Governing Global Electronic Networks

International Perspectives on Policy and Power

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1 Introduction: The Distributed Architecture of Network Global Governance

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The burgeoning use of global electronic networks and related information and communication technologies (ICT) is widely recognized to be one of the defining features of contemporary world affairs. Electronic networks underlie and enable the relational networks linking individuals and organizations that are catalyzing economic, political, and sociocultural change on a worldwide basis. So deep and widespread is the change in key domains of social organization that it is difficult to disagree with Manuel Castells's observation that, ''Networks constitute the new social morphology of our societies, and diffusion of networking logic substantially modifies the operation and outcomes in processes of production, experience, power, and culture.''[1] Among other things, as Robert Latham and Saskia Sassen point out, networks are giving rise to significant new digital formations, ''communication and information structures largely constituted in electronic space. Examples are electronic markets, Internet-based large-scale conversations, knowledge spaces arising out of networks of nongovernmental organizations (NGOs), and early conflict warning systems, among others. Such structures result from various mixes of computer-centered technologies and the broad range of social contexts that provide the utility logics, substantive rationalities, and cultural meanings for much of what happens in these electronic spaces.''[2] As the Internet and digital convergence continue to evolve and computation becomes increasingly ubiquitous in the years ahead, the centrality of electronic networks at the national and global levels and the creation of such new social forms will only increase.

Of course, electronic networks do not simply appear holus-bolus or have some intrinsic, transcendent properties. Instead, their capabilities, utilization, and impact result from social shaping processes that reflect human agents' objectives and interactions. Governance, or social steering, is a configurative force in this context, and it is exercised at multiple levels, from the intraorganizational up to local, national, regional, and global spheres. This book is concerned with the last of these levels—the global governance, particularly by intergovernmental institutions, of networks and related ICT.[3] The electronic networks of interest here generally are planetary in scope, but

they may be less geographically extensive and still have significant and configurative implications for both global networking and global policy. When electronic networks and the transactions they facilitate have crossed national borders, governments and the private sector usually have sought to establish shared rule systems, procedures, and programs that would guide the behavior of the actors involved.

The global governance of electronic networks has a very long pedigree. Indeed, international telecommunications was the first field in which nation-states established a multilateral intergovernmental organization—the International Telegraph Union, now the International Telecommunication Union (ITU), formed in 1865. Over the nearly century and a half to follow, global governance has evolved through three distinct phases (described later in this chapter), each of which has been characterized by a particular blend of dominant technologies, ideas, interest configurations, and institutional arrangements. In the third, current phase, we have seen a proliferation in the number and forms of governance mechanisms, as well as a deepening shift in social purpose away from restrictive state control and regulation and toward promoting globalized markets, private sector control, and security. Global governance mechanisms today include not only arrangements negotiated by governments, the private sector, and multistakeholder collaborations, but also arrangements imposed by powerful governments and companies possessing monopoly or oligopoly power in particular global markets. In addition, the coordinated convergence of national policies and corporate practices is becoming a significant source of global ordering, even if it is not codified in collective agreements. This book could not explore these latter forms of global governance, but they are important parts of the contemporary mix nonetheless.

The transformations in governance underway today have been driven by a number of factors. The most important of these has been the material and ideational power of the major industrialized countries, most notably the United States, and of transnational corporations (TNCs). In contrast, nondominant actors—such as the developing countries, small- and medium-sized enterprises, and civil society organizations (CSOs)—generally have found themselves to be in the positions of governance takers, rather than governance makers. To be sure, in some cases these actors have influenced governance decision making to varying degrees or have benefited from its results. But in many others, the current trajectory has been adverse to their interests, at least as they define them.

As the last point may suggest, the stakes in this arena are high. How and to whose benefit global governance is configured raises significant questions from a global public interest perspective. For example, many observers have heralded the Internet age as an era of almost unlimited possibilities for human empowerment and the weakening or dissolution of restrictive power centers. Yochai Benkler captures this spirit when he suggests,

> What characterizes the networked information economy is that decentralized individual action—specifically, new and important cooperative and coordinate action carried out through radically distributed, nonmarket mechanisms that do not depend on proprietary strategies—plays a much greater role than it did, or could have, in the industrial information economy. . . . The declining price of computation, communication, and storage have, as a practical matter, placed the material means of information and cultural production in the hands of a significant fraction of the world's population—on the order of a billion people around the globe.[4]

But in practice, how easily and to what ends that billion people can utilize ICT, whether their empowerment will be offset by other dynamics, and where this leaves the billions more who lack the same opportunities, will all be directly affected by the character of global governance and related patterns of social ordering.

The high stakes involved were made particularly clear in the course of the United Nations' 2002–2005 World Summit on the Information Society (WSIS) process. That process involved thousands of representatives from stakeholder groupings, including a number of the authors in this volume. It comprised major summits held at Geneva in December 2003 and at Tunis in November 2005, and a series of very lengthy preparatory negotiations and regional conferences. The WSIS tackled a broad range of issues pertaining to the global information society and adopted four instruments containing general principles and norms that, while nonbinding, impacted the global policy discourse on ICT and the programmatic work of many organizations going forward.[5] In the course of the process, global Internet governance—what it is, and who should control it—became a key point of contention. Had the summit resulted in the sort of significant changes to Internet governance that were being proposed by many developing and transitional countries, the consequences for the future evolution of the Internet and the global information society more generally would have been profound indeed.

With these considerations in mind, this volume places at center stage the questions of power and social purpose in network or ICT global governance. Of course, explaining outcomes requires due attention to the interests and negotiating behavior of the dominant players that shape them—what might be called governance "from above." But where possible, the contributors also try to emphasize how global governance looks "from below," most notably from the perspectives of the developing countries and civil society advocates of public interest objectives. Moreover, it should be noted that our intended audiences in this project included not only scholars, but also policy practitioners working in international organizations, governments, the private sector, and civil society. The cases included herein were selected because they are practically important, rather than in accordance with a particular scholarly methodology. Given this orientation, after describing the governance mechanisms in question and assessing the power dynamics and issues in play, each of the chapters concludes with a set of recommendations for action by either particular stakeholder groupings or the international community as a whole. Some are broadly framed principles, while others address

specific problems currently under discussion in international forums. Taken together, they may be seen as constituting a starting point for the development of a holistic global public interest agenda.

To set the stage for the discussions to follow, this chapter takes a somewhat unorthodox path for an introduction to an edited volume. As the authors do not employ a singular theoretical approach that needs to be introduced and the thrust of their chapters is previewed in Ernest Wilson's preface, I will instead provide an overview of governance mechanisms that is intended to complement and contextualize the authors' more detailed treatments. Accordingly, the first section addresses the definitional question of what we mean by global governance, particularly with respect to networks and related ICT. The second section highlights the main stages in the evolution of network global governance from 1850 to the present. The third section provides a survey of some of the major global governance mechanisms pertaining to network infrastructure, both physical and logical, as well as related transport services. These include the frameworks for telecommunications regulation and standardization, radio frequency spectrum management, satellite systems and services, trade in telecommunications services, trade in ICT goods, and Internet identifiers. The fourth section provides an overview of governance mechanisms pertaining to the information, communication, and commerce conveyed over electronic networks. These include the frameworks for information flow and content, trade in content services, intellectual property, electronic commerce, cybersecurity, and privacy protection. Finally, the concluding section offers some brief thoughts about the potential value of viewing this range of mechanisms from an integrative, holistic analytical perspective.

The Nature of ICT Global Governance

The term *global governance* gained widespread currency in the discourses of international relations scholars and practitioners during the 1990s. The term fit well within a zeitgeist shaped by the end of the Cold War, globalization, the Internet stage of the information revolution, the growth of private corporate authority, the mobilization of CSOs, and the alleged erosion of territorial sovereignty as the primary organizing principle of world politics. These and related trends seemed to increase the demand for global-ordering mechanisms created through not only traditional forms of intergovernmental cooperation, but also industry self-governance, multistakeholder partnerships, and transgovernmental relations. The global governance rubric seemed to encompass the new issues and collective responses that were emerging, and it had the added benefit of being nicely alliterative and hence catchy and marketable as well.

In consequence, global governance became the raison d'être for a cottage industry of scholarly researchers and policy analysts. For example, in 1995, a high-level Commission on Global Governance released a wide-ranging and influential report calling for

new initiatives to manage global problems and reform the United Nations. In the same year, the Academic Council on the United Nations System (ACUNS) and the United Nations University launched a new scholarly journal, *Global Governance: A Review of Multilateralism and International Organizations*. In parallel, academic institutions and think tanks established a number of research programs on the subject, and many international organizations and CSOs adopted the term as an organizing construct for their work. Interestingly, and exemplified in particular by the ACUNS journal, global governance has served as a vehicle for policy-oriented dialogue between scholars and policy practitioners from all sectors. Indeed, one could argue that the concept has become so widely institutionalized across professional environments and incorporated into so many actors' thought and work that it has become for them a social episteme, or ''the background intersubjective knowledge—collective understandings and discourse—that adopt the form of human dispositions and practices that human beings use to make sense of the world.''[6]

But what do we really mean by global governance? Given the passage of time since its rise in the lexicon and the extent to which it has been internalized by analysts and practitioners, one might expect there to be a widely agreed on understanding of the term. Nevertheless, no standard meaning is evident in the relevant academic and policy literatures and discourses. A particularly unhelpful source of dissensus is the tendency of some people to use the term in a highly normative manner, and to conflate it with particular instanciations of governance they do or do not favor. For example, there are liberal internationalists who equate the term with ''good governance'' and efforts by the international community to advance worthy goals like peace, development, and environmental stewardship; conservatives who equate it with unduly politicized and bureaucratic intergovernmentalism or even ominous schemes to establish world government; and progressives who equate it with neoliberal economics, corporate control, and the dominance of the rich over the poor. In reality, of course, governance can be done well or poorly and can serve any number of social purposes.

Even among the scholars and practitioners who construe the term in an appropriately value-neutral manner, there are differences, sometimes substantial, in its interpretation. To note some examples, governance and global governance have been defined as follows:

> This study operationalizes the amorphous term *governance* by defining it as the ability of a government to exercise public policy.[7]

> Governance is characterized by decisions issued by one actor that a second is expected to obey.[8]

> There is good reason to use the global governance concept in reference to the salience of globally oriented epistemic elites and authorities.[9]

> Global governance is governing, without sovereign authority, relationships that transcend national frontiers. Global governance is doing internationally what governments do at home.[10]

One of the best ways to explore *global governance*, what world government we actually have had, is to consider the history of *world organizations*, those intergovernmental and quasi-governmental global agencies that have (nominally) been open to any independent state (even though all states may not have joined.[11]

Governance refers to all the ways in which groups of people collectively make choices.[12]

[The authors] define ''global governance'' as collective efforts to identify, understand, or address worldwide problems that go beyond the capacity of individual states to solve.[13]

Governance, at whatever level of social organization it may take place, refers to conducting the public's business: to the constellation of authoritative rules, institutions and practices by means of which any collectivity manages its affairs.[14]

At the most general level, governance involves the establishment and operation of social institutions (in the sense of rules of the game that serve to define social practices, assign roles, and guide interactions among the occupants of these roles) capable of resolving conflicts, facilitating cooperation, or, more generally, alleviating the collective-action problems in a world of interdependent actors.[15]

The Centre understands global governance not as government but as a minimum framework of principles, rules and laws necessary to tackle global problems, which are upheld by a diverse set of institutions, including both international organisations and national governments.[16]

Governance is the sum of the many ways individuals and institutions, public and private, manage their common affairs. It is a continuing process through which conflicting or diverse interests may be accommodated and cooperative action may be taken. It includes formal institutions and regimes empowered to enforce compliance, as well as informal arrangements that people and institutions either have agreed to or perceive to be in their interest.[17]

By global governance is meant not only the formal institutions and organizations through which the rules and norms governing world order are (or are not) made and sustained—the institutions of state, intergovernmental cooperation and so on—but also those organizations and pressure groups—from [multinational corporations], transnational social movements to the plethora of non-governmental organizations—which pursue goals and objectives which have a bearing on transnational rule and authority systems.[18]

As a point of departure, governance is here conceived at a very abstract level as spheres of authority (SOAs) at all levels of human activity—from the household to the demanding public to the international organization—that amount to systems of rule in which goals are pursued through the exercise of control . . . Governance, in other words, encompasses the activities of governments, but it also includes any actors who resort to command mechanisms to make demands, frame goals, issue directives, and pursue policies.[19]

To meet the requirements of a broad conception, governance is here regarded as sustained by rule systems that serve as steering mechanisms through which leaders and collectivities frame and move toward their goals. In the state-centric world some of the rule systems are resided over by states and their governments, while international institutions and regimes maintain others. In

the multi-centric world numerous steering mechanisms are to be found in NGOs, and still others consist of informal SOAs that may never develop formal structures.[20]

By governance, we mean the processes and institutions, both formal and informal, that guide and restrain the collective activities of a group. Governance need not necessarily be conducted exclusively by governments and the international organizations to which they delegate authority. Private firms, associations of firms, nongovernmental organizations (NGOs), and associations of NGOs all engage in it, often in association with governmental bodies, to create governance; sometimes without governmental authority.[21]

Analytically, we define global governance by three criteria . . . First, we see global governance as characterized by the increasing participation of actors other than states, ranging from private actors such as multinational corporations and (networks of) scientists and environmentalists to intergovernmental organizations (''multiactor governance'') . . . Second, we see global governance as marked by new mechanisms of organization such as public-private and private-private partnerships, alongside the traditional system of legal treaties negotiated by states . . . Third, we see global governance as characterized by different layers and clusters of rule-making and rule-implementation, both vertically between supranational, international, national and subnational layers of authority (''multilevel governance'') and horizontally between different parallel rule-making systems.[22]

International regimes . . . are institutional arrangements whose members are states and whose operations center on issues arising in international society . . . Transnational regimes, by contrast, are institutional arrangements whose members are nonstate actors and whose operations are pertinent to issues that arise in global civil society . . . I use the phrase *global governance* . . . to refer to the combined efforts of international and transnational regimes.[23]

In the broadest possible definition, ''governance'' relates to any form of creating or maintaining political order and providing common goods for a given political community on whatever level . . . ''new modes of global governance'' would refer to those institutional arrangements beyond the nation-state that are characterized by two features: the inclusion of non-state actors, such as firms, private interest groups, or nongovernmental organizations (NGOs) in governance arrangements (actor dimension); [and] an emphasis on non-hierarchical modes of steering (steering modes).[24]

These eighteen formulations by leading scholars and practitioners obviously raise numerous questions. For present purposes I will highlight just three issues that bear directly on the treatment of global governance in this chapter. First, a few of these definitions emphasize social actors and their characteristics and interrelationships, while most of the others emphasize social institutions and rule systems. As is often noted in the literature, the etymology of the word *govern* derives from the Greek words ''kybenan'' and ''kybernetes,'' meaning ''to steer'' and ''pilot of helmsman,'' respectively. Actor-centric understandings derived from the latter term were long the norm in ordinary language; governance was equated with the exercise of control by an authoritative actor, particularly a government. But from the 1990s onward there has been a general evolution away from this approach, and rightfully so.

Governance is best defined in terms of the act of governing—establishing prescriptions and proscriptions that steer or guide—rather than the particular governors that engage in the act. Given that governance exists in many social settings and can be exercised by a variety of actors, this avoids having to load into the definition variable listings of the actors and their characteristics and relationships in accordance with different analysts' preferences. Moreover, while actor-centric definitions tend to explicitly or implicitly invoke hierarchical authority relationships, it is entirely possible to have rule systems that instead derive from symmetric, horizontal relationships. Consequential rules must be authoritative in the sense of being credible and of widely recognized applicability, but they need not be vertically imposed or backed by any particular actor's power or authority. In short, who governs is a separate matter from what it means to govern, and maintaining this separation also comports with normal language usage; if we do not define verb/noun pairings like dominate/dominance, resist/resistance, or tolerate/tolerance in terms of who is involved or their attributes, why should we do so with govern/governance?

Second, and conversely, most of the definitions emphasize process and the role of institutions, such as decision-making procedures and substantive rule systems, in steering social action. This approach is preferable, but some of these definitions add elements that seem extraneous or based on particular instanciations that reduce their generalizability to other cases. For example, global governance need not by definition provide common goods; be nonhierarchical, necessary to tackle global problems, or concerned only with truly worldwide problems that are beyond the capacity of individual states to solve; include particular organizational forms like public-private partnerships; or be capable of accommodating diverse interests, resolving conflicts and collective-action problems, and enforcing compliance. In many cases, these conditions may be absent. Nor does it seem right to apply the term to any and all the ways in which groups of people make choices; to mere efforts to identify and understand problems; or to the activities of pressure groups seeking to influence governance decision making.

Third, many of the definitions emphasizing process and the role of institutions seem to equate the term to collective decision making. However, it is also possible for a dominant actor to unilaterally establish global governance mechanisms. Global ordering may result from such actors using power to impose rules, or it may simply arise post hoc as other actors opt to align their behavior. Either way, what matters in such cases is that governance mechanisms are collectively recognized to be applicable to rather than negotiated by a globally significant range of actors.

These comments suggest that a definition of global governance should be action-oriented rather than actor-oriented, concerned with steering mechanisms or institutions, generalizable across cases, and reasonably concise. As such, for the purposes of this chapter, I suggest the following working definition: *global governance is the develop-*

ment and application of shared principles, norms, rules, decision-making procedures, and programs intended to shape actors' expectations and practices and to enhance their collective management capacities in world affairs. A few words of elaboration follow.

The word *development* is used here in the sense of an intentional activity, irrespective of who engages in it. Some scholars consider general customs or common patterns of behavior emerging in a spontaneous, decentralized manner to be instances of governance. This view is particularly common among libertarian scholars of the Internet.[25] But ordering arising from uncoordinated action lacks both the steering character and the injunctive weight of governance, and it is in any event often rather ephemeral. The word *application* is meant to suggest that generally only prescriptions and proscriptions that have been articulated and are recognized to be in force count. As previously noted, merely identifying and debating problems that require steering is not the same as actually engaging in governance.

Relatedly, *shared* does not necessarily mean collectively agreed. But it does mean recognized as applicable by the relevant actors in a given arena. Given the variability across cases, exactly how many actors this must be for a mechanism to be considered an example of global governance cannot easily be specified within the terms of a definition, and indeed none of the formulations listed previously specify the domain of the "global". If global is construed as meaning only universal or planetary, we would be talking about a rather limited range of governance arrangements, which leaves out many that have a substantial configurative impact on world affairs. I would argue that unilateral, bilateral, regional, and plurilateral mechanisms can be instruments of global governance if the actors recognizing them as authoritative account for a majority of the behavior in the relevant global political space. An example would be if the member countries of the Organization for Economic Cooperation and Development (OECD) account for 70 percent of a given type of economic transaction and adopt a common policy framework governing it; that countries that are involved or marginally involved in such transactions are not parties to the agreement does not detract from its globally ordering character. Moreover, such less-than-universal arrangements may set standards and create conditions to which nonparties must adapt or comply either in the near term or later when they do begin to engage in the transactions in question. In these circumstances, governance *in* the global may effectively serve as governance *that is* global.[26]

Since *principles, norms, rules, and decision-making procedures* are the main elements of the now standard definition of an international regime, it might seem preferable to simply say that. However, it is possible to have principles, norms, rules, or decision-making procedures that facilitate steering but are not the elements of a fully developed rule system or regime. This is certainly the case in the global network environment, and particularly for the rather fluid realm of Internet governance. Parties engaged in problem solving often devise a general principle or rule that helps them to sort out

the immediate problem at hand but which is not embedded in some larger institutional framework.

None of the preceding definitions from the literature specifically mentions *programs*. Doing so captures institutionalized activities that shape social actors' expectations, practices, and interactions but do not consist of developing and applying rule systems that regulate their daily conduct. Obviously, not all programs help bring order to some global realm or significantly impact actors' capacities to participate in collective decision making, but a definition should encompass those that do. For example, while international organizations have been somewhat marginalized as actors of interest in the contemporary scholarly literature on international cooperation, their secretariats may operate programs for the management of shared resources and facilities, production and dissemination of information, monitoring of events, building of members' capacities, and so on that have a demonstrable impact on the management of global problems.[27] Other actors do so as well, particularly in fields like global electronic networks where roles and responsibilities are diffused across social sectors and levels of organization. Finally, the phrase *intended to shape actors' expectations and practices and to enhance their collective management capacities in world affairs* is meant to underscore again the role of intentionality and what the principles, norms, rules, procedures, and programs actually do.

