Telecommunications Policy on Two Sides of the Atlantic: Divergence and Outlook

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1. INTRODUCTION

In 1982, amid much attention and fanfare, the World Center for Computer Science and Human Resources (Centre Mondial de l'Informatique et Ressource Humaine) was opened in Paris [1].

French President Francois Mitterrand personally supported this venture, proclaiming as its goal the understanding of computerization of society, and the development of computer applications for social and economic growth, particularly in the Third World. A noted journalist and politician, Jean-Jacques Servan-Schreiber, was the primary French organizer, and two eminent American computer scientists from M.I.T., Seymour Papert and Nicholas Negroponte, were chosen to direct research. This project, it was asserted, would fuse American technical know-how with European social concern and humanism in the service of society and the Third World. The center was generously financed by the French government, and lavishly presented to the public as a major accomplishment.

Yet within a year the center was paralyzed, and the American scientists had left. Why had things gone wrong? Among other reasons, the American scientists and the French politicians had different conceptions of the center. The French wanted to do "something" in the glamorous field of computers and high technology in order to demonstrate France's national commitment to technological leadership. The M.I.T. scientists, on the other hand, took the humanist mission of the center seriously. They believed that "personal computerization should be democratically available to all people in the world. As a vehicle of change the [center] should [be] independent of commercial and political interest" (Papert, quoted in Etheridge (1983), p. 31). They also believed in a collegial process of decision-making, "American in style, but alien to [the] French way of doing business" (Negroponte, quoted in Etheridge (1983), p. 32). Ironically, the American technocrats favored a democratic style of management and goals which clashed with the style of the leftist French politicians who controlled and subsequently took over the direction of the center.

Instead of becoming a world center with an international outlook, it

acquired a parochial outlook; Negroponte said he was "asked to take the interests of French industry increasingly into account," an assertion freely admitted by Servan-Schreiber, who stated that the "French electronics industry...is a lot more backward than I realized."

This episode illustrates the dilemma of European countries as they attempt to cope with the revolution in information and telecommunications technologies. European leaders are aware of the importance of this sector, and they realize that the U.S. and Japan are making impressive gains in it. They want to do "something" in order to attain rapid results and are willing to commit money and prestige. In the end, however, these efforts cannot transcend fundamental constraints: the self-interests of bureaucracies, the bureaucratic and hierarchical style of decision-making, the short-term interests of domestic manufacturers, and scientific nationalism.

By and large, European countries are operating in a mode very similar to the old AT&T regime in the United States; that is, one monopoly (though publicly owned and operated rather than privately owned and publicly regulated) supplies the vast bulk of communications services, both domestic and international, in each country [2].

Most of the technological advances available in the U.S. are equally available in Europe. In some instances, the technology in fact originated in European countries. Hence, institutional changes similar to those in the U.S. could have occurred in Europe, had they been primarily technology-driven[3].Why have Europeans moved in a different direction from the United States, or, more accurately, why have they essentially maintained intact their institutional arrangements in the telecommunications field, while the U.S. has radically changed its own?

2. EUROPEAN POLICY OPTIONS IN THE TELECOMMUNICATIONS AND INFORMATION SECTOR: THE POSTAL-INDUSTRIAL COMPLEX

Within the spectrum of European policy responses, one extreme is the United Kingdom, whose government under Prime Minister Margaret Thatcher supports a free market economy. Not surprisingly, therefore, British telecommunications policy has been influenced by the American pattern. The British government has, in several stages, brought about the separation of the telecommunications monopoly of British Telecom from the postal services, and has led it towards reorganization as a private corporation subject to some competition [4].

While Britain is consciously attempting to raise its high technology standards through market forces, with the government supplying an entrepreneurial environment, French policies have relied on an increase in the governmental role. This is rooted in a statist

tradition, and in the economic and social philosophy of the Mitterrand government. The French government has set development of a high technology electronics industry as a national priority, and has chosen to nationalize much of the French electric and telecommunications equipment industry to gain a lever for the achievement of this goal [5].

The effect is that the French have now created an analogue of the old Bell System: a vertically integrated complex of equipment manufacturing coupled with a telecommunications transmission monopoly and an R&D laboratory, all of it government owned. Thus, at the same time that the AT&T telecommunications monopoly in the United States has been divested into several component parts, the French have done the opposite and have assembled, for the first time, the major elements of telecommunications under one ownership.

The telecommunications policy of the Federal Republic of Germany lies somewhere between the liberalization of the United Kingdom and nationalization of France. The Deutsche Bundespost (DBP) has been loath to relinquish its monopoly power over domestic and international telecommunications, and has primarily striven to protect the status quo[6].But it has also broadened its definition of the telecommunications sector--in which it is legally privileged--and has created pressures to use the public switched network. One such action has been to reduce customers' ability to lease private lines at a flat rate.

