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Information Flows:  
Europe and the U.S. in Conflict

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Electronic publishing rests technically on the twin foundations of information storage, such as data banks, and communications links connecting the suppliers and users of information. These aspects, in an era of communications satellites and decreasing computer costs, create a service that is, in comparison to traditional publishing, time-sensitive and distance-insensitive. This combination favors undertakings on a global scale. In terms of cost, it means that it is often far more efficient for a new user to link up with a large established data provider, even if it is located abroad, than with a new smaller domestic supplier.

The economic logic which follows the technology, however, creates new international problems which lead to new forms of restrictions affecting both the data storage and the communications links. American firms are among the most affected by these restrictions, since they have a leading position in the field. As an OECD study found, in the field of on-line data services, European firms' revenues are only 10% of U.S. revenues [Anderla, 1983, p. 5]. The

explosion of personal computers and office equipment in the U.S., which has been significantly more rapid than in Western Europe, has increased this disparity even further. For all forms of data processing services, Europe's share of the market, expressed as a percentage of the U.S. share, slipped from from 62% to 52% between 1978-82. During the same time, Japan had maintained its percentage share relative to the U.S., and had increased its percentage share relative to Europe, from 31% in 1980 to 34% in 1982. [Anderial]

International trade in on-line data bases between the U.S. and Europe is almost entirely one-sided, with the US supplying between 45% to 65% of the entire European data base on-line market. European exports to the U.S. have been relatively minor, limited primarily to areas such as data bases on science (for example the British Physics Abstract), patents, and agriculture, as well as Dutch medicine and drug data bases.

A trade imbalance in an area as important as information and computer technology leads to a variety of governmental policies to alleviate the problem. These can be generically termed "industrial policy," a set of targeted measures to develop a high technology industry. A major element of industrial policy is tariffs. However, the ephemeral nature of information and data makes the use of tariffs difficult and distorting. First, what is the value of information? Furthermore, since information is not a physical good and can be shared by many simultaneously, its

physical location is unclear, and it would be difficult to define the concept of crossing a national boundary. It would also be hard to define the volume of information, since distribution by means such as satellites make it virtually impossible to identify the recipients or their number. Data and information transmission would have to be continuously monitored, and the source of information, located in another country, would somehow have to be assessed a tariff on its transborder transmission. It may be objected that commercial suppliers of information would not send it out without first establishing some relationship with paying customers; but the information could be funded through advertising, or distributed with other services in a "tie-in" relationship. For example, brokerage houses could make financial data available to their customers at no charge. In conclusion, therefore, it is a problem how information would be valued and tariffed.

Given the difficulties of using tariff restrictions, non tariff barriers become particularly important; governmental operational control over the channels of information thus is a potentially powerful lever of industrial policy.

A major concern with information flows is the impact of computers and data storage on individual privacy. Without doubt, the tremendous capacity of computers to store vast amounts of information, to centralize individual data from a large number of sources, and to rapidly recall and

disseminate information increases the ability of governmental and private surveillance over individuals.

In interactive on-line data systems information flows not only from the supplier to the user, but also to the supplier from the user, who by his data requests reveals much about himself and his activities. Some of this information is likely to be stored by the data supplier, if for no other reason than for billing purposes. This creates a potential privacy problem, and the regulatory nexus for subjecting data base providers to privacy law restrictions. Examples of this dynamic -- though in the US domestic setting -- have been interactive cable systems such Warner-Amex's Qube, whose potential invasion of privacy has brought about state regulations and municipal franchises.

Privacy concerns are especially prevalent in Europe. In 1970, the West German state of Hesse passed what was probably the first such privacy law, soon followed by similar laws in other German states and other countries.

One potentially important problem with these data protection laws is the possibility of evading them through cross-border operations. Thus emerged an awareness and later a movement to "harmonize" data protection practices, or, alternatively, to restrict the flow of personal data.

A second major concern in data flow is its threat to national sovereignty, by providing foreign governments and institutions with access to important domestic data. France, for example, is troubled by the use of American

econometrics models to project French economic trends. This may indicate a certain overestimation of American interest in the French potato crop, but the reality of the threat is less important than the political actions that are taken in response.