This definition seems generalizable to a wide variety of institutional arrangements. It can apply equally to governance mechanisms irrespective of their institutional context (whether they are negotiated under the aegis of formal organizations or are freestanding); form, that is, intergovernmental (treaties, recommendations, guidelines, declarations, memorandums of understanding, custom) or private sector (contracts, memorandums of understanding, codes, custom) agreements; strength (formal or informal, binding or voluntary); decision-making procedures (voting or consensus, dispute resolution and the like); the range and interrelatedness of issues covered; participants (public sector, private sector, civil society, or multistakeholder participation or application, and universal or smaller-n groupings); compliance mechanisms (centralized or decentralized monitoring and enforcement); distributional biases (equitable or inequitable allocations of rights, responsibilities, and benefits); and so on.

Turning then to the focus of this volume, governance has generally been applied to network infrastructures and to the information, communication, and commerce conveyed over such infrastructures. The simple binary distinction between ''carriage'' and ''content'' has long been employed in national and global communications policies, with different kinds of rules being applied to each level. In recent years it has become common to observe that the binary is breaking down due to technological convergence and regulatory change, and that issues pertaining to infrastructures are often integrally interwoven with those pertaining to transactions and content. Moreover,

with the growing centrality of data communication architectures, it has become common to discuss networks using a more differentiated topology, for example, the four-layered model of Internet Protocol (IP)-based networks (applications, transport, Internet, and network access layers), and so on.

For present purposes, it is not necessary to differentiate between the various technical functions performed at different layers of the infrastructure. To characterize the focus of global governance mechanisms, it is sufficient to employ the traditional binary categories recognizing that ''carriage'' or infrastructure (networks, services, and applications) and ''content'' or networked information, communication, and commerce are just handy simplifying categories, and that governance mechanisms that are intended to focus on issues at one level may also involve by extension issues normally addressed at the other level.

Accordingly, we can define network/ICT global governance as *the development and application of shared principles, norms, rules, decision-making procedures, and programs intended to shape actors' expectations and practices and to enhance their collective management capacities concerning global electronic networks and the information, communication, and commerce they convey*. Such governance mechanisms have been devised to perform a variety of functions. These include generic functions common to rule systems, such as constraining actors from undertaking certain courses of action they might otherwise choose; empowering actors to undertake other courses of action with community assent; reducing the transaction cost of forming agreements; reducing the cost of creating, acquiring, or distributing information related to the rules of the game; establishing liability rules and property rights; and generally, facilitating collective learning and management.

In addition, governance mechanisms of course perform more substantively specific functions concerning the management of global communication and information issue-areas. Examples here include ensuring that ICT based in different countries can be physically interconnected and logically interoperable; managing the allocation of common pool resources, such as radio frequency spectrum or Internet domain names; specifying the terms and conditions according to which traffic will be passed from one interconnected network to the next; facilitating the commercial exchange of goods and services conveyed in such traffic; proscribing certain types of information flow; protecting network security and guarding against vulnerabilities to disruption or corruption; protecting information security and fighting cybercrime; protecting intellectual property and personal privacy; and so on.

Historical Evolution

The nexus of global governance mechanisms assessed in this volume are the product of a long process of international institutionalization. While tracing in detail the

evolution of that process would be well beyond our objectives here, it is useful to highlight its main contours to establish the background for the survey of mechanisms that follows. In broad terms, the global governance of electronic networks can be said to have developed in three main stages since the mid-nineteenth century. Each of these stages has constituted what I would call a NetWorld Order (NWO), a distinctive global governance architecture characterized by a particular blend of dominant technologies, ideas, interest configurations, and institutional arrangements. In the latter years of the first two stages, the emergence of disruptive technologies set off social pressures that drove the transition to the next stage. Whether the same will happen with the current, third NWO remains an open question.

The first NWO lasted from the mid-nineteenth century until the early 1980s. It commenced with the development of multilateral institutions for telegraphy in continental Europe that were predicated on each participating state having similar domestic institutional arrangements and a shared social purpose that would guide their international cooperation. The core institution at the national level was a government ministry of posts and telegraphs (and later, also of telephones—a PTT), around which were arrayed a set of supportive societal constituencies like manufacturers, political parties, labor unions, and customers—a nexus Eli Noam has dubbed the ''postal industrial complex.''[28] Beginning from this base, the state-led organization of networking spread through colonialism and emulation to much of the world over the century to follow, albeit with a few notable exceptions where state-regulated private carriers, usually monopolies, were maintained instead. As new technologies like the telephone, radio, and telex came online, they generally were folded into the frameworks of state service provisioning or regulation of private providers. Hence, the project of state building was in most places a defining feature of the period, alongside the rationalization and integration of industrial economies and circuits of production and distribution that were typically driven, in noninfrastructural sectors, more by the private sector.

By extension, the core feature of global governance in the period was the social construction of national sovereignty as the baseline requirement with which global communications had to comport. With respect to international institutions, governments generally interpreted sovereignty as meaning state control, or in the exceptional cases, strong state authority over private carriers. But toward the end of the period, the merging of computers and of communications became a disruptive technology around which a new interest configuration arrayed to press for change. In consequence, the first NWO ended with the erosion of the global consensus equating sovereignty with state control, and the onset of privatization and market liberalization.

To flesh out these broad generalizations a little, let us begin with the PTT. On the European continent, many states had established postal monopolies that took control of the telegraph from the outset, arguing that electronic messaging was just a different way of doing the same thing and required comparable treatment in order to achieve

integrated, nationwide systems. The same reasoning would later be applied to the telephone. While in some countries the state building process was conflictual because entrepreneurs resisted nationalization, most followed that path between the late nineteenth century and the early post–World War II period, depending on their domestic developmental and political trajectories. For its part, Britain nationalized its domestic telegraph and telephone systems in 1868 and 1911, respectively, but retained a robust set of private cable companies that dominated intercontinental connections between national systems into the early twentieth century. In colonized countries, the national carriers effectively were branches or affiliates of the European administrations that became national PTTs after independence.

The PTTs generally played the triple roles of national policymaker, monopoly provider of networks and services, and monopsony purchaser of privately produced equipment. In the richer countries that had equipment manufacturing industries, this status gave the state influence over the direction and pace of technological development; for example, the rollouts of international radio telegraphy and telephony frequently were slowed and shaped by the PTTs' desires to recover their investments in predecessor technologies. When radio emerged in the first decade of the twentieth century, it was controlled by the PTTs and used as an alternative or complement to wireline telecommunications. When radio broadcasting came online in the 1920s, most countries established separate government agencies and service suppliers, sometimes allowing private stations to acquire less desirable spectrum slots.

The exceptions were as interesting and important as the rule. As with soccer and socialism, the most exceptional case was the United States. Western Union was an early power in telegraphy, and the United States retained private carriers and went through cycles of competition and industry concentration until after World War I, when the American Telegraph and Telephone Co. (AT&T) consolidated its power as a near-monopolist in major telephone markets alongside an array of small independents providing local service that often interconnected with AT&T's network. The federal government encouraged this consolidation for reasons that were in some cases similar to the rationales for PTT control abroad. The partnership between AT&T and the government deepened after the Communications Act of 1934 created the Federal Communications Commission (FCC) and the first semicoherent national policy framework for telecommunications. AT&T achieved dominance on international voice routes alongside some international record carriers that had entered the market earlier to provide telegraph and later telex services.

Partial exceptions to the rule involved mixed public/private sector models. For example, Canada combined government monopolies in certain provinces with regulated private firms, while Finland and Denmark had private local operators alongside PTTs that controlled everything else.[29] In addition, carriers from the United States and Britain sought to serve some domestic markets abroad but were frequently forced out

via nationalization or other means. However, in other places—parts of Latin America, Hong Kong, the Caribbean and Oceana Islands, and Spain until 1945—companies like International Telegraph and Telephone or Cable & Wireless stayed on as national private monopolists.

In addition, despite the global spread of the PTT model, private carriers were key players on many intercontinental routes. Some of the more interesting stories from the early history of global networking revolve around the struggle between the British cable cartel that dominated in the nineteenth century and the U.S.-based upstarts that supplanted it in many places during the twentieth century. As David Headrick has documented, the governments of the two countries got actively involved in these squabbles due to a mix of national security and commercial considerations, which included a U.S. campaign to break the British grip on communications to the countries and territories within its empire, which bore fruit in the early post–World War II era.[30] Also influential in some contexts were the major telecommunications equipment manufacturers and large corporate users of networks, including the press and financial and petroleum firms.

Prior to World War II, the ideational realm was heavily influenced by and supported the dominant players. Many arguments were advanced at different points in time to justify national monopolies in general and governmental monopolies in particular. For example, from an economic standpoint, it was said to be more efficient to have single providers of infrastructure than to have duplication of investments on routes. Monopolies could reap economies of scale and scope, and manage the research and development costs, capital requirements, and risk involved in building networks. In the early twentieth century, the theory of natural monopoly was embraced as an ex post rational that made such arguments ''scientific.'' Further, it was suggested monopolies were necessary technologically, since network elements must all work together as systems were upgraded asymmetrically over time; socially, in order to facilitate the cross-subsidization of rates for low demand or income regions and users and achieve universal service; and politically, so as to build integrated national systems and identities, as well as to preserve national sovereignty, avoid vulnerability dependence on presumably predatory foreign suppliers, and ensure easy international coordination. The notion that radio frequency spectrum was scarce and required centralized management and allocation also supported state authority. Looking back through the analytical lenses of late twentieth and early twenty-first-century academia, some analysts seem to dismiss such notions as mere ideological covers for avaricious, rent seeking behavior. However, a close reading of historical records suggests that these and related ideas often were believed and foundational to the self-conceptions of systems building, public service-oriented, reformist state technocrats and their counterparts in private monopolies like AT&T, or ''Ma Bell.''

These social forces had a strong configurative influence on the development of global governance mechanisms for electronic networks. The first such mechanism to be erected was the multilateral regime for telecommunications networks and services, which provided a framework for the noncompetitive organization of international markets, interconnection of national networks and equipment, and cross-border exchange of traffic. Its core principles were first set out in the 1850 Treaty of Dresden, which created the four-member Austro-German Telegraph Union. In 1855, Belgium, France, Sardinia, Spain, and Switzerland formed the West European Telegraph Union along essentially the same lines. After several years of coordination between the two groups, the governments involved decided to devise a unified and broader multilateral regime. Hence, in 1865, Napoleon III invited twenty European governments to Paris to create what would become the world's first formal international organization—the International Telegraph Union. The Treaty of Paris comprised a convention that laid out the political principles governing telegraph relations between members, and an annexed set of regulations that established more detailed guidelines for the technical and economic organization of international networks and services. Technical committees for telegraph and telephone standardization were launched in the 1920s. As the membership expanded and telegraph issues became increasingly intertwined with telephone and radio matters, governments in 1932 decided to replace the telegraph union and the related International Radiotelegraph Union (discussed next) with a unified International Telecommunication Union (ITU) as of January 1934. The ITU was restructured, expanded, and brought into the United Nations by a diplomatic conference held in 1947.[31]

The second governance mechanism to be erected was the international regime for radio frequency spectrum. The regime established a framework for the distribution and utilization of radio frequency spectrum for terrestrial telecommunications and broadcasting services and, since 1963, of spectrum used by satellites and of related satellite parking slots in the geostationary orbit (GSO). In 1906, twenty-nine governments met in Berlin to sign a convention launching a collaboration that was referred to as the International Radiotelegraph Union and organizationally housed in and managed by the International Telegraph Union's Berne Bureau.[32] In 1927 they revised the treaty and with private sector participants created a committee to develop voluntary technical standards for radio. In 1932, the radio operations were folded into the new ITU. The aforementioned 1947 diplomatic conference revised the ITU's core treaties and inter alia strengthened and clarified members' rights and obligations regarding spectrum management. In particular, it created the International Frequency Registration Board (IFRB), which was charged with compiling and publishing member governments' frequency assignment notifications and judging their conformity with regime rules. These innovations constituted an instance of rule-governed regime change; the

regime's guiding principles and objectives remained unaltered, but were now buttressed by a stronger and more elaborate nexus of norms, rules, and programs. Adding to this nexus was the establishment of complementary principles in a non-ITU instrument, the 1967 Outer Space Treaty negotiated through the United Nations' Committee on the Peaceful Uses of Outer Space.

A third governance mechanism was the international satellite regime. Like the telecommunications regime, the satellite regime played a central role in the development of global communications in accordance with a state-centric and anticompetitive orientation. The regime comprised both multilateral rules on the organization of the global satellite services market, and a major programmatic activity—the creation and operation of what was long the dominant service supplier in the market. A U.S.-led initiative, the International Telecommunications Satellite Organization (INTELSAT) was launched in 1964 as a consortium of twenty governments. The governments were designated as parties to the founding treaty and selected representatives (for most countries, the national PTTs) that served as shareholders and signatories to a special operational arrangement. Subject to their oversight, satellite systems management was provided by the dominant shareholder, a private firm called the Communications Satellite Organization (Comsat) that was created by the U.S. Congress in 1962. In 1971, eighty-five governments approved a treaty to make INTELSAT a permanent intergovernmental organization based in Washington, DC, and managed by a general secretariat rather than Comsat; these changes became effective in 1973. Weighted voting ensured that the industrialized countries, especially the United States, maintained overall control of the organization even as the developing country membership blossomed.

While the mechanisms just mentioned all focused on the collective management of infrastructure, they sometimes contained elements related to the content and cross-border flow of information over networks as well. For example, in the ITU treaties and their predecessors, priority was (and still is) given to government messages and emergency communications, and in the latter case, there were additional obligations like mandatory distress signals and ship-to-shore intercommunication irrespective of the telegraphic apparatus used (following the Titanic disaster of 1912). In addition, as a general matter, ITU members undertook to preserve the secrecy of private international correspondence, at least with respect to third parties. But from the 1850 Treaty of Dresden up to today's ITU Constitution, members also have reserved a broad right to stop any private communications that ''might appear'' dangerous to their security or otherwise contrary to national laws, public order, and decency. Obviously, the right as stated is rather sweepingly permissive, and it implies a corollary right (and ability), in accordance with national laws, to monitor and inspect the substance of messages in order to make such determinations. Many if not all states have given themselves that authority in some form, and some have found abundant occasions to exercise it.

For example, in the era of the British intercontinental cable cartel, messages were frequently monitored and censored, much to the chagrin of other countries. But in general, the right in principle to project territorial authority onto cross-border communications was not contested, as all states considered it to be integral to the preservation of national sovereignty.

With the development of radio broadcasting in the 1920s, governments began to consider the need for additional rules concerning the acceptable content and cross-border flow of mass media. But due to political differences over the desirability and scope of regulation and the weakness of the functional incentives relative to those in telecommunications, governments did not attempt to establish a broad multilateral organization or regime. A group of European governments launched an International Broadcast Union (IBU) in 1925, but it remained a rather limited affair and in 1950 was replaced by the more aptly named European Broadcasting Union (EBU), the broadcaster members of which concentrated more on technical matters and program exchanges. Other regions of the world developed similar unions of national broadcasting organizations. Hence, debates on global governance mechanisms devolved to multiple organizations like the League of Nations, the UN General Assembly, the ITU, and the United Nations Educational, Scientific and Cultural Organization (UNESCO). In general, the prevalence of political divisions and the frequent employment of non-binding instruments resulted in ambiguous, weak, and fragmentary global ordering, which in effect left matters in the hands of individual states and large media companies.

Given the national monopolies' tight control over networking, the first real challenge to the global order would originate outside their domain with the development of data communications in the United States. After having been nurtured by massive U.S. military contracts, a nexus of manufacturers dominated by International Business Machines Corp. (IBM) built a commercial industry by selling mainframe computers and related systems to large organizational customers. Of particular importance in this regard were IBM's System 360 and System 370 families of compatible computers, launched in 1964 and 1970, respectively. For geographically distributed organizations, interconnecting their in-house systems via telecommunications lines to perform distributed data processing and file management became an attractive prospect. The possibilities had been demonstrated by IBM and other contractors to the Department of Defense in the 1950s with the Semi-Automatic Ground Environment (SAGE) air defense system project, which "was essentially the first wide-area computer network, the first extensive digital data communications system, the first real-time transaction processing system."[33] SAGE concepts were then transferred to the business world with IBM's 1964 Semiautomatic Business Research Environment (SABRE) airline reservations system. In the years to follow, the data communications industry took off with computer manufacturers adopting competing proprietary platforms like IBM's Systems Network

Architecture (SNA) and laid the foundation for the development of related markets for specialized value-added networks (VANs), information services, online databases, and the like.

Collectively, these trends blurred the boundary line between ''in-house'' computing and telecommunications. New technological possibilities set off a learning process in which telecommunications was increasingly reconceptualized as an extension of corporate users' internal management information systems to be customized for competitive advantage, rather than as a plain vanilla public utility to be procured from monopoly providers on whatever terms they cared to offer. Large users in the airline, financial, petroleum, automobile, and other industries began to see that data communications could vastly enhance the company-wide management of their operations, both domestically and internationally.

AT&T's monopolistic practices therefore became a problem for a widening array of U.S. companies. Like the PTTs abroad, AT&T restricted customers' ability to attain, configure, and use leased circuits; to transition from discreet point-to-point leased circuits to interconnected private networks; and to attach specialized customer premise equipment (CPE) to private lines in order to enhance their flexibility and control. As such, corporate users began to complain to the FCC and demand greater freedom, a cause that IBM and other computer firms joined. Similarly, large corporate users demanded the right to procure systems and services from other suppliers, while potential competitive suppliers began to step up and demand entry into the emerging market niches. From the 1960s onward, this new corporate interest configuration grew into an informal political movement that generated a steady stream of calls for the FCC to curtail AT&T control first over the emerging specialized markets, and later over the public switched telephone network (PSTN) and provision of basic services.

Moreover, technological change created the incentives for an intellectual sea change regarding the optimal governance of telecommunications amid what was being called the information revolution. By the mid-1960s, a growing number of economists and industry analysts were questioning the continuing applicability of the old rationales for protecting AT&T from competition, such as the theory of natural monopoly. Increasingly, telecommunications was seen by many observers as being both key to the vitality of the economy as a whole and too important to be left in the hands of a monopolist. While AT&T and its supporters could dismiss the demands of potential competitors as being driven by narrow self-interest, this was more difficult with respect to the claims of independent analysts. In short, over time the combination of corporate demands and new ideas in the new technological environment led the FCC to reevaluate the wisdom of constraining innovation and entrepreneurship to benefit one company; to allow the market entry of competitors in telecommunications, particularly in the fields of specialized business services and long-distance telephony; and to pursue an incremental process of deregulation that fed into AT&T's divestiture in 1984

and helped create a highly diverse and competitive market for communications systems and services.

As these dynamics deepened within the United States and spread beyond its borders to other industrialized countries in the early 1980s, global governance lurched into a second NWO that would last until 1995. Unlike its predecessor, in which there was usually broad concordance among governments (with, in some cases, the notable exception of the United States) on the fundamental purposes and principles shaping collective governance, the second NWO was a period of growing conflict over these matters. Nevertheless, a new overarching orientation eventually took hold that effectively decoupled the dominant intersubjective understanding of sovereignty from state-controlled monopolies and favored market liberalization and privatization. This orientation would eventually spread from telecommunications to mass media as well.

