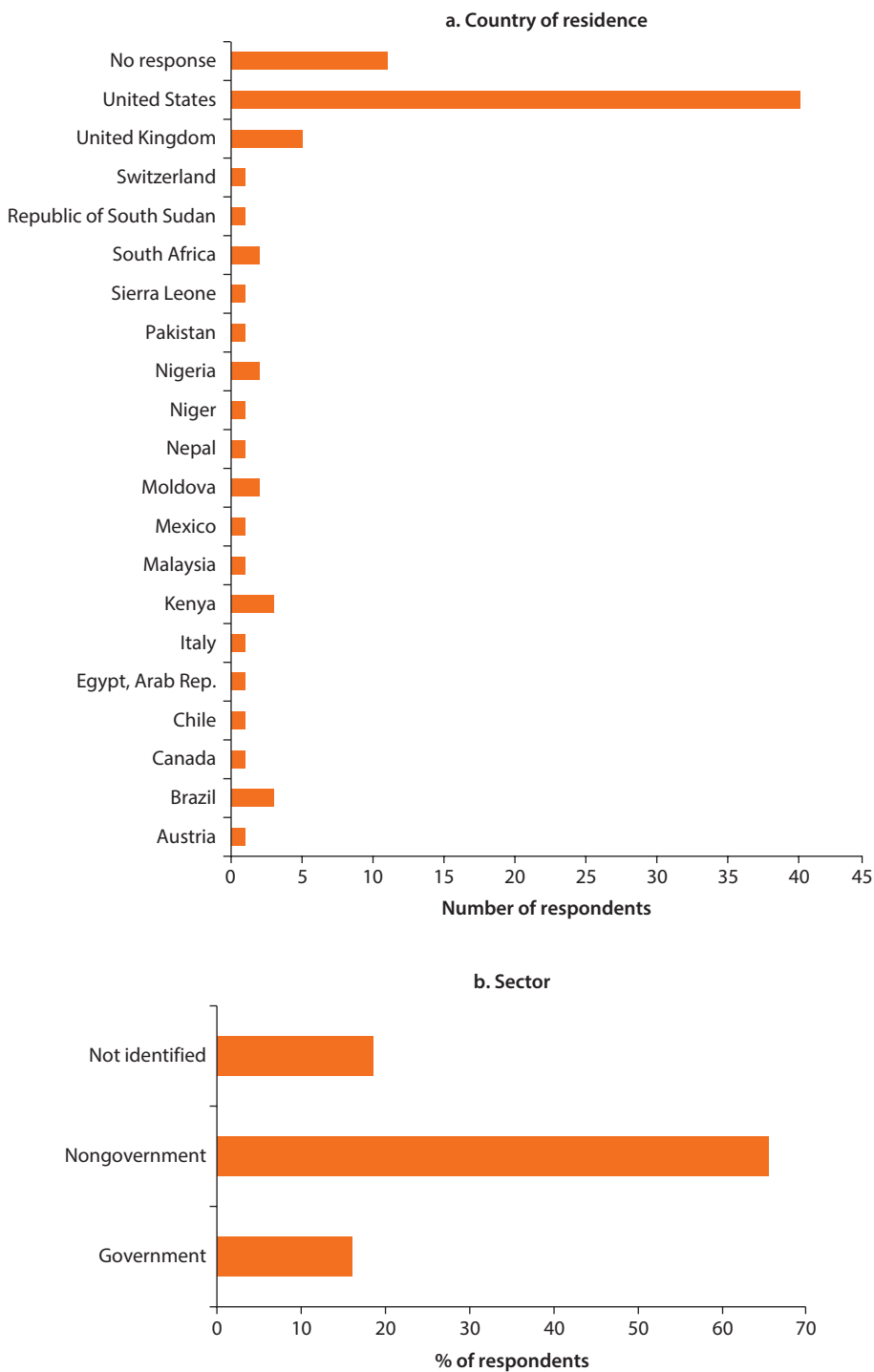
Survey of Stakeholders Outside the World Bank

A survey was also administered to experts and stakeholders from outside the World Bank who registered to attend the Citizen Voices Conference held on March 18, 2013. The survey, which was intended to guide preparation of the conference agenda, provides additional insight into the nature of citizen engagement.

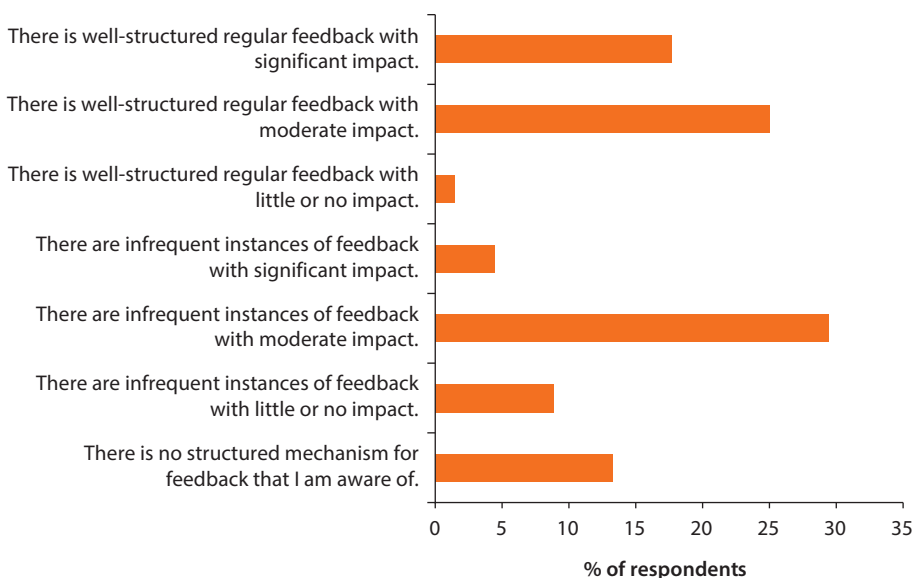
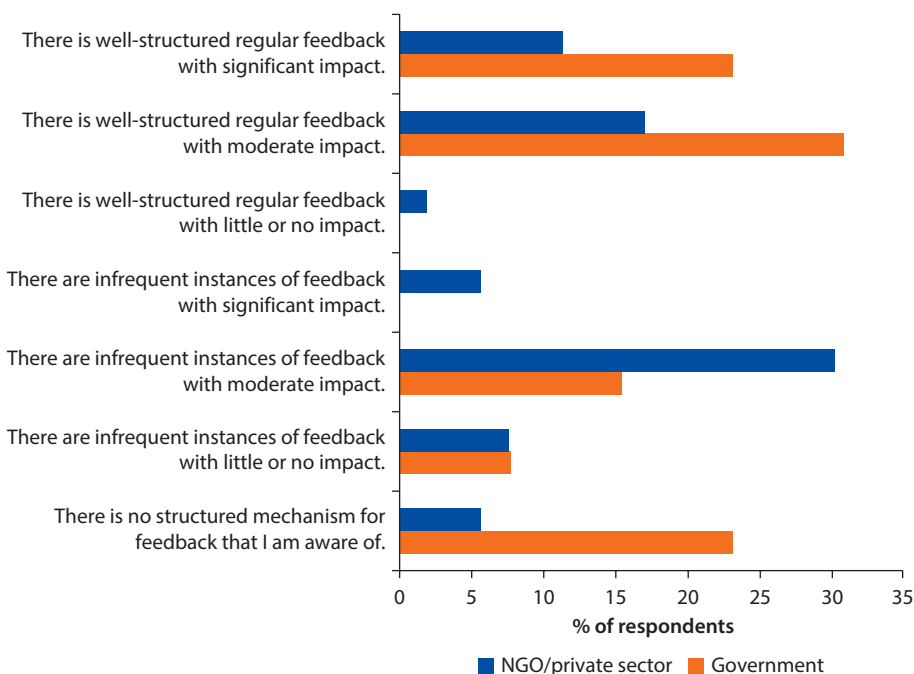
Responses were collected from 81 of 200 registered attendees. The respondents were a diverse group of people representing NGOs, the private sector, and government as well as 20 high-, middle-, and low-income countries around the world. Figure 8.11 shows the composition of survey respondents by country of residence and sector. Although the survey did not inquire explicitly about ICT-enabled citizen engagement, it did reveal some recurring themes that complemented the findings of the survey of World Bank project managers.

As shown in figure 8.12, 29 percent of the respondents mentioned that their organization rarely receives feedback and that feedback has only moderate impact. This suggests that they interact infrequently with citizens. Similar to World Bank respondents, external stakeholders also expressed the need to collect feedback more frequently. In particular, they said that they realize that collecting feedback once a year is not sufficient in projects related to their organization. Figure 8.13 presents the results by sector. There is some agreement between the government and nongovernment sectors and some differences. In particular, a larger share of respondents from the NGO and private sector said that their organization has infrequent feedback with moderate impact (30 percent) compared with respondents from the government sector (15 percent). Conversely, a larger share of respondents from the government sector said that they have well-structured feedback with either significant or moderate impact (23 and 31 percent, respectively) compared with respondents from NGOs and the private sector (11 and 17 percent, respectively). In addition, 53 percent of respondents mentioned that they cannot imagine the highest-performing development organizations—public or private—operating without a systematic approach to feedback from their primary constituents.

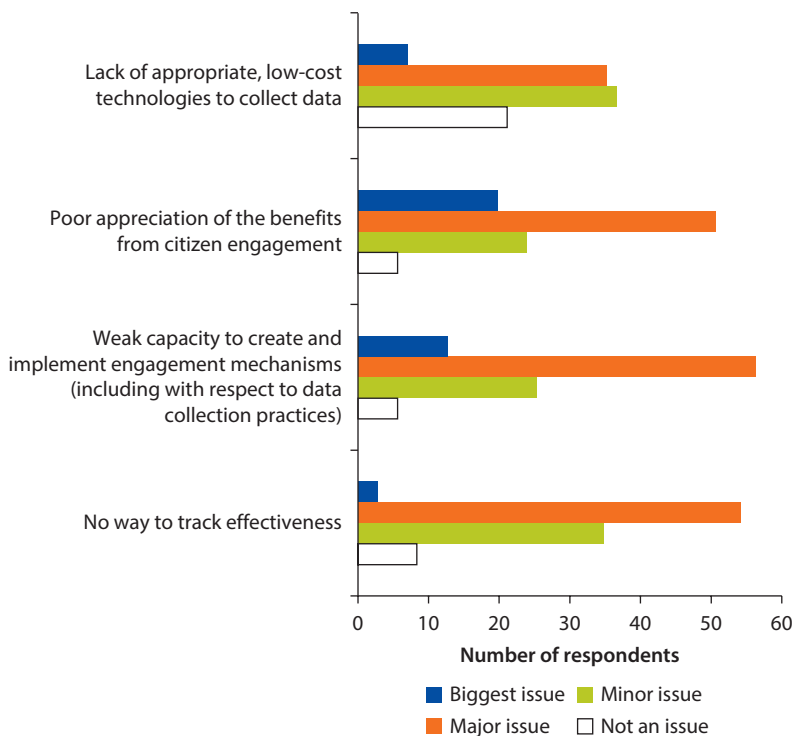
One particularly important finding is the most relevant for our research: that is, the need to use newer technology for citizen engagement. As shown in figure 8.14, 35 percent of the respondents said that the lack of appropriate, low-cost technologies to collect data is a major issue in current feedback collection techniques. This indicates that the cost of collecting feedback is a major factor in choosing a feedback mechanism. Moreover, decision makers in their organization do not appreciate the benefits of citizen engagement, with 51 percent of the respondents saying that this is a major issue. This raises an important question: What happens to the feedback once it is collected? If citizen feedback is collected, but not put to use in shaping the project, then it goes unappreciated. This lack of appreciation discourages citizens from providing feedback in the

Figure 8.11 Respondents, by Country of Residence and Sector

Note: Some of the respondents did not mention any details from which we could identify the sector.

Figure 8.12 Nature of Feedback with Respect to Organization Represented**Figure 8.13 Nature of Feedback with Respect to Organization Represented, by Sector**

Note: NGO = nongovernmental organization.

Figure 8.14 Factors to Consider in Discussing Citizen Feedback

future. For the process to continue, it is essential for citizen feedback to be incorporated meaningfully into the process.

Interviews of World Bank Staff

Finally, 10 in-depth interviews were conducted with Bank TTLs. The specific questions are presented in annex 8A, and the responses are grouped and analyzed here according to the five-factor framework.

Purpose

Civic engagement initiatives should clearly establish and articulate for all stakeholders the objective(s) of engagement and feedback. However, the majority raised the issue of *ambiguity of purpose*. Shalini, from the Independent Evaluation Group, asked, “Is it citizen engagement for the buzz? Is it because we want consumer feedback? We can’t design a good feedback mechanism or process without good design thinking including the questions we want to ask.”

Many felt that, although current feedback mechanisms exist, they tend to be instrumental, such as a “tick the box” exercise (Katerina), “checking the box” (David), or “an effective risk management strategy” (Thomas). Respondents cautioned against “vacuuming data” (Kyoko), “paying lip service to communities” (Teo), and “reinforcing bureaucratic behaviors” (Shalini). According to David,

“Buy-in is most important,” but it is not just buy-in from the “beneficiaries,” but also from “TTLs ... [and] even extending to the whole country team.”

There are underlying tensions in feedback versus engagement. Is feedback simply evaluating the Bank’s performance, or is it part of a deeper engagement—what Shalini termed “learning and adjusting together with consumers ... a more open-ended learning approach”? Thomas stressed, “Setting expectations is key.”

Whether instrumental or normative, it was generally agreed that current processes, although improved, are insufficient. Katerina made an important point: “There is no system to close the feedback loop.” Jagdish felt that feedback needs to be “demand driven, not supply driven ... that is key to sustainability.” However, feedback and broader engagement need to be incorporated into the project cycle. Shalini cautioned, “If we try to do these experiments without addressing this, we’re going to find loss of interest because people can’t adjust resources to respond.” Teo summed this up: “If you can’t respond, don’t engage.” We discuss the expectations and capacity of stakeholders further in the following section.

People

Who participates is the second critical component of a systems approach. As noted, civic engagement initiatives should clearly identify the roles and responsibilities of all stakeholders within the feedback loop. Interview respondents identified stakeholders as “individual citizens and also CSOs,” “[Bank] country directors and country teams,” “domestic governments,” “TTLs,” and even third-party communication experts. David noted that this composition varied from his experience in countries including Argentina, Brazil, Costa Rica, Mexico, Peru, and Uruguay: “Priorities change on the basis of different country directors and country teams, the environment in that particular country, and also the political cycle and system.”

From her experience working with urban, peri-urban, and rural citizens in a World Bank-funded water project in Uganda, Kyoko noted, “We identified different forms of engagement for these different groups to participate, holding town hall meetings for urbanites and peri-urbanites; for rural areas we worked with already established groups (CSOs) to facilitate face-to-face communication, since there were low literacy rates.”

