



# AFTER ACCESS

INCLUSION, DEVELOPMENT, AND  
A MORE MOBILE INTERNET

JONATHAN DONNER

## After Access

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# **After Access**

**Inclusion, Development, and a More Mobile Internet**

**Jonathan Donner**

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To Gary and Theo, wishing you two could have met.



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## Acknowledgments

Time-stamped emails on my PC suggest I started thinking about writing this book in 2012. However, it reflects and contains work going back much further, spanning a longer engagement in the ICT4D and mobile communication research communities. It is an honor to be a member of each, and I am grateful for over a decade of discussions around the world.

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# I The Boom



# 1 Introduction

When describing mobile phone use around the world, many writers start with a graphic illustrating the rapid growth in *something* over the last ten or twenty years—users, subscriptions, coverage, devices, even revenues. I am not immune to this temptation. Richard Ling and I were only five pages into our 2009 book, *Mobile Communication*, before we added a graphic depicting the steep rise in mobile telephone subscriptions that overtook worldwide landline subscriptions around the turn of the millennium.<sup>1</sup> One could certainly offer a similar graphic today, depicting the shift from an Internet dominated by personal computers (PCs) and wired connections to one teeming with mobile devices connected by wireless signals.

Such shifts—from fixed telephony to mobile, and more recently from fixed Internet toward mobile Internet—make for great stage-setting initial paragraphs because they are palpable and exciting. We are all participants in the global mobile boom. Since that 2009 book, over a billion more people have become mobile technology users, not only in the prosperous Global North, but also in the cities and villages of the Global South, where access to telecommunications services and networks has traditionally been scarcer and more expensive. Mobile devices (and signals) are not yet everywhere, but thanks to the mobile boom, the vast majority of adults around the world will soon have access to a phone, and by extension, an Internet connection.

The boom has promoted a commensurate outpouring of enthusiasm from the technology, policy, and development communities. For example, noted economist Jeffrey Sachs has called the mobile phone “the single most transformative technology for development.”<sup>2</sup> The World Bank’s flagship publication on information and communication technologies for development (ICT4D) makes a similar claim: “Mobile communication has arguably

had a bigger impact on humankind in a shorter period of time than any other invention in human history.”<sup>3</sup>

For this book linking mobile communication and the Internet, I think it is prudent to delay sharing any triumphant figures, for as the first few chapters will illustrate, there is not really a single mobile Internet to depict on such a graph. On the one hand, there is still only one Internet—the great network of networks<sup>4</sup> shuttling bits around the world. This Internet has an ever-growing array of both mobile and fixed paths to and within it. On the other hand, there is an increasing array of *means* of accessing and using the Internet, involving different combinations of hardware, networks, software, protocols, services, and content; and myriad *meanings* to that access, depending on users, skills, context, and cultures. These means and meanings, now increasingly mobile, yield innumerable different Internet experiences.

Yet across the world, there are some common properties of this more mobile Internet, sufficiently pervasive and essential to a range of human experiences as to merit not only enthusiasm,<sup>5</sup> but also careful reflection. My overarching goals for this book are to offer some reflections of this kind, and to use these reflections to explore the implications of the shift to a more mobile Internet for socioeconomic development and digital inclusion. Chapter 4 encapsulates these twin goals as the “After Access Lens” on mobile Internet use, which I hope readers will find to be a valuable resource for their own work or perspectives.

A short book about a massive topic demands considerable framing and narrowing. By situating this book project among my own affiliations, experiences, and academic communities, the rest of this chapter can identify opportunities and potential weaknesses in my endeavor, and should give the reader a sense of my approach to the topics I will be exploring.

## Affiliations

Over two decades I have worked at the intersection of theory and practice concerning the use of information and communication technologies (ICTs) in the developing world. Currently I am senior director for research for Caribou Digital, a consultancy focused on building inclusive digital economies around the world.

