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editor

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AND GLOBAL POLITICS

The Changing Scope
of Power and Governance

edited by

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and

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GLOBAL NETWORKS AND THEIR IMPACT

JONATHAN ARONSON

The spread of integrated global networks is accelerating. Vast and growing quantities of information flow across these networks at ever greater speed and continually declining prices. These technologically sophisticated networks are reshaping the landscape of politics and international relations, transforming global commerce, recasting societies and cultures, and altering policy formulation and implementation. Many suggest that this is the dawn of a new information age or the onset of a world information economy. Some predict bright prospects arising from these innovations; others worry that new technologies will destroy jobs and cause a permanent “digital divide,” a chasm separating rich and poor within and between countries.

The scope of change is widespread, deep, and rapid. Analysts grappling with these changes often become mired in generalities or focus on specific micro-issues, losing touch with the bigger picture. Two approaches help put things in perspective. First, historical context of the kind provided by Mark Zacher in this volume illustrate the evolution of change. Second, issues can be classified and sorted. This second approach is taken here. Three analytical distinctions help categorize issues related to changes prompted by the evolution of global networks. The goal of this taxonomic exercise is to explain in accessible, but structured, shorthand the terrain of possibilities created for policymakers, firms, and society by the new global networks while also providing a framework for theory building, not new theory.

THREE DISTINCTIONS

Three distinctions are at the core of this exercise. The first distinction divides content and conduit issues. Many issues arise from the management, pricing, and regulation of content. The proliferation of information flowing through wireline and wireless networks and the ease of accessing and manipulating it changes how
governments and firms conduct business and how individuals live. Burgeoning information flows affect the regulation and conduct of policy and commerce. They keep people informed and allow them to make their support or outrage known and thus influence society and events. As the volume of information flows climb, changes are accelerating. By contrast, conduit issues linked to the design, financing, construction, operation, maintenance, and integration of global networks are just as important but receive less attention.

Second, both content and conduit issues can be classified according to what flows in what manner over which networks. On the content side money, Ecommerce, data, and ideas all flow across networks. Most of the world’s money pulses through global networks. Banks exchange currencies. Stocks, bonds, and commodities are bought and sold without currency ever changing hands. Ecommerce allows the sale or auction of goods over networks, even when physical delivery is still required. In addition, bits of information are transmitted, viewed, analyzed, and acted upon. Telephone calls, cable and satellite television programs, news broadcasts, price quotes, and sports’ odds and scores all are globally available. Inherent in some information are ideas with the potential to change governments, firms, societies, and their people.

On the conduit side, different concerns arise depending on whether the information is received as voice, data, or images (still or moving). These distinctions are blurring with the expansion of the World Wide Web and the integration of information technologies. But, presently, different issues are raised depending on how information is used. Direct communications among people (telephone calls, pagers, faxes), data transmissions (databases, marketing plans, financial records, travel reservations, electronic commerce purchases) and the broadcast of images (video-streamed events, news, and entertainment) raise distinct issues. In addition, as technologies converge, new crosscutting issues emerge. Thus, in areas like video conferencing, distance learning, and interactive entertainment the voice/data/image distinctions are eroding just as the once popular FCC distinction between basic and value-added services lost its meaning.

The third distinction identifies three arenas of policy impact: politics and policy, commerce and finance, and society and culture. First, new technologies and global networks impact the domestic and foreign politics and policies of countries and force officials to redesign regulatory approaches. Second, globalization is transforming global commerce and finance and may impel private firms and state-controlled entities to become regional and global players to stay competitive. Finally, stimulated by the explosion of the Web and the proliferation of other inexpensive forms of communications, cultures and societies are reinventing themselves at a breathtaking pace.

This section looks at content issues. The following section focuses on conduit issues and the policy questions they raise. Several themes in these sections recur throughout this volume. Communication and information technologies and the networks they enable are distributing power more widely. The implications of this shift in authority may ultimately be as great as the collapse of the Soviet Union and the end of the Cold War, States remain powerful, but competing international and nongovernmental organizations and institutions also are gaining power and influence. As J. P. Singh notes in the introduction and James Rosenau reprises in the conclusion, the decentralization of power changes how power is exercised, the proliferation of global networks raises new challenges for governance, and the ubiquity of information at low cost creates far more textured and multilayered notions of identity.

CONTENT ISSUES

People do not need to know how telephones, fax machines, computers, and televisions work to use them. The miracle of modern technology is its simplicity of use. New services attract users. Falling prices spur usage. Most people believe that the content that flows over networks and its impact on governments, firms, society, and people matters most. Here, four types of flows are considered: money, Ecommerce, information, and ideas.

MONEY

Most money is electronic. Currencies—bills and coins—make up a small portion of the money supply in most industrial economies. Similarly, the percentage of banking and credit card transactions that take place over the phone or online is increasing rapidly. As smart cards, debit cards, and phone cards proliferate, the physical exchange of money should decrease. This does not mean that a cashless economy is imminent, but the trend is clear. These developments are influencing politics and policy, commerce and finance, and society and culture. This section and those that follow highlight the nature and importance of the changes in these three arenas.