These three positions--liberalization, nationalization, and status quo--are the primary policy choices of European countries, with the latter generally preferred by the key governmental agencies in the telecommunications field, the PTTs (the post, telephone, and telegraph agencies). In supporting that position, several governmental and private interest groups have joined in a broad and informal coalition that may be termed the "postal-industrial complex."

The key elements in this coalition are the PTTs themselves. With their vast procurement budgets and huge labor forces, PTTs are frequently the largest investors and employers in their countries. They are usually staffed by able and experienced public servants who are effective advocates of their positions and seasoned practitioners of institutional self-preservation.

Apart from their own positions of direct influence, much of the PTTs' power arises from allowing other groups of society to share in the benefits of their monopoly. One such group are the equipment manufacturers, typically very large private companies. In most European countries the market share of the largest four manufacturers in total telecommunications equipment is above 90%. These companies are among the most potent European firms and tend to set the tone for the private sector's telecommunications policy preferences within general industry associations. In the equipment markets, PTTs fill the role of a monopsonist, or primary buyer. The

maximum of joint profit for both monopsonist (who is a monopolist supplier of the final product) and a group of oligopolists usually lies in some form of cooperative behavior. The PTTs therefore are instrumental in coordinating the industry, an arrangement that can be advantageous to suppliers, who as a result need not vigorously compete against each other.

A variety of barriers are set to protect this cooperation; these include an unwillingness to procure foreign equipment; coordinated development of new technology; and PTT-organized setting of equipment standards.

One consequence of this protective system is that European prices were said to be 60% to 100% higher for switching equipment and 40% higher for transmission equipment than in North America [7].

The labor unions are in a similar position, since PTTs are among the largest national employers, and since employees benefit from salary levels and job security that may not be sustainable under a competitive regime. Furthermore, for unions as well as for the political left, the existing PTT system merits support not only for material but often also for ideological reasons, as a nationalized key industry. The frequently more pronounced political and class divisions in Europe lead to a strong feeling that a critical part of the infrastructure, particularly one with such future importance in the information society, cannot be entrusted to private interests dedicated to the profit motive.

Other members of the postal-industrial coalition are the poor, the elderly, the farmers, and the small towns, all of whom support the PTT system because they fear that a liberalized regime would threaten the subsidy of their service.

The office equipment manufacturers, new computer companies, and data processors have been somewhat outside of the postal-industrial complex, at least in the past. In recent years, however, the PTTs have been able to draw them into their orbit, often assuming a key role in domestic industrial policy. This role makes the PTT an important financial backer, valued customer, domestic protector and international promoter in high technology markets. They can channel development contracts to domestic industries and undertake tests of such technology. They can also coordinate R&D among manufacturers and provide non-tariff protection and export advantages. PTTs thus assume some of the costs of the early part of the learning curve, and in effect subsidize the development of products that are then offered in the world market. Europeans, of course, assert that defense spending in the United States has filled many of these same functions in the past for American industry, and that the encouragement of a high-technology industry is an important governmental function.

Some PTTs, such as the French, have foreign technical assistance

organizations which help developing countries plan and operate their telecommunications systems, and which are closely linked with national export drives. This makes sense, since the PTTs reap the benefits of future economies of scale and production due to foreign countries' orders. If foreign buyers embrace domestic equipment, it tends to reflect favorably on the PTTs' own good judgment in the original selection of the hardware.

3. EUROPEAN VIEWS ON U.S. DEREGULATION AND THE AT&T DIVESTITURE

Developments in the United States challenge the European status quo in the telecommunications field and threaten the broad postal-industrial coalition that supports and benefits from it.

Informed European interpretation of U.S. developments is usually colored by the prevailing view of telecommunications experts, who are often closely affiliated with the postal-industrial complex. The AT&T divestiture was the largest dismantling and reorganization of any industrial company in history, and yet European coverage of the event was superficial. Publications such as Le Monde, Le Figaro, Der Spiegel and Frankfurter Allgemeine Zeitung reported the basics of the divestiture agreement of January, 1982 but with limited interpretive follow-up. The divestiture itself was generally described as advantageous to AT&T: it was dropping the costly baggage of the regulated operating companies and could now take on IBM. The reportage showed a general lack of understanding of the Federal Communication Commission's (FCC's) Second Computer Inquiry, which had already permitted AT&T entry into competitive markets under a fully separated AT&T subsidiary [8].

European PTTs, in particular, had a great amount of admiration and sympathy for the "old" AT&T. Although the American telephone operating company was privately owned, it had an operating dominance similar to that of European entities. International cooperation in such areas as transatlantic communications had resulted in close links as partners rather than competitors. Indeed, AT&T had even avoided entering the European equipment market, thereby reducing potential friction with European equipment manufacturers and PTTs. The European PTTs were therefore bewildered by the dismantling of AT&T. The decision seemed arbitrary, inefficient, and political. The belief that the efficient and successful AT&T had been needlessly dismembered by the government is at odds with the opposing view, namely that the divestiture was a great success for AT&T. But this inconsistency is not surprising. The notion that the divestiture is advantageous to AT&T is held primarily by those who think in political and strategic terms.

