COMMUNICATION RESEARCH TRENDS

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The Telematics Society

For most of us, getting information is still a matter of seeking out some expert or a "trusted friend". Or we pore through books, newspapers, and professional reports hoping to find the precise information we need. Now the linking of computers to a television screen promises an information revolution in our lives. Sitting in the comfort of our homes or offices with a keypad in hand, we will be able to call up on the screen literally any sort of information from any part of the world.

Like the initial stages of cinema, radio and television, the next ten years will be critical in deciding the basic formats of telematics and how this technology will fit into our lives. What will happen to libraries? What will we do with this flood of information? Will it be essentially a commercial, advertising medium more useful for the affluent? Or will it present a broad spectrum of cultural enrichment and provide social opportunity for the information poor. What about privacy, editorial control and transborder data flows? This issue reviews research on these policy questions.

REVIEW ARTICLE

National Policies for Telematics

First, a Guide to the Terminology

As in the case of any new technology, discussions of informatics and telematics are filled with a bewildering array of competing technical and trademark terms.

"Telematics" refers to the interweaving of two technologies: 1) data processing by computers providing a vast capacity of information storage and instant, simultaneous access by multiple users; and 2) telecommunications via telephone, broadcasting or cable.

"Videotex" is one form of telematics, transmitting computerised information for display on a television screen. There are currently two general forms of videotex: the broadcast (one-way) videotex, "teletext" and the interactive (two-way) videotex, "viewdata".

Teletext information is broadcast continuously over a TV channel in a fast unbroken cycle. With a specially modified TV set, the user can "grab" a page (enough information to fill the screen) as it comes around in the cycle and display it. At present, the broadcast cycle, constantly being repeated, contains on average 400 pages, although some systems have the capacity to offer as much as 5,000 pages. Teletext has various trade names with varying technical capabilities: in Britain, the BBC has "Ceefax" and ITV has "Oracle"; France has "Antiope".

Viewdata offers far more information because it is interactive. With a small hand keypad and a catalogue of code numbers, the user can "go into" the computer and retrieve specific information. Systems are rapidly changing, but typically the code number gets the user to a generic category such as "law" with directions for reaching ever more specific areas of law such as "real estate law" or "divorce law" or cross references to related information.

Some viewdata systems have further interactive capacities that allow the user to put information into the computer. For example, private individuals can bring up items on sale in a nearby store, place an order and pay for it directly from a personal bank account. Authorised institutions such as schools, churches or voluntary organisations can place notices for their constituencies. Qube in the United States allows for instant public polling. During a political speech, for example, the public can respond to questions, have the totals instantly computed and flashed on the screen, and then continue a discussion of the poll results.

Again, the trade names and the technical capabilities of viewdata systems vary: in Britain, it is "Prestel"; in Germany, "Bildschirmtext"; in France, "Teletel"; in Canada, "Telidon"; in Japan, "Captain". All of these are competing for some share of a world market. The three basic systems have been developed in Britain, France and Canada. The U.S. TV networks are now experimenting with and debating how to adapt one of these three systems.

Japan: Information Policy for Social Development

Alex S. Edelstein, John E. Bowes and Sheldon M. Harsel, (eds), *Information Societies: Comparing the Japanese and American Experience.* (Seattle, Washington: International Communications Center, School of Communications, University of Washington, 1978).

For a decade the Japanese government has been familiarising the public with the idea that Japan will become an "information society" and that economic growth depends on the "information" industries. Studies of the Ministry of Post and Telecommunications, using a new measure of available information, show that between 1960 and 1970 the information supply in Japan increased by 400%. However, information consumption increased only 140%. A number of chapters in *The Information Societies* document how the Japanese are attempting to make better use of information technology for the social development of the country.

Harueko Kato, in his chapter, "Communication and Community: CATV in Japanese New Towns," discusses how information systems may be designed to strengthen horizontal community ties. The Japanese are concerned that rapid urbanisation and economic development could pose a threat to traditional community bonds. There is also a desire to develop a stronger grass-roots democracy built on strong local debate of issues — something quite different from the traditional authoritarian manner of achieving social integration. In view of these needs, Harueko Kato argues that community TV systems are appearing to fill a gap between the traditional interpersonal communication and the mass national media.

The author compares two experiments using community video systems initiated by the government and backed by manufacturers of hard and software. Both systems have interactive video (viewdata) features, but the technical design and social context are quite different. And the results in terms of community building seem to be quite different.

The Tama New Town near Tokyo is a large settlement with a relatively young and highly mobile population living in small rental apartments. The design of the interactive video system tends to emphasise individualised services: retransmission of VHF TV, TV requests, national news, etc. Although there was an opportunity to produce local community programmes, there was little interest in doing so.

