

New Technology in the Human Services

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IT and Equal Opportunities

The Ethics of IT

Computer-Aided Problem Management

SONETT - ENITH's Berlin Based Network

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UP FRONT

Anyone who has been a regular computer conference goer in recent years cannot have failed to notice the rise of interest in and concern for some of the ethical features of society's use of IT. Not that the hypnotic preoccupation with whatever is the latest technological gadget has changed, but other matters do increasingly get on the agenda. Few of us can be unaware, for example, that there is a real problem of software piracy, or that holders of large information systems are concerned with data security.

The HUSITA Conference in Birmingham in 1987 brought other issues to attention, most noticeably the potential technology role in combatting disability. Its successor in New Jersey extended the debate, especially focused around the forceful intervention of a group of vocal persuasive women from Latin American countries. The rich/poor divide, gender discrimination and the inadequacies of technology transfer could not be ignored. HUSITA3 in Maastricht next June will make the focus still clearer, with a major thematic presentation of the role of human services in ensuring that IT contributes to the development of a thriving and sustainable society, both globally and locally.

From its inception staff from the CTI Centre for Human Services has been aware that social workers and others in the caring professions could not, should not get involved in IT without sensitivity towards such matters of ethical and political concern. Two papers in this issue represent some of the work and analysis which has taken place.

Jackie Rafferty and Ann Wilkinson write about

equal opportunities and discrimination issues, while Bryan Glastonbury takes a more philosophical look at ethics and IT, based on his work with Walter LaMendola.

Elsewhere in this issue Ken and Margaret Manning write about computer-aided problem management, a topic with clear ethical overtones, but more fundamentally making the case for using the computer to help sort through problems methodically and with objectivity. As authors of problem management software they are particularly aware of the potential of computers in this area.

Perhaps the most challenging paper (technologically at least!) comes from Bernd Kolleck, inviting us to make use of SONETT, Germany's new network for social workers. The challenge comes from the complexity of using networks, especially surrounding the process of getting access. No doubt these processes will get easier as time passes, but please try not to be deterred. No-one is pretending that learning to use a network is easy, but once learned the pleasure and stimulus gained from access to colleagues around the world is enormous. As Professor Kolleck points out, there are serious uses to develop and exchange materials, and find out what everyone else is doing. But networks can also be very sociable. As someone who routinely chews over the vagaries of British and United States politics with fellow editor, Dick Schoech, in Texas, or gets the latest news on the Denver Broncos from Walter LaMendola, I should know!

Bryan Glastonbury

New Technology in the Human Services: An Equaliser of Opportunities?

Jackie Rafferty and Ann Wilkinson

Introduction

Equal opportunity issues have received increasing attention in the last few years and this paper focuses on the equal opportunity aspects of the use of information technology (IT) in the Human Services. It attempts to describe the tensions between equal opportunities, human service agencies and the information technology industry.

This paper starts from the premise that although computers and information technology can be used to aid the development of equal opportunities in the Human Services there are a number of conflicts.

1. Equality of opportunity is interpreted differently in different settings and equity is not always the end result.
2. The Computer Industry and Human Service Agencies have very different aims and purposes.
3. The computerisation of information in the human services brings together conflicting interests and tensions which if left unexplored and unresolved will result in an increase in inequality of opportunity.

The paper goes on to identify some of the problems, issues and choices facing those in the Human Services who wish to use Information Technology as a tool, without increasing the gulf between the technically literate and the rest.

Equal Opportunity - What is it?

The definition of "equal opportunity" varies, but an essential element is creating an environment in which all individuals can achieve their full potential. Many UK companies and organisations use wording based on the relevant employment legislation. Their equal opportunity statements and practices focus on employment matters and cover the range from direct and indirect discrimination in recruitment, on the

grounds of race, sex or marital status, through disability quotas, to discipline and grievance procedures. A policy statement for English and Scottish Universities provides an example:

"X University....confirms its commitment to a comprehensive policy of equal opportunities in employment in which individuals are selected, trained, appraised, promoted and otherwise treated on the basis of their relevant merits and abilities and are given equal opportunities within the university. The law requires that no job applicant or employee will receive less favourable treatment on the grounds of race, colour, nationality, ethnic or national origins, sex or marital status. Where the law does not prescribe every effort will be made to avoid discrimination on grounds of disability, religion, political belief, socio-economic background, parental status, age (subject to normal retirement conventions) and trades union membership.