Prior to joining Caribou Digital, from 2005 to 2014, I was a researcher at Microsoft Research (MSR), with instructions to do objective, long-term analysis to advance the state of the art in computer science and related fields; to help the company build better products and services; and to support the broader research community.<sup>6</sup> Thus while the book offers an analytical synthesis of a global trend, it does not do so from the perspective of a business strategist or product planner. It does not draw on any Microsoft internal documents, nor does it dwell on Microsoft's particular vision for the future of mobile computing worldwide. Instead, the bulk of the evidence presented in this book comes from public scholarship and practice.

Within MSR, I was a member of the Technology for Emerging Markets Group, a multidisciplinary team of researchers focused on the intersection between ICTs and socioeconomic development. Prior to MSR, I was a strategy consultant with Monitor Company, focused on regional economic development, and a postdoctoral research fellow at the Earth Institute at Columbia University, working on mobile health and mobile livelihoods projects in Rwanda.

My colleagues working in all of these organizations are talented, passionate individuals whose mandates are not simply to analyze the world, but to try to improve it through technical and social innovation, analysis, and practice. Our conversations and aspirations tended to take on a flavor of progressive, technologically optimistic interventionism. Elements of my own experiences at each of these institutions are probably visible in the perspectives and analyses I employ in this book.

## Experiences

Another way to frame this book is to situate it as the extension of my own experience. In the chapters that follow, I strive to present and analyze a global phenomenon, emphasizing commonalities across mobile Internet technologies used every day by hundreds of millions of people in every corner of the planet. As I have mentioned, in one sense, there is only one global Internet. That is why, sitting in Cape Town, I can send an email around the corner, to Boston, or to Khartoum with negligible differences in difficulty or cost. However, in another sense, there are multitudes of Internets, some more mobile than others, appropriated, shaped, and reinvented by their users in an innumerable variety of contexts and cultures.



This second sense explains why my emails are most likely to go around the corner in Cape Town or back to my old home in Boston, rather than to Khartoum or to the rest of the places in the world I have not visited, or to people I have never met.

My experiences have brought me close to many elements of a more mobile Internet. I have conducted research on mobile phone use in the Global South for over a decade, including fieldwork in Rwanda, India, the Philippines, and South Africa. I have published studies on “development” topics like mobile health, mobile banking, education, livelihoods, and civic participation, as well as studies on ICT use in everyday life, from phone sharing and family use, to missed calls and bandwidth caps.

In particular, I will draw on four studies of mobile Internet use, conducted with colleagues between 2008 and 2013. Shikoh Gitau, Gary Marsden, and I studied “mobile only” Internet use among mobile phone users in Cape Town.<sup>7</sup> Our work on that project identified many of the constraints I bring up in part III, and yielded a paper that shares the name of the book itself, *After Access*.<sup>8</sup> Also in Cape Town, Marion Walton and I studied the interplay of shared access computer use and private mobile Internet use among teenagers.<sup>9</sup> That study helped me begin to think about the concept of digital repertoires, which anchors part III. Andrew Maunder and I did a study reflecting on Maunder’s own startup, kuza.com, a portal for microentrepreneurs in South Africa and Kenya.<sup>10</sup> From my conversations with Maunder, I developed ideas around the relationship between the device and remote services that I build upon in part II. Finally, I worked with Preeti Mudliar and Bill Thies at MSR in Bangalore on a study of CGNET Swara, a platform for citizen journalism in India.<sup>11</sup> This work, exploring the intersection of “interactive voice response” (IVR) systems and basic phones, helped me question just what constituted Internet access, Internet use, and Internet experiences. Readers will see these ideas resurface throughout the book, from probing the edges of a mobile Internet experience (chapter 2), through effective use (chapter 8), production (chapter 10), and inclusive ecosystems (chapter 11).

Yet despite these projects and publications, my perspectives on mobile-centric Internet use around the world remain influenced by the experiences of where I have been, and remain limited by where I have not. Thus, I try to create work that integrates writings and perspectives beyond my own. Perhaps most germane to this book, I conducted a review of the literature

on mobile telephone use in the Global South through 2008; that study, published in the journal *The Information Society*,<sup>12</sup> hints at some of the same integrative approaches I will employ here.

