

THE NEW ECONOMICS OF INFORMATION
A Challenge For New Economics
by James Robertson

THOSE who are working to articulate a new economic order that will be enabling and conserving, not dependency-creating and ecologically destructive, must take full account of the impact on economic life of the information and communications revolution that is now taking place.

This means we must understand:

- how the new information and communications technologies (ICT) are actually affecting economic life today,
- how ICT could contribute to the new way of economic life we are trying to help to shape, and
- how the expanding role played by information and communication in all kinds of economic activity may affect, not only economic activities and structures themselves, but also the categories and concepts - such as employment and unemployment, work and leisure, money and wealth - with which we think about them.

The papers by Tom Stonier¹ and Neville Jayaweera² are valuable contributions to our understanding of these questions, and the other

¹ See also: Tom Stonier: *The Wealth of Information: A Profile of the Post-Industrial Economy*, Thames Methuen, 1983.

Another book, also to be recommended, about the transition from a mass economy to an informative economy is: Paul Hawken: *The Next Economy*, Holt Rinehart Winston, 1983.

² See also: Neville Jayaweera: *The political Economy of the Communication Revolution and the Third World*, Asian Mass Communication Research and Information Centre (39 Newton Road, Singapore 1130), Occasional Paper 20, 1986. Also his paper on "Assessing Communication Satellites" in *Informatics: Is There A Choice* - 1985:1 issue of *Development* (journal of the Society for International Development, Palazzo della Civiltà del Lavoro, 00144 Rome).

The World Association for Christian Communication (357 Kennington Lane, London SE11 5QY) - of which Neville Jayaweera is Director of Research and Planning - issues a regular journal, *Media Development*, and newsletter, *Action*.

That "the challenges of the new information technologies should be met, not with despair or desperate optimism, but with informed and thoughtful action' is also the

participants in the seminar brought a rich variety of experience to bear upon them. Some participants were directly involved in the commercial pressures of the international marketplace for ICT products, in which Japanese, European and North American companies are competing for dominance, in which the up-front costs of developing new products compel those companies to seek the largest possible markets, and in which companies successful in industrialised-country markets can then sell their products - such as television programmes like Dallas - to third world countries at low prices based on marginal costs. Other participants were researching and advising on public policies for ICT.³ Others were using ICT for new ways of working - for their employees to telecommute by datalink from their homes,⁴ or for themselves as self-employed, home-based professionals networking with colleagues elsewhere, or for organisations with shared social and environmental concerns to exchange information with one another through computer networks. Others were directly concerned with the economic and cultural changes which the information revolution is bringing to third world countries, and yet others with the way it may help to change conventional understanding about the nature of economics and economic activity.⁵ Others, including those of us most closely involved in the New Economics Foundation, were principally interested in how to ensure that ICT are harnessed to a new, self-reliant and sustainable economic order for the 21st century.

message of Ziauddin Sardar: *Information and the Muslim World: a Strategy for the 21st Century*, Mansell, 1988.

³ See *IT Futures - It Can Work*, National Economic Development Office, London, 1985. Also I. Miles, H. Rush, J. Bessant and K. Turner: *IT Horizons*, Edward Elgar Books, 1988. And *Making New Connections*, a series of articles in the Economic and Social Research Council's Newsletter 55, June 1985.

⁴ Francis Kinsman: *The Telecommuters*, Wiley, 1987. This book was sponsored by ICL and F International, two companies which have pioneered this important new way of working and which were represented at the seminar.

⁵ See, for example, references to 'information' and 'communication' in Norman Clark and Calestous Juma: *Long-Run Economics: An Evolutionary Approach to Economic Growth*, Frances Pinter, 1987.

Some of the key issues raised at the seminar are discussed below. But, first, it may be helpful to say a little more about the New Economics, as the context for what follows.⁶

A new economic order for the 21st century

A number of the characteristic features of the existing economic order will have to be reversed.

The existing economic order is:

- Dependency-creating and
- Ecologically destructive.

It is based on:

- A model of human beings as amoral maximisers of their own self-interest,
- The notion of economics as a science that is objective and value-free,
- The assumption that the normal form of economic activity is one in which producers and consumers play separate parts in a process of wealth production and wealth consumption, and
- The assumption that the nation state is the key economic entity.