In contrast, the suburban community of Higashi-Ikoma near Osaka is smaller, and the residents are settled, mature families living in homes or apartments they own. The video system is designed to foster interaction, providing each home with a TV receiver, a keyboard, a TV camera and a microphone to enable participation in two-way programmes. Home TVs are linked by optical fibre to a centre for computer and video cassette storage as well as local productions. Services via the 23 channels include TV broadcast, a video cassette request service, locally-produced programmes to stimulate interactive discussion, and access to medical or other types of consultation.

A recent evaluative report indicates that the system in Higashi-Ikoma, because of the technical design, "has created a new community spirit, introducing residents to one another, forming new social relationships and leading to groupings based on common interests discovered through the two-way programmes. It has fostered identification with and pride in the locality and community."[1]

The United States: A National Information Policy?

Arthur S. Bushkin and Jane H. Yarrow, *The Foundation of United States Information Policy.* (Washington, D.C.: National Telecommunications and Information Administration, 1980).

In the United States tendencies toward a coordinated information policy have long been resisted. However, Buskin and Yarrow caution that, since information is now so central to national development, intentional design and planning are needed to make information widely available and openly accessible. Others argue that "policy" is less important that ever. The new telecommunications technology, *in itself,* will bring about wider public access, less concentration of media ownership and greater diversity of information and content.

New Technology and Public Media Access

Unlike traditional one-way broadcasting, two-way cable systems, with greatly increased channel capacity, could combine both interactive viewdata-type services and direct participation in programme production. This implies not just interaction with a pre-established format such as electronic shopping, but allowing the public to define the format as well. In 1973, the book, *Talking Back: Citizen Feedback and Cable Technology*[2] saw two-way cable contributing to a new sense of community and the active involvement of many more people in community affairs in the U.S.

In the late 1970s, there were a number of field trials with two-way cable to explore some of its uses. Perhaps the best known was the experiment in Reading, Pennsylvania between 1975 and 1978.[3]

The Reading experiment was created to bring together the elderly and the public agencies serving their needs. Three neighbourhood communication centres located at a multi-service centre and two housing projects for the old were equipped with small studio TV cameras and large monitors and linked via two-way cable. In addition, 117 elderly people were able to view the programmes at home and participate by telephone; eventually, all 35,000 local cable subscribers could do the same. The office of local politicians were also connected on a regular basis.

The most innovative element in the Reading project was the initial question, How can citizens use cable television to obtain public services and to provide services themselves?

The production of programmes was done by the citizens themselves. They were encouraged to control the medium and use it to articulate their own needs and purposes. It was soon discovered that the diversity of interests among the elderly turned the cable system into more than a social welfare service. More disconcerting for the planners, the *assumed* needs of the elderly did not correspond with the programmes the participants actually wanted. Yet because the project was designed to enable the citizens eventually to take it over, the experiment's designers were able to help the various individuals and groups build and experiment with a fully participatory two-way system. The policy underlying the project, not the technology, made participation possible.

Need to Redefine Media Boundaries

The new telematic technology is making obsolete traditional concepts of media and the legal structures to ensure open public access to media channels. Broadcast access and content has been much more closely regulated than print because of "spectrum scarcity." But now, with up to 100-channel cable and communication satellites, how can we speak of spectrum scarcity? Is text transmission via teletext (broadcast) or viewdata (wired) to be defined as "broadcasting" or "electronic publishing"? The FCC proposes to regulate teletext because other forms of "broadcasting" are regulated, yet text transmission via print media (i.e. newspapers and books) is not regulated. Why should the same news content displayed on a TV screen be treated differently from its appearance on paper?

Don Le Duc thinks that this legal definition by mode of transmission ignores questions such as who should control the editorial content of teletext services — the broadcasters or the news suppliers? Le Duc suggests that telecommunications law should distinguish between the distinct rights and obligations of content producers (e.g., teletext news suppliers) and carriers (e.g. broadcasting companies). It is the functions that the various actors in the media arena perform that affect control of content and distribution of information.[4]

Benjamine Compaine proposes that media research should abandon its traditional categories. Analyzing media in terms of *content, process* (handling and transmitting information) and *format* (the form in which the user receives the information or the processor handles it) helps understand hybrid media like viewdata — a combination of publishing, information processing and TV.[5]

Privacy

Government intervention, to a limited degree, is widely accepted in the field of privacy protection. In the 1960's and 1970's the growth of large computerized record-keeping systems used by private and public bureaucracies, alarmed those who feared an extension of bureaucratic surveillance and social control. One danger was that unauthorized persons would have easy access to sensitive personal data in criminal, medical, educational and financial records. Now, questions arise as to the kind and amount of personal data that should be handled, stored and transmitted by such information services as viewdata.

