

Exporting Telecommunications Services to Europe

1

CHAPTER



The entry of U.S. telecommunications firms into European services markets is at this early stage—a striking success story.

U.S. TELECOMMUNICATIONS FIRMS are sending a message to Europe—‘we intend to offer services to Europe’s under-served telecommunications users.’ They are watchfully assessing European progress toward liberalization of national markets and integration into a single European market. Meanwhile, U.S. carriers and enhanced-services providers¹ are entering the niche markets that are open to them, such as cellular communications and cable television.

The entry into European markets for services by American telecommunications firms, from major carriers to small niche-services providers, is—at this early stage—a striking success story. Growing U.S. export of telecommunications and related information services² in the future can contribute significantly to national economic goals. Further expansion appears to require little or no government intervention—in this area, deregulation and pursuit of free trade has worked well.

However, there are some major caveats to these conclusions:

- Emerging technological and institutional trends could adversely affect bilateral and multilateral trade agreements already negotiated or being pursued by U.S. trade representatives, making them either unstable or overly restrictive.
- U.S. international telecommunications policy is being defined almost singlehandedly

by the Office of the United States Trade Representative (USTR). The industry structure, regulatory environment, and investment strategies that are conducive to free trade and encouraged by the USTR may not be equally appropriate for meeting the broad range of national telecommunications objectives.

- Inadequate investment in domestic telecommunications infrastructure could result from continuing investment overseas by regulated U.S. telecommunications operators, according to some State regulators and public interest groups. (The Office of Technology Assessment finds evidence for this inconclusive, but concludes that investment trends should be monitored.)

This report rests on the premise that telecommunications is not just a set of tradable services, but also a basic function of society, essential for effective governance, social cohesion, and economic viability³ and equity. International telecommunications is a primary vehicle for U.S. participation in the global polity, as well as the global marketplace. Public policy interest in international telecommunications therefore goes beyond the question of competitiveness in foreign markets.

This chapter summarizes findings from the analysis presented in more detail in the follow in: eight chapters. It addresses several questions:

¹ The terms “enhanced” or “value-added” services indicate services that go beyond the transmission of voice or data (i. e., “basic services”) to provide collection, selection, formatting, processing, or selective delivery of material being communicated. An enhanced-services provider may be a carrier or network operator, but more often provides services over lines leased from a carrier.

² For the sake of simplicity, this report will sometimes include two quite different phenomena under the shorthand phrase “export of services”: namely, the direct delivery of services from the United States to other countries over electronic networks (e.g., cash management services or market data analysis), and the delivery of services through subsidiaries or joint venture corporations overseas. At other places in the report, as appropriate to analysis, these two phenomena will be clearly and explicitly distinguished.

Growing U.S. export of telecommunications and related services can contribute to U.S. economic goals.

CAN U.S. FIRMS GAIN WIDER ACCESS TO EUROPEAN MARKETS FOR TELECOMMUNICATIONS AND RELATED SERVICES?

Technological and political trends, especially the likely effects of the European Community's Open Network Provision Directive, are converging to bring about wider access to European telecommunications markets. For U.S. firms, nearly 85 percent of the potential market is now closed. Continuing pressure from the U.S. Government through USTR may somewhat hasten broader market access. However, U.S. telecommunications firms caution that such pressure should not result in opening U.S. markets to entry of foreign telecommunications operators whose home markets still exclude U.S. services providers.

CAN U.S. FIRMS SUCCESSFULLY COMPETE IN THE EUROPEAN MARKETS?

U.S. services providers can be strong competitors in European telecommunications markets. Technology and deregulation have allowed them to develop innovative services attuned to the changing needs of business users. European business users now are relatively poorly served by the public telephone operators (PTOs).³ U.S. firms, including major long-distance carriers and regional Bell holding companies (RBHCs) have already invested billions of dollars in Europe and are doing well in niche markets.

IS IT IN THE PUBLIC INTEREST TO ENCOURAGE PARTICIPATION OF U.S. TELECOMMUNICATIONS FIRMS IN OVERSEAS MARKETS, ESPECIALLY THOSE FIRMS THAT ENJOY REGULATED MONOPOLY STATUS IN

THEIR HOME REGIONS--I.E., THE REGIONAL BELL HOLDING COMPANIES?

Expansion into European markets by U.S. telecommunications firms can contribute significantly to maintaining a positive trade balance in services, both directly and by supporting the competitive activities of other U.S. services providers, ranging from airlines to wholesale merchants, in European markets. It may also encourage the European sales of U.S. telecommunications equipment and other information technology. For political reasons most of this economic activity is in the form of joint ventures and similar kinds of direct overseas investment, which has given rise to fears that this will compete with capital for domestic investment in infrastructure modernization and in research. There is so far no clear evidence of such harmful effects, but investment patterns should be monitored to detect any emerging adverse effects so that corrective measures can be taken if appropriate.

WHAT CAN THE U.S. GOVERNMENT, AND ESPECIALLY THE U.S. CONGRESS, DO TO ENCOURAGE BROADER MARKET ACCESS AND TO ENHANCE THE COMPETITIVENESS OF U.S. TELECOMMUNICATIONS FIRMS OVERSEAS?

Broader market access may come about more as a result of pressure from users and actions by the Commission of the European Community (EC), than as a result of trade negotiations. However, the U.S. Government should continue to press, through bilateral and multilateral trade negotiations, for further liberalization of European telecommunications markets and wider access to

³The state telecommunications authorities were traditionally called PTTs, for Postal, Telephone and Telegraph administrations, and were generally part of a government ministry. In most cases telephone/telegraph functions have been separated from postal functions and operating responsibility has been divorced from regulating responsibility, so that the older designation is no longer always appropriate.

those markets for U.S. firms. Caution is warranted, because negotiating positions developed by the Office of the U.S. Trade Representative may be undermined by technological trends that challenge distinctions between basic and enhanced services and between public and private networks.

Beyond this, there is little that the U.S. Government needs to do or should do, at this time, to improve the competitiveness of U.S. carriers and services providers overseas. There is little evidence that the domestic restrictions imposed on carriers at divestiture (however onerous or effective they may be at home) now are a significant factor in success in European ventures.

IS THE POLICYMAKING STRUCTURE FOR INTERNATIONAL TELECOMMUNICATIONS NETWORKS ADEQUATE AND APPROPRIATE FOR THE COMING DECADE?

U.S. policy for international telecommunications has for the last 5 years been largely determined by USTR. This is cause for concern. The unidimensional focus of USTR on forcing open world markets for services may slight or diminish other public policy goals related to telecommunications, such as strengthening the domestic telecommunications infrastructure, extending the scope of universal service, or assuring the interoperability of networks. The mechanisms for coordinating policy formulation and regulatory actions have become ineffective and need to be strengthened.

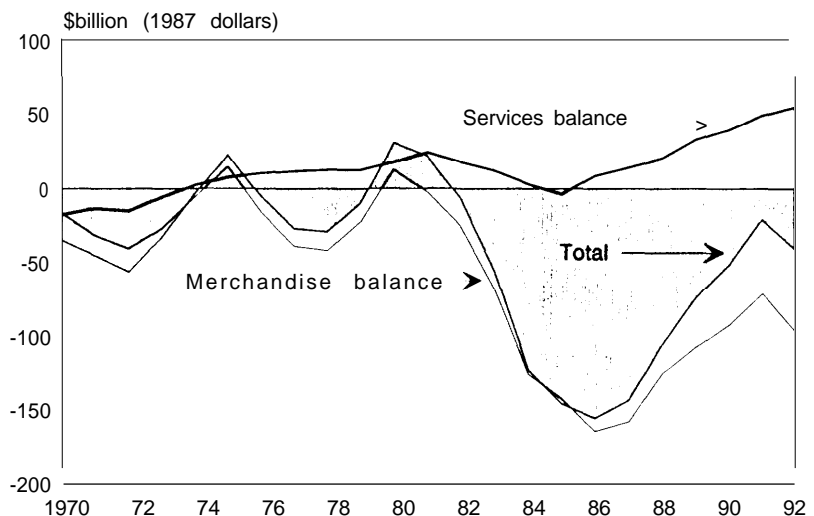
This chapter summarizes these and other findings discussed more fully in later chapters. It then suggests some actions that Congress may consider for monitoring the long-term, indirect effects of overseas activities of U.S. carriers, and for strengthening the policy development and implemen-

tation process for international telecommunications.