The new approach favored by the U.S. private sector and growing array of analysts gathered significant momentum under the Reagan administration. The increasing freedom to build or lease and configure telecommunications infrastructure helped catalyze the explosive growth of computer networking and internetworking not only in the business arena, but in academia and civil society as well. Alongside TCP/IP, which was largely developed in the 1970s under U.S. military sponsorship and became the foundation of ''the'' Internet, grew a number of protocol suites like the International Organization for Standardization's (ISO)[34] Open Systems Interconnection (OSI) and offerings from individual firms like Xerox and IBM; public data networks like Telenet, TYMNET, UUNet, USENET, and BITNET; commercial online and conferencing services like Compuserve and the WELL; and on and on. With time lags and constraints due inter alia to PTT policies, parallel systems would arise elsewhere around the world, most notably within the OECD region, resulting in a worldwide matrix of computer networks at times linked together via gateways.[35]

Early in its tenure, the Reagan administration decided to make promoting international competition in communications a key economic objective.[36] The U.S. government began to undertake bilateral negotiations with foreign governments with the objective of winning not only better treatment of corporate users, but also market access for U.S. suppliers of telecommunications services and equipment. Moreover, the Office of the U.S. Trade Representative (USTR) joined forces with an emerging community of service industry specialists to argue that jointly provided telecommunications services in fact constituted trade, and as such should be covered by the General Agreement on Tariffs and Trade (GATT) organization. The notion that international services exchange had trade-like properties first emerged in the early 1970s, and by the early 1980s the United States was pressing other governments to set trade in services rules as part of what became the 1986–1994 Uruguay Round negotiations. The very act of revisualizing telecommunications as part of a larger category of services transactions that are ''traded'' created a strong conceptual bias toward openness, and

set a new yardstick for evaluating telecommunications regulations as nontariff barriers (NTBs) to be removed.[37] Hence the GATT organization was an attractive venue in which to push for a new multilateral framework that would deal with the economic dimensions of international correspondence, as well as a means of pressuring administrations in the ITU to reform the telecommunications regime.

The United Kingdom, Japan, and Canada decided early in the decade to undertake varying degrees of privatization and liberalization in the hope of energizing their markets. But other industrialized countries' PTTs and their domestic supporters opposed the American approach, claiming that the Americans' new discourse about ''restrictive trade barriers,'' ''abuse of dominant position,'' and ''excessive regulation'' simply reflected the interests of large American firms poised to swoop down on their presumably vulnerable markets. They stepped up efforts launched in the 1970s to build monopoly-controlled public packet switched data networks that purportedly obviated the need for the competition and private networking demanded by TNCs. The PTTs and their manufacturer partners worked in the ITU to devise the requisite standards for such offerings as X.25 packet networks, X.400 message handling systems, and Integrated Services Digital Networks (ISDNs), as well as recommendations that justified the restrictive treatment of private lines and networks. These efforts were coupled with the adoption of other regulatory, trade, and industrial policies that the new interest configuration condemned as protectionism. Hence, the 1980s were marked by growing discord and drift in bilateral and multilateral policy discussions. PTT managers were aghast at being described as cartel managers conspiring against the free market, since commercial considerations had never been acknowledged criteria for evaluating standards and regulations.

Nevertheless, by the late 1980s the PTTs' positions were becoming untenable. Local corporate users, especially those in financial and other service sectors, found themselves competing with American-based counterparts that were benefiting from the efficiencies and enhanced range of choice in systems and applications associated with liberalization. For these users, market incentives pointed to the desirability of achieving similar gains with their home PTTs, and of extending these gains to cross-border services. Further, a conceptual realignment accompanied their shift to more globally oriented profiles. They were coming to see themselves as having similar interests as American users in relation to states, insofar as they were more concerned with accessing the best resources than with buying nationally. Hence, the regulatory preferences, negotiating agendas, and intellectual orientations of large users across the industrialized world began to converge, which substantially strengthened the campaigns of the International Chamber of Commerce (ICC), the International Telecommunications Users Group (INTUG), and other U.S.-inspired efforts by industry alliances to promote liberalization. Individually and collectively, companies began to press PTTs in the industrialized countries for greater flexibility with respect to leased circuits, private net-

works, CPE attachment, computerized information services, and a host of related issues that mattered to businesses but did not yet threaten directly the monopolists' control over PSTNs and basic services.

A parallel shift was occurring on the supply side of the market. The increasing globalization and differentiation of demand generated new opportunities that could best be realized in a competitive environment. Traditional telecommunications manufacturers and new entrants, whether medium-sized startups or large computer and electronics firms crossing market niches, increasingly sought out foreign sales, inter alia, to help recover the rising research and development costs of advanced CPE and network equipment. Similarly, emergent suppliers of private networks and services often needed to offer international reach in order to lure corporate customers and hence favored global liberalization. Where states were slow to change, some companies devised novel solutions to get around market access barriers, such as international corporate alliances and gray markets.

In addition, the emerging reconceptualization of telecommunications' role in economic activity called into question whether PTTs should retain their exclusive jurisdictions and, indeed, the nature of the PSTN itself.[38] The spread of American-style intellectual frameworks and the growing debate about trade in services in the GATT helped to redefine how industry analysts and government officials across the industrialized world regarded their national monopolies. High-level politicians and trade ministers alike began to believe that liberalization would energize their economies and be in the national interest. This trend gained additional momentum in 1987 when the Commission of the European Communities (EC) launched an ongoing initiative to liberalize the European market in support of its regional integration agenda.

In short, in the second half of the 1980s, PTTs across the industrialized world came under domestic as well as international pressure to open their markets and allow corporate customers significantly greater freedom in configuring and using network resources. In the years to follow, they undertook—with varying degrees of enthusiasm—liberalization programs that focused in particular on specialized business-oriented markets and stimulated the development of a wide range of new entrants like capacity resellers, systems integrators, and providers of specialized VANs. Whereas the integrated, analog, plain vanilla PSTN was the paradigmatic technology of the first NWO, their distributed, digitized, and specialized systems and services took on the same status in the second NWO.

Going further, many PTTs were broken up in the 1990s, with the national telecommunications administrations separated from the postal services and ministerial policy organs. The telecommunications administrations were privatized, often with the governments retaining 51 or 49 percent of shares of the stock at the outset and then releasing more to the market over time. The newly privatized entities came to be referred to as public telecommunications operators (PTOs). With time lags, a substantial

number of developing countries subsequently moved down the same path. Major PTOs from the industrialized world aggressively globalized, becoming transnational ''super carriers'' that invaded national markets and formed interfirm alliances to provide corporate users with integrated, end-to-end solutions on the most lucrative and high-volume routes. Inevitably, these changes began to alter many governments' preferences regarding the international order.

The shape of global governance was redefined in consequence. On the one hand, existing arrangements like the telecommunications and satellite regimes became the sites of heatedly contested policy discourses and difficult negotiations that eventually resulted in promarket reforms sought by governments and industries from the industrialized world, above all the United States. On the other hand, new arrangements were created to carry the momentum forward and lock in binding commitments to liberalization. The key innovation in this regard was the creation of the General Agreement on Trade in Services (GATS) as a result of the Uruguay Round negotiations launched in September 1986. The agreement signed in April 1994 covered a wide range of issues, and among other things replaced the GATT organization with a stronger World Trade Organization (WTO), in effect January 1, 1995. It also established a third international regime under the WTO's institutional aegis—the Trade-Related Aspects of Intellectual Property Rights (TRIPS) agreement. The TRIPS included the guiding principle of binding minimum standards, the implementation of which could be subject to WTO dispute resolution and sanctions for noncompliance. Going forward, any deals concluded among WTO members in other contexts, from bilateral or regional agreements up to the multilateral level in the World Intellectual Property Organization (WIPO), could only establish higher levels of protection for property owners or reduce existing limitations on their rights.

Another important governance initiative, which is frequently overlooked in accounts of global liberalization's spread and consolidation, pertained to point-to-point information flows. With the blossoming of data communication and processing activities in the 1970s, many governments and analysts began to raise concerns about what was happening within these transnational corporate cyberspaces. Accordingly, at a conference organized by the OECD in 1974, an expert group dubbed the phenomena ''transborder data flows'' (TDF), which in contrast to ''international'' data flows invoked a mental image of corporate activities unmediated by territorial authority, and raised the question of whether it ''constituted a problem sufficiently important in its implications for national sovereignty for governments to propose regulatory action.''[39] For the next ten years, a wide-ranging international debate raged that, in the intergovernmental context, played out not in the ITU, which had no mandate to discuss content matters, but rather in the OECD and the Intergovernmental Bureau of Informatics (IBI), an organization of over forty members, mostly developing countries. In the end, the initial calls from a few industrialized countries and many developing

countries for new multilateral regulations gave way to the adoption of regional and plurilateral instruments that effectively locked in a rough consensus among the key players that corporate TDF should generally occur without governmental impediments.

As had happened with the first NWO, pressures that built up during the latter years of the second NWO catalyzed the shift to a new governance architecture. But in this case, the dynamic was different; the third NWO that emerged from 1995 represented a very substantial deepening of rather than a striking departure from the fundamental orientation of its predecessor. The key driving force in this period, which continues today, has been the Internet.

Major developments on two fronts made 1995 a turning point. First, the GATS and the rest of the new WTO framework came into effect at the year's outset and created a legal and political context for the progressive liberalization of global telecommunications and ICT markets in the years ahead. Second, the U.S. government, which was the key source of governance via contract during the early noncommercial development of TCP/IP-based internetworking, withdrew its support for the National Science Foundation's NSFNet backbone and transitioned the Internet to a new architecture in which commercial network service providers interconnect to exchange traffic and also sell bandwidth to Internet Service Providers (ISPs) that cater to end users. In addition, the government authorized the sale of domain names, Netscape released improved versions of its pioneering Navigator browser, and Microsoft launched its Internet Explorer browser. Together, these developments greatly catalyzed the emerging commercialization and mass popularization of the Internet and laid the foundation for the boom to come. In time, the Internet's takeoff as a global mass medium was complemented and further stimulated by two further megashifts related to liberalization and digitization: the worldwide boom in mobile communications, and the advent of media convergence.[40]

The overarching features of global governance in this period have been twofold: substantively, the continuing reform and strengthening of prior arrangements geared toward the facilitation of markets and innovation, and the creation of new mechanisms designed to facilitate markets and promote security; and institutionally, a significant increase in the range and variety of global governance mechanisms, in which context private sector ''self-governance'' figure prominently. In addition, in the early twenty-first century, a new set of overarching political considerations have become an important part of the mix: demands by nondominant stakeholders, especially developing countries and civil society, for greater transparency, accountability, and inclusive participation in decision making; and the increasing importance of new stakeholders, including the multistakeholder technical and administrative communities that develop and operate much of the Internet, and individual users.

The configurative social forces and trends of the contemporary period are sufficiently familiar that they can be treated briefly here. Not long after being ensconced

in Washington, DC, the Clinton administration launched a series of initiatives to promote the Internet and global electronic commerce as industry-led catalysts of an information-based ''new economy.'' The new economy zeitgeist was powerful and widely internalized to the point that traditional public policy arrangements widely came to be seen as antithetical to wealth creation and progress. In this intellectual context, and working in close cooperation with industry associations, analysts, and even civil society actors, the administration launched an active and multidimensional campaign to promote an open and competitive ''global information infrastructure'' with the Internet at its core. Parallel networks of like-minded policy entrepreneurs, industry players, academics, and civil society actors—Ernest Wilson refers to those active in the developing countries as ''information champions''—sprang up around the world to push forward Internet development and related activities within their respective countries, sometimes in the face of significant governmental and PTT opposition.[41]

As with the initial responses to pressures for liberalization and privatization in the second NWO, many governments and national PTOs or PTTs greeted the Internet's emergence with a mix of fear and disdain. The Internet constituted a cultural challenge to the established models of governments and PTOs, as the business and technical communities involved favored more bottom-up, rapid, and flexible problem solving and innovation. Moreover, the personalization of computing meant that users were growing accustomed to configuring information resources to suit their diverse interests, and when PTO practices or government policies got in their way, these became the targets of ridicule and anger by increasingly vocal and libertarian users who depicted them in global electronic forums as the actions of hopelessly out-of-touch dinosaurs. These shifts in the ideational realm translated into a significant broadening of informed public opinion against the self-preserving policies of entrenched telecommunications incumbents.

The Internet also represented a technological challenge to the dominant players, in that its technical standardization, model of internetwork intercommunication, and modes of innovation undermined time-honored practices and organizational models subject to their control. And the Internet's data communication and later, voice telephony applications presented an economic challenge to PTT/PTO revenues from high-priced services like international fax and telephony. Seen against the backdrop of now-established challenges from a burgeoning range of specialized private providers, particularly for business-oriented services, the Internet appeared to many governments and incumbent operators as just another American-born threat to their known universe that should be contained.

Nevertheless, its burgeoning mass popularity and increasing importance to global communications and commerce made accommodation of this subversive force the only option. In the industrialized world, the PTOs eagerly if belatedly plunged into the emerging markets by providing access services in competition with the newly

emergent independent ISPs, building broadband capacity, cultivating mobile Internet markets, aggressively adapting their network architectures and service portfolios, shifting from traditional PSTNs to IP-based networks, and even supplying Internet telephony services to corporate customers in competition with their traditional voice services. In large parts of the developing world the reorientation has been slower and more contested. While many developing country PTOs, especially in the middle-income countries, have moved up the learning curve, others, especially in the least-developed countries, have been slower to adjust.

These tectonics shifts have had a profound effect on the shape of global governance. The established multilateral regimes for telecommunications, satellites, and trade in network-related goods and services were reformed or strengthened to more actively facilitate the development of globalized private markets. In parallel, new regimes were erected for the same purpose. For example, WIPO, which had been launched by a 1967 convention and became a member of the UN system in 1974, greatly expanded its work program to include the promotion of intellectual property rights in the digital environment. From the mid-1990s, WIPO embarked on the negotiation of new treaties designed to firm up and extend online protections. International organizations also took up market-enabling rulemaking on matters like global electronic commerce, and related programmatic work in the development policy field. And in parallel with this deepening market orientation, governments also began to devote significant attention to the burgeoning problem of cybercrime threats to network and information security. The most important multilateral instrument erected in this arena is the Council of Europe's (CoE) Convention on Cybercrime, which was established in 2001 and came into force in 2004. The convention is a binding treaty designed to harmonize national laws regarding substantive criminal and procedural laws, and to promote international cooperation and mutual legal assistance among states.

An especially important development in this era has been the proliferation of industry ''self-regulatory'' or ''self-governance'' arrangements, the effects of which generally reached far beyond the selves involved. These pertain in particular to the Internet—both its logical infrastructure and related services, and the communications and global electronic commerce it facilitates. They include industry agreements with respect to such items as global electronic commerce, network and information security, content regulation, personal privacy protection, and above all, the management of the Internet domain name and IP address allocation systems.

Regarding the latter, in many ways the paradigmatic event of the period has been the creation in 1998 of the Internet Corporation for Assigned Names and Numbers (ICANN). A California-based nonprofit corporation, it has operated under contracts, memoranda of understanding, and now a joint project agreement with the U.S. Department of Commerce. ICANN represents a complete departure from the tradition of intergovernmental, sovereignty-based governance that preceded it, and its contested

performance of key functions such as the governance of the domain name system (DNS) and other core resources in the service of an amorphously defined transnational ''Internet community'' and other stakeholders has been a constant source of friction with many governments, most notably in the developing world.[42]

Against the backdrop of this schematic historical overview, the next two sections of this chapter provide an integrated survey of some of the key global mechanisms that collectively comprise the distributed architecture of contemporary ICT global governance. In the case of familiar mechanisms of recent pedigree, the treatment is somewhat brief. In contrast, those arrangements with longer histories that extend across multiple NWOs receive somewhat more extended coverage.

The Global Governance of Infrastructure

International Telecommunications

The ITU-based international telecommunications regime created in 1865 promoted three overarching objectives. The one that was most definitive of the first NWO was to consolidate and buttress national sovereignty. Under the regime, states could configure and govern their domestic networks and industries however they please, but were to conduct their international correspondence in accordance with the mutual consent of the other sovereign states involved, for example by not creating competition between their national administrations. During the telegraph union era, the internal dimension of sovereignty was more a matter of the letter than the spirit of the law, as strong community pressures were exerted on countries to conform to the continental European norm. As George Codding has observed, ''Nationalization or complete control over telegraph was always an unwritten prerequisite for membership,'' and even the United Kingdom, whose firms were the driving force in intercontinental cable development, was not admitted until its domestic network was taken over by the state.[43] The United States (along with Canada and some Latin American countries) never joined the telegraph union because it did not want to nationalize or impose treaty obligations on its private carriers. Subsequently, a more permissive intersubjective understanding of acceptable domestic practices became necessary as the ITU's membership steadily expanded beyond its European roots to include countries that were slow to or did not nationalize their systems.

Despite this shift to accommodate countries that had private carriers rather than government administrations, until the 1980s the overwhelming majority of members continued to interpret the sovereignty principle in a manner that buttressed monopoly control domestically and precluded international competition. While the regime included provisions for special arrangements between correspondents that deviated from the norm but did not affect third parties, in general states followed restrictive rules of the game and imposed these on private firms from the United Kingdom,

United States, or elsewhere that provided service up to their electronic borders. Similarly, they adopted rules controlling the ways in which large corporate users of telecommunications like the airlines, banks, and news agencies could employ private leased circuits and networks. Among other things, these rules set prices and established technical constraints that limited the ability of companies to evolve their private circuits into competitive threats to the PTTs' principal revenue bases.

A second objective of the regime was to promote interconnection between national networks via technical standardization. While the early telegraph treaties specified the precise kinds of terminal apparatus and lines to be used, it was later recognized that to facilitate technical progress, standards should be set in more flexible instruments. Among other things, this meant that from the 1920s onward, standards were developed in specialized committees and set out in voluntary recommendations.

Finally, the third overarching objective was to facilitate international correspondence without undercutting sovereignty. Services generally were treated as ''jointly provided'' by outbound and inbound countries, with the revenues divided between them and any transit countries in between. Over the years, ITU members utilized a number of methods for managing the division of revenues, the most important of which—the international accounting and settlements system—attained dominance in the 1960s. The joint service provision principle, and the complex norms and rules operationalizing it, established an international order in which public or private sector monopolists could exchange traffic without competing in each other's markets. This was the fundamental political glue that held the system together and ensured broad intergovernmental support for and compliance with the regime.

For over a century, the regime evolved in a largely stable manner with new technologies and services being slowly incorporated into the dual system of national monopoly control and international joint service provisioning. The principal political challenges involved accommodating and constraining the United States and the private sector. With regard to the former, the United States has had a difficult and sometimes hostile relationship with the ITU and its predecessor, but since both sides had a strong interest in having the United States participate in the system, compromises were necessary. For example, after the United States joined the new telecommunication union in 1932, differential obligations were employed to facilitate its involvement, such as the division between a strict ''European'' system for tariffs and accounting and a more permissive ''Extra-European'' one, and members' acceptance of the United States' refusal to sign or sign without significant reservations the telegraph and telephone treaty regulations.

With regard to the private sector, although in the nineteenth and early twentieth centuries the vast majority of intercontinental submarine cables were controlled by a cartel of firms based in particular in the United Kingdom, the PTTs were able to use their control of landing rights and regulatory authority to bring these companies and

subsequent private carriers into the telecommunications regime largely on their terms. The decision-making procedures evolved to enhance the role of the private sector in technical and operational standardization, but overall its independent influence remained constrained by procedural rules and state power.

This situation changed substantially during the second NWO. The information revolution, U.S. domestic deregulation, corporate demands for worldwide market liberalization, and the spread of new ideas about telecommunications governance progressively undermined the political foundations of the old regime. During the 1980s, the variable international spread of these forces generated substantial conflict between proliberalization and promonopoly governments, especially between the United States and Europe. These disagreements came to a head at the 1988 World Administrative Telegraph and Telephone Conference (WATTC), which had been called to devise a new set of International Telecommunication Regulations (ITRs) for the emerging technologies and markets. A PTT effort to erect new multilateral restrictions was abandoned under intense pressure from the United States and U.S. business interests in particular, and the WATTC instead signed a treaty that effectively allowed competitive supply and enhanced user control. As countries liberalized and the private sector increasingly found ways to enter markets in the years ahead, the new regulations opened the door for operators and users of private networks to extend their operations internationally, thereby facilitating the transition to a multiprovider world. Hence, the 1990s witnessed a worldwide explosion in the number and diversity of international networks and service providers that operated ''special arrangements'' outside the scope of the ITRs.