Speaking on the World Bank’s Forest Carbon Partnership Facility (FCPF), Thomas noted, “We engage citizens in three ways: (1) observer delegates from indigenous peoples’ [organizations] and CSOs (both northern and southern NGOs) are included in the FCPF meetings with donors and country participants; (2) grants given to countries ... include a consultation requirement; and (3) supplemental dialogues [are held] with different interested stakeholders.”

Another challenge is to ensure that “participatory processes are fair and everyone is treated equitably” (Teo). From his many years of experience with the Bank, David commented, “With the increasing proliferation of ICTs, particularly mobile phones in LAC [Latin America and the Caribbean], this [elite capture] is becoming less of an issue, and in fact it could be argued that mobile technology provides an opportunity to break elite capture and expand the involvement of

the poorest households.” According to Thomas, “Tailoring culturally sensitive communications materials becomes key to clearly break down and communicate abstract ideas into something more easily graspable. We’ve even hired communications specialists to help with this. This communication piece could be an area where ICTs could be helpful.”

What are the incentives for different stakeholders to participate? There may be a lack of engagement. According to John, “We have to recognize that people aren’t necessarily interested in giving feedback. Daraja is a great example of this. After initial enthusiasm, people stopped calling about the water services. They lost interest.” Citizens may simply be unfamiliar with engaging with government outside elections (Andre). David stated, “‘Participation fatigue’ is a common problem. Citizens’ time is precious, and when they see nothing happen, that dampens their enthusiasm. Feedback mechanisms have to be well designed in that they need to lead to visible results (especially results that are explicitly connected to the feedback itself). An example of this has been the failure of many dispute resolution mechanisms that generate a lot of initial feedback and then nothing happens, which leads to frustration and even new disputes from those mechanisms. The culprit may be the lack of a clear process for follow-up.”

Another serious factor is the “danger of retribution and bias” (Katerina) when providing feedback. In the context of Western Africa, Andre points out, “When you are talking about denouncing corruption ... participating citizens could find themselves being sued for defamation with public visibility of feedback. The government doesn’t view it as exposing corruption; they see it as disloyalty. I think it is also important to recognize that there has been a history of civil war, assassinations, and fragmented society ... in reality, with little privacy protections ... There is no truly anonymous feedback. Activists are harassed via phone; policemen are willing to give out private/confidential information to their networks.” This political context could be applied to many countries with which the Bank works. When designing feedback mechanisms then, these concerns should be taken into account.

Teo said, “Framing the message and creating incentives are different for citizens than for government, and both are needed.” In terms of the latter, he said, “Making sure that the government is responsive to citizens’ input is the biggest problem. This is both a matter of will as well as the capacity to process and respond to large amounts of feedback.” Respondents made the point that the Bank is “reinforcing the capacity” (David) and “strengthening the capacity” (Teo) of governments rather than replacing it. Teo stated, “What the Bank should be doing is looking at customer satisfaction with regard to services delivered via Bank-funded projects, which is different than citizen engagement in its traditional political dialogue sense.” According to David, engaging with citizens could even be detrimental in the following sense: “One of the problems has been that in projects the World Bank has taken the initiative on engaging citizens and often doesn’t involve the client [recipient government]. As a result, the government takes on a marginal role, further reinforced by the fact that feedback often comes

only to the World Bank and not to the client. This is a significant glitch in the way that citizen feedback mechanisms are currently designed and implemented. This could be an area where ICTs could assist, as it is easier for feedback to be shared more broadly, including the client government.”

However, Andre said, “There could be passive resistance [within government] as there is no incentive within the administration to seek this type of interaction with citizens. It is not that they are trying to be a dictatorship; rather it is an extension of a highly technocratic approach to governance where civil servants and politicians are the experts, and citizens are part of a passive and generic population.” If governments feel threatened, however, it is a question of reframing their role, according to Katerina, Andre, and Teo. Andre suggested moving emphasis from “denunciation of government officials or as a means of social justice [to] user satisfaction regarding provision of budgeted services.” He added, “If we could show the value added of citizen feedback for the government itself, the public sector could be an ally. For example, water services have now been privatized/contracted out in urban areas, and the government is shifting from a role as service provider to regulator. The ministry tasked with overseeing the water sector [in Cameroon] is now interested in this idea of using ICTs for feedback.”

Finally, respondents recognized intermediaries or infomediaries as critical stakeholders in the feedback process. Andre summarized this thought: “Information on World Bank projects needs to be simplified and disseminated in an accessible way ... just posting a Project Appraisal Document on the country website isn’t going to achieve much. There needs to be cultivation of infomediaries to explain information and mobilize citizens.” Jagdish elaborated: “The whole idea with apps is disintermediation, however this still seems like a stretch. How would your average farmer in Malawi understand that he could access Bank information and what that actually means to him? If you have an informed, educated citizenry, you might not need intermediation between the local and global. However, if you have governments that aren’t transparent and/or citizens that are not informed, someone needs to intermediate that information.” Therefore, particularly with ICTs, “The connection between local and global might be instant, but the understanding is still distant” (Jagdish), and intermediaries are necessary.

There was some disagreement on whether CSOs have their own agenda or not. For Jagdish, “Civil society can encourage the government to be transparent, and CSOs tend to be less biased than government.” At the same time, he recognized, “There are different types of CSOs and each serves a unique role. Local organizations are the frontline groups—community associations are an expression of local ownership. National organizations—trade unions, faith-based organizations (that is, Catholic Bishops Council in Brazil on land reform), and national NGOs—are legitimate actors providing technical assistance to local organizations. International organizations such as NDI [National Democratic Institute for International Affairs] and TPI [the Philanthropic Initiative] provide international-level accountability.”

However, although the Bank has a long history of engagement with civil society, for Teo, “There is a problem of self-selection, and not all voices might be heard. Civil society hasn’t been elected or necessarily even endorsed by the constituencies they claim to represent. Increasingly in a networked society, we should be looking at individuals engaging their governments rather than groups. CSOs also have their own agendas, which may or may not be in line with their constituents. ... CSOs can play a complementary role primarily through providing technical expertise and as a strong agent of mobilization. However, they should not be viewed as an interlocutor.” To mitigate this, David suggested using “the local ombudsman office or another part of the World Bank that is not directly involved in the project.”

While governments, citizens, and representative CSOs were the most frequently mentioned stakeholders that feedback mechanisms need to engage, Teo cautioned that stakeholders do not constitute a homogeneous group. Just as “citizens” could be diverse, with different motivations, so “government isn’t a monolith; we need to think about addressing different incentives for elected politicians versus career civil servants. We also need to differentiate between citizens and CSOs, as sometimes CSOs have different interests than their target constituencies.” These distinctions are important in designing feedback mechanisms.

The final, major group of stakeholders consists of Bank staff themselves. According to the respondents, “TTLs do not want more work” (Dieter), they are “risk averse” (David), and they have “no incentive” for feedback (Andre). Shalini said, “We need to be prepared for the likely reality that citizen feedback will include negative evaluations/comments about Bank-funded projects. How will we react to this?” John answered, “It is difficult to encourage the support and responsiveness of TTLs who aren’t happy if their projects are not portrayed in a positive light.” Working primarily in Zambia, Katerina said that there is a “conflict of interest of World Bank project staff receiving and assessing the feedback. TTLs have a huge role to play in selecting which aspects of a project will be evaluated and who will be asked for feedback. This can lead to a skewing of feedback, as there is an incentive for TTLs to collect feedback on better-performing projects with supportive beneficiaries, which could lead to misleading data.” TTL responsiveness toward participation may also differ throughout the project: “At the beginning of a project TTLs like the idea of getting feedback ... Once a project is well under way ... feedback is viewed as a pain” (John). TTLs, citizens, governments, and CSOs all need to be convinced that there is value in feedback mechanisms and to have appropriate capacity to initiate and institutionalize them.

Process

What types of feedback processes currently exist, and what role can ICTs play in enhancing them? Thomas stated, “Consultation processes have blazed a trail for citizen engagement processes in the Bank, as we have engaged our critics directly through engaging them in the initial stages of policy decisions and project design.”

Yet feedback tends to be solicited at the beginning and end of projects, according to David, Andre, and Teo. A successful citizen feedback process should include “information that is disaggregated, user-friendly, and from a reliable source other than government and a space for active feedback as a starting point for a grievance mechanism” (Andre). Kyoko suggested that communication is “far more instrumental in motivating participation. ... We’ve tried using pay-for-results arrangements [that is, compensation for providing feedback or participating], however, it didn’t really work and ended up costing more.” For Katerina, “The critical factor is building a system that enables beneficiaries to see or hear that their voices are being heard and acted upon.” This is related to the concern that, once feedback is solicited, it could evaporate, breaking the “feedback loop.”

One critique was that feedback solicited at the beginning and end of projects is not engagement. According to Shalini, “Ex post evaluation is too late for feedback. ... It is almost in retrospect, essentially passing final judgment on project success. Instead we could use technologies to get feedback now, perhaps even in turnaround environments.” Thomas said that multidonor projects imply multiple feedback mechanisms, leading to feedback fatigue. ICTs could potentially address both of these points by collapsing turnaround time, but also conflating multiple feedback mechanisms.

A common theme was the attention to detail in designing mechanisms, mentioned by John, Teo, and Jagdish. John gave the example of working with truck drivers to identify roadblocks: although 2,000 business cards with a phone number were distributed, there was no response. The project was revised so that truckers dialed in a number, let it ring once, and received a callback from the operator, and this approach achieved a much higher response rate. Other successful methods include giving phone credit, loaning phones, and keeping surveys shorter than 10–15 minutes. Practical follow-up suggestions include “a ticketing mechanism to track follow-up so that there is a way to encourage TTLs to respond and to communicate to the providers of feedback at various stages [that is, upon receipt of the feedback and after the feedback has been analyzed and responded to]” (Katerina). In addition, “Community radio [could be used] to present results of polls on interactive governance. Or another approach is through notification via text once feedback is received and acted upon.” Yet, “Generalizing social accountability mechanisms is difficult, and customization is best because different communities and individuals have diverse challenges and needs” (Kyoko); “The Bank needs to avoid the temptation [to believe] that there is one size fits all” (Shalini). This motivation is problematic because “there is a psychology of success and failure [that is, people don’t want to fail and so they resist anything related to results]” (Shalini).

While a range of processes was suggested, the benefits and challenges of ICTs were also deconstructed, as discussed next.

Tools

All interviewees agreed that ICTs are a means to an end rather than an end in itself. Andre stated that in Cameroon, “We are looking at using ICTs to help the

government to collect information on user satisfaction and to support participatory budgeting along the lines of the Democratic Republic of Congo. We have been using ICTs for participatory monitoring of an energy project, including a grievance and feedback mechanism.” According to Teo, “Mobile phones have been very useful for letting people vote and receive feedback on the results of the voting, execution, and procurement. We’ve also used Web applications to do ‘policy crowdsourcing,’ such as mobilizing the public to generate 50 policy solutions to improve the health sector in their state. We’ve used Open 311 call centers successfully as well.” Similarly, David said that mobile phones, in particular, were helpful in participatory budgeting in Belo Horizonte (Brazil) and Lima (Peru).

Several interviewees pointed to the importance of mobile phones (David, Teo, Kyoko, Thomas, John, and Dieter). This was partly due to accessibility and greater infrastructure (than, for example, the Internet). David documented “very promising citizen feedback initiatives using mobile phones in Honduras (water) and Peru (nutrition). In most of these Latin American countries, ICTs are increasingly available, particularly mobile phones.”

Referring to working with indigenous communities on deforestation, Thomas stated, “Anywhere that you have remote populations that are not easily reached, you have to be creative about using technology. For example, when we’re talking about monitoring forests, there are different ways to do that. ... Many experts are comfortable with high-tech approaches such as remote sensing and aerial photographs. I could foresee greater use of mobile phones and GPS [global positioning system] to report what you have observed in the field or for polling opinions. ... Indigenous communities are already taking advantage of these satellite networks and GPS.”

Although lengthy, it is worth detailing the process of the Listening to Africa Project, as documented by John: “This is a feedback collection mechanism that collects data directly from citizens every two weeks via a mobile phone (voice) survey based on a representative sample. The purpose is to monitor the quality of service delivery and to collect quick feedback on emerging issues of concern or interest. A baseline survey is conducted, and targeted households are selected randomly. Each participating household is given a cell phone and receives a phone call every two weeks by an operator at a call center. Citizens participating in the survey receive a credit to their phone as a reward. If their information is published as part of the broader sample, they receive an SMS confirmation.”

However, Andre pointed out that it is critical to take country-specific pricing mechanisms into account—for example, Cameroon is one of the most expensive countries for SMS, as there are only two service providers, and therefore mobile phone projects may not be as successful. John also noted, “We have a bias in favor of technology. We need to be more skeptical about how realistic this is. Only 2 percent of mobiles in Dar es Salaam have Internet capability. Only 80 percent of the country has cell phone penetration.” Therefore, according to Teo, “Reducing transaction costs to participation for both citizens and government remains critical.”

This relates to a frequently mentioned point: the importance of recognizing the diversity of possible ICTs. Table 8.2 presents a range of feedback mechanisms, from “no-tech” to “high-tech.” Katerina warned against high-tech systems, saying, “Users should be able to contribute their information using various means to be as inclusive as possible. If you use just a text system, this may constrain people who are illiterate or lack the necessary equipment (mobile phone) from participating. It would be best to have a platform that is robust enough to allow people to send in information via text, verbal transmission, e-mail, etc.” Jagdish said, “Just because you have the platform and information, you may not have the connectivity. ICTs are just instruments. There is still a need for meaningful content exchange; otherwise you just have meaningless information. We can see ICT as the ultimate goal, but in reality it is a means to an end of participatory decision making and knowledge sharing.”

Kyoko cautioned, “ICT has become quite a fad in social accountability,” and there is something to be said for “minimal technology to provoke interaction and nothing more.” Thomas stated, “Typically, when we’re dealing with nonliterate populations, we try to stay away from the technology in favor of face-to-face engagement using PRA [participatory rural appraisal] or learning-in-action methods. Sometimes we end up promoting a lower-tech approach than the client [government] in order to reach everyone. For example, one agency wanted just to post information on its website for comment; however, this assumes both awareness and ability on the part of citizens to actually engage with it.”

Jagdish agreed: “Face-to-face meetings are still indispensable to these engagement processes.” Shalini said, “I see the biggest risk of all is overly focusing on the platform. ... It’s not the technology; we want feedback from these consumers.” Teo pointed to the need to distinguish between ICTs depending on the purpose: “The role of ICTs differs depending on the nature of the participatory process. For issues with ‘localized logic’ (proximate and locally visible benefits) such as potholes or schools, citizens need low levels of additional information, which facilitates use of the Web and mobile platforms. You can also easily use open-selection methods for participants (that is, anyone can participate). However, with issues such as national or state planning (distant and less-visible benefits locally) on budgeting and expenditures, the additional information that citizens need becomes bigger, and there is a need for greater face-to-face interaction as the complexity of the issues involved increases. In this context, technology can support these things such as through consensus conferences or for dissemination of background information; however, it can’t replace the in-person mechanisms of engagement. It also is possible that the ideal types of technologies to use may vary depending on the stage of participation.”

