

CHAPTER 28



Causes and consequences of the communications and Internet revolution

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READER'S GUIDE

During the 1990s the Internet and the World Wide Web exploded on to the scene. Communications always were critical in the conduct of international relations, but the onset of globalized networks makes the practice of foreign affairs even more complicated today. After providing a brief historical backdrop and an overview of global communications as of 2004, the chapter focuses on the key drivers that shape the global communication and information network and their security, political, economic, social, and cultural consequences. The chapter concludes with a review of the kinds of new global political issues raised by the globalization of communications and the demands for governance in this arena.

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Introduction and historical background

The microprocessor and cheap memory revolutionized the communication industry in the 1980s. The Web was born in the 1990s. By 2000 the price of international telephone calls was a fraction of what it had been 15 years earlier, torrents of data pulsed through global digital networks, and the ways people communicated were transformed. Communications and information technology are now at the core of a new world information economy. As globalization proceeds we need to understand why global networking grew as it did, and the consequences of these **developments** for the workings of contemporary international relations.

A significant driver of globalization is the advent of faster, cheaper communications that are critical to growth, innovation, higher productivity, and job creation. The rise of affordable global communications also had two major consequences that fundamentally altered the practice of international relations, making it more difficult for policymakers to keep control. First, global communications upset the **power** balance among **states**, firms, and non-governmental organizations. The empowerment of

new players on key issues and the restructuring of power relationships among existing actors forced change. Just as the **cold war** ended and bipolar competition gave way to new, more complex policy challenges, the rise of global communications augmented the loss of control of governments over traditional foreign and economic policy issues. Second, the instant saturation of broadcast and Internet channels with the latest news from anywhere on the planet pushed decisionmakers to act more quickly in response to breaking crises. Policymakers often did not have the luxury of time in which to deliberate about their decisions.

Until the early 1980s almost all national communications were provided by government-owned or government-controlled monopolies that were slow to innovate. Internationally there was limited voice traffic, occasional satellite broadcasts, and no commercial e-mail. There was no competition in the provision of international calls, so international calls were extremely expensive for callers, profitable for the phone companies, but not that numerous. The scheme for managing international voice

Box 28.1 The 1997 WTO agreement on basic telecommunications services

The WTO negotiations on basic telecommunications resulted in an agreement in which signatories adopted **rules** to encourage market access, adopt non-discriminatory regulations, and liberalize foreign investment restrictions by taking some, but not necessarily all, of the following steps:

1. to separate the regulatory body from the operators and to ensure that they treat all participants in the same manner;
2. to regulate closely suppliers of telecommunications services which exercise considerable market power;
3. to take measures to ensure that major suppliers do not engage in anti-competitive practices;
4. to ensure interconnection with a major supplier for competitors at any technically feasible point in the network
5. to enforce rules designed to ensure universal services in ways that are transparent, non-discriminatory, and competitively neutral;

6. to use procedures for the allocation and use of scarce resources such as radio frequencies that are timely, objective, transparent, and non-discriminatory.

Fifty-nine countries agreed to adopt transparent, pro-competitive regulatory **principles**, representing 99 per cent of the WTO telecommunications market. Forty-four countries agreed to permit significant inward foreign investment. Fifty countries guaranteed market access for all domestic and international satellite services and facilities.

The results of the WTO negotiations exceeded expectations. Twenty-three of the 25 European and Eastern European countries made full offers in all four categories. Eleven of the 20 offers from the Americas were strong across the board. Australia, Japan, New Zealand, and Singapore were far ahead of the other 12 Asian countries in fully liberalizing their markets. None of the eight African and Middle Eastern countries made full opening offers.

communications remained almost unchanged for more than a century, from the first telegraphic submarine cable until the mid-1970s. At its core was the International Telecommunication Union (ITU) that set technical standards, allocated spectrum, provided technical assistance to poorer **nations**, and later gave out orbital slots. In essence, the ITU was a cartel controlled by the national telephone monopolies.

At the start of the 1980s the British introduced limited competition and began privatizing British Telecom and Cable & Wireless. In the United States AT&T was broken up on 1 January 1984, but also was permitted, for the first time, to provide value-added and enhanced information services. Many countries followed Britain and the United States to embrace greater telecom competition, privatization, and **liberalization**. Convergence became the watchword as boundaries separating local and long-distance, voice and data, cable and telephone, and wireline and wireless services eroded. Service providers were permitted to provide content and broadcasters, studios, and other content providers could provide voice and data services.

On the international level, a series of trade negotiations pushed trade liberalization in new communications and information services and promoted

competition by multiple competitors on a playing field that was made more level. Box 28.1 summarizes the results of the WTO agreement on basic telecommunications services that moved this process forward. In addition, the US Federal Communications Commission acted unilaterally to force a sharp reduction in international calling rates.

Key points

- Communications and IT firms are at the core of a new world information economy.
- The rise of cheap global communications added new players to the decisionmaking mix and often forced decisions to be taken more rapidly.
- National monopolies provided telephone services in almost all countries for decades. They used the International Telecommunication Union to prevent competition in the provision of international communications services.
- The introduction of domestic and international communications competition liberalized national and international communications, and unleashed significant technological innovation.

Globalization, the Internet, and the World Wide Web revolution

The global telecom and information landscape is in flux. Consider telephone, cellular, and Internet penetration. Table 28.1 shows the number of main telephone lines, cellular subscribers, and Internet users per 1,000 inhabitants in 1990 and 2001. In 2001 Scandinavia, the Benelux countries, Switzerland, and North America led on installed telephone lines. Most major European countries had closed the gap with North America on wireline telephone. **Europe** and Japan enjoyed substantially larger cellular penetration in 2001 than either the United States or Canada, which lagged far behind. By contrast, Internet penetration was higher in the United States than in every country except Korea, Sweden, and Iceland, but the gap is closing.

An examination of the flows of telecommunications traffic written within Europe and Asia demonstrates that geography still matters. The United States is the linchpin of interregional voice and data flows. Combined traffic flows between Europe and Asia/and the Pacific were about a third of what passed between North America and the three main regions. Note that international bandwidth is available for data transmission hubs through North America. The USA–Europe traffic is almost four times greater than the available bandwidth for USA–Asia traffic and almost 90 times as great as the link connecting Europe and Asia. Within Europe, Germany and the United Kingdom are the main hubs of international traffic flows with France in a strong third

Table 28.1 Connectivity in relation to the UN's Human Development Index ranking (per 1,000 people)

HDI ranking	Telephone mainlines		Cellular subscribers		Internet users	
	1990	2001	1990	2001	1990	2001
1 Norway	502	732	46	815	7.1	463.8
2 Iceland	510	664	39	865	5	599.3
3 Sweden	681	739	54	790	5.8	516.3
4 Australia	456	541	11	574	5.9	371.4
5 Netherlands	464	621	5	767	3.3	490.5
6 Belgium	393	498	4	747	(.)	310.4
7 United States	547	667	21	451	8	501.5
8 Canada	565	676	22	362	3.7	466.6
9 Japan	441	586	7	588	0.2	384.2
10 Switzerland	574	732	18	728	5.8	307
12 Ireland	281	485	7	774	0.6	233.1
13 United Kingdom	441	587	19	770	0.9	329.6
14 Finland	534	548	52	804	4	430.3
17 France	495	573	5	605	0.5	263.8
18 Germany	441	634	4	682	1.4	373.6
19 Spain	316	434	1	734	0.1	182.7
21 Italy	388	471	5	883	0.2	268.9
30 South Korea	306	486	2	621	0.2	521
55 Mexico	55	137	1	217	0.1	36.2
63 Russian Fed.	140	243	0	53	—	29.3
65 Brazil	65	128	—	167	—	46.6
104 China	6	137	—	110	—	25.7
High Income	461	592	13	608	3.2	396.9
Middle Income	41	152	—	128	—	36.8
Low Income	10	30	—	10	—	6.4
WORLD	98	169	2	153	—	79.6

Source: UN Human Development Report 2003.

position. The most recent data from Telegeography indicate that Europe generated 44.1 per cent of all outgoing international telecommunications flows in 2002, up from 41.4 per cent in 1996. Within Asia the five main hubs are Hong Kong, Australia, Japan, China, and Singapore. Taiwan and South Korea trail, but also are substantial hubs. North America originated 31.3 per cent of international traffic in 2002, down from 32.3 per cent in 1996.