The present debate on privacy protection largely revolves around personal and economic issues: fears that without legislation, personal liberty will be endangered; and fears that legislation will impose financial burdens on private and public organizations. The U.S. government response, as analysed by Donald A. Marchand, is ad-hoc and piecemeal. Marchand thinks a coherent national policy requires basic shifts in orientation, including consideration of the long-term social impact of changing information and communication systems.[6]

More radical analysis, by researchers like James B. Rule and others, questions the assumed need of bureaucracies for so much personal data. Rule asks for a committment to social values which would reduce the emphasis on organizational efficiency and extend opportunities to "those who, in light 'of all the facts', may appear to be poor risks". The implication is that information technology should serve social values and not dictate them.[7]

Canada: The Quest for Cultural Sovereignty

Consultative Committee on the Implications of Telecommunications for Canadian Sovereignty, *Telecommunications and Canada.* (Hull, Quebec: Canadian Government Publishing Centre, 1979).

Much of the informatics debate in Canada has focused on the questions, Who should control the new information communication services, and How is Canadian cultural sovereignty to be protected. In 1978, the government set up the Clyne Committee to consider ways to enhance Canadian control of the direction of telecommunications change, especially considering Canadian dependence on the United States.

Transborder Data Flows

Canadian worries can be illustrated by the position relating to transborder data flows. Oswald H. Ganley, analysing Canadian U.S. communication relationships, estimated that by 1985 14% of all information processing jobs serving Canadian needs will be U.S.-based.[8] The Clyne Committee reported that by 1985 about $1.5 billion worth of computing services would be imported from the U.S., a loss of about 23,000 Canadian jobs.

The Clyne Report gave eight key ways in which use of U.S. computing services affected Canadian sovereignty:

1. Reducing Canadian control over disruptions in service;
2. Limiting Canadian power to protect against privacy violations and computer crime;
3. Prompting greater dependence on foreign programmers;
4. Hampering jurisdiction over Canadian-based companies storing and processing data abroad;
5. Undermining Canadian telecommunications by importing data via foreign communications satellites and roof-top receivers;
6. Increasing the risk that confidential Canadian information would be published;
7. Giving access to videotex services based on foreign data banks emphasizing foreign values, goods and services;
8. Facilitating U.S. government attempts to make laws applicable outside U.S. territory.

Clyne's response was to recommend promotion of the Canadian informatics, computing and electronic industries, and restrictions on the use of U.S. data processing services. It urged continued vigorous support for Canada's own viewdata system, Telidon, and for tax and other incentives to develop Canadian-owned data banks. Clyne strongly recommended that data processing related to Canadian business operations be performed in Canada unless otherwise authorized.

Canadian worries about transborder data flows are shared by many countries, in particular developing countries seeking self-suffiency in computer technology to reduce their dependency on foreign (largely U.S.) information services. Rita Cruise O'Brien, analyzing the trend to informatics technology transfer, warns that developing countries need to create appropriate knowledge and organizational supports to make use of the information. They should also be careful that sophisticated informatics systems do not increase social divisions and further concentrate social power.[9]

Who Will Control Access To The New Media?

The Clyne Committee raised this question in considering the status of cable TV, which it saw as having both "broadcasting" and "public carrier" functions. Originally cable systems were licensed as "broadcast-receiving" undertakings, to distribute programmes received off-air. Now they were also distributing programmes and information not originally broadcast, some of which they produced themselves. They were thus acting as "public carriers", except that, unlike the telephone companies, for example, they controlled both distribution and programme content.

To prevent carriers from having editorial control of production content, Clyne recommended that the production activities of cable companies be organised as separate subsidiaries. As public carriers, the cable companies would be required to carry at just and reasonable rates the content of any information provider or programme producer who wished to use their services.

Douglas Parkhill, thinks that the principle of content/-carrier separation should be the foundation of communications policy.[10] The carriers (telephone, broadcasting, cable, videotex and satellites) should be regulated monopolies having no control over what information is carried or who provides it. The producers of content (videotex information providers, newspaper companies, television producers, data base suppliers, etc.) should be unregulated, competitive and unlimited in number. Anyone can provide information via the carriers in the "Electronic Highway Network", given sufficient technical expertise and financial backing.

Lewis Auerbach criticises this reliance on economic and technical criteria alone to determine access to the "Electronic Highway". He proposes that the following principles are needed to safeguard the public interest: 1) cost should not prevent access by a significant proportion of the population; 2) advertising should be controlled and privacy protected; 3) universality of access and diversity of content should be sought and content should be primarily Canadian.[11]

Australia: Is Participatory Planning Possible?

Australian Telecommunications Commission. *Telecom 2000: An Exploration of the Long Term Development of Telecommunications In Australia.* Melbourne: Telecom Australia, 1975.

The speed of technological change in the early 1970s prompted the Australian Post Office to set up a National Telecommunications Planning Branch (NTP) to investigate probable future needs and demands for services. In 1975 the APO's telecommunications successor, the new Australian Telecommunications Commission (Telecom Australia), published the NTP's review as the report *Telecom 2000.*

In this report, Telecom Australia recognized that as a public utility it had a duty to take fully into account the needs and wants of its customers. It therefore proposed ways of involving the public in policy-making through what it called "open planning".