The PTTs' view, on the other hand, is essentially that of the engineer, with emphasis on orderliness, system continuity, and centrally planned end-to-end service that satisfies economic infrastructure needs as well as social functions of redistribution, and all this in a technically efficient and elegant fashion. This

describes, not coincidentally, the PTTs' self-image. Hence, the notion of the United States, with its advanced technology and successful telecommunications monopoly, choosing voluntarily to dismember such a system creates deep institutional shock, though this is rarely admitted. In the past, development and adoption of new technologies provided security to the PTTs; these new technologies now appear to have undermined that security. This perception has resulted in strong defensive reactions, including an interpretation of American developments as being rooted in political-ideological values rather than in engineering and technology, and thus as outside of scientific rationality.

The PTTs also portray the American circumstances as inherently different from those in European countries, and hence not applicable to the situation back home. In doing so they often misinterpret the present and the past in the United States. In some ways this closely resembles views the United States, where the AT&T divestiture agreement and its implementation have created an instant nostalgia for the old Bell system, which used to be almost everyone's favorite whipping boy. In this view, AT&T is seen as having been one of America's outstanding organizations, torn apart by economic zealots.

Some Europeans regard U.S. telecommunications liberalization in global strategic terms as an American "war" on Japan. This theme is particularly widespread in France, whose leading newspaper Le Monde expounded upon it in in a series of lengthy articles[9]. The main argument was that the United States is engaged in two wars, a military-political one against the Soviet Union and an economic one against Japan.

These observations contain some truth, although the simplistic thesis is misleading. Quite clearly, the U.S. liberalization policy is a response to the widespread desire to induce economic growth and innovation through market forces. The Japanese may be used as a domestic argument within the United States, but there is no lack of others.

Some European observers also see the AT&T divestiture as part of a strategic battle of AT&T versus IBM. This theme was anticipated in the widely circulated French report on informatization by Nora and Minc(1980) [10]. The Nora-Minc report had compared IBM's power and global reach with the universal influence of the Catholic church and the Communist International. These global-strategic views conveniently justify the need for major governmental involvement in stemming the IBM colossus, since economic and technological rivalry has been transformed into international and strategic issues. What is not clear is why the American technological offensive would be advanced by reducing through divestiture the power of AT&T. Assuming a global objective, a more plausible American strategy would be to unleash AT&T with all its resources, rather than reducing them and tying up the giant for years with reorganization. The only logical conclusion is that America expects to advance its

global war strategy against Japan through a domestically competitive regime, in which the regulated monopoly sector is separated and held to a minimum core. The American strategy against Japan is to reduce government involvement; the French strategy in the same war is the opposite.

When Europeans assert, as they frequently do, that the American system is different from the European one, they usually mean that the American system is run for profit while the European system fulfils social goals as well.

There are serious flaws in this simple contrast. On the most basic level, telecommunications policy in the United States has had social goals nearly from the beginning--and continues to have them--including a universal service that assures an affordable access for rural areas and for the poor. The percentage penetration of telephones in the United States has been higher than in any European country, despite the fact that vast areas of America are sparsely populated, and that a much larger percentage of the population is poor, or migrant, or outside the main language of communication.

Nor do the West European rate structures reflect more social concern than those in the United States, where basic subscriber rates are approximately equal or lower, and long distance rates are markedly lower. In many European countries, no rate distinction is made between residential and business customers, while in the United States business customers pay a substantially higher rate. Rural telephony in the United States is subsidized in a variety of ways, primarily through the rate structure and by low-interest loans from the federal government.

Furthermore, a price comparison needs to take into account the quality differential of services available in the United States, such as convenient operator assistance, itemized telephone billings, the ability to place collect and credit card calls, and rapid installation. While the size of internal subsidies is likely to decline as the U.S. system moves towards cost-based pricing, it does not imply that subsidies will disappear, though they may be financed differently in the future. The protection of affordable universal service is a high political priority, and U.S. Congressional and state regulatory reactions--as in the dispute over the timing of telephone access charges--indicate that it will remain greatly sensitive to the maintenance and protection of universival service, even within a liberalized setting [11].

It is nevertheless true that the deregulation and divestiture of AT&T have had a distributive effect. To many Europeans, this is seen as part of the economically conservative policies of the Reagan administration, which is regarded as a pro-business restoration. The American political view is that deregulation is not a zero-sum redistributory game, and that it is likely to generate overall gains due to increased efficiency and dynamism. While European reports of

the effects of the AT&T divestiture stress the impact on local rates, one rarely sees any reference to overall cost reductions. For example, the cost of producing a telephone receiver fell from $2.30 to $0.99 within a month [12].