Summary of findings

THE EUROPEAN MARKET FOR BASIC AND ENHANCED TELECOMMUNICATIONS SERVICES WILL EXPAND STRONGLY OVER THE NEXT FIVE TO TEN YEARS.

Comparison of the consumption of telecommunications services in Europe and the United States indicates that in all European



SOURCE: U.S. DEPARTMENT OF COMMERCE, 1993

Figure 1-1.
U.S. Trade Balance,
1970-92

countries there is a substantial unsatisfied demand for business-oriented telecommunications services. Monopoly control of networks and services, high tariffs, and strict constraints on the development of private networks have kept this demand from being met.

The Commission of the European Community is pushing ahead with its effort to create a single European market; it puts high priority on the integration of telecommunications networks and deregulation of value-

BOX I-A. RESTRICTIONS ON ACCESS TO THE U.S. MARKET FOR
FOREIGN TELECOMMUNICATIONS COMPANIES

Although the U.S. telecommunications services market is relatively open compared with that of most other countries, there are some restrictions on entry of foreign firms. These are:

- Section 310 of the 1934 Communications Act (47 U.S.C. 31 O) prohibits foreign companies from

- holding common carrier radio licenses,
- owning more than 20 percent of U.S. companies that hold such licenses, or
- having any representation on the board of a U.S. radio license holder.

Foreign citizens may not be officers of a U.S. company holding a radio license. When foreign investment in a common carrier is indirect, i.e., through a subsidiary, Section 31 O(b)(4) allows 25 percent foreign stock ownership, foreign directors, and foreign officers. It also gives the Federal Communication Commission (FCC) discretion in waiving these limits. The FCC has never done so.

This provision was originally aimed at preventing foreign powers from gaining control of U.S. broadcasting, which might be used for propaganda. With the advent of microwave transmission for long-distance telephony, a result of this provision was to keep foreign firms out of long-distance telephone service as well. As telecommunications carriers continue a shift from microwave to fiber optic cables, Section 310 will pose less difficulty for foreign firms. There are also ways around Section 310, such as assignment of radio licenses to third parties.

- The Submarine Cable Landing Act (47 U.S.C. 34-39, especially Section 35) prohibits foreign companies from landing cables in the United States without permission from the FCC. One of the purposes of this act was to give the United States leverage in getting U.S. cables landed in other countries.
- The Telegraph Act (47 U.S.C. 17) forbids foreign companies from landing telegraph lines or cables in Alaska.
- The Communications Satellite Act of 1962 (47 U.S.C. 701-757) established COMSAT as the sole U.S. participant in the INTELSAT consortium, thereby limiting foreign carriers'

added services. In spite of stubborn political resistance, the liberalization of the 12 European national markets is underway. In most of these countries, the responsibility for operating telecommunications networks has been separated from telecommunications regulatory authority and placed in a free-standing (but usually state-owned) corporation. Competition is allowed in some or most value-added services. Progress toward liberalization and curtailment of state monopolies is likely to pick up speed because of pressure

on European governments from three sources: large business users, the EC Commission, and other participants in the Uruguay Round of the General Agreement on Trade and Tariffs (GAIT).

The European Community's drive to a single market promises to expand the geographical scale of many European corporations, increasing their need for translational services. If the single market succeeds in bringing about strong European economic growth, the demand for basic and enhanced

access to satellite transmission capabilities in the United States.¹ Satellite transmission requires radio licenses under Section 310, noted above. Private satellite systems used for common carrier purposes are subject to the Section 310 restrictions.

- The FCC Decision, *International Competitive Carrier* (102 FCC 2d 812 (1985), as modified in *F?egu/alien of International Common Carrier Services* (CC Docket No. 91-360, FCC 92-463 as released Nov. 6, 1992) stipulates that a firm with 15 percent foreign ownership, or which has a foreign representative on its Board of Directors, be considered a "dominant carrier" in the United States for purposes of regulation, and therefore be required to register its proposed tariffs and costs with the FCC before offering its service to the public, and be further required to file quarterly traffic and revenue reports with the FCC.² Some foreign telecommunications operators complain that the FCC has delayed action on applications for over a year. Private line services are not affected by this order.

- The Exon-Florio Amendment to the Defense Production Act of 1950 (50 App. U.S.C. 2170) provides that the U.S. Government may review and prohibit foreign acquisitions, mergers, or takeovers of corporations that could adversely affect U.S. security interests. This provision has not yet been invoked in the telecommunications field.

Note: While no mainland U.S. local telephone company has been acquired by a foreign firm, an 80 percent interest in Puerto Rico Telephone Co. has been acquired by Telefonica of Spain. The Section 310 radio license issue was dealt with by Puerto Rico Telephone Co. ceding its licenses to a third party.

¹ An FCC ruling on a petition from Reuters stated that the term "satellite terminal station" in the act meant Earth stations connected to a terrestrial communications network, but this left the scope of the act unclear to many foreign firms.

² Section 214 of the Communications Act of 1934 requires that the establishment of circuits between the United States and other countries, or between the states of the United States, is subject to government approval. The U.S. dominant carriers, AT&T and COMSAT, are obliged to file their proposed tariffs 45 days in advance, with cost justification. Nondominant carriers, such as MCI and Sprint, have a streamlined requirement—14 days notice, with no cost justification necessary.

SOURCE: OFFICE OF TECHNOLOGY ASSESSMENT 1993

telecommunications services will further intensify. Thus European markets for telecommunications services are attractive future targets for exported telecommunications services and related information services.

ACCESS TO EUROPEAN MARKETS FOR U.S. TELECOMMUNICATIONS FIRMS WILL NOW BROADEN RAPIDLY.

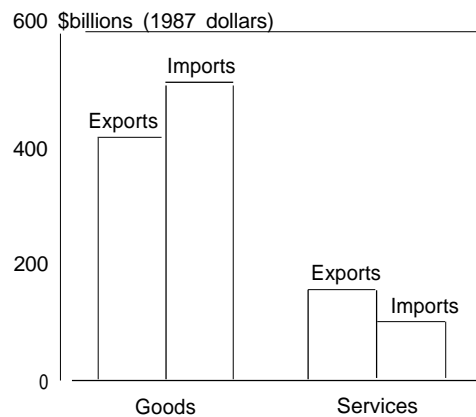
As much as 85 percent of the aggregate European telecommunications market remains closed to U.S. firms chiefly because it

is closed to even domestic competition. (In the United States, the local exchange market for voice services is also closed to foreign competition.) (See box 1 -A.) Basic voice and data transmission is reserved to state-owned monopolies (the PTO) in all European countries except the United Kingdom.

Access to this reserved portion of the market will almost certainly soon be forced open by the same kind of competitive pressure that brought about U.S. deregulation and divestiture of AT&T—namely, the

*The opportunity to
bypass public net-
works will force
open the markets
now closed to
competition.*

Figure 1-2.
U.S. International
Transactions,
1992



SOURCE U.S. DEPARTMENT OF COMMERCE, 1993.

switched networks. This effectively opens the door for bypass—i.e., for the use of private networks to deliver both voice and data traffic in competition with the public networks. As corporations rush to develop private networks in order to get cheaper, customized basic services, they will also want to attach equipment of their own choosing, and they will actively seek enhanced or value-added services customized to meet their corporate needs. Thus broadened market access in the future may have less to do with trade negotiations than with technological and market imperatives.

U.S. TELECOMMUNICATIONS FIRMS ARE MAKING A STRONG ENTRANCE INTO EUROPEAN NICHE MARKETS, PREDOMINANTLY BY DIRECT INVESTMENT ABROAD.

