Euronet DIANE: towards a common information market

European File

Every day, millions of facts are published in books, articles, company reports, market research studies... These data are indispensable to researchers, managers, specialists and individuals to help them know the facts, understand, manage and take decisions. Our societies have entered the information era and cheap and easy access to all sources of information is now considered to be one of the keys to future economic development. To gather the necessary information and then to ensure its diffusion by the most modern, the most cost-effective and quickest means, increasing use is being made of:

- ☐ data banks and bases: throughout the world, numerous organizations (public services, companies, libraries, professional associations) sift through publications to establish inventories, statistics and collections of factual information. Vast files are created, updated and, more often than not, stored in computers;

- ☐ telematics: this links the technologies of handling data (informatics) and of their long-distance transmission (telecommunications). It makes it possible to link up computers which house data with telecommunications networks which transmit information to those who need it.

Documentary research 'in conversational mode' (that is in the form of a genuine dialogue between the user and the computer) emerged ten years or so ago and demand has risen at a spectacular rate: in the Community in 1976, there were some 60 000 requests; in 1985, European users are expected to make over two million demands. The rate of average annual use per person is expected to increase from 1.7 in 1976 to 3.7 in 1985.

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Faced with demand on this scale, numerous information services making use of the most advanced technology have grown up in Europe over the past decade. Unfortunately, these services were independent of each other and often incompatible. Moreover, since they were created to meet the needs of specific categories of users (for example doctors, chemists, lawyers) they developed in isolation and resulted in a multitude of small networks.

In the United States, on the other hand, a genuine information market has been speedily established. Numerous data banks, both public and private, have been created. Paradoxically it was sometimes easier and less problematic for European users to question centres in the United States, by borrowing private transatlantic telematic networks, than to refer to less accessible European data bases.

The greater accessibility of US data bases helped their development and penetration on to the European market. Half of the 300 000 'on line' (conversational mode) searches carried out in Europe in 1977 were addressed to US data bases.

The information business is:

- a lucrative activity: the domestic and overseas income of American information companies totalled nearly 10 000 million dollars in 1979, and an annual growth of 21% is forecast for the 1980s. As for the income from the world 'on line' market alone, this was estimated at 1 000 million dollars in 1981;

- a determining factor in progress: it is widely recognized that most of the major American advances, whether in the field of industry, technology, medicine or education, have resulted in large part from an intensive use of information.

A European answer to a European problem

Europe has come to realize the importance of the information business. It boils down to allowing European countries to keep their independence from American data bases and ensure the competitivity of their industry in this field. The challenge is all the more urgent because, in order to buy vitally-needed raw materials, European countries are forced to export their advanced technologies, their 'grey matter' and particularly their information, not only to other industrialized countries in the world but to the developing countries.

A common challenge calls for a joint response:

- Europe is genuinely rich in documentation. But compared with the United States, it can only match up if it is pooled. The user has an obvious interest in applying to the network that can supply him with the most complete information;

- the technologies involved are complex and costly. In this field as in many others, European industry can only hold its own if it can count on the large market offered by the Community. Community standards must replace national standards. This will

prevent the risk of costly competition, like that which prevailed in colour televisions, where the development of two different systems, PAL and SECAM, eventually acted against European interests;

- a haphazard mushrooming of several information networks could provoke a substantial increase in costs required to operate them. One study has shown that if three or four separate networks cover the same geographic area, telecommunications expenses alone cost the European taxpayer three to ten times more than a single network.

In June 1971, the Community Council of Ministers adopted a resolution backing the creation of a European network for scientific and technical information and documentation. Since then, the action plans implemented by the European Commission have aimed chiefly at:

- promoting and helping the establishment and development of data bases and banks on common standards;

- creating a common network for information processing and communication;

- supporting and developing modern technologies for the transfer of information, and their application and use.

These joint efforts have led to the founding of the Euronet DIANE network, which was formally inaugurated on 13 February 1980.