Politics and Policy: Control of Money. Has the explosion of electronic money enhanced or undermined governments’ monetary control? Huge sums of money move from country to country and currency to currency each day. A decade ago it was estimated that the value of foreign exchange transactions dwarfed the value of global trade by a factor of fifty (Spero 1988:89). By the end of the 1990s the value of foreign exchange trades reached about $1.2 trillion each day. Many of these transactions are intra-corporate, intraday adjustments, but still the imbalance is rising.
This maelstrom of activity raises twin challenges for monetary authorities. First, on a day-to-day basis, can central bankers still manage national money supply when money can be created beyond their control and can flood or flee a currency in an instant? Most governments no longer make any serious attempt to impose currency controls. Even the imposition of draconian penalties usually fails, falling victim to the fungibility of money. Central bankers are beginning to grapple with these issues, but so far they have downplayed their significance and asserted that they are still in control. Second, do the volume and velocity of money changing hands make it more likely that a global financial crisis could sweep from currency to currency causing a global financial meltdown? From the runs on sterling in the 1960s which began the slow death of the Bretton Wood system to the Asian financial crisis in the late 1990s, central banks, finance ministries, and the International Monetary Fund (IMF) labored to stabilize the global monetary scene. Still, crises provoked finance ministers and political leaders from London to Kuala Lumpur to blame foreign speculators for their woes. Politicians like to pass the buck to avoid blame for their own mismanagement. Still, there is a growing concern that the system as managed by the IMF, if not the individual speculators, bears some responsibility for recurring crises.

Commerce and Finance: Global Disbursement and Payments. Who wins and who loses when new payment possibilities allow individuals and firms to think and act globally? Money transfers over networks make it easier to travel or stay at home. The ritual stop at the bank for cash and traveler checks before a foreign trip is no more. Visa and American Express are accepted worldwide and cash in any national currency can be withdrawn from ATMs anywhere. Similarly, direct deposit of paychecks and payments of bills are fast becoming the norm, not the exception. The location of payer and payee is irrelevant. National borders and the type of currency do not matter. The ease of money transfer and erosion of barriers also push firms, even smaller ones, to think and act regionally and globally. The variety of products and services readily available through the global electronic marketplace continues to proliferate. Governments are playing catch up, but mostly are staying out of the way and allowing firms to push economic globalization forward. Although globalization probably will proceed despite efforts to turn back the clock, much more work is needed to understand why certain firms and sectors prosper while others lag. (Friedman 1999a)

Society and Culture: Global Currency. Will integrated electronic markets with common currencies unite or divide peoples? As the millennium dawns there are two and a half currencies that matter. The dollar is solid. There even is talk, from Quebec to Argentina, that the dollar should be adopted as a single currency for the entire hemisphere. The Euro debuted on January 1, 1999, and despite birthing pains, promises to promote predictability and growth across a large region. The yen limps along as Japan marks nearly a decade of economic stagnation punctuated by unsuccessful stimulus packages. Its prospects faded when the Asian tigers stumbled, but it should endure in Asia. Most electronic purchases will be denominated in one of these currencies. Price arbitrage for similar products and services will occur. Consumers and firms will buy and sell products and services according to their quality and price and not the location of buyer or seller. Inevitably, national preferences and global tastes will collide creating cultures and societies torn between national and global preferences and further exacerbating the Jihad vs McWorld split. (Barber 1995). It is less clear, but equally important, how and to what extent global markets will impact to reinforce or erode national and ethnic identities. What does seem certain is that identity for most people and groups will be multifaceted, interlacing elements of the global and the local.

E-Commerce

People, money, things, information, and ideas flow across national borders. Global networks may substitute for international travel and facilitate the sale of things. Catalogue sale vendors using 800 numbers are proliferating. More significantly, the emergence of the Internet and the Web set the stage for the E-commerce phenomenon. Internet users exploded from three million in 1994 to 200 million by the start of 2000 and Internet traffic was doubling every 100 days in early 2000. The speed of delivery over the Internet backbone network is increasing even more rapidly and is projected to reach 4,800 Megabits per second in 2000. Annual infrastructure investment has nearly doubled between 1996 and early 2000. Between 1995 and 1999 the average online usage per user more than doubled and could double again by 2002. E-commerce experienced a similar trajectory before slowing after March 2000. E-commerce as a percentage of U.S. GDP was essentially zero in 1995, reached 1 percent in 1999, and continues to climb (Pepper 1999). Sales of securities over the Internet exceeded $100 billion a day by early 1999 (Freedman 1999). In short, E-commerce is transforming political and policy possibilities, firms and business sectors, and the way people live and interact (Magaziner Report, 1998).

Politics and Policy: Regulatory Responsibility. How should regulators and legislators respond to the rapid expansion of electronic commerce? The Federal Communications Commission has refrained from regulating the Internet but is watching closely (Werbach 1997). The Clinton administration offered a framework for global E-commerce in July 1997, proposing that the private sector should lead and governments should avoid undue restrictions on E-commerce. To the extent
government involvement is necessary, it should enforce a predictable, minimalist, consistent, and simple legal environment for E-commerce (Clinton 1997; Clinton and Gore 1997). Regulators believe that they should pursue greater competition and interoperability and that there needs to be greater agreement on how and to what extent to protect intellectual property rights. Regulators are more hesitant to regulate content.

The Web and E-commerce also present regulators with a different set of challenges related to consumer protection because fraud is rampant and growing. Concerns about privacy and data security, particularly for credit cards, also are widespread. Competition for eyeballs and competition between E-commerce providers and more established retailers is white hot. E-commerce providers contend that self-regulation is the best course. Lawmakers and regulators are not so sure. They are struggling to figure out whether and how they should intervene to ensure that the competition is fair and robust and that everybody is connected to everybody else. The challenges to governments are global as well as national. Indeed, any serious trade future trade negotiations will need to reach agreements that promote rather than retard the booming global E-commerce sector.