Four models of "open planning" were discussed:

1. "basic consultation" — the utility must consult more fully with the public;
2. "independent decision-maker" — an independent body, like the U.S. Federal Communications Commission, balancing arguments from utility and public, makes decisions in the public interest;
3. "community group" — the community makes recommendations to the decision-maker, and the utility is restricted to offering technical advice; and
4. "independent tribunal" — the independent tribunal studies submissions from all interested parties and makes recommendations to the government on issues of national importance.

After *Telecom 2000* was published, the NTP solicited comments and published a digest of reactions.[12] The NTP noted widespread support for open planning from business, government, academics, the media and Telecom Australia, though many felt the proposals were too cautious. Five questions seemed central:

1. What is the capacity of people to participate and are they interested in participating?
2. Who should participate (e.g. all groups, the inarticulate, "obstructionists", interested parties, directly affected people, communities)?
3. Where should power over planning and decision-making lie (e.g. with everyone, customers, Telecom engineers, the telecommunications industry)?
4. What capacity has Telecom to introduce open planning?
5. Is there need for a users' council independent of Telecom?

Such questions, explicitly discussing the ways users could participate in "open planning", seemed to indicate that Telecom recognized the insufficiency of planning based solely on technical and economic criteria.

However, if Telecom seeks "open planning", how is the "ordinary" public to be involved? Public response to *Telecom 2000* was tiny: though 20,000 copies were distributed, only 111 written responses were received — overwhelmingly from academic, government and industry sources. Is it that the public has neither the technical expertise nor the inclination to consider national telecommunications planning? Or is it that policy questions are couched in terms that seem remote from people's everyday concerns?

New Technologies — More Unemployment?

In Australia, many fears have been expressed about the employment effects of the proposed domestic communications satellite. The Australian Postal and Telecommunications Union (APTU) and the Australian Telecommunications Employers Association (ATEA), in a joint submission to the government Satellite Task Force,[13] urged that the existing terrestial telecommunications system was adequate enough not to require a satellite system. They claimed that a satellite system would be capital-intensive rather than labour-intensive, and that if the satellite was to be a substitute for the existing system, or a reason for not expanding it, many jobs would be lost. Furthermore, national network broadcasting via satellite "would probably finish independent regional broadcasters and reduce employment in industry production and engineering fields." If the satellite were used for electronic funds

transfer, it would eliminate many jobs in banks and other financial institutions.

The trade union position is strengthened by a recent study by Juan Rada for the International Labour Organization.[14] Rada believes that exploitation of the new information technologies will result in an over-all decrease in employment opportunities. In contrast, a report on Japan by Gerald Sweeney[15] stresses that the Japanese, recognizing that traditional jobs will be lost, are making extensive plans to help workers acquire new skills and employment. Japan sees the major problem as a shortage of people with appropriate skills and training. The question posed by these studies is how far the Japanese experience can be duplicated in other advanced economies and what benefits, if any, developing countries (or those like Australia, heavily dependent on foreign investment) can expect from such labour-saving technologies.

Rada thinks that developing countries will be unable, with few exceptions, to combine cheap labour with high technology, and sees growth in information technology reinforcing the economic dominance of the advanced nations. In the Australian informatics context, the lack of a domestic computer industry means that overseas suppliers would be the beneficiaries in terms of increased employment opportunities if Australia invested heavily in computerization.[16]

France: Building the Information Society

Simon Nora and Alain Minc, *The Computerization of Society: A Report to the President of France.* (Cambridge, Mass.: London: MIT Press, 1980).

In December 1976, President Giscard d'Estang appointed Simon Nora and Alain Minc to produce a report recommending ways in which to foster and control the "informatisation" of society in the interests of "democracy and human growth". The report, *L'Informatisation de la Société* (translated as *The Computerization of Society)* appeared in 1978. It called for a strong government direction in the development of a national system of computing and telecommunications now called "télématique".

The Threat of the Multinationals

The Nora/Minc report stressed the need for cohesive national "télématique" policy in the face of what it called the "IBM challenge". IBM's overwhelming dominance of computer manufacturing, allied to its expanding communications activities, could make it a rival to governments. Through its stake in the new Satellite Business Systems, for example, IBM would control communication and data processing networks. This would mean direct competition with national telecommunications authorities. To counter this challenge, and to control the development of the "information society", France must have policy-making institutions to promote the standardisation of telecommunications networks, the launching of communication satellites, and the creation of French data bases.

In general, these recommendations were followed. The first step was to modernize the telephone network which now has 16 million subscribers, compared to 6 million in 1974, and is forecast to have 28 million by 1987. This expansion has meant very heavy capital expenditure — the French Post Office investing £8.3 billion between 1975 and 1980[17] It is the country's biggest investor, apart from the military.