- DIANE is an abbreviation for Direct Information Access Network for Europe. The first European information network, it now consists of over 300 data bases and banks spread throughout the Community, containing over 60 million facts and references covering just about every field of human knowledge. This already substantial figure is increasing rapidly, mainly thanks to the financial backing of the Community, which supports selected projects. The data available fall into two categories:

  - data banks providing factual information. The CRONOS bank, for example, set up by the Community's Statistical Office, contains sets of national and Community statistics including imports, exports, balance of payments, unemployment, and so on;

  - data bases giving bibliographic references accompanied more often than not by a short résumé of the book, article or conference in question. But the user must then obtain the publication sought from a library or bookshop.

  The data banks and bases are managed by public organizations or private companies which play the role of 'wholesalers' of information. On the suggestion of the European Commission, 40 or so of the main serving centres joined forces in DIANE to ensure better coordination of their services and to respond more effectively to the needs of users who have access through Euronet.

- Euronet represents the first European network for dissemination of information. On the initiative of the European Commission, national post and telecommunications administrations agreed to set up and manage the network. It consists of a control and management centre in London and five switching nodes at Frankfurt, London, Paris, Rome and Zurich. These switching nodes, equipped with European designed and manufactured computers, are linked together with high-speed lines. Host computers of the serving centres and user terminals can be connected to the switching centres. Concentrator terminals at Amsterdam, Brussels, Copenhagen, Dublin, Luxembourg and Athens connect the user terminals to the nearest switching node.

  The Euronet network covers the ten Community countries. Since its entry into service, it has been extended to Switzerland and link-ups with Sweden and Finland have recently been completed or agreed. In the future, Euronet will be connected with other existing systems in Europe, and via telecommunications satellites with the United States and the Third World.

  Euronet is operated by the postal and telecommunications administrations in the participant countries, under contract agreed with the European Commission. Between now and the end of 1983, the European postal and telecommunications services will become the sole managers.

How much have these developments cost? By the end of its second action plan (1978-80), the Community had spent some 16 million ECU, [1] including 6 million for the construction of the Euronet telecommunications network. During the same period the PTT administrations had contributed 3.6 million ECU, not counting the cost of research and management carried out by their personnel. In all, some 20 million ECU have been invested to implement the infrastructure indispensable for information and economic and social progress. The third action plan, covering the period 1981-83, envisages Community funding worth 15 million ECU. During this period, the different partners in DIANE are expected to contribute progressively more to the cost of promotion, formerly financed by the Community.

The user viewpoint

Any organization or individual seeking information can have easy access to Euronet DIANE's documentary information. In January 1982, the network had nearly 3 000 users, totalling some 200 000 searches and covering such sectors as industry, trade, medicine, administration, research, education, etc. In the longer term a figure of 10 000 regular users is a realistic objective.

There are several reasons behind this success:

- The technology chosen to establish the Euronet network possesses many advantages:

[1] 1 ECU (European currency unit) = about £ 0.55, Ir.£ 0.69 or US$ 0.93 (at exchange rates current on 15 October 1982).

- avoiding the risk of ruinous competition between Community Member States, it also possesses a substantial capacity for conversion. It is therefore compatible with different equipment from other sources, used both by suppliers of information and users;

- it uses the 'electronic packet switching' method which consists of sending messages broken up into small segments, to which 'tags' are attached, indicating their origin, destination and sequence. The message is reconstituted when it reaches its destination, but meanwhile it has been interleaved with other messages so as to use every millisecond available on the line. This technique allows the network to be used to its full capacity and therefore at the lowest cost, since the lines can be used simultaneously by several users whose individual quantitative needs are often very limited. The service offered is therefore sure (the continuity of service on lines supplied by the PTTs reaches between 96 and 98%), speedy (a documentary research can be carried out in 10 minutes, while it would take between three hours and three days by traditional means), and above all cost-effective.

☐ The charges agreed with the PTTs are especially attractive. While local link-ups to Euronet continue to be taxed on the basis of national tariffs, international transmission of data is subject for the first time to a single common tariff which prevents discrimination between users in different countries. Moreover, the common tariff operates regardless of distances involved. Whether the user is in Marseille, London or Milan, it costs the same (about 6 ECU per hour) to communicate with a supplier in Paris, Copenhagen or Rome. A monthly subscription is also required, but its modest size (about 5 ECU) works to the advantage of small and medium-sized users (small firms, researchers, etc.), the total cost varying in line with the volume of data transmitted. In addition to these transmission costs, there are charges for the supply of information, which are applied by the supplier and which vary according to the data bases questioned (on average, between 60 and 100 ECU per hour). Thus for an average research of a quarter of an hour, the overall cost amounts to between 25 and 40 ECU.