AT&T's goal for 1984 is a 20% reduction in overall manufacturing costs. The company has frozen the salaries of its management and is reducing its work force, as are the regional companies. In the area of long distance transmission, a respected financial analyst stated that AT&T's projected operating costs are $0.342 per revenue minute, while those of its rival, MCI, are only $0.179 [13]. This indicates a substantial savings potential in the old AT&T system, which European PTTs considered a paragon of efficiency.

A major argument against liberalization that would open segments of the market to competitors is that of "cream-skimming." PTTs argue that they must be allowed high profits in some of their services in order to subsidize others that are less profitable but socially important[14].It is, however, possible to provide the same subsidies to poor or rural customers through direct taxation and allocation, as is done with most other goods and services. But the political system would not normally permit these massive cross-subsidies if they were transparent. The commitment to a major subsidy of universal service in most European countries would appear to be far from secure once the magnitude of the subsidy became visible.

4. POLITICAL DYNAMICS AND THE STATUS QUO

It is not clear why a Reaganite pro-big business policy would be promoted by the dismemberment of the biggest business of them all. Furthermore, the Reagan administration's political priorities are arguably not the driving force in U.S. policy. The pace of technological change dictates some of the options and forces them into the open. Governmental policies in this field respond to a significant extent to the technological realities of low-cost, long distance satellite and microwave transmission and the computerization of telecommunications. While different political administrations may have approached these questions in a somewhat different fashion, the basic issues--the reduction of the scope of monopoly, the increase in the range of potential competitive service, and the general merging of the telecommunications, computing, and information production industries--have been brought about by historic development rather than by links to any specific presidential administration.

The situation is complex largely because of the multitude of decision points--the FCC, the state regulatory commissions, the Department of Justice, the National Telecommunications and Information Administration, Judge Greene, Congress, and the Department of State. Each of these is active in some aspect of telecommunications matters, and most are largely uncoordinated with the others' actions. Hence it is surprising to find any general

fleet-footed upstarts such as Apple, Amdahl, Intel, and Wang that have given IBM the greatest challenge. By backing large establishment ventures, European governments seem to overlook this point. (Not coincidentally, several of these large government-backed manufacturers are also the main telecommunications equipment producers.) This policy has been due partly to a lack of alternatives. Successful engineers in large European countries tend to prefer the security of their employer, and potential entrepreneurs are not as confident of their ability to function as are those in the United States.

But most of all, it is the lack of capital availability that chokes off industrial development fueled by small, innovative firms. There is still only a very limited venture capital market in Western Europe, whereas in the United States it is an abundant source of equity funding for entrepreneurial developers. Western European banks are conservative, tend to do business with well-established companies, and demand greater security than a mere invention. They see their function primarily as that of lenders rather than as underwriters, even though in most European countries the functions of commercial banking and investment banking are not separate, as they are in the United States [19].

Europeans are self-defeatingly ingenious at finding reasons why the United States and Japan are more innovative in electronics than they are. One frequent argument is that the large size of the domestic American market gives its firms advantages of economies of scale. But the Japanese domestic market is not that much bigger than those of the larger European countries, and it is considerably smaller than the combined market of the European Economic Community. Furthermore, the economies of scale argument is much overdone, since it overlooks the dynamism of competition as a means to shift the entire cost curve downwards rather than merely to move downwards along a fixed static cost curve. Americans, it is also maintained, are successful in innovation because of their large defense budget. The Japanese, at the same time, are considered to be successful because they do not have to spend resources on defense. Japan, it is said, has a high degree of innovation due to the destruction of its old industrial capacity in World War II. But the American prominence in high technology is based on its head start as the prosperous victor in World War II. Similarly, Japanese successes are attributed to that country's centralized governmental planning and disciplined work force, while for the United States the non-intervention of government and free-wheeling firm structures are seen as the keys of success.

The once spectacular European growth rates have already become mediocre or stagnant. Unemployment and social tensions have risen. In many countries, the realization of the emergence of an economy of limits has not yet been integrated into political consciousness. At the same time, the United States, after a long period of stagnation, is in the midst of a technological renaissance.

Of course, European technology has had notable success stories and major achievements. For example, France has been successful in developing digital main exchanges, and the "Smart Card" has a great number of future opportunities[20]The Prestel videotex system in Britain has been a technological advance[21]Italian companies have been innovative in assembling robots and in software applications. A German company is a leader in the production of optical fibers. Overall, however, these developments have not been sufficient. The field of communications and electronics is a very fast track, and no one runs it faster than the Americans and Japanese. Although the product markets are varied enough to permit niches, this should not create the illusion of an overall success story [22].