In formulating and implementing policies on equal opportunities in employment, universities will wish to comply not only with the letter but also with the spirit of the law." (Equal Opportunities in Employment in Universities, CVCP, 1991)

The law focuses on equal opportunities for employees: for the purpose of this paper we go further than "the spirit of the law" to suggest the need for a conscious "equality proofing" of all an organisation's practices and policies, and their

technological products and services. Equality proofing is ensuring that neither by actions or words do members of an organisation create a discriminatory environment for its workers or consumers.

Sexism is described by Poulton in his material for a social work course, as follows:

"Sexism consists of an interaction between three separate components:

- a. An uneven distribution of power
- b. Discriminatory practices and procedures
- c. The prejudiced beliefs and attitudes of individuals, both conscious and unconscious

Similarly, sexual equality and justice have three components which interact with each other.

This presentation fails to show how the components interact with each other in a continuous way to sustain sexism in our society. Beliefs and attitudes inform practices and procedures which are upheld and legitimised by the power positions occupied by men. Countering sexism in our society requires a constructive

interaction of the three components shown above." (G. Poulton, Southampton University, 1991.)

Sexism could easily be replaced in the above presentation with racism, and the words "men" and "women" with "white people" and "black people". The matrix works equally well for "able-bodied people" and "people with disabilities".

Steps are being taken to recognize the concept of equal opportunity for all citizens. The majority of computer companies and human service agencies take on equal opportunity policies and are working towards complying with the letter of the law. This does not always mean, however, that their products and services are designed for all the population to use. The costs of changing practice are considerable and while there is a recession and stand still budgets there is a disincentive to generate such change. Laws such as S508 of the American Rehabilitation Act require companies selling to the government to produce computer equipment which may be adapted for people with disabilities. The size of this market forces change for the general market place and promotes the possibility of affordable technology for all. Such contract compliance

	Sexism	Equality and Justice
Power, Participation, Influence	Men control most positions of management, government, influence and power; women are disproportionately involved in menial work, or under-employed.	Women are proportionately represented in management and government at all levels and are not over-represented in lower-paid and lower status occupations.
Practices, Procedures	Practices and procedures affecting life chances and the allocation of resources benefit men rather than women.	Practices and procedures do not discriminate to the advantage of men and to the disadvantage of women. They are fair to all.
Beliefs, Attitudes	Men believe in male superiority, have negative views and expectations of women and are indifferent with regard to the nature of sexism.	There is mutual respect and appreciation: men and women are ready to learn and benefit from each other's insights and experiences.

procedures are not favoured by the UK government and it will be interesting to see how far the aims of Law S508 are attainable in the US.

Within Human Services, although cost is still a problem, a different value base from the commercial sector is operating, one which is framed by concern for people's quality of life rather than the profit motive. The Human Service industry must become proactive in developing not only good employment practices, but also apply equal opportunity criteria to their use of technology and its effects on workers and consumers. A dialogue is needed between the providers of the technology and the end-users. Many preconceptions and prejudices about the use of technology will have to be removed and new ways of working explored for this development to take place.

Why Computers and Information Technology are Important for Equal Opportunities in the Human Services.

Equal opportunities in IT are pertinent to the majority of the workforce of social services as, in the UK, the majority of the social services workforce are women, yet men are the dominant force in management. The report, *Women in Social Services: A Neglected Resource*, (1991) said "that while women constituted 86.5% of the social services workforce in England and Wales, 44 of the 116 social services departments in England and Wales had no women in their senior management teams and 39 others had only one". Women also make up a large proportion of human service consumers. Many studies have shown how women are less likely to have had experience of computers, either at home, or at work, and the bulk of any experience they will have had has been in the use of computers as glorified typewriters rather than as manipulators of information (Equal Opportunities Commission, 1982).

For clients also the role of IT is important. Current models of social welfare place value on giving eligible people the power to choose the

resources they need and create a package of care, and we need to be aware of how IT can support this empowerment model, as well as the danger of using IT as one more controlling force in people's lives. If computers are used to enable the matching of resources to consumers rather than just to count and process the consumer, more open access has to be considered.

