# Introduction

As 2009 nears, the world is in a time of gloom and panic. Will global governance and the global economic order survive? In retrospect, some saw the collapse of the dot com bubble as a portent of the financial meltdown and the collapse of confidence in the future. In the United States there is a dour bipartisan consensus that escalating special interest politics, budget deficits, economic insecurity in the midst of more consumption, environmental and energy policy gridlock, and deep uncertainties about national-security strategy point to intractable problems in the design and conduct of public policy. In other countries the specific bill of complaints may differ, but a similar uneasiness is widespread.

Although we can gripe as well as anyone about the world's follies, this book is more upbeat. Since World War II, a planet-straddling information and communications technology (ICT) infrastructure has created a global information economy at an ever-accelerating pace. A radically different model for competition and public policy for this infrastructure was introduced that is far sounder than its predecessor. More remarkably, countries agreed to rewrite the basic international agreements governing commerce for the communications and information infrastructure in a way that makes more sense than the consensus that was forged immediately after 1945.

For once, the transformation in governance and technology is not just a tale of the prosperous states doing better. These changes boosted the economic takeoff of India and China and other emerging powers, and also brought a much greater level of digital connectivity to the poor than anyone dreamed of in the late 1980s. Much remains to be done in poor countries, but an expanding record of successes now exists. For example, banking done over mobile phones ("m-banking") is taking off faster in developing countries, which lack well-developed financial markets, than in wealthy countries.

This book explains how and why a combination of technological innovation, market strategies, and political entrepreneurship propelled these

developments, first in the United States, Europe, and Japan and then in the rest of the world. Public debates sometimes grow cynical about big successes in public policy because of their preoccupation with the flaws that are inherent to even the best of policies. Although we note bad news when it occurs, we emphasize the larger story of accomplishment.

Policy is imperfect because too little is known to understand all the dimensions of an issue, because the tools for intervening in markets lack the precision of a surgeon's scalpel, and because significant compromise is necessary in political and economic bargaining. Politics is not pretty and often leads to absurdities, but it can also fundamentally redirect outmoded compromises that hamper market efficiency. "Pretty good" governance should be a goal, not a disappointment.

The current ICT infrastructure required a policy revolution to introduce competition in telecommunications markets. By correcting existing inefficiencies, this policy reversal created an innovation space that had high returns in the market for long-distance phone and data communications. In contrast with the few other countries that quickly followed the lead of the United States, the US formula eschewed most limitations on the number of entrants or the number of business models, thereby nudging diverse business strategies. Just as crucially, the policy's political coalition pushed policy in a way that favored experimentation and innovation in the closely complementary markets of computing and global information systems for large users. This tilt in favor of entrepreneurs in computer networking led to broad commercial deployment of the Internet and the Web, to e-commerce, and to the mixing and mingling of digital applications (including broadcasting, videoconferencing, and collaborative computing).[1]

But, as is typical even of successful public policy, the redefined market was hardly ideal. The political compromises that enabled the policy shift still restricted certain forms of freedom of pricing and competition in order to ensure stable pricing of local phone services. These restrictions led to a less-than-ideal market and triggered a cascade of academic criticism in the 1980s and the 1990s. However, in our view, empowering the coalition favoring technological innovation through policy was more crucial than getting all the details correct. The policy compromise defined a robust new market in which the most important options for technological innovation could be pursued competitively.

Still, basking in pleasure over past good judgments is perilous. No successful policy comes with a lifetime warranty. To paraphrase the warnings in advertisements for mutual funds, strong past performance of a public policy is no guarantee of future returns. We believe that the world's infor-

mation economy is at an inflection point. A productive shift in the direction of the world market is possible if we can adapt national and global public policies prudently. The innovation space that nurtured change in the 1980s and the 1990s is becoming less fertile. The telecommunications ("telecom") market is significantly more efficient today, and the major potential for creative political economic bargains that would open major markets for growth (through gains of efficiency and innovations) lies elsewhere. Can the domestic and global governance of the ICT infrastructure adapt to seize these opportunities?

The chapters in part I explain the political economy of domestic ICT infrastructure policy.

Chapter 1 provides a brief overview of the argument.

Chapter 2 establishes a base line for the change by reviewing the first two eras of ICT development; it also explains the technological and political economic factors that drove the shifts in the American market from the 1950s until 2000.

Chapters 3 and 4 explain how an inflection point emerged after 2000, examine the technological drivers and changes in the global supply chain that make the inflection point possible, and strongly dispute popular assumptions about the technological and economic dimensions of the market's future. For example, since the 1970s market dominance first rested with AT&T and IBM, then moved on to the regional Bell operating companies and "Wintel" (Microsoft and Intel), and now seems to be heading toward Google. But the inflection point means that the last passing of the torch of market dominance will take a different form.

Chapter 5 describes the changing political economy of policy in the United States (the global pace setter). It re-examines the political and economic logic of debates over telecom competition policy, such as the debates over "net neutrality," content, and information-market policies.

Part II, a theoretical interlude, explores the political economy of global ICT evolution since the 1950s. It consists of a single chapter, which provides an analytic framework for understanding how and why global market governance rules and institutions change and which also examines the architecture of governance.

Part III comprises three case studies that take a finer-grained look at global market governance. In chapter 7 the general rules governing competition and pricing of global networks are considered. That chapter examines why governments moved as much authority over these issues from the International Telecommunication Union to the World Trade Organization as they did, and the international consequences that arose.

Chapter 8 considers the specialized world of standard setting and spectrum policy and the raw politics that shaped the infrastructure of wireless communications. Chapter 9 examines why the choices about institutional delegation for governance had important implications for the evolution of the Internet and for the creation of new global resources for networking.

The central question of the concluding chapter is "What should be done next?" In light of the political economy shaping policy options, how should prudent policy makers approach global market governance? In this chapter we set forth principles and norms for organizing decisions and provide examples of how programs might implement them. Our goal is not to lay out a detailed manifesto, but rather to sort out first principles for policy and then begin to imagine how innovations might turn principles into market realities.

The MIT Press has agreed to make the entire text of the book available online at the time of publication. Supplementary materials on the website explore topics touched on in the book in greater depth and provide background and explanatory materials. The online material is available at http://irps.ucsd.edu/globalinfoandtelecom/.