Building on the WATTC's outcomes, key regulatory recommendations on the configuration and use of private leased circuits and networks were relaxed in the early 1990s. At the same time, technical standardization for interconnection was reformed to be more responsive to an increasingly heterogeneous industry and moved to a significant degree out of the ITU nexus. The cumulative result of these dynamics was a fundamental transformation of the regime's social purpose and of some of its key instruments. The three overarching principles that shaped the regime during the long century of monopoly control remained in place, but they were now interpreted and implemented in a manner that put far fewer restrictions on market forces and private control.[44]

In the third NWO, the regime's salience to the organization and operation of global markets has decayed significantly. Externally, the GATS and the Basic Telecommunications Agreement (BTA) reached under it (described later in this section) have redefined the social purpose and consequential rules of the game of multilateral governance and have shifted the locus of market-related decision making down Geneva's Avenue de la Paix to the WTO. The Internet, which had initially been derided as inferior to ITU-approved networks, has rapidly reshaped the global environment with relatively little regard to the ITU arrangements and their traditional proponents. Globalizing PTOs and specialized operators have been employing ''new modes of operation'' like call-

back, refile, Internet telephony, and international simple resale to move traffic around the world in ways that circumvent the spirit or practice of the regime's system for joint service provisioning. And internally, the market-enabling revision of some of the regime's key provisions, coupled with deepening national and regional liberalization (particularly within the EU), has meant that it guides a declining share of the universe of activity. Moreover, in 1997 the FCC decided to unilaterally lower international accounting and settlement rates between the United States and corresponding countries, most notably in the developing world, which had benefited from high charges on inbound calls. Other countries and the EU enacted their own reforms, and soon member compliance and the dominance of the ITU-based system waned. The net effect of these developments has been to push the world's oldest international regime into a state of drift and decline, with its instruments remaining legally in force but actually governing less and less of the global industry's actual behavior.[45]

As Don MacLean, David Souter, and Tracy Cohen and Alison Gillwald all discuss in their contributions to this volume, many governments in the developing world have found the erosion of the regime to be a difficult pill to swallow. Even for those that have pursued liberalization and privatization, the ministries and dominant carriers responsible for shaping national strategies frequently favor the stability and control promoted by multilateral regulation. In consequence, they at times have pushed for agreements intended to put the genie back in the bottle, but which arguably would be contrary to a broadened and more vibrant approach to development. For example, some have sought to use ITU forums to build consensus on restricting Internet telephony, which can eat into incumbent revenues already hard-hit by declining accounting and settlements rates, but which is highly beneficial to users and small and medium-sized enterprises and can contribute to growth and development.

Another example concerns international Internet interconnection. Carriers in developing countries are required by the big global backbone operators to pay the full cost of the connections, irrespective of the bidirectional nature of the traffic flow, and the hefty fees imposed can have negative effects on Internet deployment and use in the global South. Hence, some countries have advocated mutual compensation schemes —based on traffic flows, the number and geographical coverage of routes, transmission costs, and the like—akin to the eroding accounting and settlements system for telephony. Indeed, in 2000, ITU members took the unprecedented action of adopting a recommendation to this effect, over U.S. and corporate objections, that called for mutual compensation. While the desire for a shared governance solution is understandable, this outmoded prescription has not found favor among the Northern-based carriers that dominate the world market. The developing countries also have insisted that the ITU hold a World Conference on International Telecommunications in 2012 to review the 1988 ITRs in light of the contemporary, Internet-driven age. While the industrialized countries presumably would refuse to accept a treaty revision that clearly

extended strict regulatory limitations into the Internet environment, it is possible that some developing countries would try to interpret any accord in a manner that reinforces their traditional national carriers at the expense of other stakeholders' interests.

That said, despite the erosion of its multilateral regulatory framework, the ITU remains the principal global forum for international telecommunications policy matters. With 191 nations as members and 517 corporations as members of its standardization, radio, and development sectors, the ITU is uniquely able to bring together all states and many firms to tackle issues within its mandate.[46] While many Internet-related companies in particular refuse to participate and civil society is largely excluded, work in the ITU can contribute to mutual understanding and the coordinated convergence of national policies and corporate practices. For example, the ITU is becoming an important venue for work on network security issues that has fed back into national and corporate programs, even if this has not yet been codified in a treaty framework. As governments around the world struggle to define approaches to the convergence of digital media around IP-based networks, the ITU may serve as an important vehicle for promoting convergence and coordination on such thorny questions as identity management and law enforcement, public safety, service reliability, universal service obligations, Internet television, integrated telephone/Internet Electronic Numbering (ENUM), identifying physical objects connected to ''the Internet of things,'' and so on.[47]

In this context, it remains possible that states and powerful firms will at times be able to leverage ITU mechanisms to promote restrictive policy frameworks that reinforce their power at the expense of other players and their visions. Some critics argue that the current work on technical standards and policies for IP-based Next Generation Networks—which are conceived of as IP-based platforms for voice, data, and video convergence—could lead to implementations that restrict the Internet's flexibility. This could prove to be particularly true if efforts to recoup investment costs and provide differentiated levels of quality of service result in the sort of discrimination that has been at the heart of the U.S. debate over ''net neutrality.'' In light of these and related trends, the ITU is still an important forum on policy matters, irrespective of the regime's erosion.

Technical Standardization

During the first NWO, the technical standardization of networks was heavily configured by the international telecommunications regime of which it was an integral part. Governments, national carriers, and major manufacturers controlled the ITU standards process and often were able to influence the rate, direction, and diffusion of technical change. The recommendations they adopted on standardization reflected the regime's structuring of Internet work and intermarket relations and hence functioned as regime rules by which the higher principles of sovereignty and interconnection were balanced

and operationalized. For example, during the first century of cooperation, the standards concentrated when possible on the gateways, signaling, and transmission between national extensions, leaving countries free to employ internationally incompatible systems at the domestic level as NTBs to equipment trade.[48]

From the late 1950s onward, automation, the growing volume and diversity of traffic, and then the digitization of networks and connection of information systems pushed standardization from the international edges deep into national domains; and from minimalist and voluntary conformity requirements toward detailed specifications that in some cases were referenced in treaties and viewed as essentially binding. These shifts required a more complex interpretation of the regime's principles and political bargains across remapped political space. So did two related changes associated with the merging of computing and communications: first, ITU committees increasingly had to collaborate and work out turf arrangements with nongovernmental standards bodies active in computer and electronic systems, such as the International Electrotechnical Commission (IEC) and the ISO. Second, the ITU and its partners increasingly opted to pursue some standards on an a priori basis, before products had been introduced at the national level, so as to attenuate new industry rivalries and promote common objectives. This approach was taken in particular with two large-scale projects conceived in the 1970s and undertaken in the 1980s: ISDN, and the ISO-ITU collaboration on OSI.

As the telecommunications regime loosened and became less determinant of global market organization during the second NWO, technical standardization outgrew its confines. Liberalization and the deepening integration of computing and telecommunications meant that standards conceived to support dominant incumbents could not as easily be imposed on dynamic and competitive markets. ISDNs originally were intended to serve as single, integrated national high-speed networks that could replace private lines and networks, but antimonopoly forces subsequently derided them as ''Innovations Subscribers Don't Need.'' With the spread of liberalization, ISDNs ended up being just another service offering in some markets, one now being eclipsed by broadband Internet access. Similarly, OSI was supposed to be a vendor-neutral alternative to IBM's SNA and related offerings that would strengthen the hands of the industry players involved, but users opted for the Internet's TCP/IP model and OSI became marginalized.

Liberalization and convergence also brought into the game a heterogeneous array of actors from interrelated ICT industries that viewed standards as integral to their competitive strategies. Frustrated by the slow pace of work and dominance of incumbents in the ITU, the new players frequently opted to pursue standardization in a rapidly proliferating array of more market-driven national, regional, or industry/technology-specific forums. In response, the ITU reformed its procedures to speed the pace and increase the market-friendliness of its work; established a corporate advisory council

on standardization; and sought to reposition itself as a central node in an interinstitutional network that would give a multilateral stamp of approval to standards developed elsewhere. But despite these reforms, the ITU's historical dominance continued to slip, and the organization now had to compete for industry's attention. While hundreds of privatizing carriers and other entities participated in its work and generated a wide range of standards, a substantial share of the total network-related standards pie was increasingly unrelated to or at most influenced indirectly by the regime.

The devolution of technical standards activity from the ITU to an expanding universe of organizations and collaborations has accelerated substantially during the third NWO. The Internet environment has been a major driver in this process, and much of the key work is being done in bodies indigenous to the technical and operational community like the Internet Engineering Task Force (IETF) and the World Wide Web Consortium (W3C), the operations of which are widely seen as more flexible than the ITU. In parallel, many other standards groups have converged into the Internet space from myriad ICT-based industries to work on specific technologies and applications employed in global electronic commerce, mobile communications, audiovisual services, security, and so on. Where necessary, some of them collaborate with the ITU (which, since 2001, no longer requires governmental approval of standards), but the varying working styles, architectural orientations, and material interests of their participants can be sources of friction. As is underscored by the fissures between the traditional telecommunications industry's ''bellheads'' and the Internet's indigenous ''netheads'' over Next Generation Networks and related matters, at stake are fundamental choices about the design principles that will guide the future evolution of the electronic networks.

While the environment is infinitely more diverse and robust than in the days of the PTT monopolies, ensuring that standardization processes are not subject to capture by particular industry factions and that key standards remain open and flexible remains a problem. Individually or in blocs, large and powerful firms still aggressively push to get their technologies annointed as the basis for global standards in ways that could limit innovation and opportunities for other suppliers or tinkering users. As Peter Cowhey, Jonathan Aronson, and John Richards demonstrate in chapter 4, in cases like third-generation mobile wireless standards, the combination of competing interests and universal, consensus-based decision making in the ITU can slow the development and rollout of important technologies. Moreover, some of the native Internet standards bodies, which are generally seen as models of effective bottom-up community decision making, have experienced significant pressure from major firms in recent years.

International Radio Frequency Spectrum

As with the telecommunications regime, preserving national sovereignty was a core concern of the radio regime launched in 1906. ITU members could organize their

domestic systems as they pleased as long as their operations were consistent with the regime's rules with respect to transborder issues. Nation-states were exceptionally keen to ensure that they had total control over the spectrum's distribution and use within their territorial borders, and that they did not encounter harmful interference or other problems from their counterparts' operations. Pursuing these objectives involved periodic intergovernmental treaty negotiations that produced thousands of pages of highly detailed provisions, as well as equally painstaking work defining voluntary technical and operational standards. Moreover, in addition to social and commercial objectives, national security considerations figured prominently in the policy process and made the concern with sovereignty all the more acute. Particularly for states with internationally dispersed and mobile military and intelligence operations, securing access to choice pieces of the spectrum and GSO drew the close attention of national security planners in and out of the ITU.

Balancing the concern with sovereignty were general principles specifying its acceptable exercise. The ITU treaties and the UN's 1967 Outer Space Treaty established that spectrum and orbital slots are scarce natural resources and the common property of mankind. As such, they are not subject to national appropriation, and efforts to claim otherwise—for example, a 1976 declaration by eight equatorial countries asserting sovereignty over portions of the GSO above their territories—were rejected. Instead, usage rights could be vested in one of two ways. Under the a posteriori or ''first-come, first-served'' procedure, a state notified the ITU of its planned frequency assignments and satellite positionings and these were assessed to ensure conformity with the regulations, so that, for example, there was no harmful interference with existing, legally registered users. If the judgment was favorable, the assignments were listed in a master register of frequencies and enjoyed legal status; if it was unfavorable, the parties involved were supposed to undertake coordination to resolve the issue, although the ITU had no power to force a member to forgo an unapproved activity. Alternatively, under the a priori procedure, ITU conferences could adopt plans assigning frequencies to stations or allotting frequency channels to countries for use in a given service, which governments then assigned to particular stations within their jurisdictions. At a broader level, ITU conferences also allocated frequency bands to particular services or sets of services on a regional or global basis, and these were then listed in the table of frequency allocations. Finally, as with the telecommunications regime, ITU study groups developed a wide array of technical and operational standards specifying how the treaty principles were to be carried out.[49]

During the first NWO, the international politics of the radio regime were quite different from those of the telecommunications regime. In this case, the United States was a major player and supporter of the multilateral framework. Indeed, all the industrialized countries, including the Soviet Union, were actively engaged in deploying terrestrial and later satellite technologies and benefited from a system that allowed them to stake

claims, exploit their technological capabilities, and reduce unwanted signal interference. The main challenge to the regime came from the developing countries, which from the 1970s decried the prevalence of first-come, first-served claims under which the industrialized countries locked up the desirable spectrum real estate. They used their numerical majority in the ITU to impact a series of diplomatic conferences by pushing for greater reliance on a priori planning that would take into account their special needs and geographical situations and be in keeping with treaty provisions calling for ''equitable access.'' The industrialized countries resisted generalizing the planning approach, noting that the ITU treaties also specify that spectrum and the GSO must be used efficiently and economically, that is by countries that currently have the capabilities and requirements. Nevertheless, a partial accommodation was reached in the form of plans that set aside orbital slots and some portions of spectrum for future use by all countries, including those not yet in a position to do so.

The institutional fundamentals of the radio regime remained unaltered in the second NWO. Irrespective of liberalization and the development of new approaches like spectrum auctions at the national level, governments remained firmly wedded to the same state-centric framework for international spectrum they had employed since 1906. What did change, though, were the forces driving the intergovernmental process. The rapid growth and differentiation of markets for new spectrum-hungry technologies gave an expanding range of corporations direct interests in the outcomes of ITU negotiations. Technological advances like digital compression and fiber optic networks freed up some spectrum, but the flood of proposed technologies and uses generally offset the potential flexibilities. In response, the private sector substantially increased its involvement in both the technical standards study groups and the big diplomatic conferences, in the latter instance by joining and (in the U.S. case) even heading national delegations and by launching large-scale lobbying campaigns. The 1992 World Administrative Radio Conference was a watershed in this shift to commercially oriented negotiations, in which governments from the industrialized world essentially became evangelists for their national champions' respective technologies. Hence, if the United States wanted spectrum reallocated for its companies' low earth orbit and medium earth orbit satellites, the Europeans wanted reallocations that favored their companies' new terrestrial mobile systems, and the negotiations became focused on finding compromises to accommodate both. As was illustrated by the case of non-geostationary satellite services, the markets for which ultimately failed to blossom as projected, this industry-driven reorientation of the process could have downsides. But more to the point, the main axis of contention had shifted from North–South debates on equitable access to North–North contests between firms and technologies. The politics of the radio regime had changed dramatically, even if its guiding principles and modalities had not.

Despite the sweeping changes occurring in other global governance environments, these conditions have persisted in the third NWO. The ITU still manages international spectrum through seemingly continuous and painstakingly slow intergovernmental negotiations that produce treaties numbering thousands of pages. If one compares the ITU's discussions with the national-level debates and policy reforms of the Internet era concerning, inter alia, spectrum auctions, unlicensed spectrum and the notion of a spectrum commons, municipal Wi-Fi, and all the rest, it is difficult not to concur with Don MacLean's understated observation in chapter 2 that the ITU model ''appears curiously old-fashioned.''[50]

Nevertheless, while change of the regime itself has not occurred, change within the regime has been ongoing. First, the above-mentioned trends toward increasing commercialization and private sector involvement have grown significantly; to note just one example, there were three times as many nongovernmental observers at the 2000 World Radiocommunication Conference as there were at the 1995 conference. Second, the range of technologies and uses vying for spectrum, and hence of the issues to be managed, has continued to grow at a seemingly exponential rate due to demands of the mobile telephone and Internet booms, broadband networking, global positioning systems, military and related national security systems, aeronautical services, intelligent transportation systems, emergency and disaster communications, and the like. And third, the regime has been confronted with some significant political challenges arising from the confluence of changing incentives structures and its traditional procedural modalities. As Don MacLean (chapter 2) and Rob Frieden (chapter 3) both note, one of the most difficult examples of this has been the struggle to contain speculative registrations of so-called ''paper satellites'' that do not reflect real communications requirements. The rapid growth of such registrations generated costly backlogs and forced ITU members to devise new administrative and financial rules but not to reconsider the fundamentals of the sovereignty-based architecture.

International Satellite Systems and Services

The United States conceived INTELSAT as a government-initiated monopoly provider, a sort of meta-PTT in the sky that would operate in a manner similar to regulated domestic public utilities. The organization served as a ''carrier's carrier,'' providing international transmission to the earth station gateways of signatory operators' national networks, rather than a competitive service directly to end customers. While its tariffs were supposed to be nondiscriminatory among users of the same service, it is widely believed that there was considerable cross-subsidization of the prices charged to developing countries, which of course made the latter enthusiastic supporters of the organization.[51] Over time, its fleet of satellites would provide international service to much of the planet and prove particularly useful in integrating into the global network of

networks developing countries and territories for which terrestrial links were difficult or costly to construct. In addition, it provided domestic services for some developing countries unable to construct sufficient terrestrial facilities.

During the first NWO, the international politics of INTELSAT mainly revolved around two major sets of issues. First, while in the 1960s the United States sought to ensure an INTELSAT monopoly, by the time the definitive arrangements were negotiated in 1971 it had become clear that other countries wanted to have domestic, regional, and specialized satellite systems under their local control. The compromise reached allowed separate systems if they successfully underwent a coordination procedure to ensure technical compatibility with and avoid ''significant economic harm'' to INTELSAT. While this key term was left undefined to provide leeway, it is widely believed to have been interpreted to mean that a new system's traffic would not have been carried on INTELSAT or would not reduce its share of the market by more than 3 percent. This compromise facilitated the creation of regional systems like EUTELSAT, ARABSAT, and PALAPA and specialized systems like the International Maritime Satellite Organization (INMARSAT). The Soviet Union, which had opposed INTELSAT's creation, established the INTERSPUTNIK system in 1971 to provide services to countries under its influence.

Second, the overwhelming dominance of the United States and the managerial role of Comsat caused frictions during the interim agreements period of the 1960s. A particular source of tension between the United States and Europe was the procurement of equipment and launch services, which the Americans largely monopolized. Accordingly, European governments demanded a ''fair share'' or quota-based approach to purchasing. While such requirements were not formalized in the 1971 definitive agreements, the Europeans ultimately were able to get enough of the action to acquire expertise and build up an aerospace industry that could compete effectively for contracts as time went by. The regime faced a much more significant challenge during the second NWO. In 1984, the Reagan administration abandoned the United States' longstanding defense of INTELSAT's dominance in favor of fostering competition by separate private systems. A number of U.S.-based companies had by now developed the technology and resources needed to crack the global market, so the government moved unilaterally to license their competitive entry on the ground that no one competitor would immediately cause significant economic harm. In response, in 1985 INTELSAT adopted a resolution on a 108-to-1 vote urging members not to participate in linking with any separate international systems serving the lucrative Atlantic market, and the organization's leadership soon embarked on a crusade against the decision that included lobbying the U.S. Congress—despite the fact that INTELSAT's budget included a substantial U.S. contribution. These efforts were not well received; the United States moved ahead in authorizing new entrants, and in 1988 the Pan

American Satellite Corporation (PanAmSat) launched a satellite with Peru as its first correspondent. Moving beyond denunciations of American unilateralism, other industrialized countries abandoned ship and authorized their own competitors, and by 1999, ''more than 200 commercial geosynchronous satellites were in orbit above the earth, of which approximately 73 served the United States. Of these, only 17 satellites belonged to INTELSAT, of which just 13 served the United States.''[52] At the same time, the rapid spread of fiber-optic cables also was eating into INTELSAT's market share. The regime's formal constitution had not yet changed, but its collective interpretation and implementation clearly had.

The shift to market-facilitating governance was also evidenced by a parallel development. In the 1970s and 1980s there was much debate about the use of specialized remote-sensing satellites that gather photographic and other information about the earth and its environment by detecting and measuring radiation. While governmental programs had generated concerns among countries that were being sensed by others and lacked the technology to do it themselves, the commercialization of sensing raised additional issues when viewed in the context of concurrent debates on global communications. As usual with transterritorial information flows, the overarching framing of the issue was in terms of national sovereignty. The United States and other industrialized countries that had the technology and were developing commercial industries advocated the unrestricted use of sensing satellites and distribution of collected imagery, whereas the developing countries, Soviet bloc, and even some industrialized countries insisted on the primacy of sovereignty and prior consent. After over a decade of debate on the matter, in 1986 the UN General Assembly adopted a resolution, Principles Relating to Remote Sensing of the Earth from Outer Space, in which prior consent was abandoned in favor of a recognized right of the sensed countries to have nondiscriminatory access at reasonable cost to information gathered concerning their territories.