Elsewhere on the international scene, the Intergovernmental Bureau of Informatics (IBI) in Rome was set up to develop Third World understanding of and policies towards information technologies. In 1978, the conference of Strategy and Policies for Informatics (SPIN), held in Torremolinos, Spain, concluded with a ringing declaration that "Any nation that wishes to remain sovereign must achieve independence in informatics". [Turn, p. 7]

Strengthening European concerns is that the U.S. has sometimes imposed restrictions on the export or use of American data bases, usually on strategic information and high technology data. An example is the recent case of the U.S. attempt to pressure West European countries to cancel the Soviet gas pipeline deal. Dresser Industries, producer of compressors essential to the project, was ordered to prevent access to its technological data by restricting French engineers from accessing design data in its computer.

Another example is the case of Lockheed's Dialog on-line data base. Dialog had contracted with the Vienna based Institute for Advanced Systems Applications, an international research organization, to provide access to its publicly available data base. However, the U.S.

government became concerned that the Soviets, who had access to the IASA data gateway, would thus have easy access to U.S. data systems, and the deal was cancelled (Pipes, p. 12).

These concerns on data flows led to OECD guidelines on the subject, and to the Council of Europe convention which, when ratified, will affect transborder data flow. U.S. companies, including electronic publishers, are directly affected, because the treaty provides that any country may restrict the export of data to any other country that does not have data protection legislation comparable to that of the data exporting nation. One goal of this proviso is to prevent the emergence of "data havens" which circumvent national data protection laws. This could have a major effect on the operations of electronic publishers which operate in several countries and which collect data across boundaries in the course of their regular operations. Enforcing such restrictions necessitates some form of monitoring, registration, and restrictions on encoding. The result is that in the name of privacy protection, effective and massive government intrusion into privacy may have to be instituted.

Restrictions on information or on transmission are not neatly separated. Computer data services may be economical only with leased telephone lines, which PTTs may not make available in order to control the services. Control over transmission services can therefore in effect be used as a non-tariff barrier. For example, when two American information services suppliers,

Control Data and Tymshare, wanted to enter the Japanese market, Japan's international carrier KDD, granted them a license under the condition that the leased lines be connected to one computer center in the United States. But given that the company's U.S. configuration involves a network of computers, this condition was tantamount to denial of entry. Such restrictions were based on the fear that Japanese users could in effect be switched to various locations within the United States, thus making the information service into a communications transmission service in competition with KDD [Feketekuty and Aronson, p. 20].

Other PTT barriers include high tariffs, abolition of flat rates for leased lines, and the requirement that research funded by European governments use European based on-line services. These types of restrictions put pressure on service providers to move data bases to the individual country. Such a situation exists in Brazil, which in the area of information restriction is probably the most active country in the Third World.

As Brazil's chief informatics officer explained, "Brazil ..... prefers that copies of the data bases are installed in the country. If copies cannot be provided, Brazil considers the data-base service to be a telecommunication service which falls under state monopoly and is to be provided by Embratel [the Brazilian telecommunications company], ....." [Fagundez, 1983, p. 50]

These restrictions provide the Brazilian PTT with a large amount of control over data flows. "Embratel has made

arrangements with major data suppliers operating through Telenet to provide services to Brazil and had signed agreements with the major commercial on-line data base vendors of the U.S. and France" [Fagundez, p. 50]. Outside of Embratel's agreements, Brazilians have no access to foreign data bases unless suppliers physically locate them within Brazil. While this is sometimes possible, thus providing employment in the data processing industry, in other instances suppliers will not fragment their operations, and Brazilian users will simply have no access to the information.

These efforts for protection are only part of a larger overall conflict. PTTs' traditionally secure monopoly position is being challenged on many fronts by the potential for private and value-added networks, both within the PTTs infrastructure, or wholly outside of it. These developments threaten to reduce revenues and control, and raise the possibility of resale of telecommunications services, and of the entry of alternative carriers. For the PTTs, these developments raise the specter of international integrated telecommunications companies, mostly American, which provide communications, data processing, data bases, and marketing links with other data bases. Particularly instructive is the example of GTE Telenet, which links GTE and its Sprint US long distance network into its own exchange networks, also using GTE's equipment manufacturer, local exchanges, manufacturers of packet switching equipment, and special computer terminals. Here we have an example of what the

OECD report describes as

The emergence, under the leadership of the US information industry, of powerful integrated service firms, consortia of closely-knit groups of companies, combining computing power of their own without precedent, unrestricted access to countless data bases, assured usage of worldwide networks, an expertise unparalleled in variety and depth, together with unique marketing and managerial abilities.