Technology has advanced to the point where computers can be used by almost anyone and as with advances in adaptive technology, can be life enhancing. Yet we can also use IT to create discriminatory environments, such as the computer companies who have different pricing policies from one country to another; the education departments who provide better facilities for one school than another (observable both in the UK and USA) and ignore responsibilities to fund special education, the social service agencies who fail to provide the latest technological aids to people with physical disabilities, and parents who encourage their sons, but not their daughters, to become technically literate.

The Computer and Human Service Industries

Computers and information technology evolved from advances in the business sector, and in industry which is competitive and profit driven. Worldwide computer technology has made great strides in the last decade, and continues to advance at a phenomenal rate compared to most other technologies. The hardware is also becoming cheaper in the Western democracies and more available to the general public as long as they have the disposable income to buy the standard machine from the high street store or mail order catalogue, and do not need adaptations or specialised software. IT is now affecting large areas of our lives even though much of that effect is not always visible; for example point of sale stock control in shops, and social security and medical records. It has not, however, advanced to benefit everyone at the same rate.

The leading edge of the computer industry has

been in management information in the western developed world and is controlled by a largely white male preserve. Downing et al, said that "computer technology is embedded in the structure of domination - economic, political and cultural ... It is part and parcel of the automation of labour, the expansion of information-related occupations, the trend to a global economy dominated by giant firms via telecommunications and management information systems ... It is equally part and parcel of the expansion of state power over individuals and communities through surveillance and data centralization, of the integration between corporate and state power, foreign policy and weapons development ... The marketplace for computer hardware and software is dominated by applications relevant to bureaucracies, the state, the military and the large corporation." (Computers in Human Services, Vol.8 No 1 Haworth Press, 1991)

The Human Services in the UK grew out of public concern for quality of life and social justice and though in recent years it has been moving to a more market driven model it still retains the value base of the past.

The fastest development of the use of computers in statutory Social Service agencies reflects that of the business sector and is in controlling resources, in terms of personnel, finance, workloads and services, along with office automation. The systems have been designed as tools to aid administration and management, and priorities for spending have reflected this so that few field or residential workers have direct access to either PCs or links to the mainframe computers. Most agencies have strategies to improve this situation but the priority is slipping as resources become tighter. This process is driven by management's need for control of information and the larger computer hardware and software houses who can identify the profits to be made from multiple installations on mainframes with area networks. Development costs prohibit small scale application development, such as would be appropriate for Human Services. While office management systems can be created from commercial sector

experience, welfare benefits calculation systems cannot and are left to either computer knowledgeable amateurs or small scale private or voluntary enterprise.

Thus, we have two distinct groups serving the Human Service sector, the profit orientated businesses who serve the needs of management, and the individual who develops software, and will produce material on a subject close to his heart (we use "he" advisedly) and distribute it through a network of contacts at little or no cost. In between, there are a few small companies and trusts. In recent years a small number of high quality human service applications have been developed in the UK and the USA and there is a growing demand for more.

Accessing Computers in the Human Services

Within statutory agencies in Britain there is often an atmosphere of suspicion and antagonism toward IT as the manager's tool which produces dubious figures and performance demands. In very few, if any, agencies has fear of technology been overcome at all levels of the workforce, and there are usually no more than a handful of people committed to the development of the technology who instigate systems. Little thought is being given to the benefits for the consumer.

We argue that social workers need to overcome this antagonism towards computers and recognise the need for accurate up to date information on which to plan services. They also need to understand the processes by which the information is collected and manipulated and become involved in ensuring that the technology is used to meet their own needs and those of their clients. For this to happen social workers and social work students need, at the very least, a basic understanding of the technology and its potential benefits and pitfalls. Managers and trainers have to be persuaded that IT should be in the hands of all and then counter with positive action the disadvantages of those who have had least opportunity to come to terms with the technology in other spheres. This is not a new message: in 1985 Glastonbury wrote that it was

vital that social workers play a full part in making policies and decisions about when and how to use computers on the personal social services.

If a social work agency is computerised, and most in the UK have at least a client information database, it is likely the machines will be on the desks of senior management and clerical workers. To access the growing amount of policy, practice information and guidance available means asking the clerical worker to stop inputting data from social workers caseloads, or using the word processor, so that the social worker can use the hardware. Computers cannot easily be shared especially when individuals are learning to use them. If a computer is not available to record case notes or to run an advice program the worker will use the old methods and not look for the machine on subsequent occasions. Today it would be extremely difficult for a social worker or probation officer in the UK to find a free machine on which to display information for a consumer. The physical layout of social work offices, in fact, inhibits a consumer looking at a computer screen with a social worker, as the hardware usually sits in the general office where confidential papers abound. Developments such as portable and hand held computers can overcome this problem. Voluntary agencies which give benefits advice aim to have dedicated computers for benefit and debt programs and separate machines for database and administration information.