U.S. firms are already entering European niche markets for enhanced or value-added services, largely through partnering with European firms, often the monopoly PTOs. A U.S. carrier can handle a global corporation's needs only so long as one end of the traffic either originates or terminates in the United States. Partners are necessary both to share capital and to provide national regulatory standing and customer access in many countries.

The three major U.S. long-distance carriers (AT&T, MCI, Sprint) are actively pursuing European partners for consortia to provide large multinational corporations with a full range of services ('one-stop shopping' on a global basis. AT&T hopes to earn 50 percent of its total revenues overseas by **2000**.

The seven regional Bell holding companies are estimated to have invested about \$12 billion overseas. RBHCs pursue three kinds of European activities. They are constructing and operating cellular networks, building on their solid expertise gained at home, both to compete with monopoly local carriers in Western Europe and to provide an alternative to wire infrastructure in Central and Eastern Europe. They are experimenting with and gaining experience in other kinds of infrastructure—Personal Communications Networks and, especially in the United Kingdom, cable television networks—hoping to bring this experience and expertise home when there is a change in U.S. regulations. They are also investing in privatized foreign PTOs, although these investments have mostly been in non-European countries that have greater need for infusion of foreign capital than do European countries.

Economists have assumed that most services must be produced where they are

delivered. Many telecommunications and information services, however, could be delivered electronically, directly from the United States through international networks. But even with liberalization and market integration, European countries will try to arrange matters so that both national laws and EC regulations continue to favor European firms. The primary purpose of European market integration is to increase the competitiveness of European industries vis-à-vis American and Japanese firms that have benefited from larger domestic markets and larger scale operations.⁴ The benefits of transborder access and free movement of goods will, however, accrue also to foreign firms that have established a legal presence in member-states; in theory, they will be considered European firms. For this reason, many U.S. services vendors will continue to operate through European subsidiaries or joint ventures.

THE COMPETITIVE EDGE OF U.S. FIRMS IN BASIC NETWORK SERVICES AND ENHANCED SERVICE> BOTH IN TECHNOLOGY AND IN MANAGERIAL EXPERIENCE—IS WIDELY RECOGNIZED.

U.S. services exporters to Europe, heavily dependent on international telecommunications networks, agree that they are well served by U.S. carriers. (See chapter 5.) American communications and computer technology, they say, gives them a competitive edge in foreign markets by enabling them to offer innovative services. Network technologies and services are especially important to providers of transportation, freight, and travel-related services, which

constitute about 58 percent of all U.S. services exports, and to financial services and data processing services, which add another 5 percent.

By comparison, American firms operating in Europe feel seriously hampered by the necessity of relying on European technology and services for communications within Europe and at the European end of international networks. Many of them complain of the scarcity of high-grade leased lines, restrictions on the use of all leased lines, lack of access to fast data networks, severe restrictions on-or delays in—approving customer-premise equipment, irregular and inconsistent billings, and above all, excessively high costs. These problems beset European users as well. If U.S. telecommunications firms are allowed broader access to the market they may be able to capitalize on these opportunities to prove greater efficiency and greater responsiveness to users' needs.

EUROPEAN OPPORTUNITIES, NOT U.S. REGULATORY RESTRICTIONS, NOW DRIVE U.S. PARTICIPATION IN EUROPEAN MARKETS.

U.S. telecommunications firms have concluded that their future growth may depend largely on foreign markets, where growth rates are expected to be much higher than in the now better-served U.S. markets. For example, European consumer expenditures for telecommunications (now much lower than those in the United States) are projected to grow three times faster in the next few years. Estimates of annual growth rates for business-oriented enhanced services range

*U.S. carriers
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services wanted
by both European
and American
corporate users.*

⁴Japanese firms have not been significant competitors in the European market for telecommunications services (as distinguished from telecommunications equipment). Japan has not permitted the Nippon Telegraph and Telephone Co. to operate overseas.

from 20 to 30 percent per year (see chapter 3 for detailed market projections).

U.S. Federal and state regulations—especially the Modified Final Judgment (MFJ) that has governed the activities of RBHCs and their regional Bell operating companies (RBOCs) since their divestiture from AT&T—limit the range of opportunities for new services and new sources of revenue in the United States. The MFJ prevented RBOCs from engaging in information services, long-distance transmission, and equipment manufacturing in the United States. The prohibition on offering information services has now been lifted, and legislation is pending that would allow telecommunications companies to own and operate cable television companies.⁵

Just after divestiture, being forbidden by the MFJ to invest in many domestic telecommunications-related areas, RBHCs made widely diversified investments beyond their line of business, including, for example, real estate development. The poor performance of these noncommunications investments strongly encouraged RBHCs to look abroad for expansion, diversification, and investment activities that would better match their corporate experience and competence.

Now, however, it is likely that their European initiatives are pulled by opportunities abroad more strongly than they are pushed by regulatory limitations at home. U.S. telecommunications firms would probably not pull back from overseas ventures if MFJ restrictions were ended, as long as opportunities in foreign markets remain

inviting and there is hope of wider market access. Although some industry spokesmen continue to bring up the issue of overseas investment as a reason to end all remaining MFJ restrictions (indirectly implying that these discourage them from investment in the United States), it is unlikely that resolution of this domestic policy issue, one way or the other, would in itself have a decisive impact on the rate of overseas investment. On the other hand, the experience RBHCs are gaining overseas is likely to affect what new enterprises they pursue at home, when and if regulatory restrictions are lifted.

Just as RBHCs use their overseas investments as an argument for lifting MFJ restrictions on domestic activities, they also argue that U.S. antitrust laws should be softened because they prevent RBHCs from joining together to respond to European competitive contract bids. It is not clear that this is true. U.S. Department of Justice rulings regarding antitrust are not generally considered exportable, and no effort has been made by the government to prevent RBHCs from partnering with each other outside the United States. Two RBOCs have in fact done so in New Zealand, and other examples have occurred. Corporate lawyers are cautious in interpreting antitrust law, since judicial challenges are expensive. It is likely, however, that more important considerations are the perceived value of a European partner and the perceived risk of sharing information and technology with another RBHC.

Some telecom firms argue that they are at a competitive disadvantage vis-a-vis Euro-

⁵RBOCs can still not provide regional information services because the prohibition on long-distance transmission—including signaling—would force them to set up special transmission equipment and data banks in each local area rather than centralizing them, as efficient service would require.

pean firms because of the high cost in the United States of capital and because foreign governments often subsidize low-cost capital for overseas expansion. However, there is little evidence that any governmental financing support is needed. Most overseas telecommunications investments are funded from retained earnings and the U.S. carriers are generally cash-rich.

FOREIGN INVESTMENTS BY U.S. CARRIERS, ESPECIALLY RBOCS, WHICH ARE REGULATED LOCAL MONOPOLIES, MAY INVOLVE SOME RISKS TO U.S. CONSUMERS.

Domestic investments by RBHCs soon after divestiture, in fields unrelated to the firms' core business, were often unsuccessful. By contrast, recent overseas investments reflect focused corporate strategies that fit their proven expertise and may have a much better chance of success. The potential costs or risks of overseas competition have, however, not been satisfactorily addressed. Some state regulators and public interest group representatives fear that foreign investment diverts funds that would otherwise go to investment in domestic infrastructure modernization and development of innovative services. Some also fear that business losses or lack of adequate return on investment overseas could lead to rising consumer prices at home, or could by weakening the viability of the regional holding companies undermine the stability of their regulated local subsidiaries.

The idea that a firm's overseas investments might contribute to declining investment or disinvestment at home is based on the assumption that since companies must allocate scarce resources among competing interests, a pool of investment capital (such as the BOCs' retained earnings) would be spread more thinly in an organization with many establishments than in one with few. In addition, if some of those establishments operate in faster growing markets or less restrictive regulatory environments, a parent company may invest more in the enterprises located in these favorable environments. These are legitimate concerns, although as discussed above, in high-tech enterprises the failure to operate in global markets could be a brake on efficiency and innovation.

These concerns have only recently begun to be voiced, and state regulators are moving slowly to assess the risks. Only state regulators now have an obvious brake on the extent of overseas investment by RBHCs, through their regulation of tariffs and depreciation rates and hence the ability to limit the amount of retained earnings available for investment—the major source of investment financing. (See chapter 9.)