## Communities

A final way to situate me (and yourselves, as potential readers) is to see this work in relation to the academic communities in which I participate. Although my doctoral training is in communication research, most of my scholarship has taken place in multidisciplinary communities rather than within my original disciplinary silo. Indeed, while I draw on research from a variety of disciplines—including communication, informatics, economics, sociology, anthropology, public health, design, and computer science—the book as a whole does not fit entirely within any of them. Instead, I can offer a small list of multidisciplinary communities from which this book draws, and to which it hopes to offer new insights in return.

Two of these—ICT4D and mobile communication studies—are the “primary” communities for this book, in that I hope this work will contribute to their core conversations and theoretical frameworks. In essence, this work is an extension of my ongoing efforts over more than a decade to cross-pollinate ideas and perspectives between these two groups.

In addition, I make connections to several other large, “extended” communities, including technology and society; development studies; social enterprise, design, and innovation; and new media/Internet studies. In these cases, though I do not intend to have the book directly challenge the frameworks and theories at their cores, I nevertheless think the material in the book may be a helpful input to conversations in each of them. I must admit that my engagement and review of these literatures is less comprehensive than in the case of the primary communities, so in these cases, I apologize to scholars who may not find their own works in the pages that follow. The literatures (and possible theoretical frameworks) available across multiple multidisciplinary communities are simply too voluminous to integrate into a single volume.

## ICT4D

Throughout the book, I will draw on work by the community of researchers and practitioners exploring information and communication technologies

for development (ICT4D or ICTD).<sup>13</sup> ICT4D, as I will call it from here on out, is multidisciplinary, attracting researchers and practitioners from engineering and computer science, social sciences such as economics and development studies, design, and critical theory. ICT4D conferences can be particularly lively—or frustrating—as participants wrestle with definitional complexities of everything from the nature of development to the technical algorithms underlying networking protocols. Although ICT4D echoes older conversations about communication, development, and the modernization paradigm,<sup>14</sup> many current perspectives in ICT4D stress intervention, innovation, and programmatic engagement with resource-constrained communities throughout the developing world. Others offer analyses of how people use, appropriate, and deploy existing technologies as part of personal, community, and national change processes.

At its best, ICT4D captures the complexities and potentialities of technologies, as applied and appropriated for a myriad of different uses under the complex and often contested banners of development, justice, and progress. At its worst, as critics point out, it can reflect shallow, Western, neoliberal, technologically deterministic approaches.<sup>15</sup> Yet on balance, after an initial burst of rose-tinted enthusiasm at the turn of the millennium, ICT4D has engaged in reflection and refinement of its theory, methods, and practice.

The mobile explosion has transformed the ICT4D conversation, and there has been a growing array of activity under the banner of “mobiles for development” (M4D), including practitioner communities,<sup>16</sup> and an academic conference series starting in 2008.<sup>17</sup> The World Bank made M4D the focus of its high-profile annual ICT4D report in 2012.<sup>18</sup> Individual mobile network operators, like Vodafone, and the GSMA (Groupe Speciale Mobile Association, or GSM Association, representing hundreds of mobile network operators around the world) have been keen to document and promote the economic and developmental contributions of the “Global System for Mobile Communications” (the dominant protocol for cellular wireless communication).<sup>19</sup> Pilot projects and specialized initiatives abound, and the GSMA boasts of over 800 M4D projects in its online database.<sup>20</sup> NGOs, universities, donors, and social enterprises are working to create specific mobile products and services. The M4D conversation has become multisectorial and international.

I have written specifically about M4D in the past,<sup>21</sup> and references to M4D studies of both the technical and social-scientific variety will appear frequently in the pages that follow. However, this book is not a *comprehensive* M4D text. More specific discussions of the exploding potential of mobile phones for use in traditional development verticals like, for example, in health,<sup>22</sup> agriculture,<sup>23</sup> learning,<sup>24</sup> disaster response,<sup>25</sup> governance,<sup>26</sup> civic engagement,<sup>27</sup> water, sanitation, and hygiene delivery,<sup>28</sup> and livelihoods<sup>29</sup> are available elsewhere. Indeed and instead, the book will help make a case that as mobile technologies increasingly touch the Internet, “M4D” as a term for a standalone field or even community of practice makes less sense.