Finally, truly sweeping international regime change occurred during the third NWO. As private operators moved into the market and ate away at INTELSAT's position, they increasingly argued that the organization's legal immunities and coordination requirements gave it an unfair competitive advantage, and that a ''level playing field'' was therefore required. INTELSAT rescinded its ''no significant economic harm'' test, but U.S.-based companies remained voracious critics and pressed for legislation privatizing the organization. Given the new environment, INTELSAT's management and signatories became converts to the American view that privatization not only would benefit its competitors, but also would free the organization to compete more effectively as well. Hence, in 1999, they resolved to pursue privatization by spinning off a commercial entity. At the same time, they agreed to retain a residual intergovernmental body that would not provide services, but would ensure through a public services agreement that

the new company would preserve global connectivity and affordable access for developing countries. Following the same logic, INMARSAT members decided to privatize, beating INTELSAT to the punch by completing the process in 1999.

In 2000, the U.S. Congress passed the Open-market Reorganization for the Betterment of International Telecommunications (ORBIT) Act to encourage INTELSAT's privatization. The new entity was to be a publicly traded company (although governments retained shares); operate without the legal immunities of its predecessor; forgo the requirement that separate systems coordinate with it; and secure orbital slot registrations and spectrum from governments that subscribed to the WTO's BTA (a description of which follows), rather than through the ITU system. The following year, INTELSAT's assets were transferred to the new company, Intelsat Ltd., and the residual treaty-based International Telecommunications Satellite Organization (ITSO) was established. Also in 2001, the intergovernmental European Telecommunications Satellite Organization, EUTELSAT, was privatized. Analysts are divided on the public interest implications of these developments. While some analysts charge that privatization undermines the traditional treaty commitment to affordable and universal access and leaves countries vulnerable to the vagaries of U.S. foreign policy, others maintain that ITSO's policies and U.S. law provide sufficient protections. Either way, that intergovernmental treaty organizations have been turned into private companies competing for markets is a rather remarkable example of fundamental international regime change.

International Trade in Telecommunications Services

The GATS regime created by the Uruguay Round negotiations embodies a fundamental sea change from the way international telecommunications had been visualized and governed for almost a century and a half. Telecommunications plays a dual role under the regime: as a lucrative service sector in its own right, with global revenues of $1.4 trillion in 2006; and as a means of delivering other types of services that are embodied in information, such as financial, management consulting, audiovisual, and advertising services. In the latter role, telecommunications is the leading form of cross-border delivery, one of four designated ''modes of supply'' for services. The others include the movement of the consumer to the producer's country; the movement of a producer that is a natural person to the consumer's country; and the ''commercial presence'' of producer firms in consumer countries, including—if a country wishes to grant this concession—by foreign direct investment (FDI).

The GATS is assessed in detail in this volume by Boutheina Guermazi (chapter 5), Byung-il Choi (chapter 6), and Tracy Cohen and Alison Gillwald (chapter 13). Hence, for present purposes it is sufficient to note that it has three main elements. The first is the Framework Agreement, which includes fifteen principles or General Obligations and Disciplines, such as most-favored-nation (MFN) status, which usually apply to

national commitments, and Specific Commitments, which are negotiated undertakings by governments to liberalize the provision of service sectors or subsectors. A given category of service transaction is opened to competitive supply only insofar as a government agrees to do so; it can pick and choose what to liberalize or not (e.g., by allowing the cross-border supply of a particular service but not its supply via other means). There are three such commitments: to provide market access by removing quantitative restrictions, to ensure national treatment, and to undertake any additional commitments that governments choose. The second main element is a set of eight annexes that clarify or modify how the general obligations apply to issues unique to certain service sectors and modes of supply and open the way to further negotiations on some of them. And the third main element comprises the National Schedules in which governments list their commitments. Comprising several thousand pages, the schedules include a wide range of market-opening measures in different service sectors, including telecommunications.

Of particular interest in the present context are the parts directly related to telecommunications. To address the service delivery role, WTO members added a Telecommunications Annex to the agreement that runs directly counter to the traditional thrust of ITU instruments. The annex obliges governments that have made market access commitments in various sectors—value-added telecommunications services, financial services, professional services, and so on—to ensure that foreign providers of such services have access to and use of public telecommunications transport networks and services controlled by the dominant national carriers on a reasonable and nondiscriminatory basis. Moreover, governments must ensure that foreign service suppliers also have access to and use of private leased circuits, and that they can purchase or lease and attach terminal or other equipment interfacing with public networks; interconnect private leased or owned circuits with public networks, or with circuits leased or owned by another service supplier; and use computer protocols of their choice, provided that this does not disrupt the provision of telecommunications transport networks and services to the public generally. In addition, governments must ensure that foreign service suppliers can use these networks and circuits to transfer information without undue impediments within and across national borders, and that they can access information contained in databases held in any member country. In addition, the annex requires that governments apply no conditions on access and use other than is necessary to safeguard the dominant carriers' public service responsibilities, protect the technical integrity of public networks, or ensure that foreign service suppliers only provide services that have been designated as open to competition in their market access commitments. However, if they meet these criteria, governments may adopt certain specified market limitations. Given the liberalization of both the relevant ITU rules and the wider telecommunications environment, and with the possibility that disagreements can lead to conflicts with powerful players and trigger the WTO dispute

settlement process, these provisions rarely have given rise to significant problems for foreign service suppliers.

The establishment of the GATS regime arguably was the biggest change in the governance of global telecommunications since the founding of the ITU. Never before has there been a broad-based, multilateral regime that actively promotes international competition as a way to organize the world market. The GATS establishes procompetitive principles to which, if countries make relevant commitments, national policies must be adapted; institutionalizes mechanisms of mutual surveillance and binding dispute resolution; and sets a disciplined baseline for progressive liberalization in the future. This is almost the exact opposite of the world market envisaged and organized by the traditional telecommunications regime.

But despite its long-term significance, the immediate impact of the agreement was limited by the fact that only a few small-market countries made partial market access commitments on basic telecommunications services, such as telephony, which constitute the biggest chunk of the global market. Accordingly, urged on by the United States in particular, countries willing to contemplate more substantial basic telecommunications commitments launched a new negotiation. In February 1997, sixty-nine governments that collectively accounted for over 90 percent of the global market concluded the aforementioned BTA, thereby bringing basic telecommunications into their national schedules of commitments (at the time of writing, just over one hundred countries have accepted the BTA or made similar commitments). In addition, fifty-seven of these countries endorsed the Reference Paper (today, about eighty countries have done so), which established six overarching principles for the redesign of national regulatory rules and institutions:

- Competitive safeguards Governments must ensure that major PTOs do not engage in anticompetitive cross-subsidization; use information gathered from competitors with trade-restricting results; or fail to make available, on a timely basis, technical information about their facilities and operations that competitors need to enter the market.
- Interconnection PTOs must provide market entrants with interconnection at any technically feasible point in the network. Interconnection is to be offered under nondiscriminatory terms and conditions no less favorable than the provider gives its own services. Interconnection rates are to be cost-oriented, transparent, and (where economically feasible) unbundled. A dispute mechanism administered by an independent national body is to handle disputes over interconnection terms and other issues.
- Universal service Such obligations are to be administered in a transparent, nondiscriminatory, and competitively neutral manner that is no more burdensome than is required to meet the policy objectives.
- Public availability of licensing criteria Where licenses are needed, information and decision-making procedures are to be transparent.

- Independent regulators Regulatory bodies are to be separated from service providers and not accountable to them.
- Allocation and use of scarce resources Procedures for allocating and using frequencies, numbers, and rights-of-way are to be carried out in an objective, timely, transparent, and nondiscriminatory manner.

Collectively, these principles represent a substantial departure from the old multilateral order. Under the Reference Paper, a carrier seeking market access in a country that has made the necessary commitments to allow commercial presence can extend its network directly into the country, interconnect at a point of presence, and terminate traffic there at cost-oriented rates. If direct investment is allowed, it could opt to build or buy its own facilities within a foreign country. These types of ''beyond the borders'' deep integration represent a significant shift from the ITU's traditional joint service model, which involved connecting and revenue sharing between carriers from mutually exclusive national domains.

In November 2001, WTO members launched the Doha Round of multilateral negotiations. Due to battles over unrelated issues, most notably agriculture, the round has stalled and teetered on the brink of collapse. Should the round ultimately come to a successful conclusion, further liberalization of telecommunications networks and services can be expected. The United States is pressing for all WTO members to undertake full basic and value-added telecommunications commitments; ensure full adherence to the Reference Paper; and consider the full privatization of their national telecommunications operators and networks. The European Union is making broadly parallel demands. With the two leading WTO powers pushing in the same general direction, the pressure on other countries to make significant changes to their domestic institutional arrangements is substantial.

International Trade in ICT Goods

During the first NWO, governments did not attempt to subject global ICT equipment markets to strong multilateral trade disciplines. In telecommunications, the market was heavily concentrated; indeed, as late as 1983, OECD members still accounted for 90 percent of world production, with twelve companies from the United States, Britain, France, Germany, Italy, Sweden, the Netherlands, and Japan accounting for 80 percent of all sales.[53] The market also was highly fragmented: in the global North, many of the major manufacturers were focused on serving monopsonistic carriers at home rather than abroad, and their home markets were protected from foreign entry by nationalistic procurement policies, proprietary intranetwork standards, and other trade barriers. In parallel, colonial and postcolonial ties often were leveraged to maintain separate spheres of influence for these firms in parts of the global South. The remaining national markets that lacked indigenous producers typically were supplied via trade or FDI by the more internationally oriented firms like ITT, GTE, Philips, and Ericsson.

In short, the configuration of interests and institutions in the regime-making states and the lack of powerful countervailing political or ideational forces precluded market-oriented global governance, such as the application of GATT rules. In fact, telecommunications was specifically excluded from the plurilateral Agreement on Government Procurement signed by twenty-eight GATT members in 1979 (although the United States did pressure Japan to apply the rules as part of a bilateral deal). Hence, what intergovernmental steering there was derived principally from the international regulatory regime for telecommunications networks and services. While the early telegraph treaties specified the terminal apparatuses that could be used and hence favored the rather few manufacturers of those systems, the development over time of technical standardization processes cleared the way for an expanded set of large manufacturers able to design to the specifications for transmission, switching, and terminal equipment. Even so, the focus on systems requiring standardization for international interconnection and traffic exchange often left national monopolists leeway to employ proprietary standards or implementations within their national networks, which inter alia served as NTBs to foreign entry. Finally, one might add that the situation in telecommunications was broadly parallel to that in the mainframe computer industry, where concentrated markets (after a period of shakeouts and consolidation), preferential procurement policies, and national champion strategies in the major producer countries combined with a nexus of tariffs and NTBs to distort trade patterns and limit open competition.

Conditions began to change in the second NWO. The asymmetric liberalization being pursued by key countries and regional blocs not only increased the market access of foreign suppliers, most notably in the United States, but also stimulated technological change and the growth of a robust range of suppliers of diverse products like CPE (such as terminals and private branch exchanges) and data networking and customized business systems. Both established large manufacturers with new incentives to innovate and smaller entrants targeting niche markets were now looking to export, and corporate users were seeking to acquire the best systems available with less regard to their national origins. Ideational change and political shifts like the Reagan administration's trade campaign also supported business demands for greater competition in international markets. Given these forces and the gathering momentum of telecommunications liberalization and privatization, varying levels of market opening were achieved in bilateral agreements among industrialized countries. Moreover, international standardization deepened across a wider array of network elements, thereby facilitating participation in more markets by a broader range of suppliers. And the coverage of the plurilateral Agreement on Government Procurement was significantly expanded, inter alia, to include telecommunications equipment, even if most OECD countries continued to exempt purchases by certain governmental entities or public utilities.

The ground has shifted further during the third NWO. Many governments have been reconsidering the case for trade barriers due to an array of factors, such as the liberalization and privatization of telecommunications, the globalization of ICT production and export activity, the increasing importance to national economic development of broadly diffused and applied ICT, the expanded base of consumer demand in an age of personalized technology and the Internet, ideational change, and so on. The cumulative result has been to stimulate movement at multiple levels of governance toward market-opening initiatives. The key development at the multilateral level has been the WTO's Information Technology Agreement (ITA). In 1996, twenty-nine member countries, mostly from the industrialized world, agreed to eliminate tariffs and other duties and charges on a wide range of ICTs. In addition, the ITA provides for the review of NTBs and consultations with an eye toward encouraging their reduction or elimination. And importantly, given the long history of discrimination in this arena, ITA commitments are made on an MFN basis and hence can benefit all WTO members. The subsequent ITA II talks have encountered some difficulties and continue in the Doha Round, but as is the ITA covers a fairly broad range of network-related technologies. Moreover, the agreement now has seventy members, including key markets like China and India, that the WTO calculates account for 97 percent of world trade in ICT. Governmental trade barriers and anticompetitive corporate practices undoubtedly remain in various market segments, and some governments, most notably in the least developed countries, still seem to favor the short-term gains from high tariffs to the longer-term gains from technology diffusion. Nevertheless, viewed in historical terms, there clearly has been a significant transformation here in the social purpose and institutional mechanics of global governance, and the ICT goods sector has been normalized and brought into the mainstream of trade diplomacy.

While the rules of the game for trade in physical ICT goods are moving toward greater openness, the situation with respect to immaterial goods remains cloudier. In the Doha Round negotiations, governments are thus far at an impasse with regard to the treatment of digital products like software, music, videos, and e-books. The United States argues that products that are normally sold in the format of physical goods should be subject to the strong nondiscrimination disciplines of the GATT. In contrast, the EU insists that anything that moves over a network should be viewed as a service and subject to the weaker requirements of the GATS. As one close observer has concluded, "The gap between proponents of GATT-like treatment and those that propose a GATS classification seems unbridgeable."[54] Moreover, there has been no progress in the Doha Round on closely related e-commerce issues, such as the valuation of digital products.

A related issue concerns the application of duties to digitized products. The WTO's 1998 ministerial conference adopted a declaration on global electronic commerce that included a pledge that members would continue the general practice of not applying

customs duties to products embodied in electronic transmissions across borders. The United States pushed this symbolic initiative to help create a consensus for liberalized treatment of e-commerce. However, developing countries have expressed strong concern about the loss of customs revenues on products that were previously embodied in material form and subject to duties and hence have balked at making the moratorium permanent. In sum, while trade in immaterial products is expanding, uncertainties about the applicable rules of the game may be reducing the pace.

Internet Core Resources/Names and Numbers

ICANN is often depicted in the popular press as the ''government of the Internet'' because it performs a set of functions key to the management of Internet identifiers, that is, domain names and IP numbers. The organization is responsible for generic (gTLD) top-level domain name management and coordinates with country code (ccTLD) registries; performance of the Internet Assigned Numbers Authority (IANA) functions, such as delegating local registrations of IP addresses to Regional Internet Registries (RIRs), administering the root nameservers at the top of the DNS tree, and administering protocol parameters; and making policy on a host of related issues, many of which go beyond its nominally narrow and technical mission. Previously, the technical functions had been performed under U.S. government contract by one man, Jon Postel. ICANN regulates much of the namespace marketplace through a web of contractual relationships with domain name providers, but remains ultimately answerable to and dependent upon the U.S. government. For example, ICANN can give preliminary approval to modifications, additions, or deletions to the root zone file, but ultimate approval is up to the U.S. government. In addition, ICANN also established the Uniform Domain-Name Dispute-Resolution Policy (UDRP), a WIPO-administered alternative dispute system that has widely been used by large corporate trademark holders to defend their brands and to suppress cybersquatting.

Despite ICANN's centrality to the management of the Internet's core resources, responsibility for other key governance activities is distributed among a host of players. Principal ones include the U.S. government, which exercises nominally ''light touch'' control over ICANN through its contracts and other arrangements, and also maintains legal authority over the master databases or root zone file that contains the authoritative listing of gTLDs and ccTLDs; Verisign Inc., which maintains the server on which resides the zone file, as well as control over the .com gTLD; other commercial registries like Afilias, which is responsible for the .info gTLD, as well as the Public Interest Registry (PIR) that maintains the .org gTLD for noncommercial entities; the RIRs—AfriNIC (for Africa), APNIC (for the Asia and Pacific region), ARIN (for Canada, many Caribbean and North Atlantic islands, and the United States), LACNIC (for Latin America and parts of the Caribbean), and RIPE NCC (for Europe, parts of Asia, and the Middle East)—not-for-profit, membership-based organizations that oversee the alloca-

tion and registration of Internet number resources; the commercial registrar industry; managers of ccTLDs per country or territory; the operators of the thirteen root servers (ten in the United States, two in Europe, and one in Japan) that receive updates of the zone file, which are distributed twice daily, and are now replicated via Anycast techniques by servers on all continents in order to bring them closer to users and allow a better distribution of traffic; and so on. So while ICANN is the linchpin for the global system, it is hardly alone in providing governance of Internet naming and numbering.

By any measure, ICANN embodies a truly revolutionary model for the governance of a central element of the global networking environment. Aside from being a private nonprofit entity subject to California law and contractual oversight and approval by the U.S. government, it has many distinctive features, for example, a federal, multistakeholder structure comprising subgroups of entities from all organized segments of the Internet addressing industry, such as trademark holders, ISPs, and domain name managers; representatives of individual users and civil society; a Governance Advisory Committee (GAC), through which governments participate on what is nominally a purely advisory basis; an appointed board of directors that has final authority on policy issues; a powerful staff that enjoys considerable latitude in interpreting policy and undertaking programmatic work; generally open meetings that are webcast (save, notably, board and GAC gatherings) that are held around the world to facilitate participation of regional interests; various means of remote, online participation options like public listservs, blogs, and requests for comment; and so on. This sort of comparatively freewheeling and nominally ''bottom-up'' process represents a stark contrast with most intergovernmental and industry-only forums for ICT governance decision making.

Despite (or perhaps in part because of) these attributes, ICANN has from its inception given rise to an unprecedented degree of controversy. An early experiment with direct elections to the board of directors by citizens around the world was abandoned to much public outcry by those favoring truly participatory and democratic governance. Successive boards have demonstrated a penchant for opaque and seemingly ad hoc decisions affecting many organizations and individuals around the world. The decision-making processes have often appeared to be captured by major corporate constituencies like famous-brand trademark holders, so it has effectively worked to limit the introduction of new global domains that would purportedly dilute their brands. This has had the adverse effects of limiting freedom of speech, slowing business development, and creating artificial scarcities that engender conflict among stakeholders. Moreover, critics charge that ICANN has lacked a clear and consistent process for selecting among gTLD proposals, relying instead on painfully slow and opaque ''beauty contests'' that typically reward well-connected and well-established applicants. Indeed, as U.S. Representative Edward Markey once quipped, Vatican decisions on the selection of a new pope are more transparent than ICANN's process for

selecting new gTLDs. And as Milton Mueller and Jisuk Woo detail in chapter 14, ICANN has posed significant problems for participants and would-be participants from the developing world. In short, the list of complaints from members of the ICANN community that have arisen since its birth goes on and on.

More recently, ICANN has been the focus of vociferous criticism from national governments. The U.S. government's decision to give responsibility for the coordination of naming and numbering to a private sector entity was driven to a significant extent by its desire to keep control of the Internet out of the hands of the ITU and its traditionalist members. This has never rested well with many developing country governments, who argue that the Internet is to a significant extent built on top of PTO/PTT facilities; that governments should have authority over public policy issues, which they define broadly, pertaining to a communications medium that is increasingly central to their economies and societies; and that the ITU is the logical multilateral organization through which decisions should be made. Accordingly, they have for years pressed through various diplomatic conference resolutions and communications with the ITU secretariat for the ITU to take on a leading role in this arena, up to and including replacing ICANN entirely. At the same time, many European governments as well as the European Commission have had their own lengthy list of complaints about ICANN and have sought to assert greater multilateral public authority over its operations, albeit not necessarily in the ITU.

For the United States and the global business and technical communities in particular, the notion of intergovernmental control over ICANN or the naming and numbering systems more generally has always been a nonstarter. But after dying down a bit, the issue was revisited and catapulted to the top of the global ICT agenda by the United Nations' 2002–2005 WSIS process. In lengthy and extremely heated debates that stretched over three years of preparatory negotiations of the texts, both the EU and a broad coalition of developing countries criticized ICANN's nature and performance. The EU did not seek to replace the organization with something else, but rather to have governments agree on a set of public policy principles that would shape ICANN's decisions on some key matters. For the developing countries, the complaints were more fundamental, and pertained to the legitimacy of having a private sector entity subject to U.S. laws making key decisions about the Internet; the relegation of governments to an advisory role in relation to a private entity controlled by other stakeholders; and hence their desire to replace U.S. authority over both the zone file and ICANN with some sort of intergovernmental framework, if not under the ITU then under a new, custom-built entity. In addition, they feared (incorrectly) that by virtue of its control over the zone file, the U.S. government could somehow ''flip a switch'' and cut a country off from the Internet; expressed grave concern about the slow pace of introduction of multilingual domain names; worried that with the ex-

pected exhausting in a few years of the supply of IPV4 numbers, and the difficult transition to IPV6 numbering they would be marginalized; and so on.