These features of the existing economic order can be traced back to the origins of modern economic practice and thought in the 17th and 18th centuries. Modern economic development began when the common people were pushed off the land, excluded from their subsistence way of life, and made dependent on paid labour. Modern economic thinking had its roots in the perceptions of Hobbes and Bacon - of wealth as power over other people, of human life as an incessant competitive struggle for power, and of nature as a limitless resource to be exploited "for the relief of the inconveniences of man's estate". Then, when Adam Smith came to articulate the workings of the modern economy - in place of a vanished medieval economic

⁶ For discussion of specific aspects of the new economics see *New Economics*, the New Economics Foundation's quarterly newsletter, and Paul Ekins (ed.): *The Living Economy: A New Economics in the Making*, Routledge Kegan Paul, 1996.

order based on the rights and obligations of a static, divinely sanctioned, hierarchical society - he followed Newton's scientific system-building example. The emphasis Smith placed on the wealth of *nations* and on the production/consumption process was natural too: the two outstanding economic features of his own lifetime were, first, the struggles between the European nations to dominate trade with the Americas, the Indies and the Far East, and, second, the unprecedented growth of industrial production and of the division of labour which accompanied it.

But now the time has come for Adam Smith's economic order to be replaced in its turn, just as it replaced the medieval one, by a new one that reflects the very different realities and needs of the world today. The new economic order must be one that:

- Enables people to enlarge their capacity to meet their own needs and to control their own economic lives,
- Conserves resources and the environment,
- Recognises the right and responsibility of people to act as moral agents in their economic lives,
- Accepts that economic concepts cannot be objective and value-free,
- Attributes economic value to useful and rewarding activities that do not fall within the production/consumption model, and
- Recognises that, in the one-world economy that now exists, the prime concern of economics must be with wealth and wellbeing for people and the earth, rather than with the wealth of nations.

That, then, is the context in which to pursue our concern with the information revolution and its impact on economic life.

A one-world economy

ICT are one of the factors helping to bring a one-world economy into existence.⁷ An electronic money transmission network now envelops the globe, based on financial centres like London, Tokyo and New York. Events in one part of the world can be seen instantaneously on

⁷ See, for example, Alex Stewart's article: "Reflections on the Crash: A Global Perspective" in the Spring 1988 issue of *New Economics*.

television in other parts, and the economic achievements, lifestyles and aspirations of people in one place are quickly communicated to people everywhere else. It is no longer possible to manage the economic activity of nations as if they were wholly independent: international economic interdependence continues to grow.

But, at the same time as ICT are making it easier to centralise and internationalise the management of information and the taking of economic decisions, they are also making it easier to decentralise economic control. Whereas the material-based technologies of the industrial age encouraged centralisation to achieve economies of scale, the information-based technologies of the post-industrial age are making it possible to tailor many economic activities more closely to local needs. Micro-computers and small-scale programmable robots provide a technical base for independent professional and manufacturing activities. Together with the telephone, telex, facsimile transmission and other communications technologies, they open up possibilities for greater local and personal economic autonomy.

Thus, both from the international and from the local angle, ICT are helping, along with other factors, to undermine the primacy of national sovereignty in economic affairs. National economic management is no longer capable of meeting either international or local economic needs. ICT are making it easier, as well as more necessary, to deal with them at international and local levels.

Instead of treating the nation as the key entity in economic affairs, the 21st-century economy will need to operate as a multi-level global economy, in which each level - global, continental, national, sub-national and local - consists of quasi-autonomous economic systems, sustainable in their own right. A key function at each higher level will be to enable lower level economies to become more self-reliant rather than more dependent. So that, for example, it will become one of the main functions of the international economic system to enable national economies - especially in the third world - to become more self-reliant; and one of the main functions of national economies to foster more self-reliant cities.

ICT will play an important part in the efficient working of this multi-level global economy, many features of which - such as the boundaries and interconnections between global, continental, national and local currencies - will come to be recognised as aspects of interconnecting information systems.

Technology choice

Neville Jayaweera refers to ICT as a double-edged sword. In fact, the development of new technologies in every field now seems to offer two opposing possibilities. It can reinforce people's dependence on experts and organisations and systems over which they have no control, and it can extend their capacity to meet their own needs and to manage and control their own lives.

ICT are a prime example of this. ICT can disable people by turning them into passive consumers of information provided by mass media, but also empower them by enabling them to participate more effectively in information processes - for example by communicating the realities of their own lives to themselves, one another and the out-side world by making their own video films.⁸ ICT can subordinate people to centralised control through the computer systems of the bureaucracy and the police, but also enable people to work independently of employing organisations, using their own micro-computers and telephones.