One way to interpret these statistics is that competition and innovation have promoted three major

trends that are transforming global communications, reshaping the world information economy, and reshaping world politics and international relations.

Trend 1. The Rise of Data: First, although telephone penetration and international voice traffic proceeds incrementally, the growth of data transmission is far outdistancing the growth of domestic and international voice traffic. The changes in the size of market segments reflect these trends. In 1994 the world telecommunication services market of

\$517 billion was about 16 per cent data and 10 per cent mobile. In 2001 the world telecommunications services market was \$968 billion even though competition had caused prices to plunge in many of the world's largest markets. Data revenues were about 18.5 per cent even though data were, by volume, now equal in size to voice traffic. Mobile had grown to about 33 per cent of world telecommunications revenues. International traffic had slipped from more than 8 per cent of the total revenue to less than 8 per cent (ITU 2001). The success of the Internet and the Web and the rapid growth of e-commerce all help to explain this trend. However, there is another way to look at this trend. The rise of global digital networks made much less meaningful the distinction between voice and data. Streaming bits can now be reassembled in much richer, more textured forms as voice, data, images, films, or music. From this perspective the real change is that people, governments, firms, and computers are using communication networks to interact much more than in the past.

Trend 2. The rise of the Internet and the Web: The Internet changes how a network is organized, the services it can provide, and its cost **structure**. Internet architectures are cheaper and more powerful than traditional phone networks. Voice is being supplemented by more complex communication flows that require more bits to be transmitted thanks to the Internet, the Web, and the continuing sharp declines in computing costs. In addition phones are becoming interchangeable with computers, as witnessed by the latest cell phones (which have powerful microprocessors). Further, just as banks sometimes give away mobile phone handsets to new customers, cable companies soon will bundle domestic and long-distance telephone services in their service packages. As a result, every network of any competitive economy will need to support data applications reliably. Modern economies require modern networks that efficiently carry vast amounts of information. This means that the cost of sending large amounts of data needs to be minimal. This, in turn, means that the price of traditional phone services—domestic, long-distance, and international—will rapidly begin to approach zero. Indeed, voice services that use Internet connections and allow free calls, including international ones, are already proliferating.

Trend 3. The rise of wireless networking: The third significant trend is the emergence of **wireless networks** that now connect more users than do wired networks. Satellite and microwave systems began the movement away from wireline to the first major fixed wireless system of the modern era. Satellite services were originally provided almost exclusively through monopoly systems, mainly through the Intelsat system. Terrestrial mobile wireless systems followed. New fixed, wireless (**WiFi**) systems that can deliver large bandwidth for short distances are now proliferating. In addition, video-phones now provide many of the international stories on CNN and the BBC. All of these are substitutes for conventional phone services that use transmission cables and make possible alternative choices. The new systems provide affordable voice and data links for many poor countries with little or no connectivity to international submarine cables. Wireless voice traffic and data transfer could shortly compete strongly with wireline voice and data transfer for dominance worldwide.

The significance of wireless for society, regulation, and international relations is huge. The early leaders are Korea, Japan, and Finland, but the rest of Europe is now moving quickly, with North America trailing. Wireless has opened the way to a vast increase in the connectivity of the developing countries' populations. It is cheaper and faster to deploy than wired networks. However, communications regulators in developing countries have so far treated it as if it were a luxury premium service for the better-off and business. As a result, they allowed mobile operators to charge higher prices for service but also encouraged competition in these services earlier than for wired networks. The pace of globalization was accelerated by competition which pushed down prices for long-distance and international calls and unleashed innovation, stimulating tremendous investment in and growth of global communications. National firms partnered and merged, often across national borders, to achieve the scale and scope necessary to operate **global networks**. In essence the emergence of affordable, integrated global networks provided the backbone of the World Wide Web and was a huge catalyst that juggled the priorities and agenda of international relations.

Key points

- The United States is the linchpin of interregional telecommunications and data traffic, but European countries generate a third more international traffic flows than North America.
- Growth rates are higher in Europe, Latin America, the Pacific, and Africa than in North America or Asia.
- International data traffic has grown faster than international voice traffic and is now the larger of the two. The distinction between voice and data is losing its meaning. The rise of the Internet, the Web, and e-commerce complements this trend.
- Wireless Internet voice traffic and international video-phones will increase in popularity.

Drivers that shape globalization

Figure 28.1 presents a dynamic model of telecommunications and IT globalization. This section focuses on the drivers that shape globalization. Later the consequences of globalization will be considered. Start with the assumption that firms work to make money and dominate markets. To do so they use expertise from different disciplines to try to guide globalization in ways that help them and

undermine their competitors. Their strategies may involve influencing the policy and regulations that shape how **global networks** operate, the hardware that comprises the network, the content that flows through the network, or the software that mediates between the hardware and content. Firms employ different strategic tools to win at each level. The interdisciplinary nature of these tools is one reason

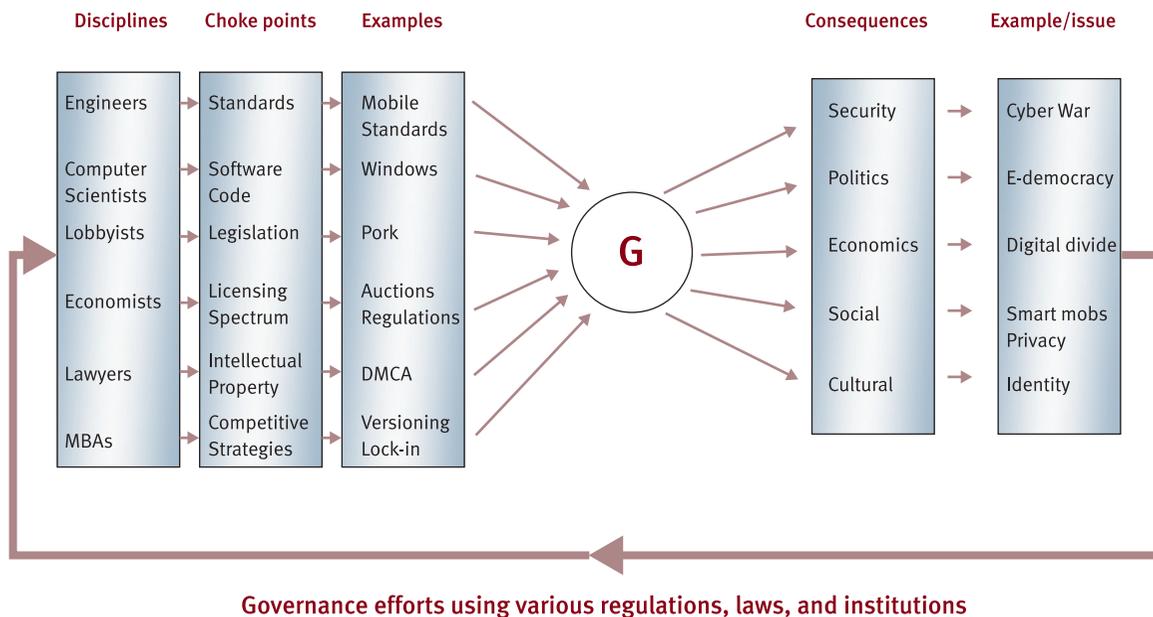


Fig. 28.1 A dynamic model of telecommunications/IT globalization

that the role of communications in determining the structure of global networks is not well understood. Six separate strategies that depend on different professional expertise are noted in Fig. 28.1 to illustrate how firms try to advantage themselves.