The evidence as to whether domestic investment is declining is mixed and inconclusive. The value of U.S. carriers' current plant grew little in the 1980s (when inflation is taken into account), and the value of annual construction appears to have decreased strik-

Could overseas investment mean a decline in domestic investment? Close attention is warranted.

Network interoperability is essential to both users and providers of international services.

ingly between 1980 and 1990.⁶ However, technology costs also declined significantly during this period, and network architecture changed in ways that affect the distribution of investment. Expenditure for research and development—by long-distance carriers, by RBHCs, and by telecommunications equipment manufacturers—is far lower than that of European counterparts. This is a significant concern, but R&D investment, although low, cannot be conclusively shown to have declined since divestiture in 1984 or in the period of high foreign investment beginning about 1988. (See chapter 9.)

Available time-series data are inadequate for making conclusive statements about either a continuing decline in investment or causal relationships between high foreign investment and low domestic investment. This issue is potentially very important. Investment trends, both in infrastructure and in research and development, should be carefully monitored by state regulators, the FCC, and congressional committees.⁷

INTERNATIONAL CARRIERS AND USERS HAVE DIFFERENT PERSPECTIVES ON COMPETITIVENESS AND TRADE POLICY ISSUES.

Accustomed to the expansive domestic market and relatively homogeneous regulatory environment in the United States, Amer-

ican telecommunications users operating businesses in Europe resent the multitude of disparate prices and billing procedures and the conflicting rules and regulations over relatively short distances. As discussed in chapter 5, they often are even more eager for liberalization of telecommunications markets within Europe than they are for the end of remaining restrictions on market entry of U.S. providers.

U.S. carriers want broader access to European markets, but they fear that they could be hurt by multilateral trade negotiations that result in the loss of some restrictions on foreign telecommunications firms entering the U.S. market, without assuring the full dismantling of foreign state telecommunications monopolies that exclude them from much of the European market. Some believe that they might fare better under bilateral than multilateral negotiations. However, since each European country is a much smaller market than the United States, most would prefer a multilateral agreement.

The interests of providers and users also diverge with regard to network interconnection and telecommunications standards. (See chapter 2.) Both carriers and users give lip service to the ideals of global interoperability and international standards. However, telecommunications companies have strong

⁶ According to the U.S. Telephone Association, the value of U.S. carriers' current plant grew only 3 percent from 1980 to 1989 (in 1980 dollars). From 1981 to 1989, there was shrinkage or no growth in value (i.e., an increase of 1 percent or less) in 5 of the 9 years. The value of annual construction, in 1980 dollars, decreased 40 percent from 1980 (\$21.2 billion) to 1989 (\$12.6 billion). In 8 of the 9 years following 1980, construction declined from the previous year or was stable in value (increasing 1 percent or less). FCC figures, for reporting carriers only, indicate that from 1985 to 1989, the value of gross plant grew by 6 percent (in constant dollars) but it did not increase from 1987 through 1989. Each year from 1986 through 1989, the value of annual construction declined from 2 to 10 percent over the preceding year (from \$15.1 billion in 1985 to \$12.3 billion in 1989 dollars). Annual revenues also declined by 3 percent in constant dollars from 1985 to 1989.

⁷ This will not be possible without requiring some standardized reporting of data by the industry, but the paperwork burden would be very light since the data is well known to the corporations.

reservations about traditional international standards-setting bodies and procedures, and tend to cling to proprietary protocols and the use of specialized interconnection technology to achieve interoperability. Users, however, generally want international standards that will give them broad choice in using and combining networks, customer-end equipment, and services from a variety of vendors.

The emphasis now being given by the European Community to the development of communitywide telecommunications standards may put U.S. telecommunications firms at a disadvantage both in gaining full access to an integrated European market, and in influencing international standards development. Some ad hoc, specialized standards consortia are successfully pulling together manufacturers, services providers, and users to develop and implement standards in a reasonable time frame, but many tensions remain in the cumbersome U.S. standards-setting process.⁸

Interoperability is essential to both users and providers, and while it can be achieved by alternative strategies, the United States cannot by itself dictate either the path to achievement, nor the architecture that eventually determines interoperability. More leadership by the U.S. Government may, however be necessary to assure this interoperability,

U.S. INTERNATIONAL TELECOMMUNICATIONS POLICY HAS BEEN THOROUGHLY SUBORDINATED TO TRADE POLICY. ACCESS TO FOREIGN MARKETS IS NOW THE ONLY CLEARLY ARTICULATED GOAL.

U.S. trade policy is focused tightly on free trade and open markets. The United States

initiated and consistently pushed for recognition of services as tradable entities, for which terms of trade could be embodied in bilateral and multilateral treaties and should eventually be included in the framework of the international General Agreement on Trade and Tariffs. In the current Uruguay Round of GATT negotiations, a "Telecommunications Annex" has been tentatively agreed on, pending acceptance of an overall trade agreement (which may now be receding into the distance). The annex sets out the rights of users and services providers to network access, interconnection, and transparency of terms and tariffs.

The U.S. negotiating position for the Uruguay Round and its Telecommunications Annex was worked out by USTR in consultation with Federal agencies and representatives of carriers, corporate telecommunications users, and labor groups. Because the responsibility, and therefore the constituency, of USTR is very broad, cutting across all industry sectors, it is a hospitable forum for large corporate users of telecommunications and is especially attentive to their concerns. Corporate users reinforce USTR's focus on unfettered access to services and unlimited network interconnection, but are concerned that USTR may not have pushed vigorously enough for open markets in Europe. U.S. telecommunications firms are concerned about the degree to which the domestic telecommunications market may be "locked open" to EC firms by GATT, while the EC nations continue to protect their national monopoly carriers by reserving large segments of the telecommunications market to them. (The GATT principle of

⁸U.S. Congress, Office of Technology Assessment, *Global Standards: Building Blocks for the Future*, TCT-512 (Washington, DC: U.S. Government Printing Office, March 1992).

national treatment would assure only that foreign firms have equal treatment with national firms—who may not be allowed to compete with the national carrier.) The rough consensus that was hammered together to form USTR's negotiating position has tended to erode somewhat over the long course of negotiations and the necessity of compromises among nations participating in the international give-and-take. Both U.S. telecommunications firms and users now tend to argue that a 'bad' GATT conclusion will be worse than no agreement at all.

USTR NEGOTIATING POSITIONS ARE BEING UNDERMINED BY INSTITUTIONAL AND TECHNOLOGICAL DEVELOPMENTS.

The negotiating positions used by USTR in multilateral and bilateral negotiations in many regards rest on traditional distinctions between public and private networks, between network operators and resellers, between competing technologies, and between basic and enhanced communication services. Many of these distinctions have already been blurred by network interconnection and capacity resale. They are rapidly being challenged by clearly identifiable technological trends and by the innovative services that they make possible. The development of "intelligent networks," in which programmable logic and customer databases are distributed throughout the system and linked by a common packet-switched signaling system, as described in chapter 2, allows network services to be thoroughly customized. This leads to pervasive commingling of carrier-provided and user-provided network facilities, logic, and databases. These technologies and services make it both difficult and ultimately unproductive to maintain

distinctions between public and private networks and between basic and enhanced services. Trade agreements based on distinctions that are already becoming obsolete cannot be enforced or adhered to in the long term.

The international telecommunications arena is marked by increasing complexity in the nature of relationships among industry participants and between industries and governments. There are many new players—wireless communications companies, resellers, private network operators, value-added service providers—in markets previously dominated by single national firms. National carriers are for the first time competing with each other in global markets and at the same time are partnering in joint ventures. National authorities are struggling to develop transparent regulations where before they acted by fiat. Governments are struggling both to gain the advantages of competition for their consumers and corporate users, and to protect their national carriers and national equipment manufacturers.