5. U.S. TELECOMMUNICATIONS INVOLVEMENT IN EUROPE-- EQUIPMENT AND SERVICES

In the equipment field the primary recent change in American involvement in Europe is the emergence of AT&T as a major entrant in European markets, which is the result of deregulation in general and the AT&T divestiture in particular. For more than half a century AT&T, despite being the largest telecommunications equipment manufacturer in the world, had no international presence, particularly in Western Europe, due to domestic U.S. restrictions.

The company's new strategy is still to have a low profile in Europe, at the same time aligning itself with European domestic interests. This is a realistic strategy in light of the barriers that any American company faces in European markets. AT&T has first linked itself with Philips, the Dutch electronics giant. Its second major involvement has been through the purchase of shares in Olivetti, the Italian office and small computer manufacturer [23].

So far, although AT&T's entry into Western Europe has not resulted in actual sales, the implications are threatening to European telecommunications equipment manufacturers. AT&T's technological know-how, its research capability through Bell Labs, as well as its vast economies of scale, can make it into a serious presence in any national market. Hence, its landing on European beaches gives European equipment manufacturers every incentive to push for protective measures. In this rivalry, the role of the government becomes still more central, through its roles as procurer of equipment, setter of standards, promoter of export markets, and facilitator of intra-European protectionism.

The clash of different policy approaches on the two sides of the Atlantic is particularly acute in the field of telecommunications services. Historically, U.S. policy in international telecommunications had been to carve up the market into distinct segments, each assigned to different types of carriers. The United States has, however, restructured the rules of the game radically within a short period, thus confronting European countries with the necessity of responding unwillingly to a new situation.

The U.S. end of international telecommunications services is made up of several market segments: domestic telephone carriers; domestic record carriers; domestic satellite carriers; international message toll service (MTS) carriers; international record carriers (IRCs); participants in international submarine cable consortia; and the U.S. carrier for international satellite communications (Comsat) in the context of the INTELSAT organization. Though in some instances AT&T participated in several of these market segments, generally speaking the international market was highly compartmentalized, and each submarket was subjected to specific rules. On the European side, things were much less complex. There, the typical arrangement was for the PTT authority to be the sole communications address, both domestically and internationally.

Historically, FCC regulation had not been particularly restrictive with respect to international communications rates. At the same time, the market segmentation just described has led to a lack of competition, as well as to substantial profit margins. This situation was largely unstable, perhaps partially because of the high profitability, and cracks began to appear. The artificial nature of the market segmentation became evident and led to policy responses within a relatively short time.

From the evidence, it seems clear that international transmission is highly profitable, in particular since the advent of communications satellites, which resulted in transmission costs fairly independent of distance. On the rate-setting side, market power was rarely controlled by the FCC, which did not consider it a priority and which did not have the instrumentation of a meaningful rate of return regulation at hand. On the contrary, the FCC, through its policy of market segmentation, contributed to the problem by insulating potential competitors from each other [24].

Eventually the FCC and Congress recognized this and embarked, starting in late 1979, on reversing the course of previous policies and legislation. In a series of rulings in 1979 and 1980 (FCC 79-842; 80-523; 80-585), the FCC largely removed the dichotomy of voice and record carriage, and eliminated the rules prohibiting AT&T and the IRCs from entering each others' markets.

The International Record Carrier Competition Act (Public Law 97-130 of Dec. 29, 1981) amended the Communications Act of 1934 to permit Western Union to engage in IRC service. At the same time, the Act permitted the IRCs to provide domestic record service.

With respect to Comsat, the FCC (FCC 82-357) permitted Comsat to go beyond its role as a carriers' carrier and to provide service to customers directly. This was conditional upon a major restructuring of Comsat which the FCC required. FCC 92-372 separates Comsat's unregulated competitive activities from those that are regulated.

The FCC also determined that it would limit, as far as possible, its

role in the allocation of communications circuits between cable and satellites, and would rely instead on competition between those two transmission modes.

If the FCC was well on its way to permitting Comsat direct access to users, it was at the same time considering direct access of other carriers to INTELSAT, bypassing Comsat entirely. In its Second Computer Inquiry (77 FCC 2nd 384 (1980)), the FCC did this by applying deregulation to international telecommunications as well. That decision allowed enhanced telecommunications services to go beyond "basic" unregulated transmission. In the Telenet-Tymnet decision (FCC 82-377), the FCC reaffirmed that the Second Computer Inquiry extended to international telecommunications services as well. This meant that enhanced communications services to other countries from the United States would not be subject to regulation of facilities or rate of return [25].

The next step in the logic of liberalization was for the FCC to reconsider its entire attitude towards INTELSAT by analogy with the U.S. "Open Skies" policy that had allowed domestic satellite competition since 1972 [26]. In theinternational sphere, matters started to come to a head when private entrepreneurs applied for licenses from the FCC to operate a privately owned commercial transatlantic satellite system under the name of Orion.