First, engineers create the technical **standards** for equipment and the mechanisms for physically linking them. This can be accomplished cooperatively or conflict may arise. Whoever controls standards that triumph in the market-place holds a significant competitive advantage. But the 'best' standard is not always the winning standard. Famously, the once ubiquitous VHS standard for videorecording vanquished Sony's Beta standard, even though at the time Beta was the superior technical standard. Nonetheless, a strong alliance of companies that did not want Sony to dominate the market successfully supported the VHS standard that ultimately was embraced everywhere. At present there is significant competition between Europe, the United States, and China over which wireless standards will triumph.

Second, computer programmers write the **software** that instructs the hardware how to operate and allow content to flow through networks. Those that design and own the software determine how networks operate. The obvious example is Windows. The battle for control of communications was initially waged between AT&T (which controlled the communication network) and IBM (which dominated the terminals attached to the network). They battled over where the intelligence should be located in the network. To try to leverage their strengths, AT&T favoured a smart network with dumb terminals; IBM advocated smart terminals and a dumb network. But they were debating the wrong issue, so both firms lost. Microsoft, by designing the operating system now run by most personal computers, won the battle that traditional powers did not understand was being fought until it was too late. However, there is a backlash against Microsoft. Hackers delight in exposing the weaknesses in Windows' security and many programmers (and IBM) champion Linux, as an alternative to Windows.

Third, firms hire lobbyists to try to create advantage for them by persuading politicians and regulators to adopt laws and public policies that benefit them. Firms may try to obtain trade protection, subsidies, or tax breaks for national firms versus foreign

ones from their own governments, for their industries over other industries, and even for one firm or process over another. At a minimum, lobbyists for established interests work hard to block laws and regulations that might undermine their favoured position. Lobbyists and the firms they represent try to elect politicians who favour their positions and lobby for changes in policy that enhance their clients' interests.

Fourth, economists worry about money and its distribution. If governments implement successful economic strategies that play to the strengths of some firms or sectors more than others, then those firms or sectors are more likely to prosper. Economists associated with firms and with government regulatory agencies continually joust with one another trying to devise policies that will skew benefits to their clients or citizens. Their focus is on the generation of revenue and **influence** and its distribution among the governments, firms, and consumers. Firms working within markets or under government guidance **rules** set prices. Government economists advise legislators and policymakers about taxation issues. In the telecommunications arena government economists have been critical in developing schemes for spectrum allocation and licensing that are meant to generate revenue for the government, spur growth and innovation, and ensure customers receive the best possible service at a fair price. One reason that privatization of government-owned telecommunications monopolists proved popular was that the sale of their **equity** generated large sums of cash for government coffers. More recently, economists urged governments to auction off scarce spectrum instead of distributing it free to existing operators or in lotteries.

Fifth, intellectual property lawyers have allowed firms to make the ownership of content into a key issue of control. Intellectual property in the network environment is critical because information is expensive to create, but additional, perfect copies are cheap to produce. Owners of content have gained a boost in the past decade because of unanticipated advances achieved in the protection of international **intellectual property rights** during the NAFTA and Uruguay Round of trade negotiations. The United States also unilaterally extended the intellectual property rights of US firms through such measures as

the Digital Millennium Copyright Act of 1998. However, the owners of information are concerned that the technology now exists to enable the simpler and cheaper manufacture of perfect copies of software, films, and music than ever before. Critics worry that the balance between innovators and users has tilted too far in favour of the owners of intellectual property and that consumers, the poor, and those in developing countries are being disadvantaged. Specifically, the extension and strengthening of intellectual property laws in the telecommunications/IT arena give a new weapon to firms that own intellectual property, but some believe that the laws are now so one-sided that some firms are using them to stifle competition. Firms trying to claim ownership of key technologies on the Internet could hold progress and innovation hostage.

Sixth, business executives, many with MBA qualifications, seek competitive strategies to lock in customers, manage their corporate alliances, and legally undermine opponents (Shapiro and Varian). Executives are paid to design marketing and pricing strategies that will attract a broad range of customers who are willing to pay different prices for different versions of the same product. Similarly, it may be possible to sell different versions of a product with quite different features in different countries and

cultures. To the extent possible firms try to lock in their more profitable customers either by making it expensive for them to switch vendors in mid-process or by providing huge incentives to good customers to stick with the same vendor.

Key points

- Different professional expertise is used by firms to create advantage. Computer programmers and engineers can design software and standards to create competitive advantages for firms within networks.
- Lobbyists work to shape laws and public policy to advantage their clients.
- Economists try to devise systems to increase the revenue and profits of their clients, firms, or governments.
- Lawyers use intellectual property laws to maximize the power of firms over content.
- Business executives are paid to find ways to create advantages and profits for their firms relative to their competitors.

The impact of the information revolution on international relations and institutions

The impact of the deregulatory push in America and Britain during the 1980s also tilted the balance of influence from government towards firms and markets. The rebalancing of power among actors in international affairs was accelerated by the information revolution. The Web and the information revolution already have had tremendous security, political, economic, social, and cultural consequences. This section briefly notes the altered roles of countries, companies, **non-governmental organizations (NGOs)**, international **institutions**, and individuals and then examines the consequences for international relations already evident.

The information revolution altered the role of government policymakers in four main ways. First, policymakers now have access to much more information, perhaps too much information. As the run-up to 9/11 makes clear, paralysis through information overload is a real danger. Second, global networks mean that decisionmaking can be centralized or decentralized. Governments generally have centralized decisionmaking, reducing the importance of ambassadors and embassies and tempting political leaders to micro-manage military situations and economic negotiations in distant locations because they can, not because they should. Third, global

networks erode the monopoly of information in the hands of governments, democratizing access to breaking information. Firms, journalists, and NGOs often have better information than governments. Fourth, global networks provide transparency to everybody, making it difficult for countries unilaterally to take national policy decisions when the problems are global.

Globalization and global networks also allow business firms to think and act in terms of global production and a global market-place, heightening their international influence. The global movement of money and information allows firms to achieve global production strategies, including the use of strategies such as outsourcing, and simultaneously makes it more difficult for national governments to regulate them effectively. In the absence of effective international regulation, these firms are gaining in influence.