Changes in UK Legislation

UK Government policy is to diversify the sources of care and to make service provision less reliant on the state. In the wake of two major pieces of legislation in the UK (the NHS and Community Care Act, 1990, and the Children Act, 1989) has come the realisation that statutory agencies need to track the services offered, not only by their own agency, but also by the other statutory bodies, the voluntary (or non-profit making) and private sector agencies. It is in the spirit of these two acts that this data

collection and processing will need to be done on a very local basis if it is to be accurate and useful to the service delivery unit on the ground, and then relevant information collated on a wider basis for the use of planners and managers.

Comprehensive resource directories and planning facilities should make for more efficient agencies. If this is co-ordinated with the arrival of hardware on social workers desks, it should enable them to be more informed, and eventually the consumers of services may reap the rewards. Currently it is hard to identify widespread advantages to the consumer of installing computers in social services departments, unless they have direct access to the information databases. There are instances of innovative practice such as the Teleshopping initiatives (as described by Michael Cahill at the HUSITA2 Conference), or the welfare benefit calculation programs (such as Ferret's Maximiser and Lisson Grove's Welfare Benefit Program) in use in some agencies, with which a social worker can advise a client of their probable entitlement before that person tackles the main benefit agency.

Decentralising Information

Computers are tools that can be used to gather and process information in order to centralise power: equally they can be used to disseminate and communicate information in a way that decentralises power. Either option can be seen as destructive or constructive dependent upon the value base being used.

The current politically driven shift in the human services away from a paternal service to a service geared to market forces and efficiency aligns social work managers' use of computers with those of the business sector; a model geared to manipulating information upwards to the highest managerial level. There are individuals in higher education, the statutory human services and organisations in the voluntary sector, who are involved in seeing how computers can be used instead to open up information and communication.

It is vital for managers to have effective up-to-

date information from which to plan services and evolve policies: but equally it is vital that access to this source of power should be open to all who are effected by such services.

In a report on a project "The Reading HABIT" (HABIT - Handicapped and Aged Benefitting from Information Technology) it has been demonstrated on a small scale in Britain that people who are confined to their homes or have hearing disabilities can adapt very quickly to e-mail communication with their social worker. It is inexpensive, quick and leaves a note of the problem as defined by the consumer (Fleming, 1990). Most importantly it puts control in the hands of consumers who can now ask for specific information, advice or help when they require it. Once they have the communication equipment, individuals can make contact with others on the same network and also access, in this case, the Prestel system. In these ways consumers can achieve greater control of their own lives and it is interesting that the write up of this project indicated that some of the failures in the experiment may not have been because of fear of technology but because key people felt threatened by the consumer's increased independence.

Computers and the Voluntary Sector

Within the UK voluntary or non-profit sector a different approach to the development of IT from that of the large statutory organisations is apparent. While software packages to manage the finances of a small organisation are welcomed, a more important focus of this sector is to address the question of how IT can empower communities.

Within the last three years there has been a growth of voluntary projects which have exploited the IT revolution. Changing demographic patterns, low cost PCs and more vocal groups are the driving force. The speed of change is always going to be hampered by lack of finance and support, but there are several examples of ventures that are using computers in community initiatives in ways which aim to

empower groups and individuals. It may be necessary for statutory agencies to adopt similar approaches, and continue the practice of incorporating the proven successes of the voluntary world into their own work.

Some of the most exciting innovatory practice is being undertaken with little funding and much energy and imagination. Here we give just a few examples.

ORIC (Oldham Resource and Information Centre), situated in the heart of Oldham where there is a concentration of families from Pakistan and Bangladesh, have made it their business to seek out multi-lingual word processing packages which they make available to those communities. A third of ORIC's usage is by the minority ethnic community. Through their work and their network of translators statutory agencies are now beginning to see the possibility of setting up translation units in house so that material can be made available in a range of languages.