### Mobile Communication Studies

My other scholarly home is in the multidisciplinary conversation about mobile communication and society. Though this conversation sometimes draws on classic studies about the sociology of the telephone,<sup>30</sup> most of its research has emerged only after the turn of the millennium. Like ICT4D, mobile communication research has a journal, *Mobile Media and Communication*,<sup>31</sup> and a growing community of scholars and canonical texts.<sup>32</sup> This multidisciplinary conversation provides insights into what is unique about the mobile communication experience, and I will reference its works throughout the chapters that follow.

Even when not specifically about the Internet, the expanding literature on mobiles in the developing world has been useful. My 2008 review identified over 200 scholarly papers on the topic in 2008<sup>33</sup>; by now, the available literature has probably tripled. To wit: an issue of the interdisciplinary journal *New Media & Society* was called “Mobile Communication in the Global South,”<sup>34</sup> and drew on elements of Internet studies, mobile communication studies, ICT4D, and area studies. Indeed, mobile communication has become such a fixture of life in societies around the world that it is the subject of country-specific books, such as Horst and Miller’s *The Cell Phone*, situated in Jamaica,<sup>35</sup> and Doron and Jeffrey’s *Great Indian Phone Book*.<sup>36</sup> These comprehensive accounts capture the nuances and complexities of the intersections between mobile communication and society, which complement whatever cross-national, cross-contextual theorization I might accomplish here.

If my goal with ICT4D is to push for further refinement of its theorization and practice around mobile technologies (leading, perhaps, to the reintegration of M4D into ICT4D), then my goal for mobile communication studies is to update its frames toward mobile use in the Global South to reflect *Internet use*.

### Extended Communities

Of course, my scholarly homes in ICT4D and mobile communication studies are not the only sources for analysis of the interactions between technologies and people, particularly in the Global South. For example, a thriving discussion around “community informatics” (CI) focuses on the intersections between digital technologies and strong communities,<sup>37</sup> but without the North-South and “development” frames often implied by ICT4D. Indeed, conversations about “technology and society,” “science, technology and society” and “the Information Society” have been underway for well over a century.<sup>38</sup> Even an illustrative list would be too long. Works by Beniger,<sup>39</sup> Castells,<sup>40</sup> Wellman,<sup>41</sup> and Latour<sup>42</sup> are among the myriad lenses available to explore how technologies—lately and perhaps particularly information and communication technologies—are both reflections of and influences on daily life and the structure of societies.

Some conversations in development studies<sup>43</sup> are conceptually proximate to these information society questions. Lately, urgent, broad questions of globalization, inequality, and the spread of the information society demand a range of analytical frames from the pragmatic to the profoundly critical, of which ICT4D is only one sub-community. Manuel Castells’ work, in particular, has influenced my own perspectives on mobile use in the developing world.<sup>44</sup>

Another community of practice has emerged from the business, social enterprise, and design communities, using the frames of *users, markets, and consumers*. With this reframe, enterprises and policymakers alike have become more aware of the potential application of “market-based solutions” to problems in development, and of the promise of “frugal”<sup>45</sup> or “inclusive”<sup>46</sup> innovation. Most famous, and perhaps most controversial,<sup>47</sup> of these frames is the notion of a “fortune at the bottom of the [income] pyramid”<sup>48</sup> awaiting companies that perfect the art of serving poor consumers. More broadly, however, many ideas around appropriate business models and design insights for resource-constrained communities have survived

initial highs and lows in the hype-cycle, and have been embraced by a growing community of practice.<sup>49</sup>

The broadest and most heterogeneous of conversations on which I draw may be Internet and new media studies<sup>50</sup>. A thriving community of scholars has emerged, offering tens of thousands of assessments<sup>51</sup> of the Internet's birth, societal significance, and future trajectories. Importantly, there are transdisciplinary spaces, such as the ubiquitous computing and human-computer interaction (HCI) communities<sup>52</sup> and the annual conference of the Association of Internet Researchers (AoIR), that reflect and sustain the enthusiasm, nuance, rigor, and maturity of a conversation about "the Internet" no longer constrained to the PC. My discussion of a more mobile Internet, as it manifests particularly in the Global South, may be useful to this conversation.