No-tech could be a very likely possibility, as could low-tech. David said, “Hybrid technology platforms are the best approach, perhaps combining websites, SMS, and community radio. Community radio (which is as accessible to literates as to nonliterates) has great potential to become a hub for communication.” Kyoko, Thomas, and Shalini agreed.

Respondents spoke less about what kind of data is solicited through the use of ICTs. This could possibly be because of the diversity of projects. However, two important points were raised. First is the issue of data quality. Speaking from a background in family planning, Shalini said, “Frequently, input data were ghastly. There is a need to have locally sound input information. This information also must be verified to ensure that there is no falsification.” This raises the point that *what* is collected and *how* need to be planned meticulously and reviewed regularly in order to provide meaningful results. Shalini commented, “There needs to be more consideration in capturing and sharing oral/visual information such as pictures or video that are more accessible for nonliterates.”

Teo noted the paradox that many “participatory” civic engagement tools are not constructed in a participatory fashion: “I think that participatory design of multichannel participation mechanisms itself is key, consulting citizens regarding the modes of participation, methods of participation selection, and soliciting feedback.” This implies a deeper cultural change, discussed next.

Environment

Respondents often returned to the broader environment in which feedback is designed and implemented: “Technology is oversold. This is not really about technology, per se. ... The larger issues are institutional” (Jagdish). “The problem isn’t information, but the ability to take action to change the behavior” (John). “Institutionalizing the accountability process, ... building in the assurance that citizen feedback will be taken seriously by the World Bank, is critical” (David).

However, interviewees did sense a changing environment for government and Bank policy. Kyoko commented, “In 1989, the focus of the Bank was all about growth, with little mention or consideration of social issues or poverty. I came back in 1997, and the Bank had begun to open up to civil society, which is when social accountability really took off as an important focus area.” Jagdish said, “There was a definite change in the World Bank’s position regarding citizen and CSO engagement that began under President [James] Wolfensohn’s tenure [1995–2005]. It is through this demand-side emphasis that the Bank decided that it should also work with citizens and other stakeholder groups [as opposed to working only with governments].” Thomas agreed: “There is a significant shift going on, as the Bank has become a lot more proactive in engaging indigenous leaders directly. I would also say that TTLs are much more sensitized to the need for stakeholder engagement than they used to be, which means you don’t have to pressure them to do this. Also, I see a stronger belief in the value of engaging citizens among younger generations of TTLs, perhaps in relation to the spread of democratic ideals.”

The use of ICTs *within* the Bank has enabled Bank employees to bridge the donor-“beneficiary” divide. For Jagdish, “The Bank website has grown in importance as a component of CSO engagement. Social media, blogs, and tweets are now allowing for engagement and dialogue with a broader set of actors.” He added, “Previously, Bank staff had to be careful when talking to the media and to

not have your own opinion. With social media and blogging, we have left the world of monolithic bureaucracy to increasing openness. I think this has helped to change the image of the Bank.”

At the same time, respondents criticized the Bank environment. According to Kyoko, “Much of the current emphasis right now is on allocating money quickly and efficiently, whereas social accountability and incorporating citizens and civil society take time and can be messy. This creates a disconnect that the Bank needs to address. The incentive system is skewed.” For Katerina, “Downward accountability (to beneficiaries) is generally much less of a focus than upward or horizontal accountability. TTLs are pressured to disburse funds, creating an incentive to skip messy consultative processes or to pursue them more in a tokenistic manner.” Similar comments were made by Andre, Dieter, and John.

Individuals also pointed to the Bank culture of the “expert,” in contradiction to engagement: “Most of the systems we utilize within the Bank are command and control, with a considerable absence of learning approach. Unfortunately, Bank staff fall into thinking that we are hired as experts, not hired to learn” (Shalini). According to Kyoko, “At present, there are too many technocrats [within the Bank] and too few able to think adaptively and talk with communities.”

Teo asked, “Is the Bank actually able to respond to citizen feedback? This I seriously doubt. If the Bank is engaging with citizens and being responsive, then I could see how you are fostering political advocacy. This is because any relationship of responsiveness probably imbues citizens with a feeling of efficacy, fostering social capital that can ultimately have a spillover effect in other areas of participatory governance.” A preconceived external perception of the Bank lingers: “There is skepticism for the Bank to offer a participatory tool, since the Bank still has a negative brand based on lack of information—that is, a big global institution in DC coming here to impose; perceptions of elitism and neo-colonialism” (Jagdish).

Not only does the Bank environment and image play an important role in citizen engagement, but so do government and civil society cultures. The Bank needs to understand and analyze these cultures. According to Kyoko, “Getting the Bank to think in ‘adaptive systems’ terms is essential to getting citizen feedback and social accountability done right. This involves things like mapping the political economy and testing to understand problems and possible responses. All of this requires familiarity with the local context and interacting with citizens as process owners.”

Regarding government, serious impasses are common. Andre gave the example of Western Africa: “There is no specific right of access to information law; however, citizens [can] request information from the government in the Democratic Reform Act of 1991, which actually refers to citizen journalists. In practice, however, the regulatory and policy environment is unhelpful, with no working grievance mechanism if information requests are refused and little online access to basic information such as laws and regulations. The government’s own culture is also not conducive, as it is highly secretive and there is a lack of basic archival systems to track information to publish. For these reasons, most

people don't view official sources of information as reliable." Any similar environment of secrecy, lack of trust, and apathy needs to be understood before the Bank implements an initiative.

Civil society cultures also need to be taken into account. These intermediaries may have their own agenda, or governments may compromise their potential. For example, governments may "play 'tricks' on civil society in order to further confound their attempts to substantively engage, such as not providing advance agendas or opportunities to provide feedback. ... Contributions [can be] primarily constrained to engaging in pro forma consultations with government on policies and programs" (Andre). ICT-enabled feedback mechanisms do not operate in isolation. The purpose, process, people involved, and enabling environment are critical. The questions are, What have we learned so far, and what recommendations can we provide for ICT-enabled mechanisms? We offer some answers in the final section.

Moving Forward: Recommendations to Maximize the Impact of Technology-Enabled Feedback

Reflecting on the literature, survey, and interview analysis, we provide recommendations that are broadly applicable for future technology-enabled citizen feedback initiatives.

Why?

First, *establish and articulate for all stakeholders the purpose and development objective(s) that feedback is intended to serve*. The first step in any citizen feedback initiative should be to make explicit the purpose of feedback for a given project as well as the project's ultimate development objective for all relevant stakeholders. It is crucial to clarify the underlying reasons for collecting citizen feedback before designing the mechanism and engaging with stakeholders. Providing clarity of purpose will help to shape expectations, measure progress toward achieving broader goals, and inform the design of the feedback mechanism so as to facilitate those objectives.

Second, *broaden the objective of collecting feedback beyond enhancing project results*. While citizen feedback is instrumental to project success, it has a value in and of itself as part of a broader effort to transform how citizens engage with civil society, government, and international donors. These initiatives should therefore include long-term policy reform that aims to build citizen capacity to engage and government capacity to provide effective services that meet citizens' needs. In this way, citizen feedback initiatives should not only aim to enhance project performance, but also strive to transform feedback into citizen empowerment and to reform how projects are implemented in the future. At the same time, it is critical for all initiatives to support, rather than replace, the role of government and other stakeholders in engaging citizens to ensure local ownership of feedback mechanisms.

What?

First, *design technology-enabled feedback mechanisms in response to project development objectives as well as the objectives that feedback intends to serve.* Technology is not a panacea, and development projects should not be technology driven. Instead, technology-mediated mechanisms should be designed *in response to* a clearly defined problem that needs to be addressed. This will require consideration of whether certain technologies are appropriate to the context and purpose of the feedback initiative. For initiatives aiming to expand reach or increase project efficiency, it may be appropriate to design mechanisms that integrate high-tech platforms; for initiatives aiming to ensure inclusive participation, no- or low-tech solutions may be more appropriate.

Second, *tailor the design of feedback mechanisms to the local political, socioeconomic, and cultural context.* The type of engagement sought and who is being asked to provide feedback interact with institutions that may inhibit or bolster feedback initiatives in a given context (Jacobs 2010). Formal and informal norms guiding the interactions between citizens, their government, and outsiders also inform the transaction costs of participation (North 1990). Ensuring that these initiatives and the technology that supports them are contextually appropriate thus requires familiarity with the local cultural, political, and economic environments as well as a willingness to adapt systems to contextual factors. This will also help to define and understand the external factors that could impede successful implementation of the project.

Third, *expand the type of feedback collected.* Project managers consider various types of feedback helpful in achieving project goals. This includes suggestions for improvement or assessments of the quality or quantity of services provided. In certain contexts, requesting feedback from citizens regarding their perceptions of a project, both positive and negative, may provide richer feedback than just collecting grievances. This also might allow all parties, including those who benefit and those who do not, to report on project implementation and outcomes.

Fourth, *use hybrid platforms that integrate offline and online modalities for citizen feedback.* Traditional methods of collecting feedback, such as in-person site visits and surveys, involve high barriers of time, cost, and distance that prevent frequent interaction with large numbers of citizens. While new technologies can reduce these barriers, accessibility can be uneven, potentially exacerbating inequities by underrepresenting certain demographics. Furthermore, as Toyama (2010) argues, “Technology—no matter how well designed—is only a magnifier of human intent and capacity ... not a substitute.” For this reason, citizen feedback initiatives should adopt a hybrid approach that enables citizens to engage using multiple modalities, including new technologies for expansive reach (that is, Internet and mobile phones) combined with older technologies and no-tech platforms to ensure inclusivity (that is, community radio and face-to-face interaction). Furthermore, the information gathered and shared via these different technologies should be integrated and aggregated so that citizens can understand the whole picture.

Who?

First, *broaden engagement beyond beneficiaries and citizens by identifying all relevant stakeholder groups involved in the feedback loop and defining their roles and responsibilities.* Determining the breadth of actors involved in a feedback mechanism has social and political implications regarding who is involved and who is left out, potentially altering power dynamics or exacerbating exclusion (Cornwall 2008; Mohan 2001). For this reason, it is crucial that feedback initiatives encompass and reach out to a broad range of stakeholders, including community organizations, local CSOs, communication specialists, media groups, the private sector, as well as groups adversely affected by the intervention. It is particularly important to obtain feedback from those who inhabit the community in which the project is implemented, but do not necessarily benefit from it. Furthermore, the role of international donors such as the World Bank should be clearly defined and agreed upon with in-country stakeholders in an effort to leverage their comparative advantage in facilitating dialogue and building capacity.

Second, *establish a role for civil society and integrate CSOs into the feedback loop.* Technology-enabled feedback mechanisms should serve as a complement to, not a substitute for, the role of civil society or other third-party organizations. CSOs continue to play a vital role as intermediaries helping to track, analyze, and communicate information on public and private sector performance. Civil society, activists, journalists, and the local tech community thus remain crucial through their role as “infomediaries” able to navigate the local cultural and political context, to communicate relevant information back to citizens, and to serve as “a necessary bridge” between service providers, international donors, and end users. For this reason, feedback mechanisms should proactively involve CSOs in receiving and responding to citizen input. This should also improve the understanding of citizens and end beneficiaries of the project about how to provide feedback and give them an opportunity to engage earlier in the project cycle.

When?

First, *engage stakeholders early, continuously, frequently, and systematically throughout the project cycle.* Mechanisms that only solicit citizen feedback following project completion wait too long for the feedback to be of use in improving project results. There is significant value in engaging citizens early on to create local awareness, increase buy-in and local ownership, as well as enhance the likelihood of continuous dialogue throughout the project cycle. ICT-mediated feedback mechanisms should solicit and respond to feedback throughout the project cycle, particularly during critical decision-making points, to support continuous iteration and strengthen project effectiveness and accountability. In this way, citizens are involved in shaping the entire project from conception through implementation and evaluation.

Furthermore, citizen engagement should not be treated as a “one-off” exercise, but should become an integral part of the project design that contributes directly to the project’s core development objectives. By adopting an iterative approach

with systematic feedback gathered throughout the project cycle, feedback initiatives will be better able to capture early lessons learned and make adjustments early in project implementation.

Second, *reflect on the types of feedback solicited and ICT modalities incorporated at each stage of the project cycle to identify the optimal engagement strategy.* The purpose of feedback can vary at each stage of the project cycle. In the early phase, citizen feedback can inform project design and preparation, while during project piloting and implementation, feedback can help the project to change course prior to being scaled up and institutionalized. Feedback mechanisms should adopt a flexible and iterative approach that allows for adaptation throughout the course of an intervention and minimizes the trade-offs between inclusivity and efficiency at each stage.

How?

First, *strengthen demand for citizen engagement.* Building a citizen feedback mechanism does not necessarily ensure robust participation or even citizen cognizance of the opportunity to participate. Use of innovative technologies should be accompanied by a proactive and continuous communication and mobilization campaign targeted toward citizens, civil society, and local community organizations. Citizens should be informed of the existence of the feedback mechanism and the value of civic engagement. Furthermore, to enhance the *willingness* of various target groups to engage, it is critical to identify contextually appropriate incentives for each group, to encourage repeat participation, and to find ways to reduce the costs and increase the benefits of providing feedback. This should also be accompanied by assurances of privacy protection and security. These outreach activities should also be accompanied by efforts to enhance the *capacity* of citizens to demand change, for example, through local training and workshop activities on how to use feedback platforms.

Second, *build capacity among government, implementing agencies, and civil society to respond to feedback.* High-frequency and continuous interaction, as called for above, has implications not only for citizens but also for the parties responsible for monitoring and acting on feedback. In many cases, successfully implementing a sustainable, inclusive, and efficient feedback mechanism will require sufficient capacity on the part of those who receive feedback not only to manage the volume and diversity of feedback, but also to respond systematically to it. For this reason, any attempt to implement a high-frequency, ICT-enabled feedback mechanism should devote sufficient resources and consideration to understanding and responding to the feedback received.

Third, *be transparent and open about the feedback process, project results, and how the project has changed as a result of the feedback provided.* Supporting a two-way flow of information not only for citizens, project managers, and implementers but also for government, service providers, and CSOs should support more substantive citizen involvement by reducing information asymmetries and facilitating recurring interaction throughout the development process. This will require continually communicating progress, expectations, outcomes, and

barriers to progress back to those who provide feedback. Citizens will expect a response, and it is important to communicate the time frame for response, particularly in cases in which responses are difficult to provide. This could be done, for instance, by providing notifications via SMS when feedback has been received and acted on. Managing expectations by being transparent throughout the project cycle should help to avoid apathy and participation fatigue. Furthermore, increasing the transparency of project results—for example, using community radio to broadcast aggregate results—should enable *meaningful* citizen feedback.