WIN (Welsh Information Network) has succeeded in getting PCs into youth clubs and village halls in a rural part of Wales. On each PC there is software for word processing, desktop publishing and databases, but there is also communications software which allows for electronic mail contact not only between people in the area but to the rest of the UK and beyond. Currently they are linked to the EEC and United Nations databases. They are also negotiating access to the Health Service database to allow individuals access to health information and services.

Projects such as WIN are emerging throughout Europe and are often funded through EC grants. In Ireland EC money has been used to develop TEAPOT (Teleworking Applications and Potentials). The aim of this project is to experiment in teleworking for people with disabilities. The participants are divided into two groups, some working from home while others go to co-operative type centres where equipment is available. Some of the employees work for one company and others are sub-contracted to

several. A further project to develop distance learning has also been started using the EC Social Fund. The students all have disabilities and the aim is to explore the possibility of delivering IT training at home. In the next phase the Irish hope to link with other European countries to exchange both students and training techniques. The ultimate goal appears to be to use satellite communications to bring education and work to the homes of those who cannot easily travel.

Often the types of voluntary sector organisations which have discovered the information revolution have also led the way in implementing equal opportunity policies and practices, and therefore are aware of the need to monitor who uses their services and to take appropriate steps to ensure that all sections of the community have access to them.

Women and Computers in the Voluntary Sector

Just as statutory human service agencies have a majority of women in their employment, the voluntary sector too is heavily dependent upon women workers. In general women in the voluntary sector are having to make their own way into the complex and mystifying initial stages of computerisation.

In the UK there are Women orientated computing organisations as reflected in voluntary agencies like the Women's Computer Centre, which provide training courses for women and information on training and computer related issues. Higher Education institutions are recognising the need to promote women only computing courses, particularly in Adult Education. The Women's Training Link in London was set up to improve direct training opportunities for women in a range of subjects including computing. It also provides advice on training in good anti-racist anti-sexist working practices, and prioritises black and minority women. There are national and international Women's Bulletin Boards and Women's Networks.

The Black Community and Computers

We have not found a similar growth in networks and organisations in the UK promoting the use of IT in the minority ethnic communities (specifically, people originating, or whose parents originate, from the New Commonwealth and Pakistan). Apart from a few government funded employment schemes aimed at giving black young people basic word processing and spreadsheet skills the running appears to be being made by the mainly white voluntary sector making facilities available, as in the ORIC example cited. Literature searches have revealed little in the way of studies and information on this subject. The tentative conclusion to be drawn must be that in the UK the same discrimination and disincentives that face women, face minority ethnic people.

The American Census Bureau's latest report on computer use may mirror the UK experience. A report in a US newspaper says "while ownership of home computers doubled between 1984 and 1989 and use of computers increased substantially, the computing gap between whites and blacks and between low-income and high income Americans of all races remains a major issue." Overall home ownership increased from 8% ownership in 1984 to 15% ownership by 1989. The report went on to state that "Upper income white children are far more likely to be exposed to computers at home than are black or Latino youngsters" (11% black, 10% Latino, 27% white children). This difference is explained by income disparity: "the median household income of a black family was less than 60% of white household income". In schools the figures were slightly more positive with 35% of black youngsters using computers at school as compared with 48% of white children (The Boca News, April 15 1991). A connection was made between the use of computers and the ability to achieve good higher education and employment. It was pointed out that the gap between the advantaged and the disadvantaged could widen. In 1989 22% of all black people used a computer at home or at work while the figure was 34% for whites.

Computers in the Life of a Person with Disability

The development of computers has been of tremendous significance for people with disabilities. Data processing, programming and many types of computer engineering offer employment possibilities of a varied nature for people with many different disabilities. Working with computers does not require great physical strength and there are a range of intellectual levels at which people can be employed. It is perhaps more important that not only can people with disabilities find work using computers but that computers can be used to make them more able, not only in employment but also in daily living and leisure.

There is a huge range of adaptive technology now on the market in both the UK and in the US. It is possible to mount portable computers on motorised wheelchairs and use miniaturised keyboards to access them. The computer can be used to control a person's environment, by turning on and off switches remotely, to communicate with others either in the same room or at a considerable distance. The technology appears to exist to alleviate people's difficulties and to improve the quality of life, but there is one immense barrier that must be overcome. Adaptive technology is extremely expensive. Each piece of equipment is costly to design and may need additional adaptations for each person for whom it is supplied. The volume of sales is small even for the simplest and most successful hardware or software. A special keyboard can cost several hundred pounds, a braille keyboard several thousand pounds, and complete kits with speech synthesizers, special keyboard, special word processor or editor and the hardware to run the device drivers will cost much more. Not all solutions are this complex and costly, but each individual to attain their potential needs a considerable input of time, to ascertain what is necessary, and even if this time is given freely the recommended technology is not always available. Human Service providers are directly concerned with this process and it is their duty to make sure that they understand and are able to

support recommendations made by assessors.