Global networks empowered and vastly increased the numbers of NGOs and even individuals on the international stage. NGOs now create, track, and disseminate information and organize people and groups sympathetic to their goals to pursue specific policy outcomes in areas such as human rights advocacy, environmental protection, and women's rights. The most striking example of the positive influence of NGOs was their major role in the negotiations to ban landmines and their success in raising human rights concerns. NGO efforts to ban land mines are summarized in Box 28.2. A more visible impact of NGOs came when environmental NGOs and labour unions joined to disrupt the attempt by governments to launch a WTO Trade Round in Seattle in November 1999. The round was finally launched in Doha, Qatar, a city not noted for public demonstrations and dissent.

Ironically, international institutions like the WTO and the IMF are both more important and less effective international actors because of the rise of global networks. They are more important because in the absence of effective national policies to deal with globalization, these institutions are the logical venues through which to organize cooperative international policies. They are less effective because critics of such institutions, who complain that they are neither democratic nor even-handed, have stymied their initiatives at major junctures.

Box 28.2 The campaign to ban landmines

In 1997 the Nobel Peace Prize was awarded to the International Campaign to Ban Landmines (www.icbl.org/), a consortium of about 1,000 NGOs that helped mobilize public opinion and motivated governments. The cause was championed by Princess Diana, the International Committee of the Red Cross, and a handful of NGOs such as the Vietnam Veterans of America, which first advocated the ban. The Web allowed NGOs and individuals to organize support for the ban and assist sympathetic political leaders such as UN Secretary General Kofi Annan, Canadian Foreign Minister Lloyd Axworthy, and US Senator Patrick Leahy to move the process forward.

The Mine Ban Treaty of December 1997 bans the use, production, stockpiling, and transfer of antipersonnel landmines. The treaty became international law on 1 March 1999. As of 10 September 2004 the treaty had been ratified by 143 countries. Another nine countries had signed but had not completed their ratification process, bringing the total number of countries supporting the treaty to 152. At that date, 42 countries had not joined the treaty. Major states that have so far not signed or ratified the treaty include the United States, Russia, China, India, Pakistan, the two Koreas, Egypt, Iran, Iraq, Israel, Cuba, Saudi Arabia, Finland, and Vietnam.

These kinds of shifts influenced world politics and the theory of international relations. Global communications enabled and empowered new non-governmental institutions and accelerated and broadened transnational contacts between states and non-state actors in other countries. Non-state actors, firms, and smaller, interest-driven NGOs proliferated because their internal communications made them more cohesive and transnational. In addition, global networks and new communication technologies produced a democratization of intelligence-like information that narrowed the information gap between states and others. For example, although official intelligence efforts to find weapons of mass destruction in Iraq have so far failed, in late 2002 photos taken by a commercial satellite documented Iran's active nuclear programme and forced this issue on to the Bush Administration's agenda.

International relations theories have adapted to incorporate globalization and global networks into



their approaches. Globalization did not banish high-level state-to-state relations, but did add several layers of complexity. The variants of theory that begin with 'neo' and/or end with 'ism' continue to proliferate, but in essence the impact of global networks is to undermine government control and to make it possible for those at the top and those at the bottom of society to interact in new ways. Supranational and subnational players matter in different ways, at different times, on different issues. Leaders isolate themselves from grassroots opinion at their own risk. The democratization of information in real time levels the field in terms of who knows what, when, and where. Every crisis is aired on CNN and BBC as it happens, often forcing decisionmakers to act quickly instead of deliberating over their responses. The same breaking news and, importantly, a flood of vivid images of the breaking news is available from all but the most remote points and is instantly available in countries around the world. Today the trendiest place in Timbuktu, Mali is the MCT (Multipurpose Community Telecentre) opened in May 1998. In Tibet tourists and residents can check their e-mail at the Barkhor Caf, not too far from the Lhasa Holiday Inn. The percentage of the world's population linked to the global communications network in one or more ways is growing rapidly. Those on the outside truly suffer from a **digital divide**, but this gap may be closing more rapidly

than most people appreciate because nodes are proliferating, costs are declining, and governments more and more understand that building a telecommunications/IT infrastructure needs to be a development priority.

Key points

- The information revolution increased the influence of the market and of giant firms relative to governments.
- Global networks allowed NGOs to increase in number and influence. NGOs sometimes promote positive changes, but may hamper initiatives that governments and firms launch through international institutions.
- Global networks and new communication technologies empowered non-state actors and democratized access to information. The information gap between states and others narrowed.
- Decisionmakers must act more quickly because every crisis is aired on CNN and BBC as it happens. A flood of information, often with vivid images, is narrowing the global news gaps. Democracy slows down decisions, so governments are having a more difficult time keeping up with changing situations.

Security, political, economic, social, and cultural consequences

The consequences of global networks and communications cut across borders and issues. The results are both positive and disruptive, raising new opportunities and challenges for global stability. This section surveys both the positive and negative consequences of globalization and global networks for **international security**, politics, economics, and social/cultural **identity**. The final section of this chapter examines the challenges for governance raised by these developments.

Security consequences: intelligence gathering, activism, and cyberwar

The information revolution altered the nature of intelligence operations, political opposition, and the waging of war. However, access to more information does not automatically translate into better policy decisions or greater national security. Components of this sea change include: intelligence gathering and its impact on foreign policy; the rise of 'activism, hacktivism, and cyberterrorism' (Arquilla and Ronfeldt 2001) and the use of networked information to



initiate terrorist actions or to use in military conflict. Table 28.2, for example, indicates the benefits and drawbacks faced by **netwar** terrorists trying to use IT to further their aims.

First, global communication networks help governments collect and analyse vast quantities of information to inform their decisions. But greater intelligence collection often does not always translate into better policy or prevention of **terrorism**. The information-collection **capabilities** of modern intelligence services were already evident in the 1980s after a Soviet fighter downed Korean Airlines 007. Within hours, President Reagan released the taped conversations between the Soviet pilot who shot down the plane and his ground base. Two decades later, despite extensive efforts and technological advances in intelligence gathering, efforts failed to prevent the terrorist attacks on 11 September 2001 on the World Trade Center and the Pentagon or the Madrid train bombings two and a half years to the day later. Similarly, despite confident claims by American and British leaders that Iraq was poised to unleash weapons of mass destruction (WMD), a year after the invasion of Iraq in 2003, no WMDs have been found. Even when important information exists, locating it and recognizing its importance in time to prevent disasters can be challenging.

Thus, deciding what intelligence matters becomes

imperative in the conduct of electronic espionage, especially because cyberterrorists have access to almost the same information on the Web. Information overload may also leave less room for intuition, trust, and secret understandings that were traditional instruments of the process. In short, more information may be a blessing when bureaucrats and political leaders can manage, analyse, and synthesize the data. It can be a curse when abundant information overloads or dehumanizes the decisionmaking process to the detriment of creativity and flexibility. Similarly, global networks allow governments to centralize decisionmaking, increasing the influence of a narrow range of top leaders. This may not translate into sound, efficient policy choices. Indeed, many large firms have decided to decentralize their decisionmaking processes and to give more authority to those closer to the customers.