Clearly, INTELSAT and its constituent organizations do not want to see their profits, both as users and shareholders of the INTELSAT consortium, being whittled down by competition [27]. To that end they have enlisted the traditional cross-subsidy argument. In international garb, this argument says that the profits from the high-density transatlantic and North Pacific routes are needed in order to provide a subsidy for low-density traffic to and among Third World countries [28]. But whether subsidies indeed offset monopoly profits so that the total system approximately realizes only normal profits is far from clear.

The question might also be raised as to why European PTTs, if they are mindful of the telecommunications needs of developing countries, cannot assist them by direct contributions in the form of equipment, expertise, or financial subsidies, or through lower communications tariffs for calls to those countries What is probably of more concern to European PTTs is the threat that competitive transatlantic rates would pose to their own profitable international communications service. It should be noted, however, that services and tariffs recently introduced by INTELSAT address the needs of developing countries for dependable, low-cost communications links.

European countries pursue various defensive strategies against potential American satellite carriers. Two of these may be described as the up-link and down-link strategies. The aim of the up-link strategy is to prevent the FCC from granting a license to applicants from the United States or from any other country. This is supported by the argument that under the terms of the INTELSAT

treaty, member states have assigned to INTELSAT the monopoly over commercial international satellite telecommunications. The U.S. applicants counter this in two ways. Orion contends that the INTELSAT treaty covers only public switched communications and does not include private line leasing. The argument of International Satellite Inc. (ISI), a TRT subsidiary, is slightly different. That company plans to offer approximately 15% to 30% of its capacity for common carrier service rather than exclusively leased lines. It maintains that the terms of the INTELSAT treaty prohibit only those rival systems that would cause "significant economic harm" to INTELSAT, and that its limited operations would not cause such harm, much in the same way that various regional satellite systems have invoked the same treaty clause.

The PTTs' down-link strategy is to prevent the down-link segment of satellite communications by eliminating the ability of satellite carriers to link with European countries. This strategy requires, in effect, a unified front by all European countries against an American beachhead. If that is impossible, the PTTs will attempt to prevent its being used as a transfer point to other European countries. As with other cartel-like agreements, they are only as strong as their weakest link. In this instance, it is far from clear whether all European countries would be willing to maintain discipline. The United Kingdom, given its general evolution towards liberalization of telecommunications and its privatization of British Telecom, may not go along over time. London is of such importance as an international telecommunications and service center that a British arrangement with Orion or similar companies would probably be a major blow to any united PTT front. Similarly, as in the case of tax havens, one could expect some European countries, in particular the smaller ones, to find it in their advantage to become international transmission hubs by permitting down-links from non-INTELSAT carriers. This then leaves as a fallback position the attempt to prevent the use of such countries as an entry point into the intra-European telecommunications network, a link which in effect would permit some "back door" liberalization.

It is not clear, however, whether limitations against retransmission would be supported by the European antitrust laws. When European countries tried, using CCITT and CEPT rules, to impose similar restrictions on the use of Great Britain as a telex hub by British telex bureaus, the European Commission, in an antitrust proceeding, resoundly struck down these attempts as a violation of intra-European competitive rules [29].

INTELSAT also has at its disposal the economic weapon of economies of scale. In other words, it can deter Orion and ISI by offering services at a rate which would preempt the markets sought by potential entrants. This is in fact what appears to be happening. Comsat, whose stake in INTELSAT is considerable, has announced new high-speed data services and rate reductions for other services that can combat the proposed alternative offerings.

6. U.S. SERVICES DEREGULATION: EUROPEAN REACTIONS AND OPPORTUNITIES

Many complicating factors have now been mentioned that challenge the orderliness of the carefully nurtured international telecommunications regime. Once the distaste for this increased complexity has subsided, however, a situation of potential advantage to the PTTs reveals itself. Being the only address within their countries for AT&T, MCI and others, they are in a position of a monopsonist that can profitably play off rival American carriers against each other. This ability is known as "whipsawing," and it essentially entails bargaining for operating agreements that are the most advantageous to the PTTs.

In order to prevent this possibility, the FCC has since 1977 enforced a policy requiring that international settlement agreements be uniform for the same routes, and that accounting and settlement arrangements be identical. In other words, the FCC officially enforces a cartel among IRCs on settlement agreements.

An instance of potential whipsawing which achieved much attention occurred when Nordtel (the intra-Scandinavian telecommunications body) and the Benelux countries invited all potential suppliers of data communications services to submit bids, and to include the division of accounting as part of their bids. American protectionist reaction was swift--for champions of liberalization--and the Europeans retreated, at least temporarily [30].

PTTs historically have not been particularly hospitable to new U.S. carriers. An extreme example is Japan, which has refused to have any agreement with Western Union, a new entrant in international record traffic. The company, however, has managed to undercut this Japanese policy by routing its traffic to Japan through another country. As a result, the Japanese are losing revenue of more than $1 million per year, according to Western Union [31].