Commerce and Finance: Global Competition. Who will win and lose as the rapid rise of E-commerce alters the competitive situation of individual firms and of industrial and business sectors? Global networks erode borders, making it possible for savvy firms to produce goods and services and compete globally. Business-to-business E-commerce is projected to increase far faster than business-to-consumer E-commerce. In 1999 business-to-business E-commerce reached about $100 billion, about four times the volume of business-to-consumer E-commerce. A quarter of American households made at least one purchase online in 1999. By 2004 the volume of business-to-business E-commerce could dwarf the volume of business-to-consumer E-commerce by a factor of ten to one (Pepper 1999).

The way people bank and shop is in flux. If individuals and firms do not need to visit a bank to do business, it may not matter where the bank is located. The death of distance that is transforming communications and commerce has spilled over to finance and is changing the way people live.

E-commerce empowers buyers by providing them with more information about their alternatives. Malls may suffer because it is easier to shop online. Newspapers could suffer if they lose readers and advertisers, although advertising by many now bankrupt Web firms helped push up revenues in 1999. The Web also could change the way goods and services are sold internationally. American children rushed to buy the British copies of the Harry Potter series online before they were available in America. Future volumes of the series will be released simultaneously on both sides of the Atlantic. German citizens may not legally purchase Hitler’s Mein Kampf in a German bookstore, but it is a top-selling item in Germany through AOL (Friedman 1999b). Moreover, as national boundaries become more porous, tax, trade, and intellectual property questions related to E-commerce are rising. This activity reinforces the growth of cross-national production networks that are altering the terms of competition in global markets and are transforming the structure of many industries (Kim and Hart in this volume; Borus and Zysman 1997).

Among those who are connected, the gap between information haves and have nots is closing. Individuals and institutions have access to the same information as their brokers and merchants. Moreover, the way that more and more people are buying and selling is changing as people flock to eBay and other online auction sites. One consequence is that, unless they provide real value as infomediaries, brokers and middlemen will be squeezed out. Thus, full service stock brokers are losing market share to discount brokers like Charles Schwab and online Internet brokers like E*trade. Even the full service brokers are using the online traders to execute their trades. Customers will pay for advice but their tolerance for high transaction fees is gone. Even stock exchanges are restructuring in the face of competition from online electronic communication networks like Island which by early 1999 controlled 21.6 percent of Nasdaq shares and almost a third of Nasdaq trades (Vogelstein 1999). Similarly, computer programs like Turbotax and online tax filing are squeezing accountants; and airlines and discount online ticket providers such as Priceline.com allow customers to bypass and undercut travel agents by booking tickets online.

Society and Culture: Global Branding. Will tastes and cultures converge or remain distinct as E-commerce promotes new forms of global branding? Products like Coca Cola, Levi’s, and Walkman gained global acceptance long before the rise of E-commerce. In the early 1990s concern increased that as product cycles short-ended only large firms with the money to mount international marketing campaigns to introduce new products would prevail across borders. E-commerce could reverse the equation by allowing customers to spread across the globe to find what they need instead of advertisers selling what they choose. (A darker view is provided by Edward Comor in this volume.) Small firms with good ideas and products, access to a large bank of computing power, and excellent international Internet connections might compete anywhere regardless of their country of origin. As trade and communications barriers fall, E-commerce provides a new, affordable way for firms to supplement their efforts to gain international recognition for their products. However, the huge expense of establishing and marketing a visible site and the advantages enjoyed by first movers, may work against innovators. In short, global branding may or may not reinforce trends already in progress and the Internet and E-commerce may play an important role in ongoing globalization.
Soon almost everybody, at least in the industrial world, will be connected with everybody else in real time. The numbers are startling. In just ten years, since the first commercial Internet providers began operation in 1989, more than 200 million users are connected, including 100 million in the United States. By 1999 almost 40 percent of U.S. households were connected; 20 percent in the European Union, and 10 percent in Japan. Affordable voice, data, and video connections between people and machines are now the norm, not the exception. Any government, firm, or individual has access to more information than exists in the world’s great libraries. Encyclopedia Britannica is accessible online for free. Interactive 900 telephone numbers, computer chat rooms, and interactive computer games now occupy so much time in America that television viewership is declining. The links are international, not just national. The Internet, E-mail, exploding capacity, and falling international phone rates all make it easier for governments, firms, and people to stay in touch. The implications of information abundance extend far beyond the drop in letter writing and reading.

Politics and Policy: Intelligence and Planning. Does more intelligence information translate into better policy? Governments always want to collect and analyze information that will inform their decisions. Intelligence communities want to collect as much information as possible. The information collection capabilities of modern intelligence services was demonstrated after the downing of Korean Airlines 007. Within hours, President Reagan released the conversations between the Soviet pilot who shot down the plane and his ground base. Even though the information exists, finding it in the databases and archives can be challenging. Developing efficient search routines therefore becomes imperative. However, the glut of information may clog the system and may not lead to better policy. There may be 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, analyze, and synthesize the data. It can be a curse when abundant information overloads or dehumanizes the decision-making process to the detriment of creativity and flexibility. Understanding how and when more information leads to better policy could become a more important area of study.