Fourth, *close the feedback loop*. Project staff, government, and other implementing parties must have incentives to respond to citizen input. Similar to citizens, these groups have their own cost-benefit calculus around whether and how to respond to the feedback they receive. Developing standards and processes outlining the responsibilities for responding to citizen feedback as well as establishing punishments for failure to act are necessary in order to move from merely soliciting citizen feedback to acting on it. Properly aligning the incentives of those who respond to feedback should also ensure that these initiatives move beyond simple “tick the box” exercises and lead to meaningful engagement.

Annex 8A: Survey Questions

Online Survey Questions for World Bank Project Staff in Africa

1. In which sectors do you currently collect feedback during project implementation? (Multiple choice)
2. What type of feedback do you currently collect during project implementation? (Multiple choice)
3. Who do you currently collect feedback from? (Multiple choice)
4. What collection mechanisms do you currently use to collect feedback? (Multiple choice)
5. How frequently do you currently collect feedback? (Multiple choice)
6. What do you feel is working well about your current feedback collection practice? (Open-ended)
7. What do you feel could be improved in your current feedback collection practice (that is, existing bottlenecks or other deficiencies)? (Open-ended)
8. In the future, for projects in which sectors would you find feedback helpful? (Multiple choice)
9. In the future, what type of feedback would you find it helpful to collect? (Multiple choice)
10. In the future, who would you find it helpful to collect feedback from? (Multiple choice)
11. In the future, how frequently would you find it helpful to collect feedback? (Multiple choice)
12. How important are the following conditions to choosing a feedback collection mechanism suitable for your projects? (Rating)

13. How would you assess the desirability of the following technology-enabled feedback collection tools based on likely response from those giving and receiving feedback? (Open-ended)
14. What further considerations should be thought of in designing and implementing feedback mechanisms to support your projects? (Open-ended)
15. Would you be willing to be interviewed to further inform development of a technology-enabled beneficiary feedback mechanism? If so, please provide your e-mail below.

Survey Questions for Participants in the Citizen Voices Conference

1. What is the nature of feedback or demands from citizens with respect to your organization?
 - There is no structured mechanism for feedback that I am aware of.
 - There are infrequent instances of feedback with little or no impact.
 - There are infrequent instances of feedback with moderate impact.
 - There are infrequent instances of feedback with significant impact.
 - There is well-structured regular feedback with little or no impact.
 - There is well-structured regular feedback with moderate impact.
 - There is well-structured regular feedback with significant impact.
2. How would you describe yourself with respect to citizen engagement as a means to enhance development outcomes?
 - A skeptic: I have never seen it make a real difference.
 - Agnostic: I have not seen it work, but I could imagine that it would.
 - Pragmatic: I have seen it work where the circumstances were right.
 - Believer: I cannot imagine the highest-performing development organizations—public or private—operating without having a systematic approach to feedback from their primary constituents.
3. Please indicate your assessment of the following possible challenges to effective citizen engagement:

<i>Possible challenge</i>	<i>Not a challenge</i>	<i>Minor challenge</i>	<i>Major challenge</i>	<i>Biggest challenge</i>
Collecting empirically valid feedback data				
Getting valid benchmarks for feedback data				
Maintaining satisfactory levels of citizen engagement over time				
Developing appropriate responses to feedback				
Closing the feedback loop by reporting back to feedback providers				
Taking corrective actions in response to feedback				
Cost of beneficiary feedback mechanisms				
Raising funds to operate beneficiary feedback mechanisms				
Overcoming defensiveness to outside criticism				
Other (please specify)				

4. Please indicate your assessment of the possible gaps and missing parts in the citizen engagement debate and practice:

<i>Possible issue</i>	<i>Not an issue</i>	<i>Minor issue</i>	<i>Major issue</i>	<i>Biggest issue</i>
No way to track effectiveness				
Weak capacity to create and implement engagement mechanisms (including with respect to data collection practices)				
Poor appreciation of the benefits from citizen engagement				
Lack of appropriate, low-cost technologies to collect data				
Other (please specify)				

5. What are the most promising and cutting-edge topics in the field of citizen engagement? (Open-ended)
6. How could this conference be helpful to your work? (Mark all relevant answers.)
- Learn about good practices and tools
 - Networking
 - Initiate partnerships/collaborative work with other participants
 - Discuss existing projects and initiatives.
7. Which questions related to citizen engagement are you most interested in?

<i>Issue</i>	<i>Not interested</i>	<i>Moderately interested</i>	<i>Very interested</i>
Strategies for effective citizen engagement			
Capacity building of citizens and civil society groups			
Capacity building of governments			
Innovative tools and mechanisms for citizen engagement			
Good practice examples from developed or developing countries			
Good practice examples from the private sector			
Impact assessment			

8. Please take a look at the draft agenda. Is there anything that you would like to modify in the structure of the conference?
9. Which topics should be added or omitted?
10. Please suggest names of (additional) speakers who could contribute to the conference.
11. Gender
12. Age
13. Sector that you work in:
14. Country of residence:
15. Country of origin:
16. Will you attend the conference?
17. Please add your biography. (Maximum 300 words)

Interview Questions for Subject Matter Experts

1. Could you please outline your role at the World Bank?
2. What is the nature of your own involvement, or that of your unit, with citizen engagement? Whom do you engage, for what purpose, and how? At which stages do you engage them?
3. What role, if any, do information communication technologies play in that process?
4. What countries do you work with, and what is the extent of access and use of ICTs in those contexts?
5. How has the World Bank's approach to soliciting and responding to citizen feedback evolved over the years? What role, if any, has technology played?
6. What is working well in the World Bank's efforts to incorporate the voices of citizens and civil society in designing, monitoring, or evaluating its projects?
7. What is *not* working well in the World Bank's efforts to incorporate the voices of citizens and civil society in designing, monitoring, or evaluating its projects?
8. Are high-level commitments to Open Data, OpenAid, and Open Development changing the way your unit or the World Bank overall approaches citizen engagement? If yes, why and in what ways? If not, why not?
9. What do you see as the possibilities and drawbacks of using technology to collect citizen feedback?
10. What potential hurdles do you see in institutionalizing technology-enabled citizen feedback?
11. Drawing on the experience of the World Bank or external examples, what do you see as the key lessons learned in how to meaningfully engage citizens and strengthen their voices in the process of development?

Follow-Up Interview Questions for Survey Respondents

1. Please outline your role at the World Bank and the nature of your involvement with feedback collection.
2. Which countries have you been working with, and what role does feedback collection play in those contexts?
3. What do you feel is working well about your current feedback collection practice?
4. What do you feel could be improved in your current feedback collection practice?
5. What do you see as the possibilities and pitfalls of using technology to collect citizen feedback? What functionalities should be built into a technology-enabled feedback mechanism?
6. Survey respondents identified four criteria as critical to informing the suitability of a feedback mechanism for a given project, including (a) TTL responsiveness; (b) respondent anonymity; (c) diffusion of project benefits; and (d) geographic dispersion of beneficiaries. How would you advise that the World Bank Institute incorporate these criteria in a technology-enabled feedback mechanism?

7. Securing buy-in of project stakeholders was identified as critical to the success of a feedback mechanism. In the country context(s) you are familiar with, how should the World Bank address the stakeholder incentives to facilitate participation?
8. What potential hurdles do you see in institutionalizing a technology-enabled feedback mechanism in your context? What recommendations would you have for the design team to proactively address and minimize these hurdles early on?
9. What further considerations should be thought of in designing and implementing feedback mechanisms to support your projects?

Interview Questions for Snapshot of Beneficiary Feedback

Broader Context

1. What is the problem that the project is trying to solve?
2. How is the project trying to solve it?
3. Who are the project stakeholders and partners you are working with, and what are their roles?
4. What is the World Bank's contribution to this project?
5. What results have you already seen?
6. When did you begin collecting beneficiary feedback in the project?

Purpose

7. What do you see as the role of beneficiary feedback in the process?
8. How is beneficiary feedback currently informing the project?

People

9. Who collects the feedback?
10. Who provides the feedback?
11. Who monitors and responds to the feedback?

Process

12. How frequently do you collect beneficiary feedback?
13. At what stages of the project cycle is this happening?
14. What types of feedback are you collecting (that is, complaints, monitoring, satisfaction, suggestions, or others)?
15. How does the project follow up with, or respond to, the concerns raised by beneficiaries?

Mechanism

16. Which collection mechanisms are being used to collect, respond to, or report on citizen feedback?
17. To what degree are these mechanisms being integrated versus serving as stand-alone channels?

Environment

18. What is the environment like in your context for different types of ICTs, and how did that play a role in your design process?

Results

19. What has been the response from beneficiaries so far to the feedback mechanism (that is, representativeness of participation, frequency, quality of feedback, others)?

Sustainability and Replicability

20. Where are the financial and human resources coming from to support the feedback mechanism?

21. What is your plan for the long-term sustainability of this feedback mechanism in the future?

Table 8A.1 Design Questions for Collecting Citizen Feedback Using a Systems Approach

<i>System component and illustrative questions</i>	<i>Possible answers</i>
Purpose	
Who is the feedback intended for?	Citizens, client government, donors, CSOs
How does the feedback align with broader goals and objectives?	Transparency, accountability, project effectiveness, good governance
How is the feedback intended to inform the project?	Inform the design, track implementation, evaluate success
What type(s) of projects will feedback be provided on and at what scope?	<i>Scope:</i> community, municipal, state or provincial, national; <i>characteristics:</i> visibility (awareness of project), proximity (dispersion of beneficiaries), time frame, salience (dispersion of benefits)
People	
Who will be providing the feedback?	Citizens, project beneficiaries, CSOs, media, client government, private sector
Who will be monitoring the feedback?	Citizens, client government, donor, CSOs
Who will be responding to the feedback?	Client government, donor, CSOs
Process	
With what frequency will feedback be solicited?	Daily, weekly, monthly, yearly, alternate specified interval
What type of feedback will be solicited?	Identification, preparation, implementation, completion, evaluation
How will the feedback be integrated within the project cycle?	Complaints, suggestions, satisfaction, reports on mismanagement
What additional organizational capacity is needed to manage the feedback mechanism?	Tracking and ticketing system, communications mechanism, standards and procedures for processing and responding to feedback
How will technology-enabled feedback integrate with other forms of feedback collection on World Bank-funded projects?	"One-stop-shop," multiple platforms but synchronized, multiple platforms but unsynchronized
Tools	
What conventional tools are already being used to collect citizen feedback?	In-person site visits or meetings, community radio, or television
What new technology options are available, and what is their comparative value added?	Cell phone or SMS, Internet, social media

table continues next page

Table 8A.1 Design Questions for Collecting Citizen Feedback Using a Systems Approach
(continued)

<i>System component and illustrative questions</i>	<i>Possible answers</i>
Tools (cont.)	
To what degree are the technology options appropriate to the context?	<i>Functionality</i> : usefulness of features and how the feedback platform is moderated; <i>usability</i> : intuitiveness of the technology and front-end software for the user; <i>accessibility</i> : technology penetration within the context and cost to users of acquiring requisite hardware or software to participate
Environment	
How inclusive is the environment for introducing new feedback mechanisms?	<i>Technology literacy</i> : citizen familiarity with specific technologies; <i>information capabilities</i> : citizen ease of interpreting usefulness of information; <i>equity of access</i> : evidence of discriminatory barriers (formal or informal) that may prevent some demographics from participating
To what degree is there civic space for citizens to organize, advocate, and take action?	Presence of civil society (community-based organizations, NGOs), freedom of information, right of assembly, freedom of speech
To what degree are project stakeholders likely to constrain or enable citizens to provide feedback?	Variable

Source: Model developed by Samantha Custer, World Bank Institute, April 2012.

Note: CSO = civil society organization; NGO = nongovernmental organization; SMS = short message service.

Annex 8B: List of 2013 World Bank–Financed Projects Incorporating Citizen Feedback, by Region

Africa

- Burkina Faso: Project Stakeholders' Perception on "How to Improve the Use of Country Systems?"
- Cameroon: Community Development Program Support Project Phase-II
- The Democratic Republic of Congo: Enhancing Governance Capacity, CM-Community
- The Democratic Republic of Congo: PFMA (Public Financial Management and Accountability) Project
- Ghana: E-ISR (External Implementation Status and Results Reports) Program
- Kenya: Maji Voice: A Feedback Platform for Improving Urban Water and Sanitation Services
- Kenya: Western Kenya CDD (Community Driven Development) and Flood Mitigation Project
- Kenya: National Integrated Education Information Management System
- Nigeria: Innovations in ICT for Social Accountability
- Nigeria: Open Contracting in Nigeria: Promoting Transparency and Accountability of Procurement Processes with Procurement Monitoring Feedback

- Nigeria: Increased Citizen Voice and Inclusion
- Nigeria: Increased Engagement of Citizens in the Development Process in the Core Niger Delta
- Rwanda: Land Husbandry, Water Harvesting, and Hillside Irrigation
- Sierra Leone: E-ISR Pilot
- Sierra Leone: Joint Community-Clinic Monitoring of Health Service Delivery
- Uganda: The Power of Mobile: Saving Uganda's Banana Crop
- Uganda: Agricultural Technology and Agribusiness Advisory Services
- Uganda: Post- Primary Education and Training Program
- Zambia: E-ISR+ (External Implementation Status and Results Reports +) and OnTrack Pilot
- Regional: Improving Cash-for-Work Projects in Post-conflict Countries through Beneficiary Surveys

East Asia and the Pacific

- Cambodia: Beneficiary Monitoring and Feedback of District Administrative Services: The Experience of the Demand for Good Governance Project
- Indonesia: Participatory Mapping for Disaster Preparedness in the Province of Jakarta with OpenStreetMap
- Indonesia: National Program for Community Empowerment (PNPM II-Rural) Project
- Indonesia: National Program for Community Empowerment (PNPM-Urban) Project
- Kiribati: Road Rehabilitation Project: Using Beneficiary Surveys to Improve Project Impact
- The Philippines: Outreach and Feedback in the Preparation and Implementation of a Bus Rapid Transit Project in Cebu
- The Philippines: Mindanao Rural Development Program (MRDP) Phase II
- Vietnam: Coastal Cities Environmental Sanitation Project
- Vietnam: Urban Upgrading Project

Eastern Europe and Central Asia

- Moldova: Governance eTransformation Project
- The Russian Federation: Enabling Smart Ulyanovsk Oblast (Phase I)
- Citizen Engagement Framework for Central Asia (Non-lending)

Latin America and the Caribbean

- Argentina: Sexual Education for Indigenous Women and Girls during Road Rehabilitation Works in Chaco
- Bolivia: Rural Alliances II Project
- Bolivia: Urban Infrastructure Project—Additional Financing
- Brazil: Rio Grande do Sul: The “Government Asks”: Multichannel Wiki Surveys for Policy Making
- Brazil: Teresina Enhancing Municipal Governance and Quality of Life Project
- Brazil: Rio de Janeiro Strengthening Public Sector Management Technical Assistance Project

- Brazil: Ceara State-Ceara Program for Results (P4R)/RAS
- Brazil: RAS (Reimbursable Advisory Services) Multimodal Transport Corridor Sao Francisco
- Brazil: Belo Horizonte's Participatory Innovations
- The Dominican Republic: Cross-Selling Citizen Participation
- Ecuador: Quito Metro Line I Project
- Nicaragua: How Clients' Voices Strengthened the Bank's Access to Finance Work

Middle East and North Africa

- Djibouti: Urban Poverty Reduction Project II
- The Arab Republic of Egypt: Micro and Small Enterprises Development for Inclusive Growth
- Morocco: Integrated Risk Management Project
- Morocco: Accountability and Transparency DPL (Development Policy Loan)
- Tunisia: Local Governance Project
- West Bank and Gaza: Cash Transfer Project Additional Financing
- West Bank and Gaza Water Supply and Sewage System Improvement
- The Republic of Yemen: Social Fund for Development

South Asia

- Afghanistan: National Solidarity Program Phase III (NSP III)
- Bangladesh: Local Governance Support Projects
- Bangladesh: Empowerment and Livelihood Improvement "Nuton Jibon" Project: Social Accountability Mechanisms for Greater Impact
- India: Karnataka Maternal Health: Beneficiary Verification System, a Scalable System for Citizen Voice in Results Management
- India: Participation and Accountability in the Tamil Nadu Empowerment and Poverty Reduction Project
- Nepal: Poverty Alleviation Fund II
- Nepal: School Sector Reform Program
- Pakistan: Punjab Model of Proactive Governance
- Pakistan: Flood Emergency Cash Transfer Project: Social Accountability Mechanisms for Real-Time Improvements in Program Management
- Pakistan: Social Safety Net Project: A Transition to CCT (conditional cash transfers) with Continuous Beneficiary Feedback
- Pakistan: Karachi Water and Sewerage Board: Consumer Survey in One Town

Note

1. Terms such as customer, client, beneficiary, and citizen are often used interchangeably, both in the international development literature and in our primary research, although they all have different implications. A deeper discussion regarding these terms is beyond the scope of this chapter, but we again recognize that the lack of clarity reflects a lack of clear conceptualization of feedback and engagement in the development field.