The telecommunications division of the Post Office, the Direction Générale des Télécommunications (DGT), is the biggest profit-making enterprise in France, and it is the prime mover in developing "télématique". The DGT hopes to provide a whole family of individual information products and services linked into a network, of which at present the most highly developed parts are videotex and the electronic directory ("annuaire éléctronique").[18]

Videotex consists of a single system by which users can gain access to the broadcast (teletext) service, Antiope, and the interactive (viewdata) service, Télétel. Already, Antiope is undergoing numerous field trials, and in June and September 2,500 telephone subscribers in Vélizy, south of Paris, will receive free keyboard TV terminals for a Télétel trial.

The electronic directory project is supposed to replace printed telephone directories by giving subscribers access via terminals to a data base containing directory information. Some 250,000 subscribers in the Île-et-Vilaine region are due to receive such terminals soon. As with videotex, the aim is to accustom the French public to the new technologies.

Too Much Centralisation?

These activities by the DGT have begun to arouse deep misgivings. An article[19] by Antoine de Tarlé points out that the DGT promotion of videotex and the electronic directory is prompted first of all by the telephone company's desire to see the telephone network used more fully. The massive investment has to be protected. De Tarlé is unhappy too about the motives for Franco-German cooperation in building communications satellites. He claims that the satellite programme was created mainly to help the French aerospace industry, and remarks "France cannot sell rockets and satellites abroad if it does not have a substantial home market".

Critics of present French policies fear that for economic reasons and a desire to assert French independence of U.S. economic, cultural and technological power, the French government is pushing the public to accept unnecessary new services like videotex. As Francois Hutin points out,[20] the real issue is not "the choice of the means of communication but ... the choice of the kind of society we want. We are dealing not with a technical problem but with a political problem". He urges that much more research be done on discovering the public's attitudes and feelings towards the new possibilities. What do people really want and need?

Hutin is also concerned by the centralisation of power in the new "informatics" systems. The DGT was recently described in a report of the French National Assembly as the only centre of communication in the country.

The Nora/Minc report drew attention to the possibilities of decentralisation offered by new technology. Small powerful computers could be linked into a network, allowing computer services and administrative functions to be dispersed. A major goal of the Informatisation Plan announced in 1978 was increased decentralisation, but critics fail to see much movement in this direction.

Indeed, Bruno Lussato has called for the development of a system of "privatique" to counter "télématique".[21] Individuals should use microcomputers to set up their own

private information systems. In addition, Lussato thinks that arguments pro-informatics are based on technology and that there has been no serious analysis of the whole concept of information.

Brenda Dervin has criticised communication researchers and others for implicitly treating information as if it were a value neutral, independent entity like electricity.[22] Like Lussato, she sees information as a construction by specific individuals in particular circumstances. Thus, for example, in viewdata systems, the kind of information and the way it is presented offers the consumer a picture of the world constructed by the information providers and the designers of the technology. Should not the consumer also have some say in how this data is selected and presented? The Nora/Minc report echoes Dervin's and Lussato's criticism when it says that "it will be increasingly necessary to call its (information) recipients to participate in its preparation ... this participation will only be accepted if rival groups are equally capable of producing, processing and transmitting their own information".

Taking seriously the concept of information as a *user construct* rather than a *producer construct* points research towards considering what users really need and want in information and to problems of creating decentralised, participatory, citizen-responsive communication and information systems.

Footnotes

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3 **Daniel L. Moss,** *Two-Way Cable Television: an Evaluation of Community Uses in Reading, Pennsylvania* (New York: The NYU-Reading Consortium, New York University, 1978).

4 **Don LeDuc,** "The COMSAT Pay-TV Proposal: American Regulatory Process vs. Telecommunications Technology", in *Journal of Media Law and Practice,* Vol. 1, No. 2, (September) 1980, p. 167-179.

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6 **Donald A. Marchand,** "Privacy, Confidentiality and Computers — National and International Implications of U.S. Information Policy", *Telecommunications Policy,* Vol. 3, No. 3 (September) 1979, p. 192-208.

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9 **Rita Cruise O'Brien,** "Specialized Information and Interdependence — Problems of Concentration and Access", *Telecommunications Policy* Vol. 4, No. 1 (March) 1980, p. 42-48.

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13 *Satellite Task Force, 1978: Precis and Index of the Major Submissions.* (North Ryde, NSW: Australian Film and Television School, 1979).

14 **Juan Rada,** *The Impact of Micro-Electronics.* (Geneva: International Labour Organization, 1980).

15 **Gerald Sweeney,** "The Chip and Employment, East and West", *Endeavour* Vol. 4, No. 3 (1980), p. 118-123.

16 Rada, *op. cit.*

17 **David White,** "France," *Financial Times Survey on Communications,* April 27, 1981, p. vi.

18 "France: La Télématique: The Technological Bubble: An IIC Report." *InterMedia,* Vol. 9, No. 1 (January) 1981, p. 12-16.

19 **Antoine de Tarlé,** "France Struggles to Control the New Technologies," *InterMedia* Vol. 8, No. 3 (May) 1980, p. 18-19.

20 **Francois Regis Huntin,** "Informatics is a Political Issue," *InterMedia* Vol. 9, No. 1 (January) 1981, p. 17-19.