This is an example that illustrates how difficult it has become, in an era of instant inter-linkage with costs relatively insensitive to distance, to guard the ramparts of protectionism.

Similar and related problems include the use of value added networks on a leased line basis. In order to protect their revenues, European PTTs have strenuously opposed resale on leased lines, both domestically and internationally. In the case of value added services, the problem is that their provision cannot be neatly separated from resale.

Value added services such as GTE Telenet or Tymnet provide packet switching, for which international private lines are leased. Subscribers to these value added networks pay for their use. In effect, therefore, some resale or shared use has taken place, since, presumably, the users would otherwise have employed some more

conventional form of telecommunications from the PTTs.

With the Second Computer Inquiry, enhanced communications services were withdrawn from FCC regulation. For AT&T, such deregulated services were allowed if they were provided by a fully separated subsidiary. Beginning in 1983, enhanced international services were deregulated by the FCC. The Commission, however, did not determine the treatment of international resale services[32].

The European PTTs view all this as anathema. In retaliation, they have threatened to employ methods such as the following: disallowing leased lines altogether; disallowing all those that are connected to some form of switch at the opposite end; or, most likely, changing the tariff structure from a flat rate to a usage-sensitive rate, with the possibility of setting rates so as to make the usage of leased lines unattractive.

Interestingly enough, however, the large-scale deregulation of enhanced communications services in the United States would present yet another opportunity to European entities and PTTs by allowing them to enter the American market freely, through U.S. subsidiaries, using existing Comsat and INTELSAT links. This could be done without additional international negotiations or agreements. The asymmetry of this possibility, when compared to the difficulties put in the way of the American carriers trying to enter in the opposite direction, is striking. Such an imbalance would surely evoke protectionist measures in the United States of the same kind to which the United States objects in Europe.

7. MISCELLANEOUS U.S.-EUROPEAN CONFLICT AREAS

One quite important concern in international telecommunications is the way in which European PTTs utilize American long distance carriers for communication originating in Europe. It is one thing for an American customer to designate MCI, GTE, Sprint, or AT&T as its carrier of choice, ultimately routing the call to its European destination. When a European customer wishes to call an American city, however, the choice as to which U.S. long distance carrier will transmit the call and realize the subsequent revenue is in the hands of the PTT. Until now, all voice traffic has been routed over AT&T. But how should the PTTs react to a competitive offering? For the PTTs, the monitoring and accounting for dealings with multiple American correspondents is a headache they would prefer not to incur, although it may become easily bearable if it provides a chance to drive a better bargain in the United States.

One possibility, of course, would be to permit the European users to indicate in some fashion which American long distance carrier they would prefer. An example would be the use of several country codes, rather than one, for the United States, with a different code assigned to each U.S. international carrier. There are a number of technical objections to this proposal, none of them particularly

convincing in light of the current sophistication of communications technology. Another objection is that multiple codes would impose an extra cost on the PTTs. This extra cost, however, could be compensated by the American carriers, who would thus gain access. The primary problem, one suspects, is that the introduction of such a choice of communications services, together with the possibility of advertising campaigns by various American carriers directed at European customers, would drive home the fact that network competition is possible today. For these reasons, it is unlikely that this kind of consumer choice will be granted to European users in the foreseeable future. Instead, present negotiations center around the ways in which the PTTs might allocate their U.S.-bound traffic by choosing among AT&T and its competitors. One way would be to negotiate market shares in advance, and another would be to have a fixed share allocation formula. The most logical approach might well be to allocate American-bound traffic to American carriers in the same proportion as those carriers supply traffic to Europe.

Another potentially destabilizing development would be for AT&T, newly awakened in its international involvement generally, to bypass Comsat or INTELSAT. The reverberations would be of such magnitude that these organizations would seek to protect themselves politically and economically. Despite pressure to contain the system as it is, it is clear that a potential disequilibrium situation exists. Thus, it will be difficult to maintain intact the narrow funnel through Comsat and INTELSAT, particularly since the alternative of a transatlantic cable is available to AT&T.

In addition to challenges posed by multiple U.S. carriers for Europe-U.S. traffic, and by potential satellite bypass incentives for AT&T internationally, there is a third problem area--that of information itself, and its processing. Briefly stated, on-line data information systems have emerged in the United States in response to new market opportunities. Once these systems are established, it is relatively inexpensive to service additional customers in European countries. American on-line data bases have thus achieved a very strong presence in European markets. This situation is opposed by the European suppliers of similar services and by their governments, who fear information and processing dependence on the United States [33].

These information flow problems involve in the first instance the nature of protection of national sovereignty. For example, the French government has expressed its concern with the use of American econometric forecasting and planning models which could be used to forecast French economic trends, since this could presumably give Americans access to and some control over confidential French economic data. Most of the concern, however, lies in the area of privacy protection. Various European countries have enacted data privacy rules insuring the privacy of data collected on an individual and stored electronically[34]The internationalization of data flows, however, makes it possible for data to be transported

across national boundaries, providing a loophope in the national protection of data privacy [35].