Even as the Uruguay Round labors toward a conclusion after repeated suspensions and extensions, the future of multilateral trade regimes is being questioned because of the coalescence of regional trading blocs and waves of political change and restructuring that increase the difficulty of concluding stable trade agreements. It is unlikely, nevertheless, that the tradability of services, including telecommunications services, will ever again be questioned. A series of bilateral and regional agreements, most recently the North American Free Trade Agreement (NAFTA), have codified principles that have reached widespread agreement. (See chapter 7.)

Trade agreements that distinguish "basic" from "enhanced" services will be undercut by changing technology and industry restructuring.

Exporting
Telecommunications
Services to
Europe

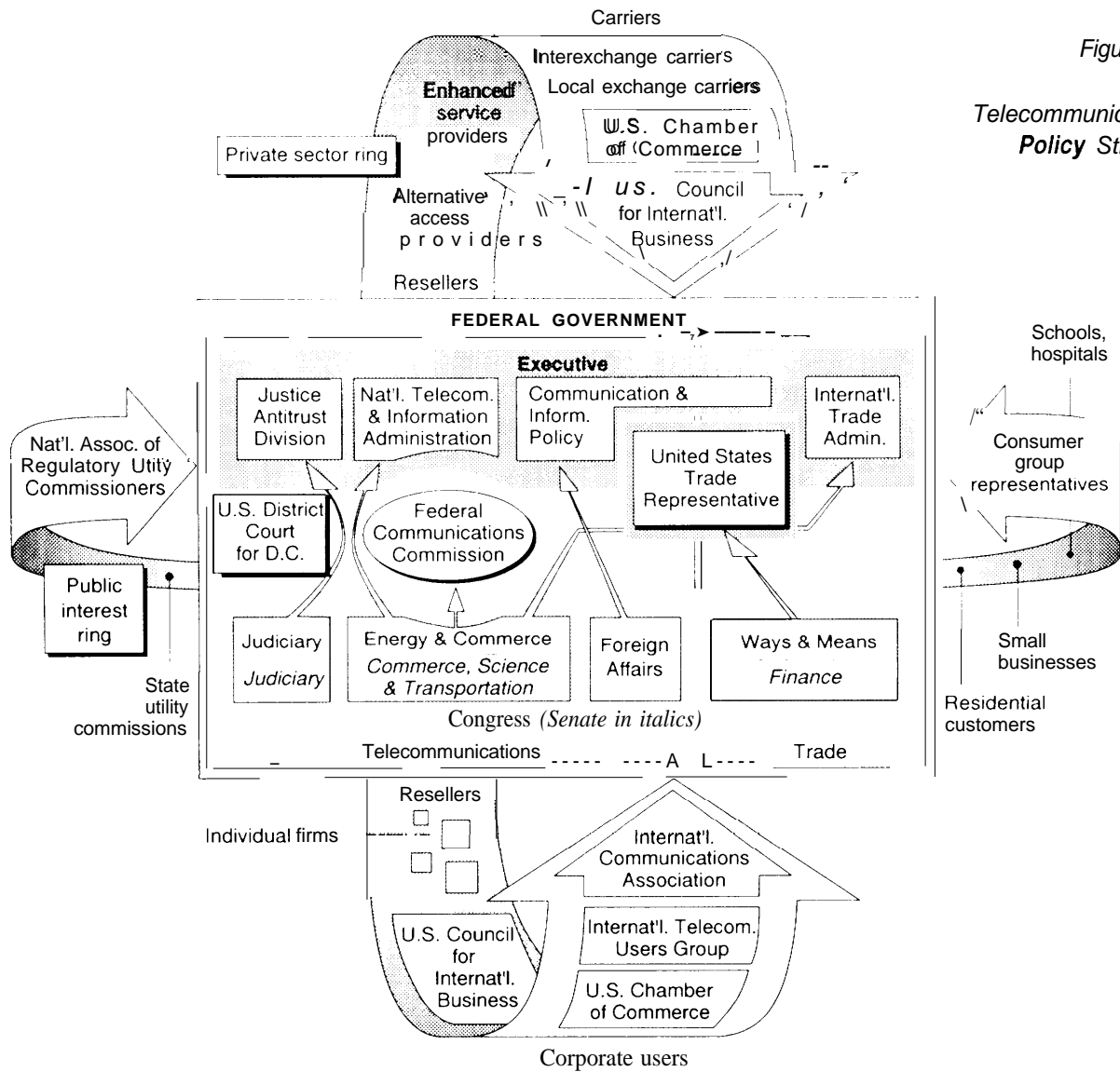


Figure 1-3.
US.

Telecommunications
Policy Structure

When telecommunications policy is subordinated to trade policy, other national goals and interests may be ignored.

**FORMAL RESPONSIBILITY FOR DEVELOPMENT OF
U.S. TELECOMMUNICATIONS POLICY IS DISPERSED,
AND COORDINATION MECHANISMS ARE WEAK.**

Policy concerning international telecommunications, until very recently, was an incidental byproduct of domestic telecommunications policy. For over a decade, the telecommunications industry has been allowed to frame and articulate the goals of telecommunications policy with relatively little effective counterbalance from the executive branch of government. The diversity of “the telecommunications industry” means that there are many conflicting interests and perspectives, but a narrow range of policy goals on which to agree. Domestic telecommunications policy has since 1978 focused almost exclusively on the divestiture of the Bell system and deregulation.

The divided and dispersed structure of Federal responsibility for telecommunications policy contributed to this outcome. Organizational fragmentation has some advantages—it provides alternative fora for competing interests to be heard and resolved. The fragmentation may also be necessary, since there is a role for both a policy-development organ within the executive branch and an independent regulatory commission outside of Administration control. Since their immediate goals are sometimes divergent, there is probably also a need for a coordinator or mediating mechanism, especially in dealing with international telecommunications, where it is desirable that U.S. policy be articulated clearly and unambiguously. There is such a coordinating mechanism located somewhat obscurely in the Department of State—the Bureau of Communications and Information Policy—but for true coordination there needs to be

some coherent and comprehensive policy that bridges the interests of carriers, services providers, and large business users.

The National Information Infrastructure advocated by the present Administration could also become an appropriate model for the evolution of a global information network—if the United States takes the lead in developing and coordinating international telecommunications policy. U.S. telecommunications policy should incorporate the national interest in global networks; for example, the national interest calls for network interoperability and service for small as well as large users. At present, there is no such policy, no effective coordinating mechanism, and no leadership in articulating the national interest in telecommunications.

The National Telecommunications and Information Administration (NTIA) is embedded in the business-oriented Department of Commerce, which has many competing constituencies and has in the past had relatively weak and diffuse channels to Administration decisionmakers. NTIA is strongly oriented toward representing carriers, but tends to be paralyzed by the often conflicting interests among local exchange carriers and interexchange carriers.

The FCC Common Carrier Bureau has until the last 2 years tended to give little attention to international issues. The FCC Office of International Affairs is relatively new and has primarily an internal coordination function. The FCC, as an independent regulatory agency, is outside of and sometimes at odds with Administration policymaking. This often provides a valuable “check and balance” on policy development, but the Commission sometimes acts unpredictably, in violation of U.S. trade

policies and its own standing rules and policies.⁹

The State Department's Bureau of Communications and Information Policy (CIP) has the legislative mandate to coordinate telecommunications policymaking among and between FCC, NTIA, and other executive agencies. The selection of the State Department as the site for coordination of telecommunication policy represented first the perception held by the Administration at that time that telecommunications is primarily a service for multinational corporations engaged in world trade, ¹⁰ and secondly a way of extending congressional oversight of telecommunications trade issues.¹¹ CIP has however recently been largely ineffective both in its coordinating role and in contributing substantively to development of telecommunications policy, functioning largely as a clerical facilitator for industry/government participation in international meetings. Its effectiveness may be further lessened by a current State Department plan to degrade it from Bureau status to that of an

office within another Bureau. To make CIP an effective tool for coordination of telecommunications policy would require restructuring, refunding, and restaffing. It would also require a hospitable environment within the State Department, one that recognizes the essential role of telecommunications in governance and in the conduct of foreign affairs.