☐ The material needed to have access to the Euronet network is simple and compact: it consists of a computer terminal equipped with a screen or a printer and connected to the telephone network by means of a modem (a machine which enables information destined for a computer or terminal to be transmitted on the telephone network). This equipment is barely more expensive than an electric typewriter, but individuals wishing to have access to the Euronet DIANE network without buying their own hardware can apply to intermediaries (service companies or public authorities) possessing terminals and competent personnel.

☐ Euronet DIANE covers virtually all fields of human knowledge. Although initially designed to carry scientific and technical information, the network has expanded into other fields of knowledge. The data banks and bases currently available cover agriculture and agro-food, medicine and biology, engineering and technology, physics and chemistry, energy, environment, law, economics, business, social sciences, etc. Information can also be found on topics as varied as ways to save heating, methods of

conserving poultry, the balance of payments of a member country of the OECD or public tenders from the whole Community listed by sector under the TED system (Tender Electronic Daily), a data bank just introduced by the Community.

At present data banks (factual information) are developing more rapidly than data bases (bibliographic references). They have the advantage that they reply immediately to a demand for information without requiring additional documentary research. It seems too that data on socio-economic affairs are interesting an increasing number of users and a growing number of documentation services are having to respond to this demand.

New ambitions

Thus, a tool has been created to supply information in Europe and to ensure its processing and dissemination. Numerous problems have been overcome in achieving this. The Community effort has in particular enabled:

- the establishment, thanks to alignment on the same fundamental principles of switching technology, of common standards to facilitate the opening of a vast market to European industry;

- the creation of a unified command language, a sort of information Esperanto which allows conversation between very different computers and which adapts to most of the bibliographic or textual data bases currently connected to Euronet.

But many questions still await an answer, including:

- the development and promotion of Euronet DIANE services with the double aim of enlarging the circle of users and increasing the market for information. Agents and services working for small and medium-sized businesses should be multiplied, as in the United States. A certain number of gaps in trade and economic information will have to be filled by the creation of new data bases; to this end, Euronet DIANE could serve as support for a Community initiative in the field of government and company information on the evolution of markets and structures of Community industry. In addition, a substantial development in export of information would allow European suppliers to achieve the level of profitability already enjoyed by their American competitors;

- a solution to the inconvenience of multi-lingualism by encouraging the development of automatic translation services for the dissemination of information. Thanks to research undertaken by the Community, one can envisage that in a few years' time a Sicilian doctor will be able to ask a question in Italian to a German data base specializing in medical problems. His question will be translated automatically into German, and the reply given in German will be automatically translated into Italian before appearing on the doctor's screen;

- encouraging the use of new technologies such as 'videotex', the branch of telematics that transforms the household telephone and television into network terminals capable of questioning data bases.

The European Commission must therefore remain continually apace with economic evolutions and technological developments that could improve the quality of services offered. It is also concerned with other problems raised by new technologies and which require a Community solution. It is vital, for example, to ensure that transfers of information, multiplying both within and across national frontiers, do not impinge on the rights of citizens and their private lives. The growth of data bases, like that of photocopiers, also raises copyright difficulties; while awaiting harmonization of the various national legislations, rules have to be introduced to safeguard the rights of authors and editors.

△

The hopes borne by the initiators of Euronet DIANE are ambitious, but they are fully justified by the size of the results already achieved. In launching Euronet DIANE, the Community has shown that it is capable of responding to the needs of our information society in which industrial and scientific activity, economic transactions and everyday life as a whole are bound up in a technological and social environment that has never before been so mobile ■

N.B. General information (list of data bases, service centres, intermediaries, user groups, etc.) as well as a guide to the documentation services using the network can be obtained from Euronet DIANE, PO Box 777, L-2017 Luxembourg. Telex 3511 DIANE LU, Tel. 40 221. For connection to the network apply to the local post and telecommunications administration.

The contents of this publication do not necessarily reflect the official views of the institutions of the Community.

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