However, permit me to make this point emphatically: this is not another book on all matters of the Internet in general, or even on the development impacts of the Internet; the topic is simply too vast. I am not able to describe the litany of ways in which Internet access and use may be unfolding in the Global South; instead, I will focus more narrowly on how some of those myriad ways are different *because the Internet is becoming more mobile*. Put another way, despite a robust array of literature about the Internet, now decades old, the user base is doubling (again), and this time our notions of what the Internet *is* will have to adjust as more of its users, particularly in the developing world, experience it primarily through mobile channels.<sup>53</sup> As communication researcher Harmeet Sawhney puts it, a shift to a more mobile Internet alters the "character of the Internet" itself.<sup>54</sup>

Another goal of the book is to complicate and update the established ideas in the popular and scholarly discourses about terms like "the mobile phone" and "the Internet." These have developed parallel literatures over the years, but the shift to a more mobile Internet challenges these distinctions. We are entering a period dominated by interlocking devices, services, and networks, yet increasingly providing heterogeneous Internet experiences. Nor is it sufficient to skip completely to a framing of "convergence" where all devices deliver comprehensive and equivalent experiences. It will take a few chapters to get there, but this book argues that research studies, policy pronouncements, and development interventions that turn on vague concepts of "the mobile phone" or "the mobile Internet" will be inadequate to account for the changing communicative landscape.

### Intersections and Antecedents

These various conversations and communities of practice are not sharply delimited; I presented them sequentially mostly as a way to signal the multidisciplinary breadth of research and practice informing these topics. Indeed, cross-pollination among these conversations is common, and several authors working at the *intersections* of these conversations have particularly influenced my research and practice over the years. Here are two illustrative examples. Jack Qiu's work on China's "working-class network society" and "the information have-less," centered largely on prepay phones and text messaging (SMS), offers a lens on "informational stratification" rather than classic digital divides.<sup>55</sup> Researchers at the research group LIRNEasia in Sri Lanka have been promoting research on "more than voice" mobile services for the poor, and have been enthusiastic champions for a perspective that looks beyond the desktop PC as the digital technology best suited to help resource-constrained people participate in the information society.<sup>56</sup>

The case of South Africa has been particularly instructive for me as a researcher, not only because it is the place where I lived while writing this book, but also because it is an early adopter of mobile Internet in the Global South and is simultaneously home to many researchers and practitioners working on these issues. These include Wallace Chigona's writing about the mobile Internet and "social inclusion in developing countries,"<sup>57</sup> Peter Benjamin's work on mobile health,<sup>58</sup> the late Gary Marsden's work on mobile interfaces and human-computer interaction,<sup>59</sup> and Marion Walton's work with teenagers and mobile literacy.<sup>60</sup> I will mention several others throughout the book.

Of similar central importance to this book are those projects that wrestle specifically with the ideas of a mobile-centric or mobile-only Internet experience in the Global South. Katy Pearce<sup>61</sup> at the University of Washington and Nimmi Rangaswamy<sup>62</sup> have been particularly prolific early voices on this matter.

With so many communities in the mix, there is a lot of ground to cover. It is my hope that the total amount of multidisciplinary scholarship on a more mobile Internet for development and digital inclusion is still limited enough that I can represent much of it, but readers should not assume that the work represents certainties or consensuses where none (yet) exist. The shift to a more mobile Internet is a multifaceted phenomenon, and it is

happening quickly, almost everywhere at once. That said, I am grateful for what I am able to read from and discuss with peers in the communities I outlined earlier, and feel privileged to be able to offer this contribution to research and theory on an increasingly mobile Internet.