Second, governments and others now routinely try to use 'soft power' to influence the views of others through television, radio, and print media and via the Web. Those who generate the information view it as 'public **diplomacy**'. Those on the receiving end are more likely to see such broadcasts as propaganda. The United States, in the aftermath of 9/11, began to focus more on public diplomacy initiatives. In March 2002 the United States launched Radio Sawa, an Arabic-language radio station to provide an

Table 28.2 Benefits and drawbacks of IT use for netwar terrorists (facilitating and mitigating factors)

IT use	Facilitating	Mitigating
<i>Organizational</i>	<ul style="list-style-type: none"> Enables dispersed activities with reasonable security Helps maintain a loose and flexible network Lessens need for state sponsorship 	<ul style="list-style-type: none"> Susceptibility to wire and wireless tapping Digitally stored information can be easily retrievable unless well protected Cannot itself energize a network; common ideology and direct contact still essential
<i>Offensive</i>	<ul style="list-style-type: none"> Generally lower entry costs Eradication of national boundaries Physically safer Spillover benefits for recruitment/fundraising 	<ul style="list-style-type: none"> Current bombing techniques already effective Significant technical hurdles for disruptive and destructive information operations Unique computer security risks impose recurring costs of 'technological treadmill'

Source: Reprinted with permission from Michele Zanini and Sean J. A. Edwards, 'The Networking of Terror In the Information Age', in John Arquilla and David Ronfeldt (eds), *Networks and Netwars* (Santa Monica, Cal.: RAND, 2001): 48.

American perspective mixed with music to attract those who otherwise might not listen. In February 2004 Al Hurra, a US-funded Arabic language television news station, went on the air throughout the Middle East. Famously, in the mid-1990s the Zapatistas in Chiapas, Mexico, knowing they could never win a military struggle, launched a social netwar spearheaded by 'Subcommander Marcos' to make their case against the Mexican Government to the world. By making their plight transparent to the world, they created a media playing field on which they could compete and sometimes triumph.

Those dissatisfied with the current **order** found in global networks a tool that allowed diverse individuals to organize to make their voice heard. Activists and NGOs of all political persuasions have seized on the Web as a mechanism to maximize their influence and lobbying clout. Advocacy networks in support of human rights issues, the environment, to oppose violence against women, and to seek the end of landmine use have been especially noteworthy (Keck and Sicking). Similarly, in the 'Battle at Seattle' anti-globalization activists used new global communications technologies to organize against the WTO and the forces of globalization that they opposed. A more virulent form of activism occurs when hackers, for fun, fame, or politics, break into networks and try to cripple or sabotage them or infect them with viruses, worms, and other forms of attack.



Third, global data communication networks and new information technologies are changing modern warfare. Knowledge is the key to destruction as well as to production. The potential power of information weapons was demonstrated in the 1990 and 2003 invasions of Iraq. The military was bolstered by AWACS (an Airborne Warning and Control System) which scanned the sky for enemy aircraft and missiles and sent targeting data to allied forces from modified Boeing 707s. In parallel, J-STARS (the Joint Surveillance and Target Attack System) helped detect, disrupt, and destroy Iraqi ground forces during Desert Storm with speed and precision. Similarly, the battle for Kosovo was fought from the air. Smart bombs were delivered by smart planes directed by smart computers. In this virtual war the attacking forces suffered no fatalities during the fighting.

In addition, the Pentagon apparently has considered launching direct cyberattacks on its foes to bring down their computer and communications systems, but there is reluctance to go as far as this because there remains uncertainty regarding cyberwarfare's place amid the rules of armed conflict. Weaker states and terrorist organizations cannot compete with the military firepower of the United States and Britain, but they have tried to mount cyberattacks on vulnerable US computer systems and networks. For example, in 2001 at the nadir of US-Chinese relations, Chinese hackers launched waves of cyber attacks on US Government computer systems in an effort to penetrate and sabotage them.

Political consequences: from e-democracy to e-terrorism

The political consequences of globalization and global networks also are both positive and negative. **E-government** that engages citizens more directly in the political process is technologically feasible. At the same time, the process, politics, and political implications that result from the new technologies could foment civil unrest and confusion.

On the positive side, new communications and information technologies are beginning to enable advances in e-government, e-democracy, and e-participation (United Nations Economic and Social Council 2003). Governments and candidates now routinely use the Web to provide citizens and supporters with information. Increasingly politicians and parties use the Web to solicit contributions. More rarely, governments and candidates use the Web to elicit views from their people and to seek input to assist them in their decisionmaking. A few isolated localities have also experimented with e-voting in elections. The lasting legacy of Governor Howard Dean, the unsuccessful US Democratic Party presidential candidate in 2004, may be that his use of the Internet to motivate and involve supporters and raise funds for his campaign was a precursor of what it is to come.

At the same time, governments are losing their **hegemony** over the political process. New communications and information technologies empower NGOs, firms, revolutionaries, terrorists,

fundamentalist religious leaders, extremists of all stripes, criminal syndicates, and political subversives as well as well-meaning **social movements**, reformers, and activists. This raises concerns that decentralized, fragmented, anarchic chaos is on the horizon that may overwhelm the positive benefits of communications and information technology. Alternatively, governments may emulate China and crack down and reassert their control over the Internet and their citizens.

Economic consequences: growth, digital divide, and criminal organizations

The strongest case for globalization and global networks is that they promote economic growth through increased trade and investment. Companies and countries that are early adopters of communications and information technologies may enjoy an information edge as they compete and grow. Globalization and global communications do not, however, guarantee that growth will be distributed equitably within or between countries. Furthermore, global flows of funds and information may undermine national policies and facilitate crime and corruption. It is unclear, for example, whether national monetary authorities can control money supply or exchange rates in a globalized economy, especially when large sums of money are being illegally laundered. In short, national governments are challenged as they try effectively to manage global firms and markets.

The teledensity gap between upper and middle income and the poorest countries results in a 'digital divide' relative to the industrial world that is especially poignant. The Benton Foundation estimates that 'there are an estimated 429 million people online globally, but even this staggering number is small when considered in context. For example, of those 429 million, fully 41% are in North America. Also, 429 million represents only 6% of the world's entire population.' Such statistics suggest that large segments of the world's population have no way of participating in the information economy. Without Internet access, economically marginalized populations will experience even greater development gaps than they already face.

The World Bank's InfoDev project concisely summarizes the dilemma: the Internet revolution is both an opportunity and a threat for developing countries. The Internet presents the opportunity to leapfrog communications into a new level beyond voice communications and incorporates entirely new applications and services. It presents the opportunity to enhance social and economic conditions through this higher level of communications, thus presenting the potential for convergence in the social and economic status of nations around the world. At the other extreme, however, is the threat that the Internet revolution results in an increased gap in the communications infrastructure and that this gap could inevitably hinder the pace of social and economic development *vis-à-vis* the developed world, thus resulting in a world where the global economic order diverges further. Box 28.3 describes this dilemma in greater detail.

Some developing countries have successfully narrowed the gap. China now has more mobile phone users than any country in the world and South Korea is the world's leader in advanced telecommunications services. Until recently most analysts worried that the digital divide would devastate poor countries' prospects. More recently this concern has been called into question. A debate rages over whether the digital divide is widening or narrowing. In the parallel case of the Internet, in the United States, according to the Center for Communication Policy at the University of California at Los Angeles, the digital divide seems to be closing. Latinos and African-Americans are the fastest-growing Internet users. The **gender** gap is also narrowing so that only a slightly larger percentage of men than women are online. By 2014 80 to 85 per cent of Americans are predicted to be connected to the Internet, approaching the predicted percentage penetration among the leading Internet adopters—Sweden, Finland, and South Korea. By that time Britain, Germany, and Japan should be approaching 75 per cent penetration.