Commerce and Finance: Global Production and Marketing. Will firms be more competitive if they produce and market globally for global markets? Firms depend more than ever on information and communications to ensure their global competitive positions and long-term viability. Business strategists show that to remain dynamic firms need information to produce goods and services globally, track their operations and inventory, and market them to customers wherever they may reside. The demand for global production and marketing means that managers focus on doing business without regard to national borders specifically in the areas of trade and investment. Large firms often use information more successfully than politicians. Still, the reasons certain firms and industries adopt new communications technologies more rapidly and successfully than others and compete more effectively in global markets remains unclear. In addition, data communication networks, electronic data interchange, and improved management of information unleash new competitive possibilities for firms. Simultaneously, firms can use new technologies to meet demands at the local level. In short, a "global" production strategy based on ever-improving internal and external information flows can make firms more competitive. The question is, which firms and industries will benefit from such a strategy and which will falter?

Society and Culture: Instant News. How does the “CNN effect” change the way people respond to breaking events and ultimately influence the events themselves? Information is power. New technologies empower people and always threaten the establishment. This was true for the printing press which spread literacy and undermined the authority of secular and religious rules. Newspapers, telephones, television, and computers all spread information worldwide with great speed. Over time the easy access to information created a "revolution of rising expectations" but also shone light on the activities of governments and firms everywhere. Copiers and fax machines ensure that most sensitive information will leak. Leaders may not like it, but their words and actions will immediately be graded in the court of public opinion. CNN, BBC, and the Web, radios and telephones all spread the news worldwide in moments. Russian and Chinese leaders often learn more about what is happening during their own crises from foreign news sources and email than from their colleagues. Bill Clinton and some other leaders took the next step. They continually update policy priorities on the basis of instant polling results.

Ideas

Ideas are not the same as information. Information provides the answers, but ideas provide the questions, dreams, and insights that reshape the world. The spread of ideas from person to person and place to place is at the core of modernization and innovation. Geography, biodiversity, and climate set the parameters. After that the speed at which ideas are transmitted and innovations are adopted is accelerated by ever-improving transportation and communication systems. The spread of new ideas is more difficult to measure than the flow of
people, money, goods, or information, but their impact can be even more dramatic.

Politics and Policy. Innovation Process. Will the rapid spread of new ideas across national borders lead to meaningful policy innovation and harmonization? New technologies speed the transmission of information and the spread of ideas. But, not all new ideas are an improvement on established ones. Economists have learned a great deal about microeconomics since the 1930s, which diminishes the likelihood that the mistakes that resulted in global depression will be repeated. But, those lessons have not helped Japan break out of its malaise. Ideas for managing national economies have converged since the fall of the Soviet Union, but a chorus of criticism of the "democratic deficit" in the IMF and other international institutions persists. In the realm of communications, certain fundamental ideas favoring privatization, regulatory liberalization, and competition were rapidly adopted by many countries. Although no two regulatory authorities adopted the same approach, ideas that worked spread and found receptive officials willing to experiment with new ideas (Levy and Spiller 1996). Enough convergence and learning took place to allow the European Union to move further toward policy harmonization and to launch a common currency, something nobody predicted as recently as the 1980s.

Commerce and Finance. Self-Regulation. Will the rapid spread of new ideas change the way governments regulate and will firms effectively regulate themselves? Government recognition of the failure of micromanagement does not mean that regulators will whither away. Much will depend on how firms and individuals react to looser regulatory shackles. A balancing act is underway. Most governments now prefer markets, not regulation, to dominate, but want to ensure that privacy is maintained. Governments claim they do not want to manage content, but Congress then passed the Decency Act to try to manage access to pornography and hate sites. China stands ready to unplug broadcasters providing content unacceptable to the government. Some critics argue that ritual worship of markets is self-serv- ing. Companies and rich individuals want fewer restrictions and taxes on their earnings. Will greed triumph, or will firms practice self-censorship and self-regulation? The answer will be mixed. Broadcasters in Asia practice self-censorship to create culturally appropriate content on a country-by-country basis. Internet portals are trying to curb spammers, but pornography and hate sites flourish. Are firms acting responsibly or are they merely wary of retribution? Clearly, foreign firms are better corporate citizens in developing countries after the early 1970s because they learned through experience that rapacious profiteering could be hazardous to their continued operations. What kinds of carrots and sticks will induce firms to compete and self-regulate?

Society and Culture: Democracy. Does the rapid spread of information promote freedom, democracy and market economics? In the early 1980s Ithiel Pool explored the implications of new electronic technologies for democracy and personal freedom. As Pool predicted, new technologies and the convergence of communications technologies placed new strains on freedom of speech and democracy (1983). Today, more information is available to voters on issues and candidates but the same technologies skew elections in favor of incumbents with money, name recognition, and sophisticated media strategies. The ideas that candidates espouse are now only beginning to get across. A decade ago Francis Fukuyama gained fame and ridicule when he declared that the victory of capitalism and democracy in the wake of the collapse of the Soviet Union meant the "end of history" (1989). The flow of ideas from the West suggested new possibilities and made clear what people in Communist and developing countries were missing. State suppression of ideas became more difficult. Television and movies reinforced the idea that America was the land of excitement and opportunity. Democracy and freedom are put in a spotlight, but, as Fukuyama recognized, the transition to democracy and market economics is not foreordained. Similarly, information and communications technologies in developing countries could become a means for urban elites to further distance themselves from the people or could become an important agent for societal change. It may be that the development potential of new communication and information technologies is undervalued and that, as these technologies become more affordable and more diverse, inequality could decline. Researchers need to go beyond slogans and consider whether and to what extent the global spread of the ideal of democracy and freedom in fact promotes democracy and freedom. Indeed, the perceived arrogance of the United States in many parts of the world and the failures to promote democracy in place of tyranny and corruption may undermine confidence in the message. Table 2.1 summarizes the preceding discussion about content issues likely to arise in today's networked economy. These issues are representative and suggestive, not all-inclusive. Still, their variety demonstrates that much work remains to be done.