### Approaches

It should be evident from the breadth of the academic communities involved that there is unlikely to be agreement among these peers about the level at which to engage with (or alter) the deep structural linkages among technology, society, and development. I am wary of disappearing into epistemological rabbit holes at this point; to do so would take the book in a different direction. Don Slater's discussion of "development narratives"<sup>63</sup> in his book *New Media, Development & Globalization* is a much better resource for reflections of this kind. Perhaps so too are discussions about the durable, unavoidable cleavages between administrative (empirical) and critical research, recognized and vigorously debated in the field of communication for decades now, but by no means exclusive to it.<sup>64</sup>

Let me instead offer an extremely simplified taxonomy wrapped in a biological analogy, and stripped of references for simplicity's sake. Some ICT4D "development narratives" suggest ICT use can solve problems, as a medicine treats a disease in an unwell body. Others suggest ICT use merely reflects and channels deeper problems and systems in the body, more like a symptom than a problem. Others go deeper still, arguing that we must understand that ICTs have come to be part of the body itself—ICTs seen as circulatory, neurological, skeletal, or cognitive systems in the organism. Finally, some offer critiques of the body's current ICT systems as profoundly flawed, suggesting that differences in ICT use are a problem themselves, replicating structural inequity and injustice. After more than a decade in the ICT4D field, I expect to hear new articulations of each of these perspectives (and several more), with freshly divergent (or absent) framings of the problem and the desired "development outcome" at each new conference or roundtable I attend.

I am not frustrated by these durable tensions, however; nor do I think a total epistemological victory of one camp over all the others is anywhere within sight. Indeed some of the most interesting work in ICT4D is coming from participating scholars whose work interrogates the very idea that information technologies can be "for" "development" at all. Any



comprehensive treatment of a phenomenon like the shift to a more mobile Internet demands attention to critical views that see mediated power and structure as a problem as much as a potentiality. However that does not mean I am not impressed and humbled by the innovative technologies and “solutions” that those with the interventionist, design, technical, and administrative perspectives seem more likely to create.

Thus, I will endeavor to keep any breathless, context-free cheerleading for the mobile telephone and the Internet in check. I do not believe that either cluster of technologies is capable of solving all the problems of inequity, strife, and poverty on this crowded planet. However, just because ICTs are not the exclusive solution to humanity’s problems does not mean they do not structure daily lives and livelihoods around the world, and certainly does not mean they are immutable forces of nature. Technologies, even ones as vast and complex as the Internet and the mobile networks, are the aggregation of thousands of design, investment, and policy decisions made by people and organizations in interaction and collaboration with their users, markets, and constituencies. Later chapters will offer suggestions on how we might improve the decisions we make about mobile devices, services, technologies, and policies, in ways which favor digital inclusion.

In so doing, however, I must acknowledge that my approach is mildly technologically deterministic; perhaps Jo Tacchi’s framing of “contextualized affordances”<sup>65</sup> or Sun’s ideas of relational affordances<sup>66</sup> can characterize my approach to the estuarial space between determinism and appropriation. I will introduce caveats and reminders throughout this text about how no technology can be fully understood (nor any development intervention be truly successful) without understanding the particular human context and relationships in which it is situated. However, this work builds on the idea that there are, still, properties and potentialities that carry from setting to setting. I will focus on how, *caeteris paribus* (with other things the same), different configurations of digital devices create different opportunities for people to manipulate and produce digital information, and therefore to coordinate, propagate, and produce the stuff of daily life and of development. The book posits both that ICTs have an impact on development, and that on balance, ICTs can be shaped by innovation, intervention, and policy to be a force for progress, productivity, and prosperity rather than inequity, domination, and despair.<sup>67</sup> It is hard, some days, to stick to these

propositions, but I am working under the general frame that things are still “getting better.”<sup>68</sup>

The themes I explore in the book do have implications that are broader than the frames of “development” and “developing countries.” I use the dichotomies Global South/North and Developing/Developed World somewhat interchangeably throughout the book. Each term has its supporters and detractors, but I use each of them to highlight and reflect on communities or contexts (at local, regional, national, and global levels) where resources and network power are scarce, constrained, or unequal. Yet there are patterns of inclusion and exclusion, centrality and marginalization, abundance and constraint in nearly every community on Earth<sup>69</sup> and the shift toward a more mobile Internet is underway in almost all of them. Thus the term Global South does a bit better than Developing World in capturing the granularity and universality of the dynamics of power and poverty.