But for populations and countries with only sparse connectivity to the world, Manuel Castells argues, 'uneven development is the most dramatic expression of the **digital divide**'. Moreover, the digital divide within and between countries should not be 'measured by the number of connections to the Internet, but by the consequences of both

connection and lack of connection'. The 'social unevenness of the development process is linked to the networking logic and global reach of the new economy. . . . Education, information, science, and technology become the critical sources of value creation in the Internet-based economy' (Castells 2001: 265–9). To be competitive within a networked

world-economy countries and firms and individuals within them must have access to global flows of capital and information. It is but a short logical jump from this starting point to contend that if legitimate, legal capital flows and especially information flows are restricted, alternatives will be found. If large parts of the population in poorer countries are shut out of

Box 28.3 The digital divide challenge: examining the gap between haves and have-nots

Without basic connectivity countries cannot participate in a communications revolution and the gap between the haves and have-nots in the short and medium term could widen. The digital divide for mobile, Internet, and broadband access varies substantially across countries. **Leaders** have the highest penetration levels in all areas of communications and are entering the multimedia phase of the Internet revolution. **Latecomers** have low penetration levels, moderate literacy rates, low income levels, and economic and social conditions that discourage ready availability of financial capital. They could be left behind in the absence of serious external intervention. **Adopters** are in between and many will unleash the Internet revolution in the near future.

Mobile

Mobile service is fast becoming the preferred medium for basic voice communications. In the medium term, mobile markets offer the greatest hope for narrowing the connectivity gap. The gap between Leaders and Adopters should shrink as markets in the Leader countries mature and growth in the Adopter countries stays strong. Competition should promote lower prices and entry costs; the spread of prepaid and calling party pay services should increase mass market penetration, reduce prices, improving quality and greater geographic coverage should boost mobile phones over fixed lines. Although mobile prices usually are higher, the level of service innovation, customer service, and price reductions competition has led to greater dynamism in mobile markets than in the fixed-line sector.

Internet

The Internet gap between developed and developing countries is less likely to narrow in the medium term. Even with the falling prices for personal computers, the cost is a significant barrier to individuals in developing countries. Low literacy and low levels of connectivity limit the growth of Internet connections. Weak postal systems, poor financial systems, and lower utility because there are few local

language sites also may limit Internet growth. Although the high cost of service probably will encourage multiple user accounts and a greater reliance on community access centres, such as Internet cafés, the Internet audience should grow. Further, the Internet is a low-cost alternative to international voice communications and should attract business from price-sensitive firms and individuals in developing countries.

Broadband access

There is considerable danger that the gap in broadband access could widen because of its high price and because the initial target market in most developing countries may be too small to spur the private sector and investments. Carriers, with limited financial resources, first focus on basic connectivity. So, few carriers in the developing world have concrete plans for the deployment of broadband access technology. Poor prospects for broadband access in developing nations also raise the risk of divergence that could sabotage the chance of Latecomers to benefit from the 'Internet Economy'.

Recommendations

Adopter and Latecomer countries need to emphasize three priorities: (1) **Connectivity**—at least 5 per cent connectivity probably is needed to leapfrog to Internet connectivity. (2) **Competition** is needed to spur investment, decrease prices, and boost subscriber growth and new technology development. The challenge is successfully to initiate and regulate competition. (3) Widespread **literacy and IT technology knowledge** are needed to participate in the Internet revolution. In short, to narrow the digital divide Adopters need to build the foundations necessary to launch affordable and ubiquitous broadband access. Latecomers must first concentrate on providing broad, basic connectivity and worry about deploying broadband infrastructure later.

Source: Greatly condensed from the Executive Summary of World Bank/InfoDev 2001.

the new economy, global criminal activities will arise to create illicit transnational networks instead. Inevitably, such activities will undermine the legitimacy and stability of governments and the civic culture and can, in extreme instances, result in the destruction of the rule of law, the collapse of state authority, and sometimes to violence and civil war.

Similarly, illegal activities could undermine the trust in and functioning of the world-economy. Organized crime has a long history. The Sicilian mafia, the Cali cartel, Chinese **triads**, Japanese Yakuza, Russian criminal networks, and their predecessors have operated for centuries. But globalization and global networks have prompted criminal networks to form transnational strategic partnerships to ply their illegal, often violent trade. Since the 1980s sophisticated transnational criminal organizations using global communications and transportation technologies have expanded their grasp and become more efficient. The United Nations Conference on Transnational Crime noted in 1994 that criminal organizations were active in crimes involving the transnational movement of drugs, weapons and weapon-grade materials, people and body parts, and money. **Drug smuggling** is the dominant global criminal activity from Colombia to Thailand. Ironically, the greatest threat facing the drug trade may be drug legalization, not government success at shutting down the supply side. **Weapons trafficking** is a multi-billion dollar business that can easily spill over to supply arms and munitions to revolutionaries, terrorists, and criminals. Smuggling of **nuclear weapons-grade material** for possible use by 'rogue' states or terrorists is a real risk. Concern for the safekeeping of Russian nuclear material has long worried specialists; in 2004 the head of Pakistan's nuclear programme confessed that he had sold materials abroad illegally. The smuggling of **illegal immigrants** eager for a better life has increased as opportunities diverged in richer and poorer countries. The **trafficking in women** for menial work and prostitution, of **children**, and of **body parts** also has increased. **Money laundering** through global networks is the glue that holds all of the other transnational criminal activities together.

Social and cultural consequences: smart mobs and transnational identities

The rise of new information and communications technologies creates a second digital divide separating those who are comfortable using new technologies from those who are not. Those who are connected to the technology also are increasingly connected to virtual communities with which they regularly share information and ideas, even if they have never met in physical space. These smart mobs gather and disperse, intellectually and physically, with remarkable speed (Rheingold 2003). In short, one consequence of global networks is that they enable actors to relate to and interact with institutions and one another in new ways. Another consequence, related to the transparency created in an interconnected world, is that individuals lose significant amounts of their privacy. It now is routine to 'google' those you meet. A slightly deeper examination will reveal credit reports, parking tickets, and employment and criminal records. Ironically, those plotting terrorism may choose not to use new communications sources precisely because that could expose their activities in advance.

On the cultural side, communications networks redefine questions of identity, of determining 'Who is us?' Again technology pulls identity in conflicting directions. On the one hand, the Internet allows people to get in touch or stay in touch with their roots and maintain their family, ethnic, religious, and cultural ties. Unlike travellers and immigrants in previous generations, those who move across the globe today do not cut ties with family, friends, and their workplace because phone and e-mail connections are usually cheap and available. At the same time, cultures blend into one another and become more global today because of shared attachments to news, movies, video games, fashion, design, and even cuisine. Thus, hyphenated identities are slowly giving way to multiple identities shared among global citizens.

In summary, globalization has tremendous consequences in different arenas. But globalization is a dynamic process. As new consequences emerge, companies, countries, and individuals adjust. These

adjustments provide feedback and impact on factors driving globalization, so the process continues to

unfold. But globalization is a journey, not a destination.

Key points

- The information revolution altered intelligence gathering and its impact on foreign policy; allowed activists and cyberterrorists to gain more influence; and networked information has transformed military conflict.
- New communications and information technologies are beginning to enable advances in e-government, e-democracy, and e-participation. But they also empower NGOs, firms, revolutionaries, terrorists, fundamentalist religious leaders, extremists of all stripes, criminal syndicates, and political subversives as well as well-meaning social movements, reformers, and activists. These forces threaten stability, raising concerns that decentralized, fragmented anarchy could occur.
- Global networks promote economic growth but may lead to uneven development. Faced with a growing digital divide, legal and illegal activities could undermine the trust in and functioning of the world-economy.
- Virtual communities build on new network connections and change the identity of those participating.