Similar double-edged possibilities are opened up by other new technologies. New energy technologies can be used either to make people dependent on bigger centralised power stations, or to enable them to reduce their dependence on outside energy sources by conserving energy and using it more efficiently and by supplying some of their own energy needs themselves, for example by putting solar

⁸ The 1/1985 issue of *Media Development* (see 2 above) is devoted to "The Video Revolution". Village Video Network (c/o Martha Stuart Communications, Inc., 147 West 22 Street, 68, New York, NY 10011) supports the participatory use of communications technologies in third world countries. *IDOC Internazionale* (Via S.M. dell'Anima 30, 00186 Rome) is a bi-monthly magazine - 'an instrument of communication for a non-dependent development'. The 1985/1 issue is on "Informatics and Third World".

panels on their roof. New medical technologies can make people even more dependent on experts and machines in hi-tech hospitals, but they can also make people less dependent by enabling them to monitor and treat many of their own medical conditions for themselves.

As we have recognised above, ICT will play both a centralising and a decentralising role in the multilevel global economy of the 21st century. But recognition of ICT's dual role in that context must not obscure the need to choose, as each particular occasion arises, whether we want ICT to be developed and used in a way that will make and keep people dependent or in a way that will help them to be more self-reliant.

The existing economic order accepts a high degree of technological determinism. A technological imperative seems to shape the development and use of new technologies, including ICT. Research, development, production and marketing of new ICT products are at present determined largely by where the information technologists think the most exciting new frontiers lie, by where commercial companies think they can make profits in the national and international marketplace, and by the desire of national governments to support them. The scale on which ICT have been developed for military purposes - in weapons systems, observation and detection systems, the electronic battlefield, and command, control and communication systems - is a prime example.⁹ New technologies, whether ICT or in other fields, are seldom developed in order to meet defined social needs - let alone in order to enable their users to become less dependent on those who manufacture and sell them!

The new economic order must find ways to reverse this situation, so that new technologies, including ICT, enabling for people and conserving of resources and the environment, are purposefully researched and developed and brought into use. As Neville Jayaweera clearly brings out, technology policies for appropriately designed technologies are essential for third world countries. But they are important for industrialised countries too. The conventional

⁹ Cees J. Hamelink: *Militarisation in the Information Age*, World Council of Churches (150 Route de Ferney, 1211 Geneva 20), 1986.

approach to 'technology assessment',¹⁰ aimed at preventing the introduction and use of disabling and environmentally damaging technologies, will have a part to play. But a more positive approach will be important. Consumers and investors and workers must be encouraged to put their economic weight behind the development and use of benign technologies - and public R&D spending must be systematically channelled in that direction too.

Impact of ICT on economic structures

Although it is widely accepted that ICT will continue to cause changes in occupational patterns, organisational forms, and the geographical distribution of economic activity, conventional thinking tends to assume that the underlying structures of the existing economic order will remain unaffected: for example, that most work will continue to be organised as employment; that large institutions will continue to dominate economic life; and that the character of economic life will continue to be predominantly urban. But these assumptions are questionable, and ICT are among the factors that call them into question.

Work: Tom Stonier's paper envisages a continuing shift from the employment of machine operatives in manufacturing industry to the employment of information operatives in the service sector. But there is another possibility. The most important shift could be from a service to a self-service economy or, to put the same thing another way, a shift from employment to 'ownwork', with growing numbers of people working for themselves either individually or in co-operative groups rather than in employment.¹¹ Many will indeed be doing information-based work, but - according to this view - they will often be doing it as part of a wider 'portfolio' of activities, paid and unpaid, domestic and voluntary.¹² This would reverse the continuing trend

¹⁰ The Office of Technology Assessment of the US Congress is a good example - see references in the Worldwatch Institute's annual *State of the World* reports, published by Norton.

¹¹ James Robertson: *Future Work: Jobs, Self-Employment and Leisure after the Industrial Age*, Gower/Temple Smith, 1985.

¹² Charles Handy: *The Future of Work*, Basil Blackwell, 1984.

toward specialisation and division of labour that has been typical of the industrial age. It would mean that much more work than today will be home-based or based in premises co-operatively owned, and that people will be using their own resources to support their work, rather than being dependent on employers to provide them with premises, capital and equipment.