This new organizational configuration has -- so far -- no equivalent in either Europe or Japan. It may well turn out to be superior, in power terms, to the old-fashioned monopolies and oligopolies. (Anderla, p. 27)

Such companies presumably would be aggressive, innovative, responsive to users, and flexible -- in short, everything that the PTTs are not. Furthermore, they would not be encumbered by the social functions which the PTTs must perform.

Protectionism on information and its flow hurts Europeans, too. American electronic publishers provide Europeans access to information, data bases, processing capabilities, and software (Montgomery, p. 9). The argument that such restrictions encourage development of domestic data processing capabilities and data bases -- essentially an infant industry argument -- is discounted by economists in other contexts as an inefficient policy. If a national industry is to be encouraged, directly targeted subsidies are a more efficient policy than across-the-board restrictions.

Given the realization in industrial countries that information technologies are of critical importance,

European governments see the need to assist and promote their domestic information industries, especially in the face of the more advanced American and Japanese firms. It is in this context that the arguments of privacy and sovereignty are used to promote non-tariff trade barriers. "Complicating this whole area is an underlying suspicion that many of these barriers are erected to achieve economic objectives (through protectionist measures) and are merely cloaked with a label of respectability. This is perhaps one of the most sensitive areas for consideration in TBDF, and at the same time, one of the most complex." (OECD, p. 10)

Though some PTT policies are aimed at helping domestic information industries, the intended beneficiaries consider them a mixed blessing. In testimony to the second OECD Symposium on TBDF, the representative of the European Computing Services Association, Dr. D. A. Eyeions, stated

The business of our member companies, particularly the service bureaus, is adversely affected if the flow of data into and out of a country is restricted. We have identified that the major factor restricting the international business of European remote computer services is the monopoly position of the national PTTs with their high pricing and restrictive regulations.

However, over the years a grand coalition in telecommunications policy has evolved which has a major stake in defending the status quo. This "postal-industrial complex" is led by the PTTs which share the benefits of their monopolies with other groups. The equipment manufacturers, who set the tone for private industry on

matters concerning communications policy, are entirely comfortable with a system in which PTTs, in effect, organize them into a cartel, and shield them from foreign competition (including intra-European) by preferential procurement practices.

One would expect that the emerging computer hardware manufacturers and data processors would favor a loosening of PTT dominance. However, they are frequently parts of existing telecommunications giants such as CGE or Siemens, or, alternatively, they are dependent on -- and potential beneficiaries of -- the PTT-dominated industrial policy.

Other participants in the coalition are the labor unions, which traditionally have strong interests in supporting the principle of PTT monopoly, both for economic and ideological reasons. Given such agreement between the unions, influential segments of the business community, as well as the poor, the political left, intellectuals, rural inhabitants, small towns, and the elderly, -- all of which are concerned with an erosion of the source of their internal subsidization -- it is hard to see forces which in the short run would lead to changes. Quite clearly, the monopoly benefits and works in the interest of significant groups in society. Arguments against monopoly are essentially hypothetical, for example that technological development in Europe is being significantly hampered and that the cost of doing business in Europe is increasing, thus reducing international competitiveness. It is difficult

to illustrate these problems convincingly. And even if they are true, they may actually reinforce the protectionism and monopoly orientation of the system, since this would be deemed necessary to meet the American and Japanese challenge. This then is a vicious circle, escape from which is very difficult for the countries involved.

This is the unavoidable situation within which U.S. electronic publishing is caught in Europe. The result of technological development, new business ventures, and new wide-ranging applications such as electronic publishing is that the Europeans are faced with pressures to transform the telecommunications status quo. But these changes do not parallel those of the US. The different approaches towards institutional innovation on the two sides of the Atlantic make conflicts unavoidable, and these will have inevitable effects on electronic publishing across the Atlantic.

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