Governance in a time of information revolution

As globalization proceeds, governance issues grow more complicated. At each stage governments and private firms react to new developments and consequences which in turn alter the dynamics of globalization. At the same time, social movements, terrorists, revolutionaries, and criminal organizations which are focused on their own goals and interests try to manipulate globalization and global networks to their own advantage. As complexity and numbers increase, the chance that networks will fall apart, leading to system breakdown, economic collapse, and violence also grows. Unless a flexible system of governance emerges, problems are likely to intensify and could spiral out of control.

There are four main options. First, governments can try to muddle through, reacting as new circumstances and issues arise. The problem is that national regulations are less and less effective when dealing with global issues and transnational movements. Second, governments can deregulate, step aside, and put their faith in the magic of markets. However, as they pursue power and profit large firms frequently distort markets. Over time firms may behave better and increasingly practise 'self-regulation' because

their behaviour can and probably will be exposed globally, but the record of self-regulation is spotty at best. Further, malicious hackers, criminal organizations, terrorists, and other rogue actors can be counted on to 'cheat' whenever it is in their interest. Third, governments may try to work through international institutions like the ITU, the WTO, or the IMF. Here too there is a problem. Activists and NGOs fear that international institutions are undemocratic and serve as puppets for rich firms and governments. Thus, although governments have transformed the international telecommunications regime since 1984, the effort to create an equitable **international regime** to govern the world information economy has proceeded in fits and starts. Fourth, there are now a few instances in which individuals and grassroots users take responsibility for managing and maintaining international **cooperation**. Prominent examples include **open source software** efforts such as Linux or Apache that are maintained by programmers around the world and the California-based, but internationally organized NGO, the Internet Corporation for Assigned Names and Numbers (ICANN), which administers the Internet's

domain name system. Linux has enjoyed significant successes, but the ICANN experience to date has been uneven.

With technology changing so rapidly, rules negotiated in prolonged trade negotiations are always going to be out of date before they come into force. Rules and regulations can only remain relevant if they are flexible enough to evolve along with the system. But that is so complicated that critics worry that if the wrong rules are negotiated or misguided policies are introduced, problems will inevitably arise. The challenge for policymakers is to be sensitive to inputs from firms and NGOs, to figure out which rules are needed (and which are not) and how they should be structured, implemented, and enforced in ways that benefit individuals and the society as a whole.

Nobody has solved the challenge of constructing and implementing a sustainable regime for managing global networks, global firms, and global economies. The task grows ever more complex because there are more and more relevant players—developing countries, global firms, labour unions, and NGOs. Moreover, as the Web powers the **transition** towards globalization, every country, large firm, and NGO is actively engaged in the process because they realize that the agreements that are struck will determine whether they are winners or losers in the emerging world information economy. Their future is at stake.

There is considerable debate about the impact of globalization on risk and uncertainty, growth and inequality, democracy and freedom, family and social relationships, and international affairs. But globalization is a dynamic process that governments and other actors continuously influence. The information revolution caught policymakers unprepared but, as it continues to unfold, the choices that governments (and other actors) make about policy do matter. So far governments and international institutions have advanced no coherent plan about how or even whether they should guide the information revolution or about how to create an international regime for cyberspace. Here, we consider four key challenges facing policymakers with regard to cyberspace, that links all countries and an increasing percentage the world's population.

The legal and policy areas most directly affected by

the communication and Web revolution can be grouped into five main areas that impact (1) individuals, (2) the content that flows over global networks, (3) the global communication infrastructure, (4) the global regulatory environment, and (5) international relations. Each of these areas requires attention because of the global nature of cyberspace, all of them may require global cooperation and **coordination**. The relative influence of governments, firms, NGOs, and international government organizations (IGOs), social movements, criminal and terrorist organizations, and individuals will all shape globalization and the information revolution as it continues to unfold. Yet the balance of influence among these actors varies from issue to issue.

Policies affecting individuals: privacy and secrecy

Privacy rights and data security concerns are heightened in cyberspace (including data security and encryption issues, sometimes referred to as the 'Balkans of the cyber age'). Data communications and especially electronic commerce transactions take place in a new form of 'space' in which much greater surveillance by governments, employers, or individuals is possible. How should the rights and privacy of individuals be protected and balanced in light of the pressing data security needs of governments and firms in an age of rising terrorism? Similarly, in many countries officials try to control content that is viewed as containing pornography, excessive violence, bigotry, and hatred, or that is relevant to national security concerns. This becomes especially sensitive and may lead to international dissension because different countries focus on different issues—Europe is more worried about Nazi memorabilia than America; China blocks Internet sites related to Tibet.

Policies affecting content: intellectual property

In a global digital age content that flows across global networks has great value. Intellectual property rules that protect the owners of content through

copyright, patents, trade marks, and trade secrets are more important now that perfect digital copies are cheap to make. The potential for software or film piracy in China or music piracy by students is immense. Firms and innovators argue that investment and *research and development* will dry up if innovators are not fairly compensated for their inventions. By contrast, if intellectual property fees are so high that users, in developing countries, cannot afford to pay to license new technologies they face immense barriers to their development. Should, for example, Africans with HIV-AIDs, who cannot afford to pay for expensive drug treatments, be condemned to early death?

One of the most visible successes of the Uruguay Round trade negotiations was the TRIPs (Trade-Related Intellectual Property) agreement of 1994 that strengthened international intellectual property protection and established new enforcement mechanisms and dispute-settlement procedures. Critics in industrial and developing countries worry, however, that the TRIPs agreement and the similar arrangements agreed to by the United States, Canada, and Mexico negotiated under the NAFTA accord tilted the balance between the rights of innovators and of users too far towards the creators of intellectual property. Finding appropriate ways to balance and harmonize the rights of users and innovators across borders may prove a significant and ongoing challenge.

For example any successful governance scheme for international intellectual property will need to balance the interests involved in three interdependent power relationships. First, can the balance between the interests of transnational firms and users be kept roughly equal? The legal and treaty advantage has shifted in favour of owners of intellectual property, but given the significant technology and information technology advances in areas such as file sharing and open source, is it possible for countries and firms to enforce international intellectual property laws and agreements? Second, now that progress in NAFTA and TRIPs has succeeded in creating stricter international intellectual property protection for industrial countries' interests, can the needs of developing countries be safeguarded in the trading system? Third, what is the relationship between international intellectual property rights, innov-

ation, and creativity? Specifically, should large companies that are subsidized by military, government, and academic infusions of money and talent be allowed to reap all the rents from 'their' intellectual property? Also, if users are innovators, not separate from them, are we in danger of establishing an international intellectual property regime that discourages innovation?

Policies affecting the network: standard setting

The global communications network is the largest single human creation. It is a logistical marvel that allows anyone anywhere to dial a few numbers on their phone or type a few strokes at a keyboard and be connected in moments to any other phone or computer in the world. With the advent of mobile, wireless communications this is true even when the communications devices are in motion, even across borders. Globalization depends on the smooth functioning of this global network. The computers, telephones, and personal digital assistants (PDAs) connected to the network must be compatible with each other or nothing happens. Therefore technical standards, set mainly by engineers, make global networking possible. Predictably firms which control key standards get rich and powerful. Losers lag or vanish altogether. Therefore countries and companies engage in ongoing **standards wars**. The outcome of these intense, but almost invisible battles delineates the shape of networks, competition, and advantage in an era of globalization. Not surprisingly, governments and users want to encourage competition and discourage bottlenecks to promote efficient global networks. As a result, the regulation and setting of technical standards to ensure network interconnectivity and interoperability is critical.