**EFFECTIVE RESPONSIBILITY FOR INTERNATIONAL
TELECOMMUNICATIONS POLICY HAS FALLEN TO
USTR, A TRADE AGENCY. THIS CONSTRICTS AND
DISTORTS THE FORMULATION OF TELECOMMUNICA-
TIONS POLICY.**

The formulation and implementation of international telecommunications policy, because of the 1988 Trade Act, has come to be dominated by trade negotiations. The United States Trade Representative has in effect played the role envisioned for CIP, USTR consults other agencies in depth and at great length, but when strong interagency differences arise, USTR generally prevails, especially since telecommunications agencies do not have a seat on committees that resolve

⁹For example, the FCC allowed Telefonica of Spain to buy the Puerto Rico Telephone Co., although U.S. telecommunications firms do not have full access to Spain's market. The Commission also did not impose any conditions related to Telefonica adopting cost-based accounting rates, as called for in FCC's CC Dec. 90-337 (Phase II) (Nov. 5, 1992). The FCC has established "benchmark" U.S.-Europe accounting rates of \$0.46 to \$0.78, to be achieved within a year; existing accounting rates with Telefonica are \$1.26 to \$1.96. See ch. 3 for explanation of the accounting rate issue.

¹⁰"It was, however, the preceding Carter Administration that in 1978 removed the Office of Telecommunications Policy from the Executive Office and placed it in the Department of Commerce. This appeared to signal a change in perspectives, from viewing telecommunications as a powerful tool for governance and social policy implementation, to an industry that produces goods and services for business users.

¹¹Communications primarily falls within the jurisdiction of the Senate Committee on Commerce, Science, and Transportation (Subcommittee on Communications) and the House Committee on Energy and Commerce (Subcommittee on Telecommunications and Finance). Other committees, including for example the Senate Committee on Finance (Subcommittee on International Trade) and House Committee on Foreign Affairs (Subcommittee on International Economic Policy and Trade), are concerned with international trade issues. The House Committee on the Judiciary has played a strong role in telecommunications issues, having responsibility for "protection of trade and commerce against unlawful restraints and monopolies." The location of the Coordinator in the State Department assures that trade and foreign affairs committees will have some oversight over telecommunications.

these differences. In the future, however, formal trade negotiations may be less critical than technology and users' needs in determining the competitiveness of U.S. telecommunications firms in foreign markets. The industry structure, investment patterns, research expenditures, and risk exposure cannot be effectively monitored by trade negotiators.

The central role of USTR in international telecommunications policy has had some advantages: it has imposed a degree of unity on representation of U.S. positions in global issue resolution; it has kept telecommunications trade issues under scrutiny by several congressional committees with a broad perspective on global economic trends; and it has given increased representation and importance to large business users of telecommunications, to whom USTR has built strong bridges, while telecommunications agencies appear to listen more attentively to the major carriers. However, the dominance of USTR further reinforces the compression of policy formulation into a single dimension, the opening up of foreign markets. The established relationships and operating procedures between the telecommunications agencies (NTIA, FCC, and CIP) and international institutions such as the International Telecommunications Union (ITU) are being superseded by trade negotiations, and some historical principles and procedures for cooperation and control may be effectively lost as a result.

The dominant role of USTR is also subject to other criticism. Some communications industry representatives fear that subjecting telecommunications to broad trade principles may result in the asymmetrical opening of U.S. markets without providing equal access for U.S. firms to foreign monopoly-

dominated markets. GATT agreements could supersede provisions of domestic law and regulation. Some stakeholders assert that trade negotiators do not have full understanding of highly technical telecommunications issues, and work on the basis of existing distinctions and categories that will be rapidly made obsolete by already emerging technological changes.

U.S. POLICY FOR INTERNATIONAL TELECOMMUNICATIONS LACKS AN INFORMING VISION.

The fragmented structure for telecommunications policymaking and the narrow focus of both domestic and international telecommunications policy has allowed policy formulation and implementation to be driven by the needs of a relatively few private sector stakeholders (carriers, equipment manufacturers, certain large business users), with government taking a hands-off position. Communications is *not* merely a utility for facilitating business competitiveness or a tradable commodity. Communications is also a basic prerequisite of effective democratic governance, an essential foundation for scientific endeavors, a channel for conducting foreign relations and cooperative activities, and a critical element in national security and global peacekeeping.

For over a decade, however, the national administration has largely renounced any voice in determining the structure, investment strategies, and technology development policies of this core industry. For example, Europe and the United States increasingly tend to differ in the approach to network architecture. In Europe, relatively more centralized "intelligence (computerization) is integral to the network, while in the United States there is a tendency to use more sophisticated terminal equipment, owned by

the user. There are many advantages to the latter approach, but on the other hand, building advanced capabilities into the network may facilitate uses of telecommunications by middle-sized and even small firms that could not afford the specialized customer premises equipment. In a global economy, the competitiveness of smaller firms may turn out to be important; in addition, smaller firms have a better track record in the United States of creating jobs than have large corporations. Telecommunications policy, not trade policy, is the appropriate vehicle for considering strategic alternatives of this kind.

Notwithstanding the often-conflicting initiatives of congressional committees and attempts by a few congressional leaders to put forward a vision of the possibilities of "electronic highways," domestic telecommunications policy has largely been articulated by the judicial branch of government. No agency, including the FCC as an independent regulatory agency, has attempted to modernize or translate the old objective of "Universal Service" in terms of new and advancing technologies. Existing policy goals remain narrow: progressive deregulation at the domestic level; opening of foreign markets at the international level. This may result in:

- Neglect of goals other than market access, such as the most efficient interconnection of networks and development of a full spectrum of services for small business and residential consumers as well as large businesses;
- Inattention to costs and risks such as weakening of regulated domestic subsidies or disinvestment at home;
- Complete subordination of telecommunications policy to more general trade principles,

ignoring special characteristics of telecommunications services;

- Continuing confusion and conflict over the question of what the national telecommunications infrastructure, and its connections to global networks, should be like at the beginning of the 21st century.



CORPORATE LEADERS GATHER IN A FIELD OUTSIDE DARIEN CONNECTICUT, WHERE ONE OF THEM CLAIMS TO HAVE SEEN THE INVISIBLE HAND OF THE MARKETPLACE.

DRAWING BY DANA FRADON, © 1992, THE NEW YORKER MAGAZINE, INC

Under the present, dispersed policymaking structure, attention to such aspects of international telecommunications may not be adequate.

U.S. PARTICIPATION IN EUROPEAN MARKETS FOR TELECOMMUNICATIONS SERVICES IS IN ACCORD WITH U.S. ECONOMIC INTERESTS AND SUPPORTS U.S. TRADE GOALS.

Export of services is now, and increasingly in the future, important to the U.S. economy. Concern about the United States' long-term balance of payments has mostly focused on the continuing trade deficit in manufactured goods; but services exports are now more than one-third as large as our export of goods and growing faster, with

Europe as the primary foreign market. The United States has a healthy trade surplus in services, partially offsetting the troublesome merchandise trade deficit. The increased export of enhanced telecommunications services and closely related information services can add significantly to this surplus. (See chapter 3.)

Telecommunications and information services are a relatively small part of all U.S. services exports--only about 2 percent--but they hold the opportunity for strong growth. U.S. firms have a competitive edge in delivering telecommunications and information services because of their experience in competitive markets and in developing innovative, user-tailored services based on advanced transmission and network technologies. Other U.S. firms operating in or selling to Europe benefit by the availability of U.S. telecommunications services. (See chapter 5.) The sale of telecommunications services overseas can also stimulate foreign demand for U.S. telecommunications and computer equipment.

In contrast to the overall surplus in trade of services, the United States now has an overall trade deficit in telecommunications services. (See figure 1-4.) This deficit, however, is not due to lack of competitiveness, but to the excellent performance of U.S. telecommunications providers in comparison with European telephone systems. The deficit results from international accounting

rates. A carrier originating an international call pays a foreign carrier to route the call to its final destination. Countries from which more calls are made thus see a net outflow of payments. More international calls are made from the United States than are made to it, because of our large industrial base, large population, and high per capita income, and because we enjoy much lower communications tariffs and greater access to useful services than most countries.