That new pattern of working would have many advantages - social, personal and cultural, as well as economic. It can be greatly facilitated by ICT. ICT should be purposefully developed to support it. Other aspects of the context for working life - including such things as planning regulations, taxation, credit and insurance facilities, accounting requirements, management education, and so on - also need to be made more supportive to home-based work and other forms of ownwork.

Institutions. It is possible that the post-industrial economy will continue to be dominated by the large institutions of government, trade unions, business, finance and mass media. The opposite is also possible, however. The 1980s have seen the economic powers of government and trade unions beginning to be cut back in countries like Britain. In the 1990s it may be recognised that an enterprise culture means shaking off dependency on big commercial institutions too. The decentralising potential of ICT is one of the factors that can help to reduce the dependence of people on remote impersonal institutions of whatever kind.

The geographical balance of economic activity: During the industrial age the urban economy has dominated the rural economy. But the two have been closely linked. In the industrial world the modernisation of agriculture set the scene for urban industrialisation and the movement of population from country to city. In the third world, economic progress has been sought in the development of the Westernised, urban, industrial sector, rather than in the development of the rural village-based sector. The resulting discrimination against the rural economy, and the displacement of population to the cities which it has caused, has helped to create today's third world urban crisis.

ICT can help to rectify the present economic imbalance between city and country. Developments in robotics and information technology will make it possible to replace centralised, large-scale urban industry by dispersed, flexible, small-scale manufacturing units. The use of biotechnology and information technology in the agricultural sector will also make it possible to replace large monocrop agribusinesses with small-scale, sophisticated food-producing units. As small-scale manufacturing becomes possible in the countryside, and small-scale food growing in the cities, and as conservation, leisure and tourism play a larger part in the urban and rural economy alike, the differences between urban and rural economies are likely to become blurred. As ICT continue to bring the cultural and amenity advantages of the city to people living in the country, the civilising and urbanising of the countryside will go together with the greening and villaging of the city. The decentralising potential of ICT may even call in question the need for a centralised urban base for many of the financial, commercial, communications, and governmental services for which new city-centre office blocks are still being built today.¹³

Along with their impact on geographical patterns of economic activity, ICT will help to change volumes and patterns of movement. By reducing the need to transport both materials and people for economic purposes, for example in the numbers of people commuting long distances daily to work, they can help to conserve energy and resources.

The new economics must encourage the purposeful development and use of ICT to support balanced and sustainable urban and rural development and more conserving patterns of movement.¹⁴

The monetary and financial system

¹³ A New Economics Foundation seminar on "Future Cities" held in April 1987, was reported by David Cadman in *New Economics*, September 1987 [and *The Living City: Towards a Sustainable Future*, edited by David Cadman and Geoffrey Payne, was published by Routledge in 1990].

¹⁴ *Access For All? Technology and Urban Movement*, Council for Science and Society, 1986. Also see Barry Cooper's article "Planners at the Leading Edge of Change" in *Town and Country Planning*, April 1987.

The evolution of money has been from concrete to abstract: from valuables like cattle and tobacco, to metal bars and coins, to paper notes and cheques, and now to numbers electronically stored in computer files and electronically transmitted between them. As this last stage has arrived - with the transformation of monetary and financial assets into entries in computerised accounts, and of monetary and financial transactions into electronic messages that debit and credit the accounts of payer and payee - our understanding of the nature of money and its role in economic life has reached a watershed.

So long as people were required to transfer money to one another in the form of actual things, such as metal and paper, this gave colour to the idea that money was itself a kind of thing - a commodity like other commodities. Concepts like the money supply and the velocity of circulation of money then seemed to make sense, in spite of the difficulties of measuring them satisfactorily. So did the concept of money as something that had to be issued and put into circulation. So did the idea of tying the value of a currency to the value of a commodity like gold, or to the value of a 'basket' of commodities in more general use, like grain or timber.

But now it is becoming clear that the monetary and financial system is basically an information system. Money and finance provide an accounting system, or scoring system, which regulates people's economic relations with one another. It indicates the claims for goods and services which people are entitled to make on one another, it enables them to trade those claims in exchange for goods and services, and it enables them - for example through investment and insurance - to exchange their present claims such as money in a bank deposit account, for other financial claims such as an insurance policy.

Once this is recognised - that the function of money and finance is to provide a system of linked accounts through which people anywhere in the world can conduct economic relations with one another - the question then becomes: how is this accounting system to be designed to operate efficiently and fairly? How is it to be managed, as a vital part of an enabling multi-level global economy (*see section on*

'One-world economy'above), in which people's ability to engage in economic transactions with one another is no longer to be dependent on monetary authorities and financial institutions which they are discouraged from understanding and over which they have no control?