From the beginning, however, there was a trade protectionist element to regulation and legislation ostensibly aimed at preservation of national sovereignty and individual privacy. Domestic computer manufacturers and data enterprises could greatly benefit from requirements that would restrict the flow of data in ways that would make domestic processing necessary.

A fourth motive for transborder data flow (TBDF) restrictions, in addition to sovereignty, privacy, and trade protectionism, involves the desire of PTTs to shore up their monopolistic positions by strengthening their new alliance--one that could otherwise not have been expected--with the emerging electronic data processing industries. It is clear that TBDF can be effectively maintained and monitored only if there is a firm control by the state over the conduits, namely through the PTTs.

8. EQUIPMENT SALES OPPORTUNITIES FOR EUROPE PRESENTED BY U.S. DEREGULATION

The liberalization of the American telecommunications industry and the divestiture of AT&T have provided Europe with opportunities in the American telecommunications equipment market [36]. The AT&T divestiture frees the Bell operating companies (BOCs) to buy equipment from other suppliers. Previously, the BOCs had been largely dependent on Western Electric, an AT&T subsidiary, for equipment procurement.

American technical standards are somewhat different from those in Europe, and thus European equipment cannot simply be shipped to the United States. After appropriate modifications, however, the vast American market could be opened to European manufacturers if quality and price were found acceptable by American companies and consumers.

Most European manufacturers have been slow to examine their export opportunities to the United States, reflecting the cautious way in which those firms do business. One cannot expect them to permanently shy away from the huge American market, however. The potential opening of the American market is some of the best news that European manufacturers must have had in a long time. After all, the other European countries' markets are largely closed to them. In the developing world, deliveries to oil-exporting countries have declined after the initial large orders were placed. This is due to the decline in infrastructural investment in OPEC countries generally, following the drop in the world price of oil. In other third world markets, funds available for telecommunications are more meager, and the technology ordered need not incorporate the state of the art. Indeed, the traditional electromechanical switches are probably more advantageous for these countries, since they can be serviced domestically. Furthermore, in the more

advanced of the developing countries, domestic equipment manufacturers have been established, and their governments have provided them the same protection from foreign competition that is enjoyed by European manufacturers. Thus, the free international telecommunications market for sophisticated equipment is quite limited. In fact, the largest such market is now in the United States. Hence, ironically, many of the strongest advocates of protectionist policy in telecommunications procurement will now seek their fortunes in the newly liberalized U.S. environment.

As in the case of services, however, this asymmetry entails a contradiction which may be at the root of the uneasiness with which European firms consider entry into the U.S. market. It takes no great imagination to expect strong American pressure of reciprocity on European countries. Hence, the invitation to enter the American market is in fact a two-edged sword. It bears with it the obligation of entrants to reduce or eliminate restrictions on entry into their own protected markets.

9. CONCLUSION

American and European policies have diverged in recent years. Technological change has reduced the extent of a core natural monopoly, and this has led in the United States to entrepreneurial initiatives, a restructuring of the industry, and a reduction of government involvement. In Europe (except for the United Kingdom), similar underlying technical developments have led to a stiffening of the protective coalition of the PTT system. Telecommunications policy is increasingly being presented as industrial policy, i.e. as a central component in developing an advanced electronics industry. This strategy, however, has yielded impressive results neither in technology nor in telecommunications services. Given the rapidity of developments, the orderly pace of centralized government decision-making has been constraining. The insiders' tendency to rely on established firms has been similarly conservative. In the United States, the communications and information sector has opened rapidly to new players. But in most European countries the defensive posture of the inside coalition has been strong and effective. Given the breadth of its support, it is likely to prevail for some time, even if it is tempered on occasion. In such an environment, more government-sponsored initiatives are likely to share the fate of the Paris Center for Computer Science and Human Resources that was described at the beginning of this chapter: an ambitious substitution of symbolism for a fundamental economic framework that can accommodate change and technological dynamism. And while this divergence of telecommunications policies runs its course, the U.S. and Western Europe, partners at the two ends of the transatlantic communications pipeline, will find it increasingly more difficult and yet unavoidable to translate the technical ease of communications into institutional coordination.

At this time, the liberalization of U.S. telecommunications, though

partly a threat to the European status quo, is also an opportunity for the export of hardware and services, and for a monopsonistic bargaining position. Yet these opportunities also undermine the status quo through their demonstration effect and their asymmetry to the possibilities U.S. firms have of operating in Europe.. More than economic theories or political pressure, the dynamics of business opportunities for Europeans may set off a partial liberalization to entry of U.S. telecommunications firms, and a softening of the divergence in telecommunications on the two sides of the Atlantic.

FOOTNOTES

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