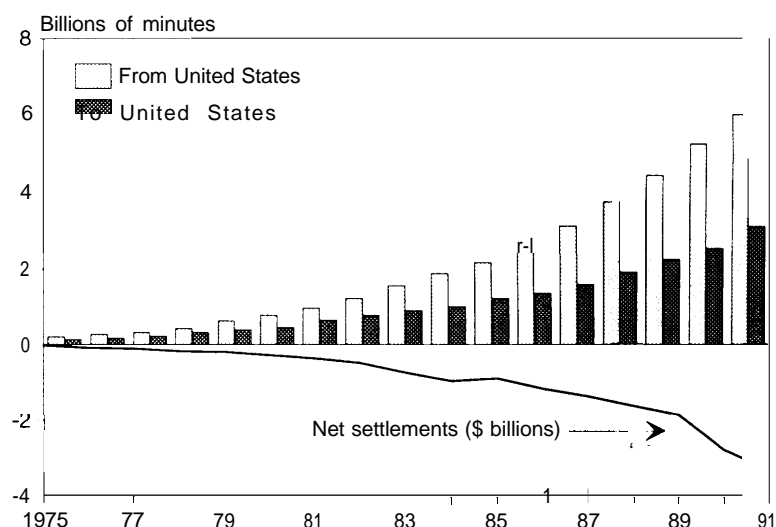
It is important to correct the accounting rate deficit, but this will require both renegotiation of accounting rates to reflect real costs (which will mean lower accounting rates), and lower customer charges in foreign countries to reduce the asymmetry in telecommunications usage. But the accounting rate deficit can also be partially counterbalanced by growth of the still-small U.S. export of enhanced services (in which we now have a healthy trade surplus), with the additional benefit of supporting the competitiveness of other U.S. firms in Europe. (See figure 1-1.)

The success of U.S. telecommunications and information services firms in international markets is important to the U.S. economy. Most research on the employment effects of trade has dealt exclusively with export and import of merchandise, but available projections indicate that exports of services create U.S. jobs and that these jobs have relatively higher pay than other services

12 Accounting rates are discussed further in chapter 3. They are negotiated between carriers and are independent of customer charges and of actual costs of message delivery.

jobs.¹³ However, there is relatively little evidence for this proposition, probably because the concepts of 'trade in services' or 'services exports' are themselves new and because statistics on trade in services are inadequate (see chapter 8).

Some services, for example financial services, have been directly exported for centuries (e. g., bills of exchange), but the direct electronic export of enhanced services has burgeoned only recently.¹⁵ Most telecommunications services are delivered overseas through direct overseas investment in subsidiaries and joint ventures. It is difficult to judge the impact of such corporate overseas investments on U.S. income, jobs, profits, and general economic welfare. Offshore operations financed by direct investment generally create jobs and secondary income in the foreign country, not in the United States, but profit repatriation must also be taken into account. Profits flowing back to a



SOURCE FEDERAL COMMUNICATIONS COMMISSION, 1992.

U.S. parent firm increase the value of the domestic corporate enterprise, and are assumed to strengthen its growth prospects and stimulate domestic employment and income. Foreign services firms entering our markets

Figure 1-4.
Telecommunications
Traffic Balance

NOTE Does not include traffic with Mexico and Canada.

¹³ For example, the Department of Commerce has estimated that 7.2 million U.S. jobs were directly or indirectly supported by merchandise exports in 1990. This study included some service-sector jobs indirectly supported by merchandise exports, but it expressly did not include jobs supported by exports of services. U.S. Department of Commerce, *U.S. Jobs Supported by Merchandise Exports*, April 1992. The Office of the U.S. Trade Representative matched this data, disaggregated by industry, with average hourly wage data supplied by the U.S. Bureau of Labor Statistics, and concluded that the average hourly wages for services jobs within merchandise-exporting firms were nearly 20 percent higher than services jobs in nonexporting manufacturing firms. USTR's analysis included a comment that "there is every reason to believe that the same pattern of higher wages in companies exporting services would also prevail." See USTR, "U.S. Exports Create High-Wage Employment," press release, Washington, DC, 1992, p. 4.

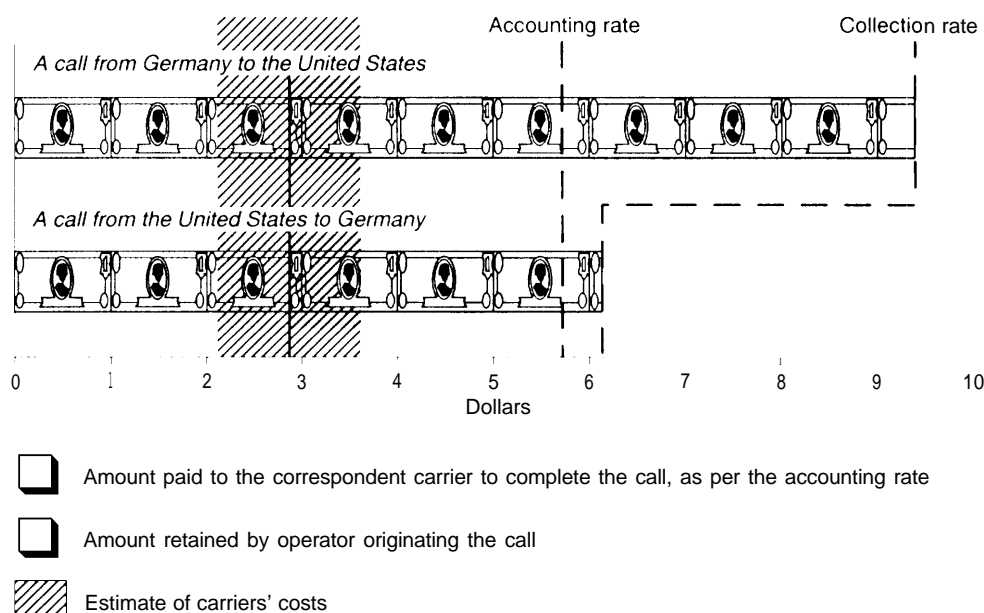
¹⁴ A newspaper projection pointed out that if U.S. export of services grows between 9 percent (recent annual growth in the domestic services sector) and 14 percent (recent growth in services exports) it will reach an annual total of between \$206 and \$257 billion by 1996, and the statement was made that this could create 5 million new jobs. Stephen Kindel, "Invisible Trade," *Financial World*, Oct. 13, 1992, pp. 56-69. According to Kindel, the employment estimate was based on the number of jobs that USTR estimates are created by increases in U.S. exports of goods, but this number was arbitrarily reduced by half on the grounds that the services jobs would be, on average, more highly skilled and highly paid than most manufacturing jobs.

¹⁵ During the same period, telecommunications companies—including U.S. long-distance carriers and local exchange carriers—have been undergoing rigorous "downsizing" but this job destruction does not appear to be tied to concurrent overseas expansions. Similarly, there is evidence of some migration of data processing and other information industry employment to offshore locations, but no evidence that this is related directly to export of services.

Figure 1-5.
*Accounting and
Collection Rates for
International
Telecommunications
Traffic*

NOTES: The accounting rate with Germany in 1992 was 0.8 special drawing rights or \$1.14 (FCC, Statistics of Communications Common Carriers, 1991 / 1 992 Ed.). The collection rate (i.e., what the caller is charged) for the U.S.-to-Germany call is calculated as \$1.77 [for the initial m. mute] + 4x\$1.09 = \$6.13 (FCC). The collection rate for the Germany -to-U.S. call is derived from 5x\$1.88 (TeleGeography 1992, International Institute of Communications). The costs to the carriers are estimated at \$0.15 per m. inute at both the U.S and German end; this number is conservative.