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The Loch Ness Model: Can ICTs Bridge the “Accountability Gap”?

Björn-Sören Gigler, Savita Bailur, and Nicole Anand

We began this book with a grand question: can information and communication technologies (ICTs) empower through participation, transparency, and accountability and if so, under which conditions? In our introductory chapters, we laid the theoretical groundwork for understanding the *potential* of technologies to achieve these goals. We then highlighted practical examples that operationalize ICTs to test these hypotheses. We wrapped up with an analysis of the feedback loop, in which accountability is only achieved when citizens actively participate *and* governments respond. As in the specific case of the feedback loop, technologies can empower citizens to hold governments and international donors accountable, but true accountability will only result from recognizing the gap between supply (governments, international donors, service providers) and demand (citizens, civil society organizations [CSOs], communities) and considering how to bridge it from both sides. As illustrated in previous chapters, ICT-enabled initiatives have contributed to *shrinking* this “accountability gap,” yet in many cases, it remains open. In this concluding chapter, we develop a framework for analyzing how technologies can accelerate efforts to close the gap, which we call the Loch Ness model. We then offer reasons why the gap remains open and put forth recommendations for closing it.

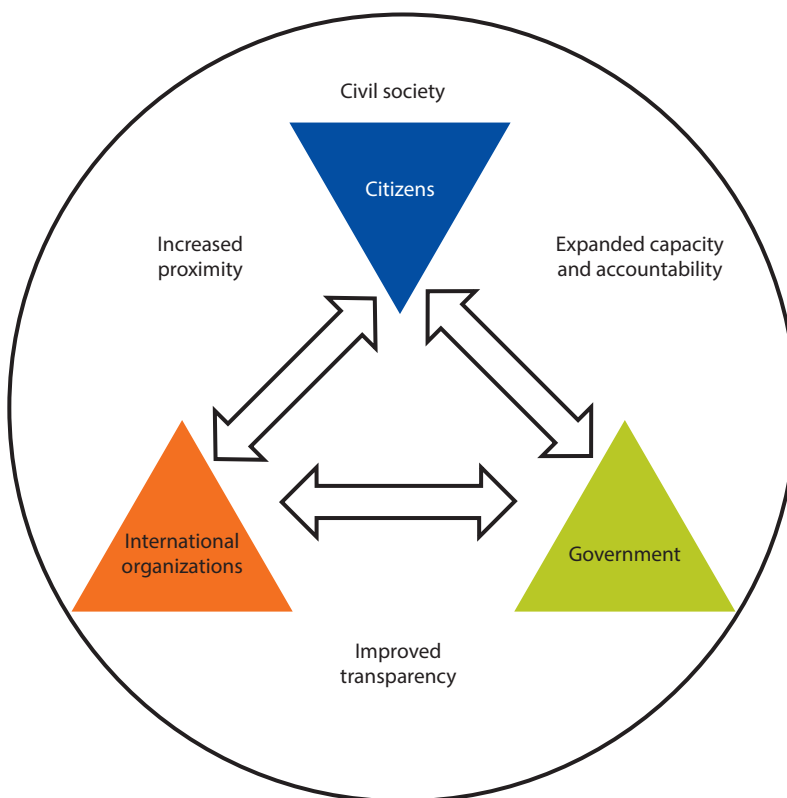
The authors extend their gratitude to the following people for their comments and insights: David Bonbright, founder of Keystone Accountability and former chair of board, CIVICUS; Jane Fountain, distinguished professor, University of Massachusetts Amherst, and director, National Center for Digital Government; Jonathan Fox, professor at American University and author of *Accountability Politics: Power and Voice in Rural Mexico*; John Garrison, senior civil society specialist, World Bank; Helene Grandvoinnet, cluster leader, Social Accountability and Demand for Good Governance team, World Bank; Saki Kumagai, social development specialist, World Bank; Mary McNeil, team lead, Governance, World Bank Institute; Tiago Carneiro Peixoto, specialist in open government, World Bank Institute; Rakesh Rajani, founder of Twaweza, and Open Government Partnership (OGP) cochair; Sundeep Sahay, professor of informatics, University of Oslo, Norway; and Michael Woolcock, lead social development specialist, World Bank.

Understanding the Dimensions of ICT-Enabled Citizen Engagement

Case studies presented in this book demonstrate how ICTs have been used to collect, visualize, and analyze data (crisis mapping, mobile monitoring), to access and disseminate information (health kiosks, right-to-information hotlines), and to unify and engage communities (community mapping, community radio, online parliamentary forums). While non-ICT initiatives using similar approaches (community scorecards, citizen report cards, participatory budgets), mentioned in chapter 3, have had success in many programs, there are reasons to believe that ICTs can contribute to empowering citizens and government alike, shrinking the gap between them and drawing us nearer to an accountable governance system. Evidence suggests that ICTs can accelerate citizen engagement—the two-way interaction between citizens and governments or public service providers that gives citizens a stake in decision making with the objective of improving intermediate and final development outcomes (figure 9.1).

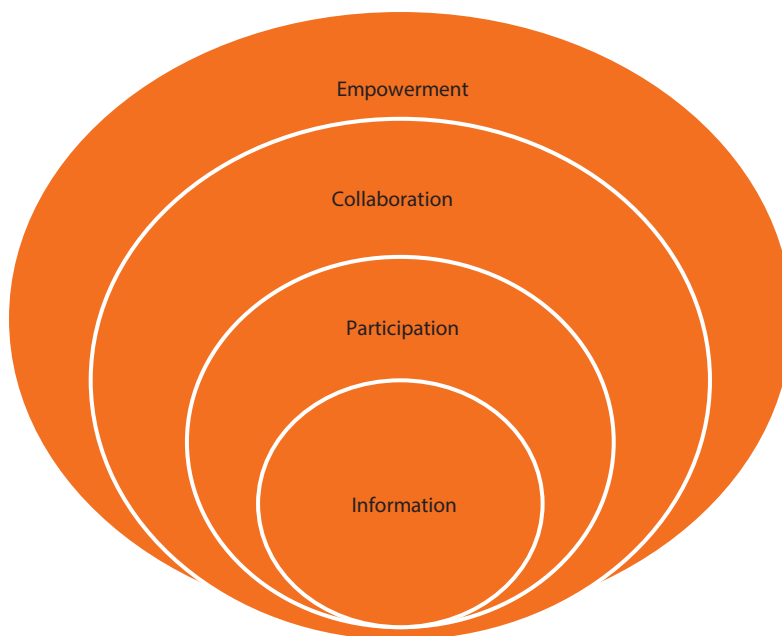
To examine how citizen engagement occurs with ICTs in practice, we draw on Arnstein’s ladder of citizen participation, in which informing and consulting

Figure 9.1 Strengthening Civic Engagement in Development with ICT-Enabled Feedback



Source: Custer, Novin, and Palumbo 2011.

Note: ICT = information and communication technology.

Figure 9.2 Dimensions of Citizen Engagement: Embedding ICTs

Note: ICTs = information and communication technologies. Information = one-way flow of information to citizens to inform problems, alternatives, opportunities, and solutions; participation = two-way flow of information and meaningful citizen consent; collaboration = partnering and sharing between communities; empowerment = multistakeholder coalition building.

take place at lower levels, while partnering takes place at higher levels and is more representative of real citizen power (Arnstein 1969). Combining this model with the Public Participation Spectrum developed by the International Association for Public Participation (IAP2)¹ and literature on civic engagement (Gramberger 2001; Reuben 2004), we develop a new lens that begins with citizen engagement facilitated through ICTs along four dimensions: information, participation, collaboration, and empowerment (figure 9.2). As one moves from information to empowerment, the effects of citizen participation on political decision-making increase.

The extent to which ICTs can act as an accelerator for civic engagement along these dimensions will be limited by barriers that prevent this process from occurring and depend on factors that create an enabling environment. Table 9.1 delineates the capabilities and limitations of ICTs to enhance the level of citizen sharing, participation, collaboration, and empowerment.

To start, ICTs can reduce information asymmetries by providing improved access to relevant, timely, and actionable information (Kapur and Whittle 2009). Open and free access to information can lower transaction costs by reducing the time that citizens spend obtaining access to information or directly processing transactions, such as obtaining a birth certificate. However, simply enhancing citizens' access to information is insufficient for meaningful citizen engagement because it does not provide citizens with opportunities to participate in

Table 9.1 Opportunities and Barriers to Closing the Accountability Loop through ICTs

<i>Dimensions</i>	<i>Enabling environment</i>	<i>Opportunities</i>	<i>Barriers</i>
Information	Trust Informediaries Institutional change	Reduce information asymmetries	Informational capabilities: limited capacity to process and evaluate information and lack of ability to evaluate and act on information and data
		Reduce transaction costs	Information poverty: marginalized and excluded groups with very limited access to information in spite of rapid diffusion of ICTs (mobile phones) in rural and poor communities
		Improve access to information and enable timely access to information	Mismatch of information needs by citizens (local content, microdata) and the supply of information by government (policy, macrodata)
		Enhance transparency	Serious constraints due to existing information ecologies and asymmetric power relationships (that is, information gatekeepers)
		Democratize the flow of information—that is, direct information flows from citizens to senior policy makers in addition to access to “expert knowledge”	Political commitment from policy makers to receive and access information and lack of resources and time limitations, with many policy makers overwhelmed by information overload and lacking the resources to process new information
Participation		Broaden the reach and be more inclusive	Digital exclusion and high levels of illiteracy of marginalized groups
		Motivate nontraditional stakeholders (such as youth)	Selection bias—that is, exclusion of disadvantaged groups and the elderly
		Encourage “active citizenship”	Temporary—for example, appearance and disappearance of online communities (crisis mapping)
		Enable more open and participatory deliberation through networks	Lack of incentives—need of citizens to see how their actions result in meaningful changes of policies or projects
Collaboration		Reduce the time lag between hearing voices and closing the loop (more instant access to information in ICT-enabled consultations)	Little evidence of vertical collaboration—connecting different communities (for example, civil society and governments)
		Connect people across geographically disparate groups	Lack of government capabilities or resources
		Create horizontal collaboration and bring together like-minded communities	Political economy, existing structures, and power relations
Empowerment		Reduce information poverty	Lack of government responsiveness due to culture, existing structures, and power relations
		Intrinsic value in itself	
		Enable a collective voice and collective action (crowdvoicing)	Citizens’ lack of agency, capabilities, trust, and organization
		Participatory monitoring of programs and comanagement of public resources	Lack of “vertical accountability” mechanism between government and traditionally excluded groups
		Facilitate joint decision-making processes between government officials and citizens	Government’s lack of awareness, political will, human capabilities, resources, incentives, and institutional mandates

Note: ICT = information and communication technology.

decision-making processes (Macintosh 2003). As chapter 3 elucidates, improvements in transparency frequently result in one-way flows of information sharing from government to citizens, but they do not lead to enhanced accountability. Thus improved access to information is a critical factor for closing the accountability loop, but it is not sufficient.

As discussed in chapters 1 and 2, assessing the impact of ICTs needs to move beyond issues related to simple access to ICTs and instead focus on evaluating the effects of the widespread use and generation of information by citizens on enhancing social accountability and facilitating collaboration and empowerment. These processes are enabled through (a) a two-way exchange of information (Martin 2009), (b) increased transparency and accountability with enhanced visibility of performance (Kuriyan *et al.* 2011), and (c) improved outlets for visualization and feedback (Martin 2009).

Within the broader context of human development, we have shown in chapter 2 that the process depends on the expansion of people’s *informational capabilities*—the ability to access and use information—and not solely on the provision of ICTs. The expansion of people’s ability to analyze, evaluate, and act on information is a requisite for the process of individual and collective empowerment and thus can contribute to enhancing people’s human capabilities (Gigler 2004). As outlined in Chapter 2, enhanced access and use of ICTs are critical enablers; however, this approach focuses the analysis on changes in people’s human development instead of the technologies. Here, the concept of “*information poverty*” stresses that the deprivation of information restricts the advancement of a person’s economic, social, political, and cultural freedoms. In this sense, the lack of information is a critical “*unfreedom*” that has far-reaching repercussions on a person’s well-being (Gigler 2004). While information poverty is only one dimension of poverty, it plays a critical role for human development overall since it affects all other dimensions of people’s well-being. Thus enhancing poor people’s information capabilities can act as a catalyst for the enhancement in the economic, social, and political spheres of a person’s life and thus is a critical factor for development.