CONDUIT ISSUES

Before telegraph and telephones, people carried news and letters between distant points. Fax machines, mobile phones, and computers all made it easier for people or machines to share information over great distances and among many individuals. The build-out of the infrastructure connecting these devices represents a vast investment comparable to the funds required to build the road and rail transportation systems. Although most communications specialists concentrate on the impact of information flows on various aspects of society, fewer examine
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the issues related to the financing, construction, operation, and maintenance of a robust, competitive infrastructure. Until the breakup of AT&T in 1984, regulated national monopolies, some private but mostly public, provided telephone service. AT&T was not permitted to provide value-added services until after the breakup. Since then technological innovation, the fragmentation of the public networks, greater competition, and regulatory liberalization unleashed unrivaled changes in communications and information technologies (Cowhey and Aronson 1993).

VOICE

Traditionally a series of cross-subsidies existed in the pricing of telecommunications. Telecommunications services subsidized postal services. Businesses subsidized individuals. Urban calls subsidized rural users. Most strikingly, international services subsidized domestic long-distance services, which in turn subsidized local service. New competitors, technologies, and regulatory approaches combined to turn the voice communications markets on its head. Today, market competition is imperfect, but choice is growing and prices, especially for long-distance service and international long-distance calls, continue to decline toward the cost of providing services. Rate rebalancing was accelerated by the growing competitive possibilities provided by cable, satellite and Internet voice alternatives. (But, fancy technology does not guarantee successful implementation as the collapse of the Iridium satellite system demonstrates.)

Politics and Policy: Centralization of Decision-Making. How will the expansion of global communication networks change who makes the decisions and how they decide? Other chapters in this book explore how the information age is impacting government policy making. Here, it is enough to ask: Whatever happened to the plenipotentiary ambassador? Centuries ago a Renaissance ambassador upheld “his master’s honour at a foreign court, aided by no more than his wit, courage, and eloquence” (Mattingly 1971, 211). Global networks allowed governments to centralize their decision-making apparatus, giving more influence to a narrow range of top-level leaders. The role of ambassadors is more social and representational than ever before. The centralization of political decision-making authority does not automatically translate into sound, efficient choices emanating from capitals. However, global networks defy easy national regulation and undermine national authority. Here the trend seems toward decentralization. Many business firms are decentralizing their decision-making process at the same time governments are moving in the opposite direction. Fortunately for good economic and commercial policy, as national and global networks proliferate, many government regulators are promoting competition instead of trying to set prices and define and defend the public interest. The problem remains, however, of how to manage or regulate global networks. Competition alone may not ensure fair, sound, and efficient service provision. For example, global satellite networks and global strategic alliances with partners in several countries may require governments to cede some authority to international institutions trying to create international rules of the road. The solution for governments may be global. To effectively oversee global networks may require regional or international institutions supported by national governments.

Commerce and Finance: Telemarketing. As the expansion of global communications networks allows buyers to shop anywhere, nationally or internationally, what does that change? Telephones provide opportunities for selling, buying, and soliciting contributions, as do telemarketing and Internet marketing by people and computers. Telephone and Internet marketing of goods and services is expanding. (Junk mail, faxes, and email also are proliferating.) So is home shopping. Indeed, the home shopping networks were among the first to recognize that they could show products on the air and people would call in to buy them. It now is routine to call, fax, or email in orders for everything from goods ranging from take-out food to clothes and services as diverse as airline tickets and phone sex. If prices are competitive and shopping by phone is simple, busy people will try to save time and energy by calling in their orders.
Society and Culture: Citizenship and Identity. As global communications networks evolve, how will people, particularly immigrants, define their own citizenship and identity? Until recently immigrants to the United States joined America's melting pot within a generation or so. Language, culture, and family of the old country slipped away because of the difficulty of staying in touch. Slow letters on slow boats often were sent back to uncertain destinations. People lost touch with their roots. By contrast, present day refugees and immigrants can, economically, call home or stay in touch by email and without any time lag. Communities are more likely to retain their identity and history even when they choose or are forced to leave their birthplaces. In addition, immigrants everywhere are using new technologies to reconnect to their cultures and roots. Genealogy research on the Web is popular. Heritage students are, in increasing numbers, learning the languages of their grandparents and great grandparents. There even is a move afoot for immigrants to retain the right to vote and participate in the political processes of their birth country even after they have emigrated. The move beyond the melting pot may stimulate the retention of ethnic and religious identities, but also may foster greater clashes among civilizations.

The capacity, speed, and reach of data networks are expanding rapidly. Public and private data networks are now at the core of the operations of government and business and many individuals rely on them at work and at home. Similarly, the amount of text available online is expanding exponentially, complementing and substituting for newspapers, books, files, and libraries. The Y2K millennial scare and the ongoing specter of computer viruses are linked to the fear that they might cripple or shut down critical data networks.