A comparison of a 5-minute, peak-time call between the United States and Germany, 1991



SOURCE: OFFICE OF TECHNOLOGY ASSESSMENT, 1993.

under trade agreements also create jobs here. Unfortunately, economists have not developed a credible way to track and calculate the net benefits of these competing effects, especially for services firms.¹⁶

In some industries, lower costs of production in foreign markets—often, lower labor costs—have caused offshore facilities to displace plants in the United States. But in other industries, particularly those with global sales and increasing “returns-to-scale,”¹⁷ the most able firms are those with extensive

global operations. In some businesses, too, access to customers with different preferences, markets with different standards, and researchers with a wide variety of approaches to problems is an asset. In such industries, foreign investment is likely to result in a bigger pool of investment capital for all the company’s establishments.¹⁸

Those industries where offshore operations are likely to displace domestic ones consist mainly of commodities like wheat, textiles, apparel, and lumber.¹⁹ In the other

¹⁶ James K. Jackson, “American Direct Investment in the European Community,” Congressional Research Service Report for Congress, June 9, 1992.

¹⁷ “Increasing returns to scale” means that, within a generous limit, the more the company produces of its product the cheaper the costs of production are, per unit, and the better off it is, competitively.

¹⁸ U.S. Congress, Office of Technology Assessment, *Competing Economies: America, Europe, and the Pacific Rim*, OTA-ITE-498 (Washington, DC: U.S. Government Printing Office, October 1991).

¹⁹ These goods can be produced by well-known and straightforward methods, usually in establishments which, when sized to be efficient, add no more than small increments to global production.

category are industries where the most experienced and large-scale producers are the most efficient and innovative, both because of increasing returns-to-scale and because of the enormous amount of know-how and technology embodied in the production and delivery of the output. The telecommunications services industry is in this category. Increasing returns-to-scale was the justification for its traditional status as a regulated monopoly. Provision of high-quality services is highly dependent on vast inputs of technology and decades of accumulated know-how.

Limits on the ability of the telecommunications industry to invest in and serve fast-growing, complex foreign markets would likely prove a disastrous competitive disadvantage. The speed of innovation and the shortening half-life of products is a powerful argument for global operations. Slower market growth in the United States would not continue indefinitely to encourage rapid innovation, while in faster-growing foreign markets there will be the opportunity to experiment fruitfully with different technology, different demands, and different standards.

The United States is now operating in a global economy. It must begin to balance its imports with exports-of services as well as goods. Telecommunications equipment and services is a sector in which U.S. firms excel. The European market for telecommunications services is both growing and moving toward liberalized entry. The U.S. Government can encourage and hasten this increased opportunity through trade negotiations and other actions. Whether U.S. firms can remain competitive in this market will also depend on other factors: technological superiority, management skills, access to affordable capital, well-trained human re-

sources, and U.S. regulatory policies. The strategies being used by U.S. telecommunications firms to compete in the European market are described in chapter 4.

Conclusions and policy options

U.S. telecommunications firms and enhanced-services providers are well positioned to compete in European markets for services, to the extent that those markets are now open to them. A combination of technology, market forces, and institutional pressures is converging to force open much of the telecommunications services market that is now closed to all competition-the opportunity to bypass monopolistic public telephone operators has been thrown open.

Congress need do little to enlarge the competitive opportunities for U.S. telecommunications services providers in Europe, except for encouraging the President and USTR to continue to push for the liberalization of European telecommunications markets, and to support efforts of the European Community to establish a single European market for telecommunications. No *other actions are clearly needed*. There is a strong likelihood that European markets will continue slowly to liberalize and move toward greater integration.

There are two other unresolved issues that Congress may want to address:

- The risk of disinvestment or inadequate investment in domestic infrastructure as a result of overseas investment by the major long-distance carriers and the holding companies that include regulated local exchange carriers; and
- The weak and ineffectively coordinated Federal organizational structure through which national telecommunications policy is developed and implemented.

The Office of Technology Assessment found only mixed and inconclusive evidence for inadequate or declining investment in domestic infrastructure. There may be no significant trend in that direction; yet if there is, the long-term consequences would be serious. *In order to resolve this question for purposes of future oversight and policymaking, Congress has options:*

- Congress could instruct the FCC to monitor and report on all telecommunications activities and investments overseas, on the source of capital for these investments, and on the financial condition and resources of carriers undertaking such activities.

An appropriate monitoring system would also require reporting, in standardized format, of annual investment in infrastructure modernization and in research and development.

- Congress could request consultation and cooperation among State regulators through the National Association of Regulatory Utility Commission (NARUC), with support from the FCC, to develop joint strategies for protecting consumer rates, requiring minimum infrastructure investment, and other protective measures.

The publicly available data about carrier investments in infrastructure modernization or in research and development is not adequate to allow decisionmakers either to accept or to reject a trend toward ‘disinvestment.’ The first step, therefore, is to create a monitoring system that can track both investment in plant and equipment and investment in research and development.²⁰ If

a consistent pattern or trend of disinvestment appears, Congress and/or the states can then consider legislative remedies, including deregulation, redefinition of depreciation rates, tax inducements, or tax penalties to correct the situation.

State regulators are vitally concerned with this issue, but they may lack the resources and the geographical span of authority to track investments. Congress may therefore wish to ask the FCC to report regularly on patterns of investment.

In order to encourage the development of more comprehensive, coherent, and visionary international telecommunication policy, Congress may wish to consider..

- Declaring goals and priorities for international telecommunications development and deployment that include, but are not limited to, export and trade goals:
- Consulting with the Administration to call attention to the importance of clear definition and location of responsibility for executive policy articulation and implementation and to cooperatively create a mechanism for consultation and coordination between executive agencies and FCC;
- Mandating a restructuring of the policymaking structure, possibly
 - creating a new Office of Telecommunications Policy within the Executive Office, or
 - restructuring, refunding, and restaffing the coordinating function/position within the Department of State. and
 - limiting the responsibility of USTR by setting congressional policy guidelines for or limitations on bilateral and multi-

²⁰ Eight major carriers told the Office of Technology Assessment that they strongly object to the concept of monitoring as an additional paperwork burden. Although any well-run corporation has such information for internal decisionmaking, it is jealously guarded so that it will not fall into the hands of competitors and critics.

lateral negotiating positions with respect to telecommunications.

The three primary options (congressional restatement of policy goals, active consultation and collaboration with the Administration, and strengthening the policy implementation structure) are not mutually exclusive, but could be strongly reinforcing. The most active of these options, organizational restructuring, involves alternative approaches.

Creating a small policy office within the Executive Office would signify the importance of telecommunications and the recognition that there is a national interest in the health, structure, and operations of the industry that is responsible for this essential infrastructure. It would provide a voice in top-level deliberations. However, this action to be effective must reflect the willingness and intent of the Administration to make use of such an office. Past experiment has shown that additions to the Executive Office that are forced on an unwilling President accomplish little.

Revalidating and reinvigorating the role of the State Department's Bureau of Communications and Information Policy reasserts the interests of a number of congressional committees and subcommittees in international telecommunications. It would, however, also require the assent and collaboration of the Administration and Secretary of State and a reversal of current plans to downgrade the Bureau. Historically, the Department has shown little understanding

of the effects of technology on the Nation and on relations between nations, and has not afforded much influence or prestige to its bureaus that are concerned with science and technology. A stronger position and voice within the Department, which can only be effected by those heading the Department, is a necessary prerequisite for making CIP effective. However, Congress can through its funding and oversight roles encourage this to happen.

While the United States Trade Representative is also an executive branch office, restricting and directing the USTR role in telecommunications policy formulation would be an appropriate reassertion of Congress' primary responsibility for U.S. trade policy, trade relationships, and conduct of other, nontrade, international relationships. Stating such policy guidelines could take the form of a general declaration of telecommunications policy goals and need not unduly limit trade representatives in active negotiations any more than does any prior formulation of negotiating positions. The difference is that these positions have recently been formulated entirely within USTR, with little prior congressional instruction, or discussion.

Uniformity, single-mindedness, and a narrow focus are not desirable in formulating international telecommunications policy, but ultimately some consensus and concerted representation is needed in national and international decisionmaking.

There is a national interest in the health, structure, and operations of the telecommunications industry that includes, but is not limited to, competitiveness in world markets.