At the same time, barriers that prevent ICT from “closing the accountability loop” are predominately socioeconomic and political in nature, although inevitably related to the appropriateness of technology. As chapters 3, 4, and 5 have illustrated, through crisis mapping, social media platforms, and technology-enabled public consultations, accelerated collaboration is perhaps the best-understood contribution of ICTs. The “crisis mapper” community has demonstrated that ICTs can help to facilitate collaboration among like-minded, geographically disparate groups of volunteers who convene around a common objective, such as responding to a humanitarian crisis. After the earthquake in Haiti in 2010, the highly effective online collaboration of thousands of online crisis mapper volunteers, which resulted in the development of a comprehensive relief map of Port-au-Prince in just 48 hours, demonstrated the power of crowdsourcing and social networks (see chapter 5 for additional cases). However, the community is facing key

challenges related to making crowdsourcing approaches sustainable over the long term. A critical issue that requires attention is how to move online technical volunteer communities beyond temporary response systems that focus on the immediate needs of a humanitarian crisis or natural disaster to providing ongoing support for long-term development challenges.

The extent to which ICTs can help to move beyond horizontal collaboration between like-minded groups by facilitating similar collaborations across different sectors, institutions, and traditionally dissimilar groups remains to be seen. In this context, it is critical to understand which institutional, sociopolitical, and cultural factors need to be addressed in order to overcome barriers to enhancing “vertical accountability” mechanisms between governments and traditionally excluded groups such as youth, minorities, or the elderly. In this context, sociopolitical factors, including the willingness of government to engage in a genuine process of political reforms, are critical.

Related to vertical accountability mechanisms in particular, the degree to which ICTs improve the relationship between citizens and government is contingent on trust relationships between key stakeholders. Frequently, lack of trust (see table 9.1) between government, civil society, and citizens is the key impediment to technologies being effective in enhancing governance (Avgerou *et al.* 2005; Nye, Zelikow, and King 1997). Holzer, Zhang, and Dong (2004) argue that citizen trust in government declines when “first, the citizenry feel as though government officials abuse their powers in the interest of self-aggrandizement. Second, citizens feel disconnected from government. Third, government service delivery is perceived to be inadequate.”

Chapter 8 demonstrates how lack of trust by both citizens and government officials can be an impediment to closing the feedback loop. In Bolivia, for instance, indigenous peoples from remote communities expressed doubts about whether the government would listen and act on the feedback they provided through the OnTrack system. In spite of the government’s full commitment to the ICT-enabled citizen feedback program, the lack of trust among marginalized groups was one of the most challenging obstacles to overcome.

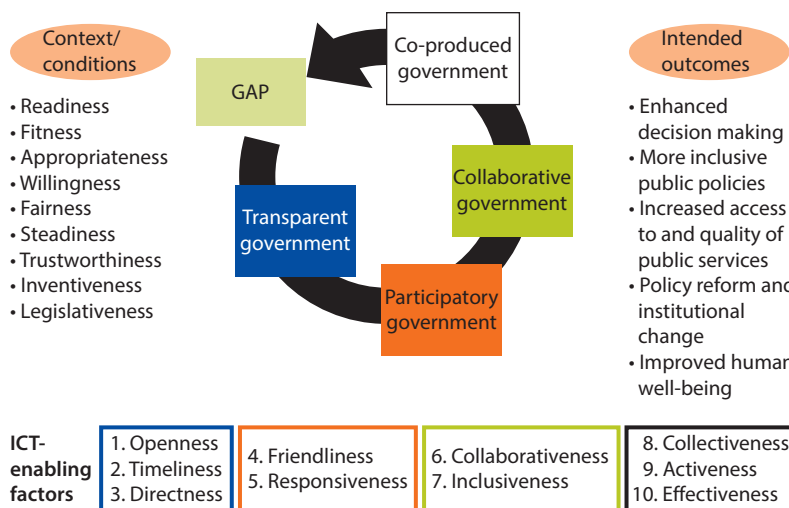
How Can ICTs Bridge the Accountability Gap? The Loch Ness Model

Like our belief in the Loch Ness monster, a sea creature found in the Scottish Highlands so rarely that its very existence has become legend, the accelerating role ICTs can play to enhance accountability and human development is something we have seen but are still trying to fully understand and document. Previous chapters have provided a theoretical framework and supporting empirical evidence on the role that ICTs can play in fundamentally altering the relationship between government and citizens. At the same time, the findings presented highlight how technologies are deeply embedded in existing sociopolitical local contexts and what preconditions must be satisfied for ICTs to accelerate the opening up of government and the closing of the accountability loop. The Loch Ness model provides a framework for an in-depth analysis of the

conditions under which ICTs can empower citizens to hold government more accountable, enhance their access to and quality of basic services, and improve their overall human well-being.

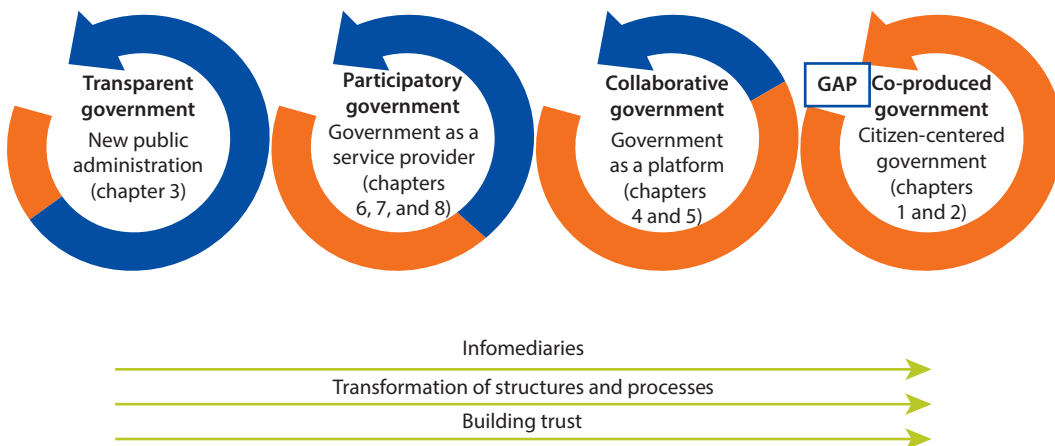
We hypothesize that there are ten factors where ICTs play an important enabling role for closing the accountability gap and enhancing people’s human development (figure 9.3) and a process through which these intended outcomes are pursued (figure 9.4). As shown in figure 9.3, the Loch Ness model presents key *contextual “Ness” factors* (that is, readiness, appropriateness, willingness, and so on) and critical *enabling “Ness” factors* (that is, openness, inclusiveness, responsiveness); the former are constraining effects, and the latter are effects of how ICTs can act as an accelerator for closing the accountability gap.

Figure 9.3 The Loch Ness Model: Contextual and ICT-Enabling Factors



Note: ICT = information and communication technology.

Figure 9.4 The Loch Ness Model: Process



The framework is centered on four models of government as seen through an information lens. Each of these models is a form of an emerging approach to open government (derived from the dimensions in figure 9.2), with gradually increasing levels of citizen engagement and degrees of collaborative decision-making processes, from transparency to co-production.

We acknowledge that the levels of citizen engagement linked to each model of government may not be sequential; for example, collaborative governance may occur in the absence of transparent processes. Moreover, we recognize that the different stages of citizen engagement and the extent to which this leads to an increasing impact on decision-making processes is not based on a linear process and is dependent on many factors that are unrelated to ICTs, but are based on broader local political economy context. As such, the “gap” remains even in the co-production model of government (figure 9.4). Nevertheless, both the theoretical (chapters 1–3) and the empirical (chapters 4–8) evidence presented demonstrate that the degree to which the access, generation, and use of information as knowledge are being “democratized” is central to collaborative public decision making and improved social accountability.

The aim of the Loch Ness model is to delineate critical areas in which ICTs are uniquely positioned to support the supply side of governance by promoting institutional changes toward a more open, inclusive, and effective government; and the demand side of governance by expanding citizens’ ability to meaningfully participate in decision-making processes to enhance their political, social, and economic freedoms.

Central to the Loch Ness model is the *process* by which ICTs enhance civic engagement and help to transform how government operates. Based on the findings presented in chapters 3–8, figure 9.4 showcases how innovative uses of technologies can fundamentally redefine the relationship between government and citizens and move it toward a model of co-production, characterized by joint decision-making processes. New mechanisms of governance and accountability are central to this process—whereby the power of decision-making processes is increasingly diffused—with the ultimate goal of closing the accountability loop and enhancing human well-being. Figure 9.4 further incorporates key enabling institutional factors (that is, intermediation, trust building) and maps each chapter to a corresponding model of government along the loop.

The Loch Ness model differentiates four types of open government according to level of citizen engagement and overall citizen-government interaction.

First, *transparent government* emphasizes providing citizens with open access to transparent and comprehensive information and data about government programs and public affairs (Di Maio 2009; Fung, Graham, and Weil 2007). Although enhanced transparency, in terms of the open and comprehensive access to public information, is necessary for citizen engagement, chapters 3 and 8 have illustrated that such a one-way flow of information is rather limited in enhancing accountability. This mode of government continues to treat citizens as passive recipients or beneficiaries of government-designed programs, representing a rather narrow interpretation of open government.

Many transparency initiatives have fallen short of being useful for citizens. Chapter 2 offers reasons why mere heightened access to information without equal strengthening of informational capabilities fails to enable people to derive meaning from the information obtained and hence does very little to enhance people’s human development. Figure 9.4 visualizes the limited contribution of increased transparency to closing the loop, as an important accountability gap remains at this level of the change process.

Second, *participatory government* stresses the need to move beyond merely achieving transparency and toward fostering the full and meaningful participation of citizens in government programs. This approach moves the role of government to that of a “service provider,” with government officials listening to the concerns of citizens and responding as quickly and accurately as possible to their needs (Maier-Rabler and Huber 2011). At the forefront of this approach is an extensive process of public deliberation and civic participation facilitated by ICTs, which is argued to enhance the quality of government decisions regarding more effective public service delivery (Nam 2012, 17).

Coleman has argued that innovations in ICTs are changing the communicative relationship between the governed and the governors (Coleman 2007, 369). As the citizen feedback case study from Punjab presented in chapter 8 has shown, ICTs can be instrumental for creating a vibrant community of participation and enabling a broad range of citizens to make their voices heard in policy debates. However, the experience from Daraja—an ICT-enabled citizen monitoring system of water points in Tanzania—demonstrates that social and cultural factors can prevent such feedback systems from being inclusive and thus from being sustainable in the long term. As in Daraja, marginalized women are frequently excluded from accessing mobile phones and lack incentives to provide feedback to an “abstract” and remote political system they generally do not trust.

The continuous lack of access to ICTs and informational capabilities by the most excluded and marginalized groups threatens to undermine the “inclusiveness” of programs and thus can derail the goals of improved e-participation overall. Along these lines, figure 9.4 again illustrates an accountability loop closed only to a certain degree. Participatory approaches frequently stand in stark contrast to existing bureaucratic traditions and cultures of government agencies. As such, they represent only the beginning of a much deeper and more meaningful process of civic engagement and empowerment.

Third, *collaborative government* aims to encourage active participation by citizens in the design and delivery of public services by fostering an approach that is based on (a) enhanced two-way flows of information and communications between government agencies and citizens, (b) partnership and cooperation among different government agencies as well as between government officials and citizens in the design and implementation of programs, and (c) high levels of civic engagement through a process of open and public deliberation about planned policies and programs (Nam 2012, 18). Here, government agencies act more as facilitators, providing a platform for all stakeholders to meet and collaborate around a common objective.

In the context of open government, Beth Noveck stresses that collaborative approaches highlight the importance of citizens' ability to participate fully in agenda-setting and decision-making processes that are based on a "culture of participation" (Noveck 2010, 64). Technologies and social networks can play a critical role in promoting collaboration between government and citizens. As discussed by O'Reilly, technologies can be instrumental in *government as a platform*, where open data and collaborative technology platforms can enable "anyone with a good idea to build innovative services that connect government to citizens, give citizens visibility, ... and even allow citizens to participate directly in policy making" (O'Reilly 2010). The crowdsourcing examples in chapters 4 and 5 represent this model in that they show how citizens move beyond being passive recipients of government solutions toward becoming active providers of data, proactively engaged in collaborating with government officials to find the best ways of responding to natural disasters or provisioning public services.

As shown in the case study of Rio Grande do Sul, highlighted in chapter 8, ICTs can play a critical role in enhancing public deliberation about government policies. At the same time, as shown in the case study of Check My School (CMS) in chapter 6, the process of ICT-enabled public deliberation will be limited, and obstacles will continue to block the path toward fostering true and sustained collaboration between government and citizens.

A key limitation of the collaborative government approach, however, is that decision-making power continues to reside with policy makers, who often do not fully incorporate the results from the collaborative planning and design processes. While this model of government recognizes the importance of citizen contributions to developing new ideas, generating data, and finding solutions, it nevertheless is limited in its ability to democratize political decision-making processes. Important asymmetries in the distribution of power remain. While technologies and social networks can be a powerful instrument to promote non-hierarchical, flat, and collaborative approaches to policy making, they often cannot alter existing power inequalities between government bureaucracies, civil society, and citizens. Thus, in spite of enhanced levels of civic engagement and significant improvements in accountability, ICTs cannot fully close the loop, as displayed in figure 9.4.

Finally, the *co-production* or *citizen-centered* model of government represents the highest level of civic engagement and is characterized by a process of shared decision making between government and citizens. In this approach, citizens and CSOs are empowered to codesign and comanage the delivery of public services with government officials. The concept of co-production, first coined by Elinor Ostrom in the 1970s, analyzes how this new form of government can support the "crossing of the great divide" between citizens, CSOs, and government to enhance the effectiveness and efficiency of public programs (Ostrom 1996). The co-production approach has been promoted by the New Economics Foundation, which offers the following definition: "Co-production means delivering public services in an equal and reciprocal relationship between professionals,

people using services, their families, and their neighbors. Where activities are co-produced in this way, both services and neighborhoods become far more effective agents of change” (Boyle, Slay, and Stephens 2010, 1).

Co-production essentially redefines the relationship between public service professionals and citizens from one of dependency to one of mutuality and reciprocity. Citizens become active agents in the design and implementation of public services. The existing human capabilities of individuals and the social capital of citizen groups are recognized as key assets in the design, implementation, and maintenance of public programs (Bovaird 2007, 846). At the center of this model is the empowerment of citizens to become active agents in the process of development and the planning and provision of public services. It entails a sharing of power between government agencies, private service providers, civil society actors, and citizens.

New forms of accountability are critical for the success of such an approach. In the context of open government, this model requires an approach of *radical openness*, whereby all decision-making processes are based on open, free, and easy access to information as well as open and extensive processes of public deliberation. As chapters 1 and 2 have shown, ICTs can play a critical role in both individual and collective empowerment. ICT-enabled social networks can be leveraged to support nonhierarchical decision making in which all citizens are given a voice and in which processes are broadly dispersed in a decentralized network structure. ICTs can play a critical role as an enabler of social change, whereby government takes on a new role as facilitator of partnerships between different stakeholders and where citizens and communities are empowered to co-manage public resources and the provision of public services. However, as the ICT impact chain in chapter 2 highlights, the degree to which technologies can play a catalytic role for such a process of empowerment depends on the broader political economy, the existing information ecology, and multiple contextual and socioeconomic factors. As figure 9.4 shows, the co-production model has the potential to close the accountability loop almost entirely.