In the end, the United States made it clear that it was unwilling to contemplate any of the radical changes being proposed by either bloc of countries. Instead, it nominally agreed to engage in a process of ''enhanced cooperation'' with governments and relevant international organizations and entities, most notably ICANN, with an eye to addressing the concerns about private authority over policy decisions many regard to be the rightful preserve of governments. In reality, little has happened along these lines at the intergovernmental level since the WSIS concluded, leaving many governments deeply frustrated and angry. For its part, ICANN has responded to the WSIS debate by undertaking a series of reforms intended to increase its transparency and accountability, including increasing the influence of the GAC. Early signs indicate that governments may use this new momentum to advance policy ''requirements'' that could politicize the process of introducing new gTLDs, assert sovereign authority over the independent operators of ccTLDs, and so forth.

The Global Governance of Networked Information, Communication, and Commerce

The Flow and Content of Information

In the first NWO, the social construction of national sovereignty was the overarching consideration in global governance debates on the information conveyed over electronic networks. This was especially true in the case of mass media wherein, as Cees Hamelink explains in chapter 7, sovereignty was framed as being at odds with the free flow of information. Sovereign states' rights under ITU instruments to stop cross-border transmissions applied to broadcasting as well as private communications because the ITU defined telecommunications broadly as any transmission or reception of signals and messages via wired or wireless media. However, this right alone was insufficient for states that equated sovereignty with inviolable borders because of the promiscuous nature of some radio signals and the technical and financial demands of stoppage. Many authoritarian governments therefore desired collective commitments to curtail outbound transmissions from other countries that could spill across their borders.

The competing principle of the ''free flow'' of information reflected Western liberal and especially American values, and was supported by post–World War II developments in international human rights law. The term was often construed as equivalent to or an extension of the protections enunciated in Article 19 of the 1948 Universal Declaration of Human Rights (UDHR): ''Everyone has the right to freedom of opinion and expression; this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers.'' A number of international instruments on human rights and related matters

have since invoked and reinforced these freedoms in varying formulations. Even so, they are somewhat circumscribed by sovereignty-based provisions within the UDHR and other instruments. Moreover, the free-flow principle has been contested not only by authoritarian states opposed to the free exchange of ideas, but also by governmental and nongovernmental stakeholders that saw the term providing cover for U.S. commercial interests and cultural imperialism.

Given the sharply divided interests involved, no singular and comprehensive solution to the ''sovereignty vs. free flow'' question was possible. When international radio broadcasting began in the 1920s, some governments expressed concern about the purported need to ''protect'' their publics from dangerous foreign ideas. But these concerns were not universally shared; by the mid-1920s, in Europe alone there were over two dozen stations providing international service, and the originating countries saw this as *their* sovereign prerogative. Hence, an international regime for radio broadcasting involving limitations on cross-border transmissions was not pursued, and sustained cooperation in the IBU and related bodies tended to focus instead on technical matters, including as inputs into ITU activities. In consequence, some authoritarian states took matters into their own hands and built expensive facilities to jam inbound signals. Agreement on the legality of jamming proved elusive save in the ITU, which proscribed spectrum usage that caused harmful interference with the signals of third parties.

The growth of television broadcasting after World War II did not spur discussion of a multilateral regime on information flow and content because of the limited range of terrestrial signals. As such, neighboring countries dealt with signal spillovers and related matters in bilateral or regional contexts. But the subsequent development of direct broadcasting satellite (DBS) did set off divisive and protracted debates in the ITU, UNESCO, and the UN General Assembly from the 1960s into the 1980s, when widespread commercial service finally commenced. Each of the three bodies adopted a principle of ''prior consent,'' which ultimately was formulated to mean that a state that intends to initiate or authorize a DBS service is to notify the proposed receiving states and enter in consultations to receive permission if requested. Only the ITU adopted a treaty instrument, as the United States and other countries with concerns about multilateral restrictions ''were prepared to accept principles in the ITU context—in which technical problems can cover up for political issues—principles that they were not ready to accept in the UN context.''[55] In the end, the narrow technical specification of the ITU's approach and the soft-law or unratified status of other instruments created ambiguity, and the few countries that proceeded without obtaining prior consent did not suffer notable consequences.

While only for DBS did governments manage to set generally applicable sovereignty-based principles, they enjoyed somewhat greater success in agreeing to limit the dissemination of specific substantive types of messages that were deemed to be especially

problematic. Efforts to do so did not begin with the rise of electronic media. Probably the first initiative was the Carlsbad Decrees of 1819, in which a group of German states agreed to help each other suppress the expression, inter alia in print publications, of opinions that were hostile to each other's institutions. In addition, the early twentieth century saw the establishment of treaties suppressing the production, possession, and circulation of obscene print materials. And as international broadcasting took off, heightened concerns about the rapid and widespread distribution of potentially incendiary information gave rise to a number of initiatives. For example, in 1925, the IBU passed resolutions asking governments and broadcasters to suppress transmissions intended to prejudice good international relations. Similarly, in 1936, the League of Nations adopted the International Convention Concerning the Use of Broadcasting in the Cause of Peace, which enjoined members to prohibit or stop transmissions that could incite populations to commit acts incompatible with each others' internal order or lead to war. However, as Germany, Italy, Japan, and the United States were not among the twenty-eight signatory nations, the practical effects of the agreement were negligible. Arguably more noteworthy were the United Nations' post–World War II resolutions and conventions on war propaganda, racial discrimination, the protection of minors, crimes against humanity, cultural exchange, and so on that included provisions applicable to international communications irrespective of the medium used. While these agreements were carefully crafted not to impinge on sovereignty too much and were certainly violated, most notably in times of war, they did open the door to normative pressuring and have a somewhat civilizing effect on the use of global networks.

The balance between sovereignty and free flow was also at the heart of the most controversial challenge to mass media during the first and early second NWOs—the proposed New World Information and Communications Order (NWICO). Throughout the 1970s, developing countries and the Soviet bloc pressed principally in UNESCO for a NWICO in parallel with the debate on a New International Economic Order that was taking place in particular in the UN Conference on Trade and Development (UNCTAD). In brief, the campaign ''was an outgrowth of third-world resentment of the imbalances in international news flows, as summarized in the phrase, 'one-way-flow'; the lack of respect for third-world peoples' cultural identity that such imbalances reflected; the monopoly positions of TNCs, which were perceived as a threat to the countries' national independence; and the inequitable distribution of communications resources in the world.''[56] In response, the challengers pressed themes that came to be known as the ''four Ds'' (democratization, decolonization, demonopolization, and development) and advocated measures that would strengthen the hands of states, regulate media organizations, promote a collective ''right to communicate'' and a balanced flow of information, expand development assistance and technology transfers, and so on. These proposals engendered virulent opposition from Western governments,

media companies, and journalists that resulted in the substantial watering down of the negotiated texts. The hotly contested Mass Media Declaration adopted in 1978 called for the ''free flow and wider and more balanced dissemination of information,'' a greater diversity of information sources, responsible journalism, respect of the rights and dignity of all nations, expanded development assistance, and so on, and an international commission convened to study the situation and make recommendations adopted a similar approach. By 1980 the challengers' regulatory agenda had been effectively replaced by the consensual creation of a new development assistance program, but the United States and the United Kingdom remained disgruntled and subsequently withdrew from UNESCO, throwing the organization into an extended period of financial and political difficulties.

The transition from the first to the second NWO also witnessed a parallel development with respect to point-to-point computer communications—the previously mentioned TDF debate. From the mid-1970s to the mid-1980s, governments argued about a number of potential challenges to national sovereignty and related values stemming from the rapid growth of intercorporate and especially intracorporate TDF. Many of these same issues are currently being debated again with respect to the Internet—albeit not in the context of purely private cyberspaces.[57] On one side of the debate were those who feared that TDF could have negative consequences and hence merit collective regulation, since purely national action would be ineffective. Many developing countries were firmly of this view, and on some issues the Canadians, Scandinavians, French, and other continental Europeans shared their concerns to varying degrees. On the other side of the debate were those who feared that the concerns being raised were simply veiled rationales for digital trade protection and burdensome regulations directed in the first instance at U.S.-based TNCs, which were the biggest and most advanced users of TDF. As one might expect, the principal proponents of this view were the U.S. government and business community. Also an important factor in the debate was a lively expert community comprising scholars, consultants, privacy advocates, and the like, the members of which were not united in their principled and causal beliefs. The experts' influence was magnified by the newness and complexity of the issues and by many states' uncertainties about whether the potential problems were real and what would be in their national interests.

Under these circumstances, the policy process was heavily ideational in character, and the strategic control of information and discourse was central to the outcomes. U.S.-based TNCs mobilized their counterparts in a number of multinational business lobbying groups around the notion that international regulation would endanger all businesses that were users of transnational networks and would stifle innovation and competitiveness. Moreover, because most of the information about what TNCs were doing with TDF and how this might matter was proprietary and not publicly accessible, it proved easy to argue that the concerns being raised were mere shibboleths with

no factual basis, and that imposing regulations would be too technically difficult and draconian. The private sector's perception-management campaign, control of the technology and markets, and structural power over national economic destinies turned the discursive tide away from the possible need for regulations and toward the need to maintain business confidence in an increasingly network-dependent world economy. Wavering governments in the OECD fell into line, and settled the matter by agreeing to two plurilateral instruments.

Hence, in 1980, the OECD adopted Guidelines on the Protection of Privacy and Transborder Flows of Personal Data, a fairly mild and nonbinding instrument that was acceptable to the United States and global business. The other OECD instrument adopted pertained to the broader range of economic, legal, and social issues. Here too, far from imposing regulations as some had originally envisioned, the 1985 Declaration on Transborder Data Flows acknowledged that TDF was largely circulating without restriction, held that this was beneficial, and urged governments to avoid the creation of unjustified barriers to the international exchange of data and information. For its part, the developing country-dominated IBI relented on the issue, but was later disbanded. In short, the thrust of a debate begun in the sovereignty-oriented first NWO had been decisively reversed in the second. The OECD declaration, while nonbinding, reflected an understanding among governments that the issue had run its course, and that there would be no collective legitimation of new general regulations on corporate data transfers based on such considerations as the location of data processing.

During the third NWO, the perceived urgency of governance challenges has vastly increased due to the Internet. With over a billion individual users able in principle to globally disseminate information on a mass scale, sometimes anonymously, proregulatory governments' traditional concerns about penetration by foreign media organizations (and their own inability to disseminate the information needed for a ''balanced flow'') have been overtaken. Not surprisingly, the first responses have been at the national level. Across the world, governments have adopted laws and regulations and courts have made rulings curtailing speech they deem undesirable, requiring the use of filtering technologies, compelling ISPs and websites to monitor and take down noncompliant content, and so on. Major technology companies have helped to facilitate such restrictions in both democratic and authoritarian countries. In addition, there have been a number of celebrated cases in which governments and courts have sought to force information providers outside their borders, such as Yahoo! and YouTube, to remove or block local access to undesired information. In the aggregate, the growth of uncoordinated extraterritorial governmental censorship and industry's own anticipatory or other restrictions are producing balkanization or, perhaps more accurately, a neomedieval condition of multiple, overlapping, and competing layers of authority.

In response to or anticipation of such political problems, the private sector has undertaken a number of efforts to develop self-governance mechanisms. In terms of

collectively defined rules, in some countries and regions fairly effective industry codes of conduct have been agreed to by Internet service providers, advertisers, electronic game providers, and the like.[58] With the globalization of markets, such rules are being extended transnationally through contractual relations, trade association coordination, and other means to provide a measure of transaction-specific governance. But as Peng Hwa Ang argues in chapter 8, efforts to develop effective opt-in international private rule systems for content labeling like the W3C's Platform for Internet Content Selection and the Internet Content Rating Association initiative have encountered significant difficulties.

In light of the shortcomings of self-regulation and politicians' need to appear responsive, it is reasonable to expect fresh calls from some quarters for intergovernmental frameworks that address speech questions. Nevertheless, the complexity of the issues and variations in national legal systems and traditions make it difficult to reach broad international agreement on either restrictive or permissive measures. For example, in the first phases of the 2002–2005 WSIS process, it was a major struggle to even get the governments assembled to include a full reference to article 19 of the UDHR in the Geneva declaration, much less to seriously consider the relevance of other internationally recognized human rights to access the Internet and other modes of communication.[59] With universal governance mechanisms for speech per se impossible, the main action probably will remain at the regional and plurilateral levels, and even there difficulties exist. Among the most active and important bodies is the CoE. Its cybercrime convention includes a protocol requiring signatories to criminalize racist and xenophobic speech, but it is optional and leaves governments with considerable freedom. Similarly, at the time of writing, the CoE is drafting a convention to protect children against sexual exploitation and abuse that will include provisions on pornography, but it is expected to allow signatories latitude in setting the age below which its provisions become relevant.

Despite the international political differences on speech per se, there are some arenas in which governments have succeeded in establishing regimes affecting the distribution of content. These pertain to such issues as trade, intellectual property, privacy and consumer protection, and so on, and are taken up in the sections to follow.

International Trade in Content Services

Of potentially increasing significance has been the inclusion of culturally oriented content services under the WTO's GATS. Byung-il Choi examines this development in detail in chapter 6. During the Uruguay Round negotiations of the second NWO, some countries—most notably, France, and by extension, the EU—were hesitant to bring international trade in audiovisual services under the aegis of the GATS as the United States was urging. Ultimately, a compromise was reached to include these services and hence allow future bargaining over progressive liberalization, but opponents were freed

to withhold MFN treatment and avoid substantial market access and national treatment commitments.

The issue has been resurrected in the ongoing Doha Round, with the United States pushing for governments to make commitments in at least some subsectors. This time, the effort is receiving varying degrees of support from countries, including in the developing world, that either believe they would benefit from more open markets, or are willing to exchange support on this issue for American help on other negotiation items. Nevertheless, many governments remain reluctant to undertake trade commitments regarding cultural content like movies and television programming, the Internet-based diversification of content and distribution channels notwithstanding.

In response to the commodification and globalization of corporate cultural products, the demands for expanded GATS commitments, and related trends, countries led by France and Canada in particular have worked in UNESCO to shore up their defenses. The results were the 2001 Universal Declaration on Cultural Diversity, and the 2005 Convention on the Protection and Promotion of the Diversity of Cultural Expressions. A binding legal regime, the latter was adopted by a vote of 148 in favor, 2 opposed (the United States and Israel), and 4 abstentions (Australia, Nicaragua, Honduras, and Liberia). As Choi also explains, the convention addresses the creation, production, distribution/dissemination, and access to and enjoyment of cultural activities, goods, and services; and reaffirms states' sovereign right to establish cultural policies and the need for international cooperation to support the cultural expressions of all countries. While it does not directly address the behavior of transnational media conglomerates, it does contain language that could be construed as allowing flexibility in the interpretation of GATS commitments, and as such could lead to tension with the WTO framework.

As with audiovisual services, the GATS covers all other commercially provided services of a ''content'' nature that are embodied in information and may be delivered via cross-border telecommunications networks or other modes of supply. This includes, inter alia, accountancy, financial, advertising, architectural, engineering, computer, legal, educational, environmental management, health, and tourism services. The only question is whether in practice, governments choose (or are pressured) to undertake market access commitments in a given sector. During the Uruguay Round, networked service delivery was generally thought to involve private corporate networks based on proprietary technologies. Governments were selective in making substantial commitments on cross-border services supply, preferring instead that providers like banks and consulting firms enter their markets via commercial presence (which generates local taxation and employment and boosts local businesses that sell goods and services to foreign suppliers), or that customers visit their territories (as with tourism) for related reasons.

With the Internet's subsequent emergence as a medium for commercial exchange, the level of global electronic commerce has radically increased and its composition

has changed. Now a potentially unlimited range of individuals and organizations, large and small, can directly engage in unmediated international trade, and policing the bit stream or erecting direct barriers to transmission is difficult. However, in many cases indirect barriers can be maintained, for example, by preserving licensing and accreditation requirements that do not recognize foreign-sourced services or by limiting related services. Accordingly, the United States is pressing for all WTO members to make full commitments in complementary services that are increasingly integrated into network-based transactions including distribution, computer services, express delivery, advertising, and certain financial services. The EU proposal pertaining to the networked delivery of services is also quite sweeping.

Beyond the depth of commitments under the existing arrangement, the Internet's emergence as a vehicle for networked trade also has raised questions about the adequacy of the framework itself. As the previously mentioned debate over the classification and treatment of digital goods indicates, there are reasons to believe that some provisions of the GATS, and perhaps also of the GATT and TRIPS agreement, are not properly configured to accommodate the specificities of global electronic commerce. Accordingly, in 1998 the WTO adopted a work program on e-commerce and mandated the organs responsible for each agreement to examine areas in which issues may arise and require adjustments to the texts. Several years of debate ensued that satisfied members that the existing treaties were sufficient with respect to some of the issues, but as noted previously, for other important matters like digital goods no agreement has been reached. Unless these matters are taken up and resolved more effectively, it is possible that the Doha Round, should it conclude successfully, will end up leaving some key and conceptually challenging matters to be worked out in any dispute resolution cases that may arise, which is hardly the normatively optimal way to make governance decisions.[60]

A related topic in the current negotiations, in which the prospects for agreement seem brighter, concerns domestic regulation. Since trade in services takes place ''behind the borders'' and many service industries—education, financial, accounting, medical, and the like—are subject to extensive regulation, domestic regulatory institutions and policies intended to promote social objectives or merely to protect incumbent providers can have a strongly inhibiting impact on trade. Indeed, even when governments undertake market access commitments on paper, restrictive regulations often negate their value in practice. To address this dilemma, WTO members have devoted a substantial amount of energy in recent years to developing additional GATS disciplines on the conduct of domestic regulation. While all WTO members, including the United States, are adamant about preserving their sovereign regulatory rights, the negotiations are intended to ensure that these are exercised in a manner that is nondiscriminatory, transparent, and no more trade-restrictive than is necessary to preserve legitimate social objectives. Current trends indicate that a deal could be reached geared toward safeguarding regulatory authority and recognizing the special challenges faced

by developing countries, but prohibiting the use of regulation as a disguised trade barrier.

Intellectual Property

The establishment of new national laws and intergovernmental regimes for intellectual property protection on the Internet has been one of the defining features of contemporary global governance. It has also been one of the most controversial from the standpoints of developing countries and public interest advocates in civil society, as it threatens to significantly undermine opportunities for access to knowledge and creative uses of digital content by citizens around the world in order to benefit politically connected transnational firms in the United States and other industrialized countries.[61]

Intellectual property has long been an important issue with respect to ICT equipment and software. Conflicts between national patent, copyright, and trademark systems were addressed through legal proceedings and bilateral trade negotiations, such as between the United States and Japan, against the facilitative backdrop of longstanding multilateral regimes like the 1883 Paris Convention for the Protection of Industrial Property and the 1886 Berne Convention for the Protection of Literary and Artistic Works. But the emergence of private and later public cyberspaces raised a host of new issues because of the ease of copying and circulating digital information and the jurisdictional uncertainties raised by transterritorial economic activity. Some of the emerging issues were considered in the OECD during the TDF debates, but multilateral solutions rapidly emerged as the preference of business interests.