Recognising that money is information will throw light on many of the issues concerning the future of the monetary and financial system that will have to be dealt with between now and the end of the century. These issues are conceptual, practical and political - short-term, medium-term and long-term. They include:

- The differences between money and credit, and the implications of debt,
- Further development of international monetary institutions, and the need for a new international currency - or currencies - in place of the US dollar,
- A possible role for local currencies for use in local transactions,
- The case for competitive currencies issued by nongovernmental bodies, as a further development of the credit cards and cash cards now offered by financial and retail businesses,
- The possible scope for local exchange trading systems (LET Systems) based on their own units of account, through which members can transact with other members without using currency,
- New procedures for making monetary authorities publicly accountable at international, national and local levels,
- New procedures for managing and regulating the activities of financial institutions in the public interest.

These monetary and financial questions will play an important part in the development of a new economics for the 21st century and in the agenda of the New Economics Foundation in the coming years. Insights from the design, management and operation of information and communications systems must be brought to bear upon them.

Better information for economic decision-making

The provision of better information to economic decision-makers must be a key feature of the new economic order at every level. ICT can be of crucial help.

Do not be misled by the term 'decision-makers'. People, as managers of our own personal and household economies, are among the most important economic decision-makers. We need information that will enable us to make better-informed choices and decisions in our daily lives. This includes information about: the social and environmental impacts of how we spend and invest our money; about what kinds of work, including voluntary work, are really needed; and about ways in which we could help ourselves and one another to meet more of our own needs.

At the local - for example, city - level, better information is needed about how the local economy is functioning. This includes information about:

- how the local economy might become less dependent on outside imports and reduce its vulnerability to decisions made by organisations controlled elsewhere;
- the extent to which the local economy is recycling its waste and meeting its various material and non-material needs from local production and local provision; and
- the standard of local public health and the quality of the local environment.

At the national and international levels, conventional economic statistics - on economic growth, balance of trade, inflation, etc. - will need to be supplemented, if not eventually replaced, with new statistics showing the impact of the economy on the real world, for example on public health, environmental quality, efficiency in the use of energy and resources, and so on.¹⁵

At the corporate level, businesses and other organisations need better information about their own social and environmental impacts. At all levels, better information is needed about the social and environmental costs and risks attaching to economic activities.

As we develop the new information flows needed to support the new economic order, the following questions will be important:

¹⁵ Victor Anderson reported the New Economics Foundation's project on "New Indicators" in *New Economics*, Spring 1988.

- The meaning of much of the statistical information currently used about the economy - for example, on unemployment, trade, and inflation - is disputed and obscure. Can we learn how to monitor economic developments through measurements that are less ambiguous in their meaning and in the responses which they call for?
- Changes in the policy-making processes and management information systems in governmental and other economic organisations will be needed in order to handle the new flows of economic information. How, to take one example, should the process of national budgetary policy-making - involving decisions about taxation, public expenditure and public borrowing - be changed to take account of up-to-date information about the effects of economic activities on public health, the quality of the environment, and the availability of resources?
- Who is economic information for? Should governmental and business organisations keep it to themselves? Or should everyone have access to it? Free access to economic information, especially when this is collected at public expense, will be a crucial aspect of the new economic order. Supporters of the New Economics will see this as an important aspect of freedom of information more generally. For example, they will reject the idea that economic statistics collected by the Central Statistical Office should be for the private internal needs of British government officials and ministers, and not for the general public.¹⁶

Economics of post-materialism

As the shift continues from an industrial economy, revolving around the provision and use of material goods, to a post-industrial economy in which information plays an increasingly important part, new questions will arise about the nature and purposes of economic

¹⁶ Christopher Johnson: *Measuring the Economy: A Guide to Understanding Official Statistics*, Penguin, 1988 - page 9.

Note: Many of the books and publications listed here contain extensive biographies. So, although the list is far from comprehensive it should enable readers to follow up topics that particularly interest them.

activity, and the meanings of economic concepts like work and wealth. The seminar discussion was unable to take these questions very far, but they will be an important part of the New Economics agenda. A few examples follow.