As outlined in chapters 1 and 2, information and ICTs are a critical part of an empowered active citizenship that can hold governments to account. However, even in this model of government, the loop cannot be closed entirely, leaving an accountability gap. A genuine process of civic engagement, which is based on the sharing of power between government agencies and citizens, faces multiple challenges in implementation. Frequently, such a process requires fundamental cultural and behavioral changes within both bureaucracies and citizen groups. It requires the strengthening of human capacities and trust on both sides, which requires time and a clear vision from policy makers and civic leaders. Based on the evidence presented in this book, some critical factors influence the extent to which ICTs can be transformational for promoting a genuine process of civic engagement and empowerment. Based on the Loch Ness model, the following section summarizes the major areas where ICTs can act as a critical enabler for people’s empowerment and closing the accountability loop.

Key ICT Enabling Factors

Actors interacting with ICTs will experience varying value additions. Citizen-driven approaches cite the advantages of openness, directness, activeness, and collectiveness. Government and service provider-driven approaches see value in ICTs for enhancing timeliness, responsiveness, friendliness, and effectiveness. Finally, in a cocreated landscape, the major benefit will be in the form of collaborativeness.

Added value corresponds to one of the four models of government presented in the Loch Ness model. In a *transparent government*, ICTs tend to enhance openness, directness, and timeliness. In a *participatory government*, technology-enabled programs will showcase greater effects of responsiveness and friendliness. In a *collaborative government*, ICTs contribute to inclusiveness and collaborativeness. Finally, in a *co-production government*, ICTs show signs of heightened activeness, collectiveness, and effectiveness.

Openness and Directness

Openness is “central to digital democracy” and “predicated on improving access to government information” (Holzer, Zhang, and Dong 2004). Taking from this definition of openness, we can say that ICTs specifically increase the visibility of information by removing silos, leading to more active citizenship.

The cases presented in this book show that “transparency and accountability represent an opening up of organizations, people, and processes to scrutiny and feedback loops” (Smith 2013) and that technology has helped to facilitate this process unlike ever before. For example, in the case of I Paid a Bribe highlighted in chapter 3, Indian citizens report bribe requests through a simple text message (short message service, or SMS), phone call, or online report. Petty corruption was known only through isolated anecdotal evidence before ICTs enabled a collectivized, transparent front.

The work of Map Kibera, showcased in chapter 4, additionally illustrates the power of technologies to make information transparent. By identifying and marking their roads, homes, and sanitation facilities, the residents of Kibera, Kenya, are empowered with information about their rights and access to them in a visual way that they absorb, trust, and desire to use for their benefit.

These examples also demonstrate a derivative of openness: directness or an ability to leapfrog barriers, particularly as they relate to communications, in order to reach a desired end point. I Paid a Bribe gives citizens direct access to a former government official who collects feedback on the corruption issues they face. In this way, the online platform and mobile technologies put citizen-government interaction on the fast track. Mapping efforts, particularly those that target crisis situations, offer similar evidence of directness. Specifically, they illuminate problems that CSOs can present to the responsible authorities for amelioration.

Timeliness

ICTs enable meaningful participation through timely information. They can redress the persistent problem of “time lags” through continuous exchange of

information, which provides a more accurate picture of on-the-ground realities. In a similar vein, by generating almost real-time data, ICTs allow for midterm corrections, learning on the go, and generally greater flexibility in service provision and project implementation. As citizens gain access to the same information that international donors and governments have about project priorities, performance, and expenditures, their ability to exact accountability and shape future decision making is substantially strengthened (Kapur and Whittle 2009).

In chapter 5, “real time” conveys the timeliness of data collection and subsequent action. To illustrate the value of timeliness through ICTs, World Bank project implementers liken real-time, crowdsourced mapping to “having [one’s] own helicopter,” because it enables an immediate sense of events occurring in time and space.

Responsiveness and Friendliness

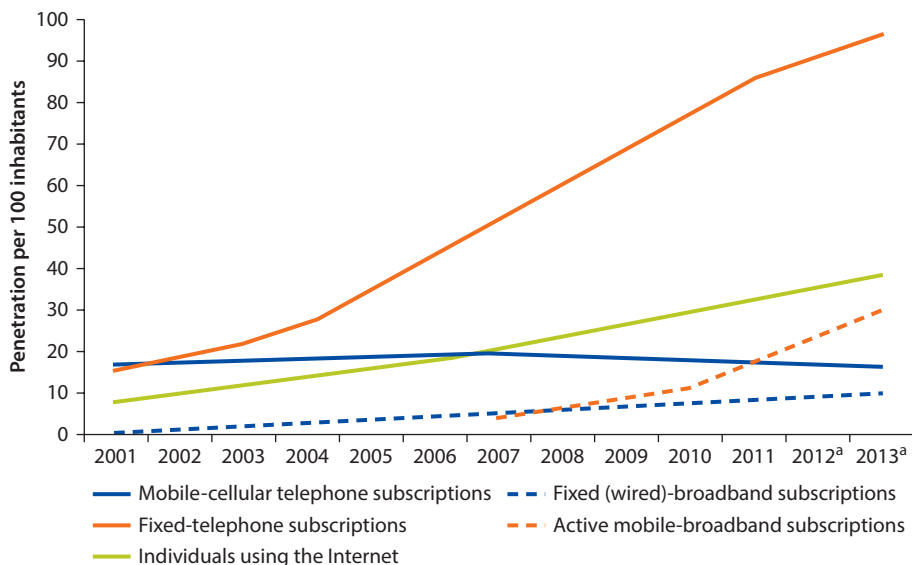
According to Vigoda (2002, 529), “Responsiveness generally denotes the speed and accuracy with which a service provider responds to a request for action or information.” In addition to these quantitative metrics for assessing the quality of responsiveness is the qualitative element of friendliness. Leveraging ICTs to facilitate information flows can support more substantive civic engagement by encouraging recurring interaction through timely, precise, and friendly response.

Chapter 6 illustrates how a community monitoring tool on educational services in the Philippines called Check My School (CMS) uses ICTs to motivate friendly responsiveness. In a specific example, the existence of CMS fueled reports on the poor quality of toilets at local schools. This further incentivized authorities to respond to the reports holistically: first with inspections and second with funding to improve the facilities. The willingness of the government to act with urgency and thoroughness exemplifies the power of the ICT-led approach.

Inclusiveness

Exponential growth in social media, mobile phones, and the Internet has generated enthusiasm for harnessing this connectivity to reduce communication barriers and bolster both the direct participation of citizens as well as more communal civic engagement (Holzer, Zhang, and Dong 2004). Globally there has been tremendous growth in ICT penetration over the last decade, particularly with mobile phones (figure 9.5). In addition, there has been a decrease in tariffs for using ICTs. The International Telecommunication Union, using data from 143 countries across the globe, found that between 2008 and 2010 the price for a high-speed Internet connection dropped 52 percent, while that for mobile cellular service dropped 22 percent. The increase in penetration, combined with the decrease in tariff rates, suggests the possibility of a more inclusive role for ICTs.

The existing literature on e-participation outlines both the opportunities as well as the limitations to using ICTs for enhancing the inclusiveness of political decision making processes (Benkler 2006; Fung, Gilman, and Shkabatur 2013; Noveck 2009). Several scholars have highlighted the limitations of ICT platforms to making political decision-making processes more inclusive. Often

Figure 9.5 ICT Penetration Rates, 2001–13

Source: International Telecommunication Union, World Telecommunication database, ICT Indicators.

Note: ICT = information and communication technology.

a. Estimate.

critical parts of communities do not participate in technology-enabled public participation processes due to a lack of awareness or lack of incentives or because of distrust in government (Hindman 2009; Schlozman, Verba, and Brady 2012).

On the other hand, innovative uses of technologies can broaden the “public sphere” by facilitating a process to amplify voices in deliberation. New technologies have been noted to accelerate communication and information flows and empower people to participate in many-to-many communication (whereas traditional media such as radio or television are one-to-many broadcasting technologies), lower the cost of expressing a diverse set of views, and enhance the openness of the public debate (Benkler 2006). For instance, a recent study on political participation through SMS in Uganda concludes, “ICT leads to significant flattening: a greater share of marginalized populations use this channel [through mobile phones] compared to existing political communication channels” (Grossman, Humphreys, and Sacramone-Lutz 2013).

Evidence however also shows how ICTs can not only enhance processes of political participation however contribute to expanding the reach of public services (Gigler 2001; Smith 2009). The analysis presented above highlights that ICT can be under certain conditions a critical enabler for inclusiveness and enhance the reach of the delivery of public services and disaster response to marginalized and remote communities.

Chapter 7 improves this understanding by offering field results from ICT-led primary health care systems in the southern state of Karnataka, India. The case study demonstrates the opportunities and challenges involved in the growing use

of technologies in local kiosks to grapple with the problem of remote beneficiaries and make decentralized governance more effective.

Crowdsourced and live mapping of needs resulting from the major earthquake in Haiti in 2010, as described in chapter 5, exemplifies how ICTs can involve citizens in crisis management in a way that was not possible in their absence. In this case, the leading nongovernmental organization (NGO) Ushahidi partnered with volunteers and used a local SMS channel for reporting. As a result, the effort included a population often overlooked due to time constraints.

Activeness and Collectiveness

Activeness can be understood as the citizen-led precursor to responsiveness or the way in which technology-mediated citizen accountability mechanisms enable citizens to “express their ideas, experiment with measures and actions, and ... raise awareness,” with or without prompting (Wien, Otjens, and van der Wal 2003). The act of citizens engaging in governance matters is especially strong when their actions are conducted collectively; ICTs ease the collectivization of individual citizens.

Discussed in chapter 6, the CMS platform stimulates citizens to engage with the education system and unites them to target problem areas uncovered through collective monitoring. The health care kiosks in Karnataka, discussed in chapter 7, have similar effects on citizen activity. The technologies prompt citizens to inform themselves about health service rights and needs. They also give local community members reason to act collectively and to track expected, in relation to actual, project outcomes.

Collaborativeness

Collaboration is perhaps the single most transformative power of ICTs. At a macro level, technologies are playing a significant role in the emergence of “communities of interest that go beyond the confinements or boundaries of the nation state and beyond mere rights” (Cammaerts and Van Audenhove 2005). In this way, actors are joining forces to collaborate on achieving common goals in an effective manner that was not possible in the absence of technologies.

The Open Government Partnership is a multistakeholder global platform designed to partner governments and civil society in the struggle for greater transparency and accountability. In its Articles of Declaration, member governments commit to “creating mechanisms to enable greater collaboration between governments and CSOs and businesses” and acknowledge that “new technologies offer opportunities for information sharing, public participation, and collaboration.” The acknowledgment of and commitment to collaboration, including through new ICTs, ensure that the value of collaboration is recognized across the globe.

On a micro level, Kuriyan *et al.* (2011) highlight how technologies can be used to enhance analytical and visualization tools that help users to understand raw project information. For example, platforms that have an aggregation function can facilitate dialogue among geographically disparate citizens and enable them

to share and compare their experiences. Adding to this is evidence from crowd-sourced mapping efforts described in chapter 4. The technology tools used in mapping projects allow multiple parties, including CSOs as infomediaries, citizens as beneficiaries, and governments as service providers, to work together toward achieving a common goal.

Effectiveness

Effectiveness through ICTs can be understood in three ways: first, the cost of project execution; second, the alignment of organizational goals with project outcomes; and third, the institutional uptake of changes made and tools used in the process.

Costs are a frequent barrier to project sustainability. ICTs reduce these costs significantly. For example, the Libya crisis mapping model laid out in chapter 5 is used in an “extreme-conflict environment,” exacerbating the level of difficulty to achieve impact. However, through the technology-led approach, it becomes “successful in rapidly collecting valuable data at much lower cost than would have been possible through other means.”

Effectiveness can also denote “producing a result that is wanted” (Nam 2012). Nam extrapolates that projects are effective when outcomes are aligned with organizational goals, mission, and objectives. In this way, the emphasis is on the importance of project design, implementation, and monitoring and evaluation. Chapter 8 examines the U-report, a RapidSMS system designed to poll Ugandans on pressing community development issues. Owing to the ICT-enabled data collection tool, in a mere few weeks a poll received up to tens of thousands of reports, meeting the original objectives of the initiative.

The third interpretation of ICT-led effectiveness is the incorporation of changes by government into existing processes and actions. In the case of the Rural Alliances Project in Bolivia and use of the OnTrack system, as described in chapter 8, rural producers provide timely feedback using broad-based technologies. The project is made effective by the government implementation officers who adapt and absorb the project by leveraging the same tool to promote internal goals, including strengthening economic partnerships for the rural poor.

Effectiveness will only change in the presence of certain contextual conditions, such as well-understood organizational objectives and an enabling political economy. Barriers related to these conditions are structural in form, uniquely local, and difficult to alter. They are discussed in further detail in the following section because the persistence of the accountability gap can be attributed in large part to them.

Constraints on ICTs: A Door Still Ajar

While technology has the potential to lower barriers, facilitate multidirectional exchange of information, as well as increase transparency and accountability through access to data for visualization and improved communication, its limitations must also be recognized. These include the intertwined challenges of elite

Table 9.2 Contextual Constraints on ICTs

<i>Type of constraint</i>	<i>Indicator</i>
<i>Socioeconomic and political</i>	
Willingness	Does the government have the political will to implement reform?
Fairness	Do citizens have the opportunity to participate in government decision-making processes in a fair and representative manner (participatory budgeting)?
Trustworthiness	What is the level of trust between citizens and government?
Inventiveness	What are the incentives for citizens to engage?
Fitness	Do citizens have a minimal level of digital literacy and informational capabilities to participate in decision-making processes in a meaningful way?
Legislativeness	Does an enabling legal framework exist at the country level (access to information law)?
<i>Technical</i>	
Readiness	Does a certain level of e-readiness exist at the country level (diffusion and use of ICTs)?
Appropriateness	Are the technologies appropriate for the local socioeconomic context (use of traditional media)?
Steadiness	Are the ICT programs financially and socially sustainable in the long term (community ownership)?

Note: ICT = information and communication technology.

capture and digital exclusion, which arise as a result of limited access to ICTs, poorly designed systems, constrained information capabilities, and low citizen motivation (table 9.2).

Social, Economic, and Political Barriers: Limited Access and Use

Due to economic and social barriers, the “beneficiaries” of development assistance often do not have access to the requisite hardware and software. Insufficient broadband and lack of connectivity are acute barriers to access among communities and citizens living in lower socioeconomic circumstances or in rural and remote areas (United Nations 2012).

Socioeconomic conditions further influence the *use* of technologies by communities. According to a recent survey of 2,253 U.S. adults, “The well-educated and the well-off are more likely than others to participate in civic life online just as those groups have always been more likely to be active in politics and community affairs offline” (Smith 2013, 1). This study suggests that technology has not acted as an equalizer for civic participation because its use will remain higher in rich communities, reinforcing the status quo.