The Uruguay Round negotiations concluded just as the Internet was beginning to take off as a global mass medium. Nevertheless, the TRIPS agreement, which is critiqued by Christopher May in chapter 11, does contain provisions of direct relevance to the online world. For example, article 10 confirms that computer programs are ''literary works'' and extends protection to compilations of data; article 11 requires member countries to provide authors or their successors with exclusive rights to authorize or prohibit the commercial rental of computer programs and cinematographic works; and articles 12 and 14 set standards for the term of protections afforded to copyrighted and sound-recording works, respectively. Moreover, under its rules, ''any intellectual property agreement negotiated subsequent to TRIPS among and/or involving WTO members can only create higher standards. Higher standards, which could result from bilateral, plurilateral or multilateral treaties, have come to be commonly referred to as 'TRIPS-plus' . . . the concept covers both those activities aimed at increasing the level of protection for right holders beyond that which is given in the TRIPS Agreement and those measures aimed at reducing the scope or effectiveness of limitations on rights and exceptions under the TRIPS Agreement.''[62]

In the third NWO, multilateral action has proceeded down two interrelated tracks. Work has continued in the WTO on strengthening and implementing the TRIPS agreement; as with the rest of the Doha Round, the ultimate resolution of these efforts is

uncertain at the time of writing. And WIPO has launched a number of initiatives focusing specifically on the networked environment. In 1996, WIPO members agreed on a Copyright Treaty and a Performances and Phonographs Treaty. Under these instruments, governments are required to tighten their national copyright laws and extend or clarify the rights of owners to control communication and the ''making available'' of their creations, as well as the distribution of copies. In addition, governments must curtail the circumvention of technological protections for rights management and any tampering with the tags and codes associated with copies of protected works and phonograms. Together with the United States' 1998 Digital Millennium Copyright Act, the EU's 2001 Copyright Directive, and related national and regional actions, WIPO treaties ushered in the beginning of a new and globalized enclosure movement for the digital domain. The slow pace of accession has frustrated the treaties' proponents; indeed, while the instruments finally came into force in 2002, just over sixty member countries have joined them, a large share of which are the industrialized countries. As such, the United States and other proponents continue to pressure developing countries to accede.

In parallel, the United States and the EC pushed in 1996 for the adoption of a proposed WIPO treaty on intellectual property and databases. Their proposals would have inter alia extended strong protections to collections of data that are not sufficiently original to qualify for copyright, but may involve corporate investments in their creation and maintenance. Such a shift from protecting creativity to protecting investments and establishing rights over such data could greatly reduce the public's access to information that is currently in the public domain. Concerted opposition to the proposal by developing countries and segments of the business community (including electronics and computer companies) forced its abandonment in 1996, but the issues could be revisited in WIPO and have been addressed by other instruments like the EU's Database Directive.

Going further, in 1999 WIPO adopted an ambitious Digital Agenda. In line with the stream of activity it laid out, in 2001 WIPO adopted a Joint Recommendation Concerning Provisions on the Protection of Marks, and Other Industrial Property Rights in Signs, on the Internet. But probably the most significant and controversial initiative to be undertaken has been the effort to negotiate a new broadcasting treaty. Some of the competing draft texts to emerge could permit broadcasters to control information already in the public domain, extend property rights from twenty to fifty years, create new ownership rights to signals, further curtail the use of anticircumvention technologies, require signatories to join the prior Internet treaties, give broadcasters much greater rights than artists and performers, and (in the U.S. version) apply well beyond the broadcast arena to encompass webcasting as well. The loose and expansive framing of the U.S. proposal on the latter area would have significant detrimental effects on users and the technological and economic development of the Internet.

Catalyzed by this and related developments, a strong coalition of CSOs has come together and worked with key developing countries, led by Brazil and Argentina, to oppose the broadcast treaty. Moreover, other business factions that could be negatively affected by its overly expansive language on webcasting, including elements of the computing and Internet service industries, have been mobilized in support of the cause. As such, the treaty's fate now appears to be highly uncertain. Moreover, the developing countries and the CSO coalition have built on this momentum to promote a sweeping development agenda that would reorient WIPO, a UN agency, away from a narrow focus on placating business interests and toward the promotion of access to knowledge and the preservation of the public domain of ideas and information. Probably in no other domain of network global governance have developing countries and civil society activists been so successful in pushing a change of direction toward public interest concerns.

Given these developments and various organizational problems within WIPO, the United States and other ardent champions of strict intellectual property protection are stepping up their efforts on other tracks. For example, the United States has been building into a variety of bilateral and regional trade agreements intellectual property requirements that go beyond what has been achieved in WIPO. Here the possibility of binding dispute settlements under the WTO's TRIPS agreement and of resulting trade sanctions becomes a factor in pressuring governments toward higher levels of protection. Hence, in the absence of what they consider to be sufficient movement in WIPO on digital rights, the proponents of increasing the scope, strength, and duration of global intellectual property protections are piecing together a pattern of global governance in which the accumulation of small-n agreements and the virtual projection of national laws and policies figure prominently.

Electronic Commerce

As with network security, the global governance of electronic commerce reflects the accumulation of activities distributed across multiple institutions and levels of social organization. Most of the heavy lifting has been done during the third NWO. As mentioned previously, work conducted in the WTO since the end of the Uruguay Round has determined that the GATT, GATS, and TRIPS are fully applicable to networked trade. But beyond market access and related WTO matters, there are a number of e-commerce issues for which shared solutions have been sought.

Private sector contracts are a key source of order in the global ICT environment. In the case of e-contracts, while these are naturally very heterogeneous in form and substance, there are some common problems for which market participants have desired internationally harmonized solutions. For example, contracting over networks among globally dispersed parties via Electronic Data Interchange and other services raises questions about when a contract can be said to have been concluded, the real locations

of the parties, the incorporation of terms by reference, the transfer of rights, differences between national laws, legal barriers posed by existing international agreements, and so on. To enhance predictability and reduce transactions costs, industry associations like the ICC have developed collective rules and tools in the form of guidelines, codes, model contracts, and standardized terminologies for such issues as contracting, identity management, and authentication. In the latter case, individual firms like Microsoft, with its Passport system, have been an important force. In parallel, a broad coalition of firms participating in the Liberty Alliance are pushing a competing, open standards approach intended to promote federated, multilateral trust relationships and greater user control and choice among diverse identity management tools.

At the same time, governments have recognized that self-governance approaches are not entirely sufficient for all purposes and have sought to provide a facilitative legal environment. A principal forum for these efforts has been the UN Commission on International Trade Law (UNCITRAL), in particular its Working Group on Electronic Commerce. In 1996, UNCITRAL adopted a Model Law on Electronic Commerce to be used as a national legislative basis for the elimination of legal barriers to e-commerce. After some changes to mollify industry criticisms that it was overly broad and inflexible, a United Nations Convention on the Use of Electronic Communications in International Contracts was adopted by the General Assembly in 2005. The convention seeks to enhance legal and commercial certainty by addressing such issues as the determination of a party's location in an electronic environment, the time and place of electronic communications, and the criteria used in establishing equivalence between electronic communications and paper documents and between electronic authentication and handwritten signatures. Other related initiatives have been undertaken by the ITU, the UN Centre for Trade Facilitation and Electronic Business (UN/CEFACT), the International Institute for the Unification of Private Law (UNIDROIT), and the OECD, which in 1998 adopted a Declaration on Authentication for Electronic Commerce.

Also important in the e-commerce context is the question of legal jurisdiction. Probably the most important initiative to achieve some harmonization has been taking place in the Hague Conference on Private International Law. The organization is working to set rules on the jurisdictional aspects of international lawsuits and facilitate the recognition and enforcement of foreign judgments with respect to business. In 2005 a convention on choice of court agreements was negotiated, but no country has signed it at the time of writing. It could apply not only to the sixty-seven member states, but potentially many others; over sixty additional countries have previously opted to become parties to other Hague Conference conventions. The convention would apply to business-to-business (B2B) commerce cases in which the parties have chosen a court in their contract. It would make these provisions enforceable if the parties entered into

a legal dispute, and would also require that other national courts enforce any judgments rendered by the courts selected in the contract.

Taxation is of course a preeminently national-level issue, but governments also maintain an elaborate mesh of bilateral tax treaties that establish some baseline harmonization on a host of technical issues such as location of taxation, transfer pricing and sourcing, valuation and computation of profits, and sharing of revenues. The borderless nature of e-commerce transactions poses challenges to the treatment of many of these issues, so the most densely interlinked countries have been working to develop shared solutions. At the plurilateral level, the OECD has been at the forefront of efforts to think through the e-commerce issues and promote cooperation among tax authorities. In 1998, the organization set out some basic principles and since then has pursued an active work program to elaborate on the details. Among these principles are that the approaches used for conventional commerce are applicable but should be clarified; that taxation should occur in the jurisdiction where consumption takes place; that reporting requirements and collection procedures should be neutral and fair to level the playing field; and that digital products should be treated as services for tax purposes. The EU has drawn on the OECD work in setting its regional policy, which includes a uniform approach to the application of value-added taxes. This has resulted in tensions between the EU and United States over the former's insistence that externally located companies should collect tax on B2B sales into Europe on behalf of its member countries.

Consumer protection is a key concern in global e-commerce, but there is no broad multilateral organization or regime focused specifically on these issues. Instead, they have been tackled through a combination of bilateral, regional, and plurilateral cooperation, particularly among the industrialized countries, and industry standards. The bilateral context has been a source of tensions between the United States and Europe, with the former arguing that disagreements over transnational transactions should be addressed under the law of the supplier's home country, while the EU has opted for a more differentiated model under which if an external seller specifically targets consumers in member countries, the laws of those countries apply. At the plurilateral level soft-law agreements have been the tools of choice: the OECD has adopted Guidelines for Consumer Protection in the Context of Electronic Commerce, and Guidelines for Protecting Consumers from Fraudulent and Deceptive Commercial Practices Across Borders; the APEC has adopted Voluntary Consumer Protection Guidelines for the Online Environment; and the International Consumer Protection and Enforcement Network (ICPEN), which comprises the trade practices law enforcement authorities of more than two dozen mostly industrialized countries, works to share information about e-commerce activities affecting consumer interests. In parallel, industry groups like BBBOnLine, the ICC, and the GBDe have adopted their own codes of conduct and guidelines.

A related issue is Internet spam. While many of those involved in the spam industry would argue that it is a legitimate business practice and simply a form of e-commerce, spam is also routinely employed for phishing and fraud, and raises a host of other problems as well. Estimates seem to vary widely, but it appears that spam may account for up to 80 percent of global Internet traffic. The cost to the world economy in terms of lost productivity, wasted bandwidth, and so on is enormous. The burden falls especially hard on developing and transitional countries, where slow and expensive connections, limited access to anti-spam technology and expertise, and related factors create disincentives to Internet adoption and use. Despite the calls by various developing countries for multilateral action in the ITU, the industrialized countries and the global business community have maintained that technical fixes, national laws, mutual assistance and information sharing and the like, and industry self-governance provide the best solutions to the problem. Hence, Australia and South Korea have signed a memorandum of understanding on information sharing and mutual support in the enforcement of national laws; Australia, the United Kingdom, and the United States have done likewise; the European Union has adopted rules applicable to its members; and in 2006, the OECD's Task Force on Spam developed an anti-spam toolkit comprising recommended policies and measures that can be taken. Complementing these governmental efforts are the programs of technical standards bodies; organizations like the Spamhaus Project; and self-governance collaborations or industry associations like the Anti-Spam Technical Alliance, the Anti-Phishing Working Group, the ICC, and others.

Cybersecurity

The generic terms *cybersecurity* and *cybercrime* encompass a range of issues that are sometimes distinct and other times closely interrelated. Accordingly, some global governance mechanisms are designed to address one or a few of them, while others are of wider scope. The CoE cybercrime convention disaggregates the issues within its broad scope into four categories: offenses against the confidentiality, integrity, and availability of data and systems, such as spreading viruses and other kinds of malware, or illegally accessing or interfering with information infrastructures; computer-related offenses, such as using ICT to engage in traditional types of criminality like forgery and fraud; content-related offenses, such as disseminating child pornography or other prohibited types of substantive information; and offenses related to infringements of copyright and related rights (a topic addressed previously). Another approach taken in many policy discussions is to cluster the issues into two broad categories: network security/crimes and information security/crimes. For narrative purposes it is easier to treat these two sets of issues together in this section rather than distribute them here and in the preceding section; furthermore, the reasons for protecting or attacking systems generally relate to the specific information they handle.

Network security and information security were not a major focus of global governance mechanisms for most of the first NWO. In the era of analog and monopoly-controlled networks, the ITU treaties simply required that members avoid harmful interference in the radio sphere and ensure the maintenance within their territories of the channels and installations needed for uninterrupted international telecommunications. More politically charged security issues like the construction and use of networks to strengthen military capabilities and imperialist campaigns, military attacks on cables and other enemy facilities and the treatment of neutral lines during wartime, the interception of communications (and in the case of telegraphy, the breaking of codes and ciphers), and so on were thought to be beyond the ITU's technical mandate.

By the second NWO, liberalization, digitization, and networked information systems began to pose new kinds of threats that elicited international debate and action. Hence, the ITU adopted numerous standards meant to strengthen the resilience and reliability of networks, including by constraining customers from attaching equipment that the carriers said could cause technical harm to their networks. In addition, following the celebrated incident of the Morris worm that disrupted the early Internet, negotiators at the 1988 WATTC included in the new ITRs a provision stating that any special arrangements on matters not of concern to member governments generally (such as private networks) should avoid technical harm to the facilities of third countries. Ten years later, members' responsibility to protect other countries from disruptions emanating from within their jurisdictions would be brought into the ITU's organizational convention as well.

In a similar vein, during the TDF debate a number of security issues were considered, with particular attention being devoted to the vulnerability of networked information systems to disruptions from abroad. Further work in the OECD led to the adoption of the Guidelines for the Security of Information Systems in 1992. These groundbreaking guidelines advanced principles applicable to both public and private sector entities and called for worldwide security technical standards, rules for the allocation of risks and liabilities, national laws that are backed by sanctions and harmonized across member countries, and collaboration on matters of national jurisdiction, mutual legal assistance with criminal cases, and so on.

Concerns about technology-based threats to networks and the information they contain or convey have increased dramatically in the third NWO. The Internet's design is optimized for openness and ease of communication rather than security, which makes it a ready vehicle for an endless array of individuals and organizations that are dedicated to probing and exploiting its weaknesses. The worldwide reliance on insecure Microsoft products poses related problems. The consequences for individual users, organizations, critical infrastructures, national security, and the world economy have included waves of viruses, worms, trojans, phishing, zombie botnets, spoofing attacks, denial of service attacks, identity thefts, information warfare gambits, and so on, as

well as the rapid blossoming of a lucrative security industry in response. As the 2005 report by UNCTAD summarizes, "The global information security market is estimated at around $40 billon, half of which is represented by the United States. The corresponding estimates of economic damage caused by security breaches in 2003 vary from $12.5 billion for viruses only to over $200 billion for all forms of digital attack."[63]

Governance responses to cybersecurity challenges are highly distributed across multiple institutions and levels of social organization. Involved in various pieces of this terrain are national-level bodies like the National Infrastructure Protection Center of the U.S. Department of Homeland Security, as well as the various intelligence and law enforcement agencies; specialized industry organizations like the International Systems Security Certification Consortium, the Information Systems Security Association, the Center for Internet Security, and the Internet Security Alliance, as well as more general organizations like the ICC and Global Business Dialogue on Electronic Commerce (GBDe); regional organizations like the EC and the European Network and Information Security Agency; technical standards bodies like the IETF and European Telecommunications Standardization Institute; ICANN, through its Committee on Security and Stability; plurilateral organizations like the Group of 8, the OECD, and the Asia-Pacific Economic Cooperation (APEC); universal multilateral organizations like the ITU; and many more. A particularly interesting and understudied aspect of this complex nexus is the growing role of the private sector in tracking communications over its infrastructure and supporting lawful intercept and digital forensics activities.

Much of the important cybersecurity activity is programmatic in nature and involves trend monitoring, information sharing, and responding to outbreaks and attacks. Organizations involved include the many national and subnational Computer Emergency Response Teams (CERTs) like the CERT Coordination Center, a federally funded program at Carnegie Mellon University that studies Internet vulnerabilities, serves as an international information clearinghouse, assists websites that have been attacked, and publishes security alerts; the Forum of Incident Response Teams (FIRST), which comprises more than 170 member organizations from governments, the private sector, and academia in the Americas, Asia, Europe and Oceania; and parallel bodies like the Asia Pacific Security Incident Response Coordination (APSIRC), and the Information Sharing and Analysis Centers (ISACs) in the United States. Moreover, there are the various information sharing and mutual assistance agreements between law enforcement agencies, including via Interpol's High Tech Crime Unit; and the secretive ECHELON program for electronic surveillance that is said to be run by the intelligence agencies of the United States and four other English-speaking nations.

International rulemaking and policy coordination are a growing part of the governance mix. Some notable intergovernmental examples include the OECD's 2002 Guidelines on the Security of Information Systems and Networks, which strengthened

and expanded the 1992 edition; the EC's 2001 Communication on Creating a Safer Information Society by Improving the Security of Information Infrastructures and Combating Computer-related Crime; APEC's 2002 Statement on the Security of Information and Communications Infrastructures and its Program of Action; the UN General Assembly's 2003 resolution urging the creation of a global culture of cybersecurity; the G8's work program on shared principles and action items; the OECD's 1997 guidelines on cryptography; the Wassenaar Arrangement regarding export controls on cryptographic and other technologies; and the activities of the International Law Enforcement Telecommunications Seminar, a collaboration of law enforcement agencies from the industrialized countries that has set ''requirements'' for surveillance capabilities that have been incorporated into national laws, manufacturing designs, and technical standards.

Certainly the most important regime instrument adopted to date is the CoE cybercrime convention, which is closely and critically assessed by Ian Hosein in chapter 9. As we have noted previously, the agreement requires the elaboration of substantive and procedural laws at the national level, provides for mutual legal assistance between countries, and addresses a range of network security and content-related issues. The convention is open to accession by non-CoE states, and has been signed by such countries as Canada, Costa Rica, Japan, Mexico, South Africa, and the United States. As such, it is the broadest intergovernmental regime in place to deal with security matters, and is for better or for worse informing much of the work being done in other bodies. In the years ahead, it is possible that the ITU will seek to advance a universal agreement that builds on these foundations. In sum, the architecture of collective governance with respect to the network security arena is highly distributed, rapidly evolving, and deserving of far more attention by scholars than it has received to date.

Privacy Protection

In the context of the previously mentioned TDF debate, in 1980 the OECD adopted Guidelines on the Protection of Privacy and Transborder Flows of Personal Data. This nonbinding instrument set forth a set of principles for fair information practices, for example, that individuals should be notified when their data is being collected; data should be used only for specified purposes and not be disclosed without its subjects' consent; data should be kept secure from abuse and made accessible to its subjects for correction; and data collectors should be accountable to subjects for following the principles. The guidelines' weakness was due in particular to strong pressure from the United States and global business, which claimed that privacy protection was somehow intended to serve as a covert trade barrier against U.S.-based transnational firms. Following their establishment, U.S.-based firms pretended to follow them and European governments pretended to believe that they were, post hoc studies indicating otherwise notwithstanding.

The following year, the Council of Europe adopted a binding Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data. The convention specifies that signatory governments shall not, for the sole purpose of protecting privacy, prohibit or subject to special authorization TDF of personal data going to the territory of another party. However, they can derogate from this obligation if their legislation includes specific regulations for certain categories of personal data, except if the other party provides an equivalent protection; or when the transfer is made to the territory of a nonsignatory through the intermediary territory of another party. In principle, these provisions could have allowed the blocking of TDF to countries lacking sufficient privacy protections, and as such many in the U.S. business community roundly denounced them. In practice, there is little evidence that the agreement was implemented in a manner that caused notable problems for industry. The difficulty of monitoring transmissions, problems of administrative capacity, and so on may have been factors in this regard.

In 1995, the EU adopted a stronger Directive on the Protection of Personal Data that, inter alia, gives data subjects the right to access and correct data about them and limits flows to countries with inadequate protections. Concerns of the United States and U.S. businesses that these rights would interfere with corporate operations led to the negotiation in 2000 of a face-saving ''safe harbor'' agreement with the EU, according to which companies from nonmember countries can claim to provide equivalent levels of protections via other means, such as self-regulation. Henry Farrell argues in chapter 10 that the EU has pushed weaker trading partners to adopt stronger data protection laws, and hence may be promoting a convergence of national policies in the absence of a broad international regime. APEC and the United Nations have established other intergovernmental frameworks, although these are soft-law agreements that have been influenced by the United States.

The private sector also has devised a number of self-regulatory instruments pertaining to general data collection and use, for example, in the ICC and GBDe. There are also programs designed specifically for the Internet environment, such as TRUSTe and BBBOnLine, and the W3C's Platform for Privacy Preferences Project. In general, the flowering of self-regulatory arrangements has done much more to head off governmental efforts to develop strong rules and verifiable implementation than it has to protect the privacy of individuals. While an investigation of governance based on market power is beyond the scope of this book, one could add that the internal policies of individual companies like Google and Microsoft certainly have rule-like effects on large swaths of cyberspace as well.