21 **Bruno Lussato,** *Télématique et Privatique.* (Paris: Ed. Informatique, 1979).

22 **Brenda Dervin,** "Communication Gaps and Inequities: Moving Toward a Reconceptualization", in *Progress in Communication Sciences:* Volume 2, ed. by Brenda Dervin and Melvin J. Voigt. (Norwood, N.J.: Abex Publishing Corp., 1980, p. 73-112.

Current Research on Telematics

AUSTRALIA

At the University of Queensland, Dept. of Economics (St. Lucia, Queensland 4067) **D.M. Lamberton** with **N.D. Karunaratne** and **Stuart Macdonald** is researching international information flows between Australia, Japan and the U.S. and investigating the implication for trade and investment theory. He has written *The Economics of Communication* (Oxford: Pergamon Press, forthcoming). **Lamberton, Macdonald, T. Mandeville** and **B. Hodge** undertook research projects for the Myers Committee on Technological Change, on computers in small businesses and local government, and about the Australian word processor industry.

CANADA

David Godfrey (Dept. of Creative Writing, U. of Victoria, PO Box 1700, Victoria, B.C. V8W 2Y2) is writing *The Telidon Book* (Press Porcepic, 620 View St., Victoria, B.C., V8W 1J6) to appear Sept 1981. The U. of Victoria is planning the NATAL/TELIDON project. It will look at Computer Assisted Learning and videotex in terms of a combination of NATAL, a structured, machine-independent CAL language and TELIDON.

Richard Larratt (Richard Larratt Associates, RR1, Demonestville, Ontario KOK 1WO) is researching consumer preference for visual and/or voice communication with machines. He is also making a social-impact study of teleshopping.

Nicole F. Leduc (Bell Canada, Vista Project, 1140 de Mainsonneuve, Rm. 507, Montreal, Quebec H3A 1M8) is project manager for the Quebec trials of VISTA, Bell Canada's videotex system. This is a two year trial beginning early 1981, which will include 500 terminals in three cities, Montreal, Quebec and Toronto.

FRANCE

Jean-Pierre Chamoux (Ed. Techniques, 123 rue d'Alésia, 75678, Paris Cedex 14) wrote *L'Information sans Frontiere* (Paris: La Documentation Francaise, 1980) discussing the power of U.S. multinationals like IBM in telecommunications, information flow problems and data protection legislation.

IREST (Institute de Recherches Economiques et Sociales sur les Télécommunications, 48 rue de la Procession, 75724 Paris Cedex 15, Dir., J. Dondoux; Sec. Gen., P. Tornato)held a *Round Table on the Electronic Telephone Directory and Videotex* on October 16th, 1980. This was part of a series of Round Tables on various aspects of telecommunications and télématique.

Bruno Lefevre (Etude et Planification des Communications, 16 rue Chandon-Lagache, 75016 Paris) has written *Audiovisuel et Télématique dans la Cite* (Paris: La Documentation Francaise, 1979), in which he explores the impact of the new information technologies on urban life style, in particular, on inter- and intraurban transportation, the organization and

localization of work, and the rearrangement of rural and urban space to solve current space problems.

Dominique Wotton (STS, 87 Bvd. S. Michel, 75005 Paris) has written, with **Jean-Louis Lepigeon**, *L'Information Demain: de la Press Ecrite aux Nouveaux Media* (Paris: La Documentation Francaise, 1979), surveying the switch by the press throughout the world to the new electronic means of printing the news.

GERMANY

At the **Gesellschaft für Mathematik und Datenverarbeitung**, Institut für Planungsund Entscheidungssyteme (IPES), Postfach 1240, Schlöss Birlinghoven, D-5205, St. Augustin 1) the "Wirkungsforschung" group are developing participation strategies to involve more people in designing information systems. There are two experiments, one a school information system, the second a "citizen office" in a local administrative agency.

Edmund Hogrebe (Oeldorf 17, D-5067, Kürten) has published *Dangers and Opportunities of Digital Communication Media: New Information and Communication Technologies from a Social and Political Perspective: From Dominated to Alternative Communication in Latin America?* (Mexico, D.F.: ILET, 1980) . One topic of research is the implications of the massive introduction of computers and computer-based information technologies into the Third World.

Klaus Lenk (Universität Oldenburg, Ammerländer Heerstr. 67-99, D-2900 Oldenburg) is interested in policy issues in scientific and technical information and social and political implications of information technology. He has edited *Informationsrechte und Kommunkationspolitik.* (Darmstadt: Toeche-Mittler, 1976).

GREAT BRITAIN

Communication Studies and Planning Ltd (21 Gt. Titchfield St., London W1P 7FD) (Managing Dir. **Barry Stapley**; Dir. of Applications Studies, **Roger Pye**) undertakes a wide range of consultancy and research. Examples include: for the U.K. Dept. of Environment, it looked at ways to improve information services in an inner London area, and a recent project funded by the Equal Opportunities Commission looked at the impact of women's jobs on office information technology.