Policies affecting global competition: competition (anti-trust) policy

Liberalization and the decline of micro-management is not the same as **deregulation** and free markets. To cope with global networks policymakers need to know when to act, and when not to act. They will

need to understand how to act, and how not to act. They will need to balance domestic politics and **national interests** against international realities enhanced by globalization. They will need to develop mechanisms flexible and robust enough to withstand attacks by rebels and terrorists intent on abusing or undermining the network and the existing order.

Specifically, there is growing attention being paid to cross-national and international governance and rule making as the idea that markets and corporate self-governance will suffice recedes. The pressures of determining jurisdiction and the limits of **sovereignty** are growing. Although the pendulum of influence may have swung towards markets and firms, government policymakers and regulators will not go away. If they are savvy, they adapt to new circumstances and develop new tools. Competition is on the rise nationally and internationally, but, predictably, established incumbents continue to try to take advantage of their dominant position whenever they have the opportunity. One consequence is

that regulators nationally and internationally are concluding that **competition policy** (or **anti-trust policy** as it is called in the United States) is trade policy. These *new-style regulators* are intent on promoting competition by curbing potential global monopolists. They want to be proactive without being micro-managers. But regulators and policy-makers on different continents may not agree and harmonized policies are unlikely to emerge soon. For example, the EU blocked the merger between General Electric and Honeywell which had already been approved by the US Justice Department and continued to prosecute Microsoft after it had settled in the United States.

Global networks operated by global firms are under increasing scrutiny. In Europe, the Competition Directorate of the European Commission has intervened to stop transborder mergers within Europe and has expressed strong concerns that caused mergers within the United States to be restructured or even abandoned (General Electric and Honeywell). Even after the US Government

Box 28.4 Key concepts

Competition (anti-trust) policy: policies that prohibit anti-competitive action and transactions by firms, especially monopolists, including state-owned enterprises.

Deregulation: the removal of all regulation so that market forces, not government policy, control economic developments.

Digital divide: the gap in technology access/ownership between those who have access to advanced communications and information services and those who are either too poor to afford such access or live in rural or remote areas with no access. Most often, the gap is that between the Internet 'haves' and 'have nots'.

E-government: the use of technology to engage people in the political process.

Global network: digital networks that span the globe allowing instant voice and data communication worldwide—the global information highway.

Intellectual property rights: rules that protect the owners of content through copyright, patents, trade marks and trade secrets.

Netwar (or cyberwar): the use of digital networks and communications to attack enemies as an act of war or terrorism.

Non-governmental organization (NGO): an organization with policy goals. NGOs, often grassroots ones, are neither governmental nor corporate in their make-up. Examples include Amnesty International and the International Campaign to Ban Landmines.

Open source software: software that is built on the idea that software should be freely distributed and that potential users should not be excluded.

Standards war: conflict between countries or firms over which standards to adopt.

WiFi: Wireless Fidelity, fixed, wireless systems that can deliver large bandwidth for short distances.

Wireless network: communication data and voice traffic networked through microwave and satellite connections.

settled with Microsoft, Europe continued to prosecute it in relation to its practices. More generally, as telecommunications and IT firms are transformed into global networking giants, regulators are trying to promote the efficient and affordable flow of information across national borders by ensuring that multiple carriers are positioned to compete to provide comparable services. Where they succeed in promoting competition, less regulation is needed.

The effect on international relations

In 1989 the fall of the Berlin Wall precipitated the collapse of the Soviet Union, the end of the cold war, and if not the **end of history**, at least a major shake-up in international relations. That same year the launching of commercial Internet operations went unnoticed, but it too led in time to the World Web and to fundamental changes in international affairs. The latest information revolution that is hurtling forward on the wings of global communication networks also raises new opportunities and challenges that will rewrite the way that the existing order works. The ultimate impact on international affairs will be far ranging. But, just as was the case with the introduction of the printing press authorities do not want to accept that the world as they knew it is gone. If governments, firms, and NGOs fail to use instant, affordable access to vast troves of information and knowledge to promote equality and cooperation and instead concentrate on maximizing their wealth,

power, and narrow self-interest, prospects for peace and sustainability will be bleak. But if leaders and individuals, men and women, of all ages and from all nations and backgrounds, are allowed to share in the possibilities of global networks, then perhaps we will begin to move in a better direction.

Key points

- The nature of cyberspace impacts individuals, the content that flows over global networks, the communication infrastructure, and the global regulatory environment.
- A balance is needed between protecting the rights of individuals and the data security needs of governments and firms.
- A balance is needed between the rights of users of information and those of the creators of information. Therefore, valuing intellectual property on global networks is important.
- Whoever controls the winning standards wins. Therefore, 'standards wars' are fierce.
- Competition (anti-trust) policy is becoming trade policy for the world information economy.
- The advent of global networks will transform international relations as much as the end of the **cold war** did. Whether the results will be positive or negative is unclear.

Conclusion

Global communications networks are a driving force propelling globalization and challenging policy-makers to adapt to new international challenges. But it is not enough to say that global networks and the Web 'will change everything'. It also is necessary to find out which changes are short-term fads driven by speedier delivery of more information and which constitute fundamental long-term shifts in the way people, organizations, and governments deal with one another. In the future international relations

will involve more actors interacting about more issues on a transparent, but complex field of play. To succeed leaders will need to use the abundance of information at their disposal to help them decide what matters and how to achieve their goals. But the democratization of information means that others will have much the same information that they possess. In that sense, all the forces that traditionally shaped international relations remain the same, but global networks have accelerated the intensity and

speed of the interactions. The challenge will be to find ways for national governments, working alone or together, to guide globalization through its next phase.

For further information and case studies on this subject, please visit the companion web site at www.oup.com/uk/booksites/politics.



QUESTIONS

- 1 Why did economists and policymakers traditionally decide that the monopoly provision of telecommunications services made more sense than competition in the provision of telecommunications services?
- 2 Why did policymakers start to promote competition and reduce regulation in the provision of communication and information services during the 1980s and 1990s?
- 3 How are the Internet and the World Wide Web connected to globalization?
- 4 How do firms use choke points to enhance their global competitive position?
- 5 How would easy, affordable wireless Internet connections change your life?
- 6 Is it possible for any country to develop and progress without being fully integrated into global networks? Why or why not?
- 7 To what extent should policymakers be concerned with the 'digital divide', 'transparency', and 'universal service'? Which should be the first priority and why?
- 8 After the GATT/WTO entered into the trade in telecommunications services arena how do you expect that the ITU reacted to the trespassing on its turf? On balance did this improve the ITU?
- 9 If globalization is irreversible and national policies are increasingly ineffective, what should be done? Muddle through? Deregulate and get out of the way? Depend on international agreements and institutions? Or do something else?
- 10 How does the way you communicate today differ from the way you connected to the world three years ago? What changes in the way you communicate do you expect during the next few years?

GUIDE TO FURTHER READING

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www.fcc.gov Federal Communications Commission (USA). This is the first stop for those wanting to understand US domestic and international communications policy.

www.intug.net International Telecommunications Users Group. Position papers, speeches, and surveys on issues related to global telecommunications policy and emergent problems.

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