The intended audience for the book is rather broad. I am, of course, writing for scholars in all the communities I listed earlier, interested in Internet use in the developing world and the Global South, as well for those interested in matters of digital participation and inclusion in the information society. However, in addition, I am writing for policymakers trying to understand, reframe, and improve mobile Internet technologies, infrastructures, and services in the developing world, and I am writing for designers, technologists, and entrepreneurs seeking to harness mobile Internet technologies to create new and more useful products and services, and for development practitioners hoping to apply such technologies “for development.”

Thanks to many years working outside the traditional confines of academics, I have friends and long-time colleagues fitting each of these audience categories. I have tried to fashion a book that is approachable enough to be useful across these different sets of demanding readers. Though it is not an easy task, the result is the book I wanted to write, and one I think this particularly multifaceted topic demands.

### **The Book from Here**

Across these audiences, therefore, the book might influence how some readers think about the so-called digital divide, or might influence how

others think about (re)framing the development project in the changing context of the emerging global information society. However, these are not the primary intended outcomes. Rather, and much more narrowly, this book synthesizes current research and theory from two distinct communities I have mentioned above—ICT4D and mobile communication studies—to examine the shift to a more mobile Internet and its implications for the trajectory (and pursuit) of socioeconomic development and digital inclusion. What, exactly, your model of development might be remains up to you.

Comprising this introduction and the next three chapters, part I focuses on defining “mobile Internet.” Chapter 2 details how mobile Internet technologies are a work in progress, with rapid advances in coverage, affordability, and functionality. Chapter 3 continues the task of re-definition with two specific, complicating questions: “how mobile?” and “which Internet?” It suggests that the gradations in experiences between users are so great as to complicate any bifurcation into user and nonuser. Thus, instead of offering a specific definition of a discernable, standalone, separate mobile Internet, chapter 4 identifies six general properties that tend to differentiate mobile modes of Internet use from “fixed” modes. The chapter suggests that each has played a role in explaining the rapid growth in mobile Internet use, and uses these properties to introduce and anchor the “After Access Lens,” which will be used throughout the book.

Part II merges mobile communication research with ICT4D to identify two broad new potentialities afforded by mobile Internet technologies. Chapter 5 starts the section by contrasting research on the social and economic impacts of landlines, mobile phones, and the conventional Internet. It isolates cases where a more mobile Internet allows different interactions with data and services residing remotely and, in so doing, allows its users new ways to renegotiate their orientation to physical places. Further articulating the After Access Lens, it argues that mobile modes of Internet use afford greater options to have place(less) informational interactions, and paradoxically, to engage in more place(full) ones as well. Chapters 6 and 7 explore these new behaviors in the context of ICT4D.

Part III concludes the articulation of the After Access Lens, focusing on how the same properties that have fueled the boom in access also present considerable constraints to engaged, effective Internet use. Chapter 8 merges the two key concepts for use in part III: (1) from mobile

communication research, *digital repertoires* (which allows me to distinguish mobile-only from mobile-centric Internet use); and (2) from ICT4D, the idea of *effective use*, which is a flexible way to evaluate how individuals and communities might use ICTs (as tools) to achieve their development goals. Chapters 9 through 11 take the three major constraints in turn: a *metered mindset*, *limited production scenarios*, and *circumscribed structural roles*.

Part IV concludes with a single chapter wrapping up the implications of the full After Access Lens for ICT4D and mobile communication research, with nods to implications for the broader scholarly and practitioner communities in adjacent fields. In general, the chapter rearticulates how the shift to a more mobile Internet creates new opportunities and new challenges for ICT4D in assuring that (in the words of Michael Gurstein) “the internet is and continues to be a resource available, usable and of equitable benefit to all.”<sup>70</sup>



## Notes

Note to readers: The references below have been gathered in note form, arranged by chapter. An integrated bibliography—a list of all references in the book, in alphabetical order—will be made available around the time of publication at [www.jonathandonner.com/afteraccessreferences](http://www.jonathandonner.com/afteraccessreferences).

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### Chapter 3

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## Chapter 7

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## Chapter 9

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## Chapter 10

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