Kevin Robins, (Department of Languages and Cultures, Sunderland Polytechnic, Sunderland SR1 3SD) is studying the impact of information technology on leisure and 'everyday life', a critique of the concept of 'information', and information technology and futurism. With Frank Webster he is publishing "Technological Determinism or Demystification," in *New Universities Quarterly,* and published "Information is a Social Relation," in *Intermedia,* July 1980.

JAPAN

Nozumu Takasaki (Dir., International Affairs, Research Inst. of Telecommunications and Economics 1-6-19, Azabudai, Minato-ku, Tokyo) is engaged in a census of information flows with M.I.T., USA. He is also studying the social acceptability of Japanese videotex and new media, doing a comparative study of transnational communication industries and researching information classification and dissemination in the Pacific region.

MEXICO

The Communications Division of **ILET** (Instituto Latinoamericano de Estudios Transnacionales, Esq. Avenida San Jerónimo/Calle Magnolia, Apartado 85-025, México 20, D.F.), under the direction of **Rafael Roncagliolo** and **Fernando Reyes Matta**, will focus its research programme in the coming three years on alternatives in the new communication technologies and, specifically, informatics.

THE NETHERLANDS

Cees J. Hamelink (Institute of Social Studies, P.O. Box 90733, 2509 The Hague), commissioned by the UN Centre on Transnational Corporations to do a report on transnational data flow, will research the role of business in the use of information. The focus of the study will include studying how businesses use information as their main product line, such as data base services; as their commercial lifeblood, as in banks; as the operational ingredient affecting competition, as in finance and technology.

NORWAY

Norwegian Research Centre for Computers and Law (Niels Juels Gate 16, Oslo 2, Dir., **Knut S. Selmer**), has two research programmes: NORIS (on legal informatics) and TERESA (on the legal aspects of computer systems). NORIS Project (45), "Teledata and Legal Aid", looks at the ways of using viewdata to give legal aid to the public. TERESA (9) seeks to develop a legal regime for computer services generating transborder data flows. **Jon Bing** and **Knut S. Selmer** have edited *A Decade of Computers and Law* (Oslo: Norwegian U. Press, 1980).

UNITED STATES

Kent W. Colton (Institute of Public Management, Brigham Young Univ., Provo, Utah 83602) is investigating the crime-related impact of Electronic Fund Transfer Systems (EFTS) and Electronic Mail Systems (EMS) for the U.S. Justice Dept.

Herbert S. Dordick (Annenberg School of Communications, U. of So. California, Los Angeles, CA 900007) co-authored with Helen G. Bradley and Burt Nanus *The Emerging Network Marketplace* (Norwood, N.J.: Ablex Pub. Corp., 1981) and has edited *Public Broadcasting and Videotex/Teletext: The Present and a Guide to the Future* (Wash. D.C.: Corp. for Public Broadcasting, 1981).

Martin Elton (Alternate Media Center, New York Univ., New York, N.Y. 10003) is directing research on teletext. The Center is conducting the first scientifically designed user field trial of teletext with the public TV station WETA-TV in Wash., D.C.

Ronald J. Goldman (Teletext Project, Dir., KCET-TV, 4401 Sunset Blvd., Los Angeles, CA 90027) is researching the design, content, format and use of the French Antiope teletext presentation. He is also helping to develop models of Public Telecommunications Centers (PTC's), which supplement radio and TV in providing public programming and services with new video and computer technology.

Institute for the Future (2740 Sand Hill Rd., Menlo Park, CA (94025). **John Tydeman** is leading a Technology Assessment Project on Teletext and Videotex in the U.S. Working papers produced include *Videotex: A Dozen Public Policy Concerns and a Design to Understand Them* with **Robert Johansen, Hubert Lipinski** and **Michael J. Nyhan. Robert Johansen** with **Jacques Vallee** and **Kathleen Spangler** has co-authored *Electronic Meetings: Technical Alternatives and Social Change* (Reading, Mass.: London: Addison-Wesley Pub. Co., 1979).

Don. R. LeDuc (Dept. of Comm. Arts, U. of Wisconsin, Madison, WI 53706), in *Beyond Broadcasting: The Limits of Public Policy*, is examining legal loopholes and regulatory deficiencies to be remedied to maintain a "marketplace of ideas" when "spectrum scarcity" no longer justifies government's role in communications content regulation. With **Guido Fauconnier** (U. of Lovain) and **Benno Signitzer** (U. of Salzburg), among others, he will assess the capacity of European legal systems to cope with new communication technologies.

MIT Research Program on Communications Policy (Massachusetts Institute of Technology, Cambridge, Mass.) is cooperating with the Research Institute of Telecommunications & Economics in Tokyo on a census of communication flows.