The conventional production/consumption model of economic activity assumes merely that a shift is taking place in what is being produced and consumed. Information producers, producing information products for information consumers, are playing a relatively larger part in economic life. As people's information wants and needs continue to grow, the market for information products will continue to expand. Increasing numbers of people will be employed to serve that market. By capturing a large share of it, information producers can become wealthy and powerful, just like producers of other necessary products such as grain or oil who capture a large market share. There is, of course, truth in all this. But it is not the whole truth.

In the first place, information is different from material products in significant respects. The same item of information can be used by many people, whereas the same pork chop or gallon of petrol cannot. The call for special arrangements to protect the rights of information producers - for example, to prevent unauthorised copying of computer software and audio- and video-tapes - underlines this, as well as reminding us that artificially created scarcity is often what gives products their value. When it comes to disposal, forgetting unwanted information has different side effects from the dumping of unwanted material wastes - and the effects of information overload are different from those of physical pollution.

Moreover, people often value the giving of information more than the receiving of it: conversationalists are a case in point, and advertisers actually pay to give information. The value of information does not reside in its value as a product for consumption: its value depends on the part it plays in a process of communication. The basic economic role of information is to do with people's participation in communication processes, not with their consumption of products of a special kind.

This brings us back to the empowering capability of ICT to enable people to participate more effectively in information and

communication processes (*see section on Technology Choice*). It also suggests a change in the economic role of managers and professionals. Hitherto, their functions have depended on their having more information and knowledge than other people. In a secretive, centralised economy ICT could strengthen their position in that respect. But in an open economy ICT will make information and knowledge more readily accessible to all. The role of managers and professionals will shift from providing people with information and knowledge to helping them to select and understand what is relevant.

There are difficult questions lurking here about information, knowledge and meaning. Who is to determine what information is valuable, and what knowledge is important? Who is to decide what information has meaning for people and what its meaning for them is? In the industrial economy these things have been largely decided by the employers who have given people work, by the advertisers and producers who have shaped and met people's wants as consumers, and by the mass media and education system. In a post-industrial economy in which people are enabled to participate more effectively in information processes, we should expect people increasingly to decide these things for themselves. But what this will mean in practice is not yet at all clear.

Nor is it yet clear precisely how the shift from a material economy to an information economy is likely to affect the symbolic aspects of economic activity. For example, in pre-industrial societies, personal physical fitness has often symbolised economic status and success. In industrial societies, conspicuous material possessions have symbolised it. What will symbolise wealth in the post-industrial society of the information age?

Finally, if information is becoming the stuff of economic activity - the staple of what is produced and consumed, bought and sold - a serious question may arise about the future of the market economy. It is a principle of economic theory that a competitive market can only function efficiently and fairly if all the participants have equal access to relevant information: this is why 'insider dealing' in the financial markets is a crime. If it were to become accepted that information is itself the crucial component in almost everything that is bought and sold, and therefore that those with more money will

always be able to buy superior information, what happens to the idea of equal access to relevant information in a competitive market?

Conclusion

This paper - together with those by Tom Stonier and Neville Jayaweera - has outlined some of the areas in which important questions arise about the New Economics of Information. They include:

- The role of information and communication in a one-world economy that will be decentralised, enabling and conserving,
- Technology choice, in respect of ICT and other technologies,
- The impact of ICT on the future of work, the future of economic institutions, and the future geographical balance of economic activity,
- The implications of the information revolution for the monetary and financial system,
- Better information for economic decision-making, and
- The economics of post-materialism.

There are, no doubt, other such areas. There are also, of course, numerous specific possibilities for the use of ICT for purposes that are socially and ecologically benign. And, coming right home, we who are involved in developing the new economics will need to make effective use of the new ICT - data-linked microcomputers, audio- and video-tapes, radio and television, etc. - for managing our affairs and communicating our message.

More questions have been raised than answered. There is much work to be done on the new economics of information between now and the Year 2000. But one thing surely is clear.

ICT are, indeed, a double-edged sword. They can be used to reinforce existing relations of economic dominance and dependency - between industrialised countries and third world countries, between technocratic elites and the rest of the population, between impersonal institutions and people, between men and women, between city and the countryside. Or alternatively, they can be used to create a more enabling and conserving way of economic life for people everywhere. These alternatives apply equally to industrialised

countries and third world countries, although the actual economic situations and problems facing those countries are so different. The challenge for the new economics is to ensure that the second alternative is the one that actually happens.

The new economics of information will be one of the priority items on the New Economics Foundation's agenda. We hope that through the 1990s we shall be able to take forward - and help others to take forward - many of the issues arising.

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