Politics and Policy: Data Analysis and Speed of Response. Will global data communications networks and new information technologies allow policymakers to respond to national security situations more rapidly and efficiently? The role of information in the waging of war is changing. How different are wars in the information age? The U.S. military adapted to new realities quickly and creatively. All modern military groups are investing heavily in information and communications technologies. Their dependence on communications continues to rise. Alvin and Heidi Toffler assert that knowledge "is now the central resource of destructiveness, just as it is the central source of productivity." They envision a day in the near future when "more soldiers carry computers than carry guns." They note that, in 1993, the U.S. Air Force contracted to buy up to 300,000 personal computers for its forces (Toffler and Toffler 1993, 71). The potential power of information weapons was dramatically demonstrated during the Gulf War. The military was bolstered by AWACS (Airborne Warning and Control System) which scanned the heavens for enemy aircraft and missiles and sent targeting data to allied forces from modified Boeing 707s. In parallel, JSTARS (the Joint Surveillance and Target Attack System) helped detect, disrupt, and destroy Iraqi ground forces during Desert Storm with remarkable speed and precision. But there also is danger of relying too much on new information technology. Smart networks, smart planes, and smart bombs may not substitute for soldiers on the ground.

Commerce and Finance: Telecommuting. As global data communication networks change the nature of business will the way people work change fundamentally? Global networks provide new possibilities for commerce and work. On the commercial side the whole explosion of Internet companies on the equity markets represents a bet that some of these companies will be the Microsofts, Ciscos, and Amazon.coms of the next decade. Many of these companies failed when the dot.com bubble burst in 2000. Still more will fail, but the ones that get there first could reap huge benefits. The sale of stocks, books, and airline tickets already are well advanced. The music business and real estate are in transition. The whole advertising industry is rethinking its position and newspapers and magazines must adapt or lose readers and ultimately advertising revenues. Obviously, computers and computer networks are changing the nature of work as well. It is easier and easier for people to work at home or far from the office. Mothers with young children, avid skiers, stock brokers tired of Wall Street and others often can live anywhere, even abroad, and continue on the job. Firms too can flee the urban center to the suburbs or beyond. More broadly, the networking of the world and proliferating flows of information have profound implications for the international division of labor.

Society and Culture: Education. Will global data communication networks that promote distance learning change the way we learn in the future? Can the education establishment survive the information flood? New computer technologies already have transformed the teaching and research of fields as diverse as music and classics. The new Internet technology may represent a profound challenge to education as we have known it for centuries. The explosion of new knowledge is impressive, but its distribution online may prove revolutionary. The architecture of innovation also will force changes in the structure of schools and universities. Universities will need to choose priorities and niches, and depend on interconnection to fill out their offerings. Libraries are becoming digital and global and electronic scholarly communities are emerging. Even teaching itself is beginning to change (Noam 1995, 247). Distance learning is available over broadcast, cable, online, and satellite links. The University of Phoenix, highly dependent on distance and online instruction already, has the largest enrollment of any university
Web. Other issues arise because of the overlap and ongoing integration of information infrastructures.

Politics and Policy: Information Overload and Infosecurity. Will the rise of the Web result in information overload and the loss of privacy? When is enough information enough? Three distinct but interrelated policy issues are among those that bedevil the modern information economy. First, the superabundance of information means that some Web surfers and serious researchers spend more and more time on their computers. In addition many are watching television while online and reacting and interacting to what they are watching. Information overload is a distinct prospect and competition for “eyeballs” is intense. Second, the gold-to-junk ratio of information online is declining. When the volume of information available online is counted in terabytes, those with the most efficient search engines and search strategies are the most productive. Third, the protection of individual privacy is growing more difficult when everyone’s spending habits, credit history, calling patterns, and communication contacts are transparent. For example, technologically sophisticated “psychics” can pick up a call, see what number it comes from, identify the caller, and check their recent spending patterns in a matter of seconds. Nobody should be surprised when these “psychics” provide remarkably precient insights into a person’s life. Similarly, retailers and phone operators sometimes “call back” by greeting them by name. In addition, privacy has resurfaced as a key issue in Europe and the United States, although they disagree about how it should be handled. How is it possible to balance the demands of an open transparent society necessary to guarantee freedom and still maintain a modicum of privacy? What can and should governments and other groups do to promote data security and protect privacy, or is it too late (Brin 1998)? Does the partial displacement of established hierarchies by crisscrossing networks of control (as described in Ronald Diebert’s chapter), mean that solutions will prove elusive?

Commerce and Finance: Intellectual Property and Standards. As the Web increases the importance of information as a strategic tool of business will instinct and intuition still be useful? Two recent books trumpet the importance of integrated information networks for business success in the future. Bill Gates focuses on the opportunities presented by online commerce and stresses that firms must use digital networks to manage their own operations (Gates 1999). By contrast, in Information Rules, Carl Shapiro and Hal Varian concentrate on how firms can use new digital networks as strategic tools to lock in customers and trash competitors (1999). As Kim and Hart note later in this volume, the rise of integrated digital networks caused forward-looking firms to place renewed emphasis on protecting and managing their intellectual property. Although large questions remain about how best to protect intellectual property on the Web, in recent years the balance has tilted to favor creators of intellectual property at the expense of users of intellectual property. At both the national and international levels, large firms are increasing their efforts to protect their intellectual property so that it can be used as a competitive advantage (Lessig 1999; Samuelson 1997). During the next trade round, trade negotiators should concentrate on creating new trade rules and principles appropriate to a global information economy. They should strive to strengthen and extend the TRIPS agreement negotiated during the Uruguay Round (Barshesky 1999).