The Program on Information Resources Policy of Harvard University and the Center for Information Policy Research (200 Aiken, Harvard U., Cambridge, Mass. 02138, **Anthony G. Oettinger**, Chairman) is researching in the areas of postal services, media, international communications, and informatics. Specific topics include transborder data flows and cable TV regulation. **Benjamin M. Compaine** continues research on informatics/media issues, e.g. control of ownership of content and or information conduits, privacy, etc.

The Public Policy Research Organization (U. of California, Irvine, CA 92717, **Dir. Kenneth L. Kraemer** is researching the organizational and social effects of information technology. **K. Kraemer, James N. Danziger, Rob Kling,** and **William H. Dutton** (Annenberg School, U. of S. Cal., Los Angeles, CA 90007) co-authored *Computers and Politics: High Technology in American Local Government* (N.Y.: Columbia Univ. Press, 1981). **John L. King** and **K. Kraemer** are publishing "The Impacts of Computer Systems on Citizens in U.S. Cities", in *Information Privacy,* and are writing *An International Comparative Study of Computing Policies and Impacts in Cities.*

Dan Schiller (Temple Univ., Phil., PA 19122) is writing *Telematics and Government* (Norwood, N.J.: Ablex Pub. Corp., 1982) on U.S. Government contribution to the computerization of U.S. and world society; e.g., by FCC influence on telematics policy.

Murray Turoff (Dir.) and **Starr Roxanne Hiltz** (Assoc. Dir.) N.J. Inst. of Tech., Computerized Conferencing and Communications Ctr., (323 High St., Newark, N.J. 07102) are co-authoring *Superconnectivity: Computer Systems for Organizational Communications,* and researching human communication via computer and an information marketplace via the Turoff computer conferencing system, Electronic Information Exchange System (EIES).

John Wicklein (Corp. for Public Broadcasting, 1111 16th St. N.W., Wash., D.C., 20008). His *Electronic Nightmare: The New Communications and Freedom* (N.Y.: Viking Press, July 1981) highlights dangers to personal freedom and privacy in the new technologies, and makes suggestions for a new U.S. information policy.

Research for a Participatory Telematics

Much research on the new information technologies studies the "needs" of the consumer and business markets. The basic question is, How can the new systems be designed to provide the information products the market demands?

Other research concentrates on the design of "field trials" for such new systems as teletext, viewdata, interactive cable TV, and computer conferencing. These trials can be an extension of market research, or publicly funded attempts to develop "community" information systems.

A third strand of research looks at policy issues — Who should control the new media? How should technological developments be monitored or regulated? Who should have access to the new media? What is the impact on employment, privacy, etc.?

Users as Information Consumers

Unfortunately, a good deal of this research effort fails to question the basic commercial orientation of the new media. It takes for granted that videotex and interactive cable TV systems are going to offer a new range of consumer and business goods — electronic shopping, financial services, travel information, news, electronic games, etc. The key research problems are, Who is to control this new electronic marketplace? and, Who will be able to afford the goods on offer?

These questions are valuable but treat the user of the new services as a *passive* consumer of information products rather than as an active participant in a new communication system. Market research studies in particular are usually solely interested in discovering and categorising user needs which can be readily translated into product consumption.

Such an orientation often affects field trials of new media, even trials designed to offer a community service. For example, one goal of the Reading (U.S.A.) interactive cable experiment was to help older citizens obtain public services. The initial system design characterised the elderly as consumers of welfare services who needed only a limited range of information products. However, in the course of the experiment, the citizens themselves refused to be so characterised and asserted their right to other programmes *they* thought relevant.

What Information is Needed?

There is a need for more research which regards people as active seekers and users of information. Too little is known about the particular social and personal contexts in which people engage in information activities. Understanding these contexts, combined with research into ways to help people clarify and articulate their information needs, could radically transform information systems design. The new technologies should be introduced only if they meet the real needs of users.

Users-designed Information Technology

Above all, research should be encouraged which looks for ways of involving users in the initial design of information systems. Most people do not feel in control of the new technologies because they have little critical understanding of how or why they were so designed. Once viewdata, for example, is presented to the public as a supplier of commercial information, alternative uses become harder to imagine and even more difficult and expensive to implement.

Who determines basic design is the fundamental question for policy research. Will the advertisers, for example, help shape the new telematics as they have so markedly formed radio and television?

Decisions about who controls, provides, and conveys information over the new media are being taken by governments and business every day. Still, most people have little influence on what is happening, even though communication research has clearly demonstrated the need for citizens to participate in determining information policy.

Helping the Public Decide

New ways are required to translate research findings into language the general public understands. Needed too are institutional means to engage the public in *designing* telematics policy. Extensive public involvement might induce governments and telecommunications authorities to think more in terms of serving the whole community's information needs, not simply in terms of promoting economic growth and selling more information products.

Unless ordinary people can gain access to information which is significant for them, and can have a say in how that information is distributed, telematics will simply add to the proliferation of one-way information channels. The challenge for research is to help in designing two-way participatory communication and information systems.

James McDonnell
Issue Editor

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