Technology itself may also become a barrier to participation; incentives to engage will disappear when the technology needed to create or access information is too expensive (Gigler, Custer, and Rahemtulla 2011). In sum, with little knowledge of the “communicative ecology” (Tacchi, Watkins, and Keerthirathne 2009) or greater environment in which the ICT is grounded, designing a citizen engagement mechanism will be difficult, especially when done at a distance—geographically and politically—from the user or beneficiary.

Lastly, citizens’ compliance with regulations and acceptance of government legitimacy, for example, will depend on trust or confidence in government. According to Smith (2013), although “e-government applications have the potential for many positive changes (efficiency, effectiveness, transparency, and increased connectedness) that provide a multitude of pathways to build citizens’ trust in democratic institutions of government,” the supporting empirical evidence remains unclear.

Technology Barriers: The Choice Conundrum of Multiple Mediums

Beyond socioeconomic and political constraints, the type of technologies available and appropriate for use can be a limiting condition. The problem is that the diversity of available ICTs is often insufficiently understood and explored. Since the Arab Spring, many have argued that high-tech solutions including smartphones and particularly social media are critical channels for civic engagement because they reach a mass audience at low cost, provide maximum flexibility with asynchronous platforms, and provide rich interactions with visualizations and multiple parties. In parallel, however, donors and NGOs have targeted and tracked improvements in transparency, accountability, and participation through many low-cost, low-tech channels; these include community radio, loudspeaker broadcasts, narrowcasting (playing tapes at self-help or other cooperative group meetings), simple SMS-capable phones (not smartphones), and free phone calls.

A broad spectrum of methods is available in order to design for context. For example, high-technology modalities, such as the Internet or social media, have great appeal from an efficiency perspective: they can reach a mass audience rapidly and at low cost. They also provide maximum flexibility and a rich interactive experience, with visualizations and multiparty interaction, among others. However, the more advanced the technology, the higher the level of information capabilities needed. These include traditional literacy, information literacy (how to access the information strategically), and digital literacy (how to use the ICT) to make meaning from the content (Gigler 2011). In this way, high-tech tools may be most appropriate when targeting users with greater information capabilities, or they may require support through capacity building when targeting users with lower information capabilities.

Recommendations

We conclude by offering recommendations for policy makers, practitioners, researchers, and others in the following areas: designing for effectiveness, exploring intermediaries, building an enabling ecosystem, measuring outputs and outcomes, experimenting with ICTs in non-ICT-enabled initiatives, interpreting crowdsourced data, and informing new regulations and ethics.

Designing for Inclusiveness

Although early evidence showed that ICT-led transparency and accountability initiatives run the risk of exclusivity—because access to technologies is hindered

by cost, connectivity, infrastructure, and the relevance and meaningful use of technology (Gigler 2011)—taking an inclusive approach to employing ICTs is increasingly possible, particularly as the costs of technology have continued to fall. In addition, we recommend designing hybrid initiatives that integrate new and older technologies, together with offline strategies. Cases shared in this book offer insights into how this can be achieved: for example, integrating reports from low-tech mobile phones with high-tech mapping software and offline community ICT training. For deeper use, we recommend including digital literacy programs in the architecture and operational plans of citizen engagement initiatives.

For policy makers, we recommend specifically accounting for lower-income groups by recognizing that their participation may be constrained by structural issues and a lack of opportunities to enhance their information capabilities. It is also important to recognize that data produced through crowdsourcing and interactive mapping may not be representative of all citizen information, data, and desires, masking the true needs of the most marginalized groups.

For researchers, we recommend examining the actual use, participation, and impact of citizen feedback mechanisms, participatory budgeting, and interactive mapping by poor and marginalized groups. To what extent does participation include these groups? What is the role of intermediaries acting on behalf of them?

Finally, it has been argued that transparency initiatives often benefit mainly the upper and middle classes, even though the poorer population is particularly affected by issues of corruption (Knox 2009; Wade 2002). Lower-income groups are less likely to participate in transparency and accountability initiatives, due to lack of access to ICTs, lack of confidence in using them, insecurity about making complaints, and lack of basic literacy (Madon and Sahay 2002; Wade 2002). For these reasons, intermediaries such as NGO practitioners and professionals act on behalf of poor communities, and it is important to understand the role of all stakeholders.

Exploring Intermediaries

Due to the existence of supply-side issues, as well as constrained information capabilities, the risk of selection bias arises in using ICT platforms to enable citizen feedback. Of particular concern is that younger, more educated, and mostly male citizens will participate, while more marginalized groups, including the elderly, the less literate, and women, will be excluded from the process. However, this view tends to ignore the existence of external capabilities. In developing countries, access to technology for those with lower levels of literacy is facilitated by their access to the capabilities of other members of the family or community (Basu and Foster 1998; Foster and Handy 2008). The role of these intermediaries, or “infomediaries,” in ICT-mediated feedback initiatives deserves further attention.

Consider the case of an illiterate woman living in a remote village that is covered by a cash transfer program. In the event that an ICT-based citizen engagement mechanism is incorporated into the program, the woman could report her feedback with the help of a younger or more educated family member who is

technologically literate. In addition, sharing, particularly of cell phones, is very common among households as well as within communities in developing countries. At the same time, the existence of external capabilities might be limited depending on the type of technology in question, which should be taken into account when designing technology-enabled platforms for civic engagement.

Building an Enabling Ecosystem

While technologies can be used to make information transparent and inform citizens, create new spaces for citizens' voices, connect voices to government, and enable governments to respond, a nurturing environment—people and institutions—is necessary for intended outcomes to be realized. For example, websites, wikis, and social media seem to be strongest when they are used together to run a campaign—specifically, their greatest advantage is the speed at which they gather momentum. A strong civil society caucus, civic-minded coders, and a public willing to believe that the status quo can be challenged are all inputs to a campaign that “goes viral.” To be heard and responded to, a campaign requires policy makers who are willing and able to digest the campaign, legislative bodies through which changes can be made, and judicial bodies that enforce the change. In this way, citizen engagement is about more than just using tools for participation; it is also about priming an entire ecosystem for reform by way of those technologies.

Measuring Outputs and Outcomes

Measuring the impact of citizen engagement initiatives is a daunting task, and the path to tackling it remains unclear. A case in point is the Ushahidi platform, first hailed as a success in 2008 for crowdsourced mapping of postelection violence in Kenya and then used to map Haiti after the 2010 earthquake, Japan after the 2011 earthquake and tsunami, and, most recently, the Syrian Arab Republic after the revolution. Many questions arise concerning the results of these experiments. Did the crisis mapping techniques used in 2008 succeed in creating actual impact? That is, were electorally instigated acts of violence mitigated? To what extent did media attention contribute to these outcomes? With less media coverage on the following interventions, did the level of impact differ? Were the levels of output—crowdsourced reports—significant? Did outputs translate into reaching outcomes such as aiding in crisis response and disaster management? If goals were achieved, how did technologies specifically help to facilitate this?

Interested parties have already begun to dig for answers to these questions. “Dead Ushahidi”² notes the failures of the platform to generate anticipated usage levels in several cases. However, the ways in which this approach has produced outputs and achieved outcomes in other cases have not been measured or clearly articulated.

For practitioners, we recommend designing models that are fit for dynamic learning. Monitoring, documenting, and assessing should occur on an ongoing basis with the intention being to promote learning from experience. This could look like tracked outcomes paired with targeted communication plans to learn

from existing successes, avoid repeating failures, and design forward-looking initiatives. A significant point of consideration is the potential inability to quantify outcomes and, hence, the difficulties involved in measurement. In these cases, it will be necessary to describe qualitative changes.

Experimenting with ICTs on Non-ICT-Enabled Initiatives

In this chapter, we have discussed ways in which ICTs benefit citizen engagement mechanisms as well as their limitations in doing so. One way of determining the added value of using ICTs would be to analyze their effects on non-ICT-enabled transparency and accountability initiatives. For instance, how would the results of an *online* community scorecard or citizen report card compare to those of a traditional face-to-face one? What did Anna Hazare’s campaign against corruption in India, characterized by a Mahatma Gandhi-inspired hunger strike, look like after Facebook publicity? Many assume a straightforward answer: through social media, the campaign picked up speed and volume. Examining it from a different angle complicates this conclusion. For example, Cohen (2011) argues that Egyptian President Hosni Mubarak’s decision to shut down the Internet and mobile phone networks during protests in Tahrir Square backfired by encouraging face-to-face interaction, spreading the message to a wider demographic. Mubarak’s decision “implicated many apolitical citizens unaware of or uninterested in the unrest; it forced more face-to-face communication, i.e., more physical presence in streets; and finally it effectively decentralized the rebellion on the 28th [January] through new hybrid communication tactics, producing a quagmire much harder to control and repress than one massive gathering in Tahrir.” This analysis demonstrates the need to see the benefits of ICTs, such as hastening the process of interaction, together with the limitations, including engendering no more than armchair discussions within elite groups. One approach to unpacking this nexus is to experiment with ICTs in non-ICT models.

Interpreting Crowdsourced Data

As crowdsourcing becomes an increasingly popular technique for data collection, a question about the robustness and meaning of the data arises. Namely, if individuals are self-reporting on, for example, elections, corruption, and public service delivery, are there ways to verify the validity and quality of this information? Do we need to “validate” it, and, if so, to what extent? What role do personal motivations play in the reporting process, and how does this affect outputs?

The concern with crowdsourced data is twofold but overlapping: the authenticity of individual data and the meaning of composite data. Data users, whether they are government, donors, or NGOs, seek data points that are relevant to their goals. It is difficult to determine a universal definition of relevance, but issues of user motivation and demographics are defining factors. Inappropriate intentions or mismatched demographics may call the relevance of the data into question. However, a large sample size can render this issue insignificant; for example, if hundreds of reports identify violence in a single location, verifying each data point may not be necessary or useful for taking action.

Interpretations of aggregate data are equally important. I Paid a Bribe, the online bribe-reporting platform in India discussed in chapter 3, reveals that the heaviest traffic is from Bangalore. Is this due to the city’s disproportionately tech-savvy population, or does it suggest that Bangalore has the highest level of petty corruption? Are there other ways to interpret this information?

By decentralizing data collection, crowdsourcing has accelerated the pace at which geographically disparate pieces of information are aggregated. Going forward, the main task will be to analyze data critically and to communicate what the results mean for furthering citizen engagement and bettering government responsiveness and action.

Informing New Regulations and Ethics

As ICTs play an increasingly prominent role in shaping routes to accountable governance, there are new implications for how ICTs should be used and regulated. We encourage a debate about the responsibilities of companies that manufacture the technologies used in social movements and changes. For example, should Vodafone, a British-based company, have acquiesced to Mubarak’s telecommunications blackout? The company was criticized for later releasing a “power to you” advertising campaign, suggesting that it had been a major tool in the protests, despite having acquiesced to Mubarak’s suppression. If ICTs are used to spark a riot, revolution, or even a peaceful protest, what role should technology companies play in these events? What responsibility do they have to the end users who are making demands or even threats using these technologies? Who should be regulating these activities, and what should this regulation look like? How should the legal system operate if the technology company enabling the ICT service is based in one country, while the technology is used for various purposes in another?

Technology-driven transparency and accountability initiatives raise several ethical questions regarding issues of security and privacy. If a citizen uploads data to report human rights violations, corruption, or general public wrongdoing, are the data secure and to what extent? What are the risks to participating in these initiatives? Are steps being taken to ensure privacy and protect human rights?

Finally, what are the ethics behind policy to limit or increase the use of technologies? Opposing approaches to using technologies—one for openness in the name of democracy and prosperity and one for surveillance in the name of national security—begs the question: who decides what is “for ill” and “for good”? How and who will legislate for this in the new paradigms of citizen-government interaction?

There is an urgent need for and much to be done about developing a better understanding of the impact that technologies for transparency have on privacy, security, and human rights. Researchers should examine what constitutes a regulatory environment that nurtures civic participation without encroaching on fundamental rights to privacy. Policy makers need to direct their attention toward building a regulatory and legal framework under which citizen engagement initiatives can operate to promote transparency while also protecting security.

This requires open dialogue and collaboration between governments, private technology companies, donors, and CSOs to define and explore the list of possibilities and boundaries. How we use technologies today—for creating openness versus restricting privacy, for engagement versus surveillance or censorship, for human rights protection versus harm—will determine the societies we live in tomorrow. The more we work to demystify the use and effects of ICTs for citizen engagement, the closer we will come to closing the accountability gap.

Notes

1. See <https://www.iap2.org.au/resources/iap2s-public-participation-spectrum>.
2. See <http://deadushahidi.tumblr.com/>.

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Closing the Feedback Loop: Can Technology Bridge the Accountability Gap? addresses three main questions:

- How do ICTs empower citizens through participation, transparency, and accountability?
- Are technologies an accelerator to close the *accountability gap*—the space between government and citizens that requires bridging for open and collaborative governance?
- Under what conditions does this occur?

In addition to exploring the theoretical linkages among empowerment, participation, transparency, and accountability, the authors devise an informational capability framework, relating human capabilities and well-being to the use of ICTs. The book showcases methods for community and crisis mapping across the globe, provides example of citizen-feedback mechanisms, and analyzes the World Bank's experiences in ICT-enabled citizen engagement. Introducing the Loch Ness model the study shows how technologies contribute to shrinking the gap, why the gap remains open in many cases, and what can be done to help close it.

Anyone who wants to understand the impact of ICT on development should read this important book. Carefully researched and compellingly reasoned, the authors shine a bright light on ICT and development by focusing on empowerment, participation, transparency and accountability. Through novel conceptual frameworks and a series of illuminating and detailed case studies, they examine when and why some initiatives to promote empowerment through ICTs succeed while others do not and chart a course for moving from short-term development impacts to long-term change.

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—**Professor Frances Stewart**

University of Oxford

Government and citizen use of ICTs is enabling new forms of governance but some projects are successful and others fail. What are the technical, social, political and economic conditions that enable ICT-facilitated collaborative governance? Are ICT applications leading to greater participation, transparency and accountability? This book is a must read for policy makers and academics who want to understand how ICTs can better support citizen engagement in the governance processes that affect their lives.

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London School of Economics and Political Science

As practice races ahead of research in the transparency/accountability field, our analysis of the drivers and impacts of citizen participation needs to catch up. This innovative collection makes an important contribution to the evidence base for understanding how ICTs can enable both the aggregation and projection of citizen voice. The cases show that the pathways to accountability impacts are complex and full of missing links, providing the groundwork for understanding how and why power-holders respond to citizen voice.

—**Professor Jonathan Fox**

Author of Accountability Politics: Power and Voice in Rural Mexico

This book provides important insights on using ICT to actively engage citizens not only as beneficiaries, but as actors of their own development.

—**Dr. Frank Weiler**

Head of Division and former Head of Competence Center Governance, KfW Development Bank



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