An example of the fight to preserve dominance is the struggle by AT&T to prevent America Online and other Internet Service Providers (ISP) “open access” to AT&T cable networks to homes served by TCI and Media One. AT&T argues that the only way to recoup its huge investment to buy these subsidiaries is by maintaining control over the access. Oregon, backed by the ISPs, argued that this would stifle competition and innovation and raise prices to consumers (Bar et al. 1999). Similarly, new technological breakthroughs that make possible the new digital infrastructure provide ample opportunity for firms to use standards to increase their advantage over their competitors. Standards wars like those over third generation wireless standards between Qualcomm and Ericsson/Nokia and the fight over Java between Sun and Microsoft are likely to proliferate (Lemley and McGowan 1998).

Society and Culture: Entertainment. How will the Web change entertainment and the way we play? Technology provides new opportunities for entertainment. Telephones, radios, televisions, video games, MP3, and computers all provide opportunities for distraction. Vast, integrated information networks are changing the nature of leisure and culture. The workings of the entertainment industry and the impact of its output on people, society, and cultures are just beginning to be appreciated. Networks of people now regularly watch, comment, obsess, and gamble about the outcome of sporting events. Chat groups, list servers, and Web sites stimulate conversations but also shape opinion about issues. Marketers regularly invade chat rooms to plant rave reviews of their products. In addition, horizontal marketing of hot entertainment products from Star Wars to Pokemon is remarkably effective and winning children’s devotion. Canada and France continue to warn of U.S. cultural imperialism. France even held up the last trade round over media and cultural issues. Serious efforts by political scientists and economists to consider the economic importance and impact of the entertainment industry nationally and internationally, is however, in its early stages.

As Table 2.2 shows conduit issues are as diverse and vexing as content issues, but may not get quite as much attention.
in the United States. The transformation of educational institutions (and of publishers) will take time. Nonetheless new technologies will challenge schools and universities to reinvent themselves or risk falling victim to new, online upstarts.

**IMAGE/VIDEO**

If a picture is worth a thousand words, then millions of images available through the Web are valuable indeed. More spectacular still, as images move and become video a world of streaming video and countless channels of programming stretches television and movies in new directions. It is not an accident that Bill Gates is buying major photographic archives or that the value of movie libraries is soaring. Networks provide an almost limitless opportunity to deliver information to people, but the images and even more the video content needed to fill all those channels is lagging. The infrastructure required to provide those images/video on demand are vast, sophisticated, and expensive to build. The building and operation of the broadcast network raises important issues.

**Politics and Policy: Credibility and Visibility.** As global broadcast facilities make government actions more transparent, will this encourage trust and discourage corruption? CNN, BBC, and other global broadcasters make breaking stories real. Sometimes the news providers get it wrong. Sometimes reporters are so eager to uncover wrongdoing and make their careers that they are sloppy or misleading. Still, images and video convey a credible reality that is easier for most people to grasp than spoken word (voice), print (text), or tables and graphs (data). Despite the public’s revulsion to and cynicism about negative, distorted, often misleading political attack ads, they continue to be used because they work. All major politicians now have media relations experts, handlers, pollsters, and spin-meisters who try to get news skewed favorably to their politician or policies. Television is more important than retail politics in all but a few political venues. Ironically, the flood of images makes it more difficult for viewers to differentiate between reality and fiction. Historically, as Stalin demonstrated, the technology can make and alter reality and rewrite history by literally taking someone out of the picture. New computer technologies make it simple to alter, distort, or recreate the record. Conspiracy theories and “wag the dog” explanations of policy are unlikely to recede anytime soon.

**Commerce and Finance: Teleconferencing and Videoconferencing.** Will the spread of picturephones and videoconferencing facilities reduce the need for executive commuting and business travel? New technologies do not lead at once to expected changes. A productivity paradox arose because the introduction of computers in the work

place did not quickly translate into productivity gains. Only after massive equipment and training expenditures take hold, does labor productivity improve markedly. Evidence that the provision of advanced communications and information technology resulted in productivity gains was slow in coming. It is difficult to determine when the critical threshold is reached, but the last 10 percent of the investment apparently produces most of the productivity benefits. Similarly, despite the geometric increase in computer speed and power, the paperless office is nowhere in sight and more trees than ever are sacrificed to the printed word. Although some firms now regularly employ teleconferencing to link key executives who know each other already, business travel seems to be climbing not falling. Partners in law firms or investment banks spread around the planet may save time and effort through teleconferencing, but meetings between companies and their clients still demand the personal touch. Over time this could change. ATMs, after all, were rejected by most consumers when they first were introduced. People complained they were too impersonal. The second time around, of course, people started to prefer machines and their convenience to waiting in line for tellers.

**Society and Culture: Common Symbols.** Will global broadcast facilities foster common symbols that span the globe? Images are powerful. The right picture at the right time can catapult an individual into the limelight. Most people gain their fifteen minutes of fame and then recede into anonymity. Each culture recognizes its own heroes. Flags can unite a people. Even license plates may serve the purpose. In Bosnia, for instance, one important U.S. initiative was to introduce a single license plate design so that people in cars were not immediately identifiable as coming from one ethnic community or another. Similarly, global broadcast networks create common global images and symbols that spread across borders and peoples. Tragedy and triumph, drama and soap opera, can capture the imagination or stir the emotions of people on a level never before possible. The Gulf War, the O.J. Simpson trial, the death of Lady Diana, or mayhem in a high school in Colorado may fascinate and appall the entire world. Similarly the Olympics or earthquakes, famines, and other natural disasters can generate pride or provoke generosity and empathy. The challenge is to determine whether common symbols and images will play a positive role in transforming how people think toward each other or whether they too will get their fifteen minutes of attention and then fade away again.