Conclusion: Toward the Holistic Analysis of Distributed Governance

As the preceding survey indicates, the realm of global networks and related ICTs is replete with global governance mechanisms. Unlike some international policy spaces,

there is no one or even principal international regime or set of programs that covers the whole range of issues involved. Nor is there an overarching meta-regime, defined by a singular logic or social purpose, into which all the issue-specific mechanisms we have mentioned and the many that we have not are somehow nested. Instead, what has developed over the past century and a half is a highly distributed and heterogeneous architecture comprising an array of arrangements that generally were created on a piecemeal, stand-alone basis to deal with individual functional and political problems. Within some issue-areas there is interinstitutional coordination, but in the aggregate there is nothing like a tightly interwoven system.

The diversity of this governance architecture presents some analytical challenges. Academic and policy research efforts in areas like international security, trade, or environmental policy constitute fairly coherent ''fields'' that are well institutionalized and supported within traditional academic disciplines. In contrast, ICT global governance is a horizontally cross-cutting ''field of fields'' that is generally not recognized to be such, including by many who are actually in it. For a number of reasons, there has been little effort to view international institutions and cooperation in the various domains of ICT global governance as comprising a unified terrain meriting integrative or comparative inquiry.

For example, the scholars involved hail from the disciplines of political science, sociology, economics, law, business and management, communication studies, information studies, and even technical fields like engineering and computer science. They often gear their work toward their home disciplines rather than toward the multidisciplinary array of people working on similar questions with respect to other ICT governance arenas. In consequence, most of the literature does not employ a shared analytical vocabulary in the same manner as political science work on international regimes and cooperation, and it is often inadequately cumulative. Moreover, a good deal of the interesting research is focused on specific policy issues rather than the larger regimes or cross-cutting field in which they are situated, and is generated by people working in international organizations, think tanks, consulting firms, and CSOs rather than in academia. And the experts on each topic tend to embrace varying priorities, publish in different journals, go to different meetings, and eschew efforts to generalize or draw linkages across cases. In short, as a terrain of study, the global governance of global electronic networks is highly fragmented along multiple axes.

Developing a more holistic vision of network global governance could yield a number of benefits. For example, assessing the historical development of the contemporary landscape of governance arrangements in this manner could enrich our understanding of how and why networks have been constructed and employed as they have and, by extension, how they have helped to shape the trajectories of world politics, economics, and society. In some of the major, zeitgeist-shaping scholarly and popular works on global networks and globalization that have been published in recent years, it at times seems that the technology is simply there, a given with fixed properties from which

the analysis departs without looking back, when in fact their precise configuration, embedding in social structures, and utilization are the result of complex historical dynamics and power relationships that mattered. A holistic approach also would lend itself to the assessment of generalizable causal dynamics with respect to international power, counter-power strategies, the roles of the private sector and civil society, the influence of ideas and discourse, leadership, bargaining, and so on. The sorts of explanatory theories favored by international relations scholars (such as those in the rationalistic and constructivist traditions), communication studies scholars (such as those in the critical and administrative traditions), and so on, across the academic topography, could be systematically worked through via progressive research agendas if ICT global governance were recognized to be a legitimate and coherent field of inquiry.

A holistic approach would be useful as well in comparing governance mechanisms and considering generalizable questions of interest to scholars and practitioners of institutional design.[64] That is, in addition to assessing the governance architecture as a whole, one could consider the parts in relation to both the whole and each other. One could then ask such questions as: Which issues have or have not given rise to what kinds of collective rules and programs, and why? When have intergovernmental or private sector self-regulatory arrangements been used, and to what effect? Where intergovernmentalism is needed, what have been the costs and benefits of bilateral, plurilateral, regional, or multilateral configurations? What have been the relative merits of treaties and hard-law vs. soft-law mechanisms like guidelines, declarations, opinions, or light coordination and information sharing? When is it better to anchor cooperative rules in a formal organizational setting, to distribute functions among networked institutions, or to have freestanding agreements? What would constitute best practices in the agenda setting, negotiation, and compliance enforcement stages of cooperation? How has compliance been monitored and noncompliance sanctioned, or dispute resolution pursued? Which mechanisms have performed more or less well than the others in promoting technological innovation and new markets, or in terms of institutional efficiency? Which adapt most effectively to changes in their operational environments? Which have done better or worse with respect to transparency, accountability, inclusion, and social justice? Which most effectively empower nondominant stakeholders in terms of knowledge acquisition, negotiating capabilities, and national capacity building and implementation? Are there lessons that intergovernmental, private sector, and multistakeholder approaches could learn from one another? What are the costs and benefits of governance mechanisms that cover a range of interrelated issues vs. those that are narrowly targeted? How can procedural transparency and accountability and a good substantive balance between competing objectives be achieved? In short, examining governance options in relation to what has or has not worked in related issue-areas might help answer these and related questions more effectively.

Similarly, a holistic analysis might help to identify weaknesses and gaps in the coverage of important issues. A few examples of problems that have not given rise to strong collective responses or have fallen between the cracks of existing mechanisms may include access to knowledge, privacy protection, certain aspects of network security, Internet spam, and problems associated with market concentration like international Internet interconnection pricing, competition policy, and restrictive business practices. Of course, whether some form of collective response to any of these challenges is really needed is a matter of debate, but if one takes as given that the nexus of existing institutions and the issues agreed to be under their mandates exhausts the range of possible cooperation, it may be more difficult to address some important outstanding problems.

Finally, a holistic approach would direct our attention to the possibility of procedural and substantive tensions between governance mechanisms, particularly in the case of multidimensional issues. As the existing arrangements have been created in a piecemeal manner in response to individual problems, it is possible that some may at times clash a bit with others. For example, there have been tensions between ITU and WTO instruments, between instruments concerning the free flow of information and national sovereignty, between different technical standardization processes (e.g., between the ITU and the Internet Architecture Board), between organizations and rules involved in managing names and numbers, and between arrangements pertaining to personal privacy and security or cybercrime, intellectual property, and freedom of speech, and so on. Examining how well the various institutions mesh into a whole might facilitate the identification and resolution of problems and unleash latent value through interinstitutional synergies.

This sort of enterprise is most definitely not just of academic interest. Policy practitioners in international organization secretariats, governments, business, and civil society already have confronted at least some of these issues, although perhaps not as starkly framed as they are here. The WSIS process, which is addressed by David Souter (chapter 12) and Wolfgang Kleinwächter (chapter 15), provided examples of this at two levels. First, it was the first extended worldwide effort to assess the policy aspects of global information society generally. Never before had persons from all the major stakeholder groupings—international organization secretariats, governments, industry, civil society, and the technical and administrative community—had an opportunity to debate at length the broad range of issues and governance mechanisms involved in global ICT that cut across the turfs of vertically segmented international organizations and national government ministries. It would be politically difficult for any one international organization to hold discussions of issues pertaining to the conduct and mandate of multiple other international organizations, much less the activities of industry self-governance mechanisms and multistakeholder collaborations. It took a UN summit with a nominally unrestricted mandate to have this sort of interaction.

For over three years, participants gathered in lengthy preparatory meetings and regional consultations to debate and agree on language pertaining to a plethora of topics. This included such issues as access to ICT and knowledge, Internet interconnection charging, Internet identifiers, telecommunications regulation, spectrum management, Internet names and numbers, privacy protection, intellectual property, security, culture and content spam, voiceover IP, intellectual property, network security and information security, development policy, trust issues, human rights, mass media, the public domain, cultural and linguistic diversity, free and open-source software, community-level ICT, e-health, e-education, e-government, e-commerce, e-ethics, e-everything, as well as the special challenges relating to gender, age, minorities, indigenous peoples, and marginalized social groups.

In the process, collective, transformational substantive learning took place. This was demonstrated by the widespread recognition, reflected both in the debates and outcome documents, of the integral interrelationships between nominally discrete issues, policies, and institutions. The intersubjective construction of ''the global information society'' as an overarching global policy space within which individual issues are remapped as interrelated parts of a whole meriting coordinated action shared some features with other UN summit outcomes, such as the construction and institutionalization on the global agenda of climate change or sustainable development.[65]

A second example concerns the heated debate on Internet governance during the WSIS. The nature, conduct, and potential reform of Internet governance was explored at length, and the discussions included the sort of institutional design questions posed previously within a fairly holistic framing. This was especially true within the Working Group on Internet Governance (WGIG), a forty-person multistakeholder body that was appointed by UN Secretary General Kofi Annan to study Internet governance, develop a working definition of it, identify the public policy issues that are relevant, and develop a common understanding of the respective roles and responsibilities of governments, existing international organizations, and other forums as well as the private sector and civil society from both developing and developed countries. The WGIG, on which some of the authors in this book (Ang, Drake, MacLean, and Kleinwächter) served as members, adopted a holistic approach to assessing Internet governance mechanisms in relation to each other and collectively, and put forward recommendations on that basis.[66] The WGIG advanced a broad and holistic definition of Internet governance akin to the definition of ICT global governance offered earlier in this chapter, namely that ''Internet governance is the development and application by Governments, the private sector and civil society, in their respective roles, of shared principles, norms, rules, decision-making procedures, and programmes that shape the evolution and use of the Internet.''[67] The definition was ultimately adopted by the international community, included in the final summit's Tunis Agenda for the Information Society, and helped to defuse the battle over what Internet governance was and who should do it.

A holistic approach was also evidenced by the WGIG's principal operational recommendation, to create a new UN Internet Governance Forum (IGF). The WGIG proposed a mandate for the IGF that maps with the points made above, was amplified by the preparatory committee meeting held in Tunis on the eve of the November 2005 summit, and was adopted by the governments and other parties assembled. The mandate was as follows:

> We ask the UN Secretary-General, in an open and inclusive process, to convene, by the second quarter of 2006, a meeting of the new forum for multi-stakeholder policy dialogue—called the *Internet Governance Forum* (IGF). The mandate of the Forum is to:
>
> a) Discuss public policy issues related to key elements of Internet Governance in order to foster the sustainability, robustness, security, stability and development of the Internet;
> b) Facilitate discourse between bodies dealing with different cross-cutting international public policies regarding the Internet and discuss issues that do not fall within the scope of any existing body;
> c) Interface with appropriate inter-governmental organisations and other institutions on matters under their purview;
> d) Facilitate the exchange of information and best practices, and in this regard make full use of the expertise of the academic, scientific and technical communities;
> e) Advise all stakeholders in proposing ways and means to accelerate the availability and affordability of the Internet in the developing world;
> f) Strengthen and enhance the engagement of stakeholders in existing and/or future Internet Governance mechanisms, particularly those from developing countries;
> g) Identify emerging issues, bring them to the attention of the relevant bodies and the general public, and, where appropriate, make recommendations;
> h) Contribute to capacity-building for Internet Governance in developing countries, drawing fully on local sources of knowledge and expertise;
> i) Promote and assess, on an ongoing basis, the embodiment of WSIS principles in Internet Governance processes;
> j) Discuss, inter alia, issues relating to critical Internet resources;
> k) Help to find solutions to the issues arising from the use and misuse of the Internet, of particular concern to everyday users;
> l) Publish its proceedings.[68]

It is too early to tell at the time of writing whether the IGF will be able to fulfill this mandate, particularly in the face of reluctance in practice of some powerful stakeholders to create a process that is as robust as the mandate implies. Nevertheless, it is perhaps a hopeful sign that the global community was able to sign off on such a framework, recognizing that viewing Internet governance mechanisms holistically with an eye to promoting improvements is explicitly contemplated. In the meanwhile, it would be useful if academics and other analysts were to carry such work forward. Hopefully, this volume will help lay the foundation for a progressive research program along these lines.

Notes

1. Castells 1996, 469.

2. Latham and Sassen 2005, 1.

3. Many ICT issues are not now and do not need to be subject to global governance as it is conceptualized in this volume, but those that are generally pertain to electronic networking. Given this, and the common practice of most people in the field of using the term *ICT* when referring to network-related technologies, the terms *ICT global governance* and *network global governance* are used interchangeably in this volume.

4. Benkler 2006, 3.

5. See in particular, World Summit on the Information Society 2003a, 2003b, and 2005, as well as civil society's alternative declaration to the Geneva summit, *Shaping Information Societies for Human Needs* (2003).

6. Adler and Bernstein 2005, 295.

7. Reinicke 1998, 4, emphasis in the original. However, the author later adds that governance is "a social function . . . [that] does not have to be equated with government" (87) and spends most of the book demonstrating this point.

8. Kahler and Lake 2003, 7–8.

9. Hewson and Sinclair 1999, 10.

10. Finkelstein 1995, 369.

11. Murphy 1994, 1.

12. Florini 2003, 5, emphasis in the original.

13. Thakur and Weiss. See the United Nations Intellectual History Project web page for their forthcoming book, "The UN and Global Governance: An Idea and its Prospects." Available at www.unhistory.org/publications/globalgov.html.

14. Ruggie 2004, 9.

15. Young 1994, 15.

16. The Centre for the Study of Global Governance at the London School of Economics and Political Science, "Research Themes," available at www.lse.ac.uk/Depts/global/2research.htm.

17. Commission on Global Governance 1995, 2.

18. Held, McGrew, Goldblatt, and Perraton 1999, 50.

19. Rosenau 1997, 145.

20. Rosenau 2003, 393.

21. Keohane and Nye 2000, 12.

22. The Global Governance Project (a joint research program of eight European research institutions), ''About the Project,'' available at www.glogov.org/front_content.php?idcat=3.

23. Young 1999, 11.

24. Risse 2005, 165, 167.

25. For example, David Johnson and David Post have argued that, ''de facto rules may emerge as a result of the complex interplay of individual decisions by domain name and IP address registries (regarding what conditions to impose on possession of an online address), by sysops (regarding what local rules to adopt, what filters to install, what users to allow to sign on, and with which other systems to connect) and by users (regarding which personal filters to install and which systems to patronize).'' See Johnson and Post 1997, 67–68. Similarly, Johnson, Susan Crawford, and John Paltry suggest that ''The aggregation of numerous individual decisions about who to trust and who to avoid will create a diverse set of rules that most accurately and fairly serves the interests of those who use the online world. In other words, we can use 'peer production of governance' to address the collective action problems that arise in the online context.'' See Johnson, Crawford, and Palfry 2004, 9.

26. This distinction has been introduced by Robert Latham, as follows: ''Governance that is global refers to the steering at the global level. Governance in the global refers to all the governance that occurs throughout the global order.'' See Latham 1999, 28. Some but certainly not all of the latter may effectively rise to the level of the former.

27. In so doing, international organizations' secretariats often enjoy enough autonomy and leeway that their efforts cannot be viewed as simply an epiphenomena of members' desires; for a discussion, see Barnett and Finnemore 2004.

28. See Noam 1992, 23.

29. For an analysis of the politics that sustained the decentralized exceptions to the European rule, see Davies 1994.

30. See Headrick 1991.

31. The state technocrats involved in the international telecommunications regime brought to bear the same sort of systems building, public service-oriented perspectives they employed at the national level; for a discussion, see Murphy 1994.

32. The name ''International Radiotelegraph Union was not used in the radiotelegraph conventions that preceded the establishment of the ITU by the 1932 conference, perhaps because the name too closely resembled that of its administrative home, the International Telegraph Union. Instead, it referred to the countries that were signatories or adherents to these conventions.

33. Flamm 1988, 89.

34. The counterintuitive acronym, ISO, derives from the Greek *isos*, meaning equal.

35. For an overview of the computer networking matrix, see Quarterman 1990.

36. For a classic statement of the new U.S. policy, see National Telecommunications and Information Administration, Government of the United States 1983.

37. For a discussion, see Drake and Nicolaïdis 1992.

38. See Noam 1987.

39. Gassman and Pipe 1976, 27.

40. On the mobile revolution, see Castells et al. 2006.

41. See Wilson 2004.

42. The scholarly literature on ICANN is abundant and growing. For an early but still instructive analysis, see Mueller 2002.

43. Codding 1952, 42.

44. For varying assessments of the nature and causes of this transformation, see Cowhey 1990, Drake 1994, and Zacher with Sutton 1996.

45. The legal preservation but decaying salience of the regime's instruments speaks to the intersubjective nature of regimes and the centrality of expectations. For a discussion of these trends, see Drake 2000.

46. Nevertheless, the move from multilateral regulation to looser coordination and cross-fertilization among national policies also has increased the role of nonuniversal institutions. National entities in key states, most notably the U.S. FCC, can be very influential in this context. Regional bodies like the EU, the European Conference of Postal and Telecommunications Administrations, the Asia-Pacific Economic Cooperation, the Asia-Pacific Telecommunity, and the Inter-American Telecommunication Commission coordinate national policies to varying degrees, with the EU framework being the strongest and most elaborate. Plurilateral bodies like the OECD also promote international policy consensus and national policy convergence.

47. The term *Internet of things* refers to the use of the Internet to connect inanimate objects via electronic tags and sensors. For a discussion, see International Telecommunication Union 2005.

48. As a leading analyst and ITU participant has observed, ''For many years [ITU standards committees] were well occupied with work on the details necessary for compatible systems that would carry the traffic over the international lines connecting the national-international transfer points. The domestic side of these transfer points and the whole domestic network, including the subscriber terminals, were exempted from the purview of [ITU recommendations]. Thus, the interference with state prerogatives was limited to the international service from the gateway points.'' Wallenstein 1990, 73.

49. Here as elsewhere I am simplifying greatly in describing the workings of the relevant instruments. Unfortunately, the scholarly literature on the radio regime is exceptionally thin; the best treatment, which is now forty years out of date, is still Leive 1970.

50. See MacLean, Chapter 2, 97.

51. On the difficulty of assessing INTELSAT's tariffs, see Snow 1987. The uncertainty about this and other policies is due to intentional opacity; as Heather Hudson notes, ''There is no mechanism for external analysis of costs, tariffs, internal cross-subsidies, and the like. Critics have argued that Intelsat's costs are higher than necessary . . . Intelsat denies these allegations, but is not required to make public any documentation of its costs and rate-setting procedures.'' See Hudson 1990, 148.

52. Katkin 2005, 9.

53. OECD 1883, 20–21, 130.

54. Wunsch-Vicent 2006, 173.

55. Ploman 1979, 159.

56. Carlsson 2005, 11–12.

57. Among the issues considered in the TDF debate were: the protection of citizens' privacy when data is transferred to countries with weak protections; the weakening of national cultural and linguistic integrity; deepening divisions between the ''information rich'' and the ''information poor;'' the stifled development of indigenous online cultural production; difficulties in ensuring access to data held abroad; national security conflicts, as with the American effort to control East-West TDF; the extraterritorial application to data of national laws; the vulnerability to disruption of foreign systems on which countries depend; liability for errors in transmission and processing; the preservation or overextension of intellectual property rights; computer-based crime; the location and concentration of corporate decision making; the location, level, and quality of TDF-related production and employment; outsourcing; the policy treatment of intercorporate commercial transactions, or what later came to be understood as network-based international trade in services; the preservation of sectoral regulatory policies, such as in banking and finance, professional services, and computer services; the commodification of information, including governmental information; the valuation and taxation of information and its transfer; and ultimately, the erosion, as with other kinds of cross-border flows, of what some participants called ''information sovereignty.'' For more on the debate and its outcomes, see Drake 1993.

58. For a good overview of some of the self-regulatory initiatives with respect to Internet content, see Price and Verhulst 2005.

59. The role of human rights in the global information society generally and in the WSIS specifically is addressed in Drake and Jørgensen 2006.

60. The complexities of the issues need not be addressed here; for discussions, see Drake and Nicolaïdis 2000 and Wunsch-Vincent 2006.

61. For an overview of the underlying issues, see Drahos and Braithwaite 2002.

62. Musungu and Dutfield 2003, 3.

63. UNCTAD 2005, 191.

64. For an initial effort along these lines, see Drake 2001.

65. On these and other forms of learning in the WSIS, see Drake 2005.

66. For an overview of the process, see MacLean 2005. For broader perspectives on the nature and politics of Internet governance by participants in this project, see the chapters by Drake, Kleinwächter, and MacLean; and by Mueller, Mathieson, and McKnight in MacLean 2004.

67. See Working Group on Internet Governance 2005a, 4. For a fuller elaboration of the thinking behind this definition, see Working Group on Internet Governance 2005b.

68. World Summit on the Information Society 2005, 11.

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