**The World Wide Web**

The rapid expansion of the World Wide Web is more fundamental than the frenzy of speculation in Internet stocks. The Web is at the locus of voice, data/text, and image/video. All of the issues raised above come together with the
THE FORMULATION, NEGOTIATION AND IMPLEMENTATION OF POLICY

This chapter provides a wide-ranging survey of issues and questions, not a thick description of their complexities and subtleties. Still, it is worth briefly noting that the consequences of the spread of global networks unfold in stages and not all at once. Global networks are altering policy formulation, negotiations among countries, and the implementation of policy. Separating the formulation, negotiation, and implementation of policy is important because information provided by networks takes on different functions at different stages of the policy process.

Thus, several chapters in this volume stress that the emergence of global networks and their ability to manage vast amounts of data makes it possible for governments, firms, groups, organizations, and individuals to dream of projects and consider alternative policies in new ways. Just as computers and supercomputers allowed mathematicians and scientists to attack previously impossible problems, global networks allow people to master information and use it to formulate ambitious projects. For example, networked collectors and computers now provide more data and the ability to analyze it about pollution, weather, and climate patterns than ever before. Strong data on the ozone depletion allowed countries to agree to limit certain emissions. At the same time access to global networks provides firms, nongovernmental organizations, and even individuals the possibility to compete with governments to shape or disrupt policy. For example, at the Seattle WTO Summit in late 1999, environmental and labor groups, along with dissatisfied developing countries, made it impossible for large industrial countries to reach a compromise to lauch a new round of trade negotiations. Similarly, although the vast majority of scientists now believe that global warming is occurring, a few well-funded dissenters using media networks have effectively delayed the emergence of consensus and slowed action.

Once policies and programs are formulated, global networks make it possible to implement new policies and practices on a scale and on a schedule never before possible. Firms and governments alike are spending heavily on new technologies so that they can proactively embrace change and for fear that if others get there first that they could lose out. Once the politics of national policy making are resolved and a policy is promulgated or law is passed, global networks allow for their rapid dissemination and implementation. Similarly, the introduction of new wireless networks promises cheap and rapid notification of customers as necessary. For example, if Boeing needs to update its notifications and servicing recommendations to airplane owners or Microsoft needs to update users' programs and manuals, the information can be broadcast quickly and efficiently directly to users' computers.

The undertaking of international negotiations is an example of a somewhat murky middle ground between formulation and implementation. Sometimes the policy process jumps directly from formulation to implementation. But, when governments or firms negotiate with other governments and firms, global networks may provide negotiators with an edge, a better understanding of the implications of various approaches than their counterparts. The ability to instantly access and analyze relevant information can provide a valuable advantage to negotiators. In this vein, J.P. Singh's chapter on negotiating regime change usefully points out that developing countries were more successful in the last round of WTO negotiations than generally is assumed because they agreed to adopt policies in high technology areas that they already concluded were in their interest. In return they received valuable breakthroughs from industrial countries on textiles and other traditional sectors. Similarly, U.S. negotiators were able to achieve significant success in negotiations on orbital slots because technical calculations showing the results of various approaches could be produced rapidly and shared with other negotiators. In addition, negotiators may increasingly undertake at least some sessions in ongoing negotiations, especially bilateral negotiations, via teleconferencing.
The other authors provide textured, complex, often subtle arguments that flesh out the issues raised in this overview piece. The goal here was narrower: to raise issues and questions that need to be answered. These are not the only issues; others may be equally or more important. However, the questions raised here are representative of the kinds of issues that public and private, national and international policymakers will need to address. Otherwise, the technology will drive the policy without regard to what needs to be accomplished to help people learn and prosper.

NOTES

1. The FCC stressed the basic versus enhanced distinction in its 1980 Computer Inquiry II, arguing that basic services should be regulated and enhanced services unregulated. By 1986, after the AT&T breakup, the FCC acknowledged in its Computer Inquiry III that the line between basic and enhanced services was eroding and that competition should be encouraged in the provision of all services.

2. Another possible distinction contrasts the formulation, negotiation, and implementation of policy. The information provided by networks takes on different functions at different stages of the policy process.


4. Christensen (1997) argues that cheap new technologies that are not immediately attractive to established companies can undermine the best companies and advocates setting up separate subsidiaries using the new technologies to compete with the parent companies. He mentions the Internet in passing and never touches on education, but senior university administrators are worried that online education could divert revenue and force them to alter their mission and teaching methods.

5. Why would leaders commit important information to paper? Phones are easier than letters and the possibility of leaks depends if nothing is written.

6. Government security and individual privacy clash as the Clinton Administration learned during the clipper chip controversy. The government was caught in a no-win situation. If it can snoop on individuals it is invading their privacy. But, if it fails to gather critical intelligence and a terrorist assault succeeds, the government loses as well.

7. James Randi, the noted debunker of the paranormal, uses this example.

8. Brin (1998) concludes that somebody has to watch the watchers and hold them accountable. Karen Litfin’s contribution to this volume suggests that as global satellite imagery becomes easily available to NGOs, this kind of globalization of transparency is taking place.

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9. An Ericsson-led European consortia persuaded the EU to adopt a new standard that was not backward compatible with second-generation Qualcomm standards, and thus threatened the long-run viability of Qualcomm. After much high-level controversy, Ericsson bought Qualcomm’s network business and an agreement was struck to support two standards. Qualcomm stock promptly soared.

REFERENCES