Too often equipment is suggested and not supplied because assessment reports are watered down to match existing resources. A worse situation is caused when equipment is supplied but care assistants, teachers or other involved persons are not trained to use and maintain it. The recipient may then be aware that the tools to help are in the room but experience the double frustration of being unable to do a task and knowing that the aid is gathering dust. Many people with extreme disabilities are becoming more vociferous in demanding the resources they need to lead active and independent lives. This process appears to be advancing more quickly in the US than the UK but there is still a long way to go.

Conclusion

Although market orientation and legislation appear to be causing great changes in the structure and methods of operation of the human services in the UK, genuine change has always been a slow, cumulative process which involves people from all levels of an organisation, including its consumers; it is inclusive rather than exclusive. In many respects the way forward is the same whether implementing equal opportunity practice, or overcoming social workers' reluctance to get to grips with computers, that is to involve consumers and workers in the identification of need, design, development, evaluation and implementation of IT systems for human services and other sectors. This would be an initial step which could open the door to furthering equal opportunities.

The key questions which need to be asked of any plans for IT systems are:

How is the need for the system identified and by whom?

Who controls the design and use of the system?

Who profits/benefits from the use of the

system and conversely who does not?

Who provides training and to whom?

Who can access and use the system?

How is it used?

How is the use of the system monitored and evaluated?

How will the costs be met?

By putting every IT development through such an interrogation, it is more likely a scenario could evolve where both software and hardware developers, managers, workers and consumers feel a system is designed to benefit all more fairly.

The barrier to this way forward would appear to be threefold:

1. Firstly, management levels have to be prepared to delegate responsibility so that planning and decision making can be devolved to the people effected.
2. Secondly, for on line access to be widened the amount of hardware positioned on workers desks and in public places has to be increased. This has major cost implications for all organisations.
3. Thirdly, workers will have to be open to new technology and what it can offer. This means not only understanding what it is good for, and what it cannot do, but also contributing to and updating databases of resources, by sharing local knowledge not guarding it jealously.

Education is of primary importance. The British government has acknowledged this in planning their new national curriculum for schools which requires the use of computers across the curriculum, but insufficient funding is being made available to put enough hardware into schools. It then becomes the task of parents to

provide equipment and it is the schools in affluent middle class areas which are able to provide the best materials. Attitudes in schools are also important, as all children need equal access to the technology. There are reports of computer classes being dominated by male children and this is accentuated by the patterns of use demonstrated where there are home computers (Sanders, 1987).

Children with disabilities need to be assured of access to appropriate technology to allow them to use computers. Education does not stop with children and good quality education for older students and people needing a second chance is vitally important. These are resource areas which are attacked first when recession leads to cuts in provision. Women, racial minorities and people with disabilities often return to education later in life and it is they who are penalised.

Social work training and education can prepare students for a constructively critical approach to IT in their future jobs, if lecturers and trainers incorporate not only computer literacy onto the courses, but also computer assisted learning materials and an analysis of the ethical use of IT within the human services. Within the UK the Computers in Teaching Initiative Centre for Human Services aims to provide support for this approach.

Technology needs to become more visible in human service agencies. It is at present a threatening unknown, hidden behind the counter on which records are kept. If the consumer is able to see a resources directory and use it, many fears may be diminished. Travel agencies' use of computers for travel bookings, with the computer positioned on the desk so that both worker and customer can see what is happening, provides a good model.

Workers will need to learn to trust the consumer to participate in decision-making. People who are poor, ill, underemployed, disabled or whose mother tongue is not English should have the same chance to control their lives as any other person in the community. If access to

information is one key to improving quality of life then efforts should be made to make it available.

The Human Services' developing use of computers and information technology currently models that of the private sector, with a predominance of large management information systems that provide little return for the field worker or consumer. There are few signs as yet that equal opportunity policies and practices are being applied to statutory agencies' use of computers.

If individuals and groups can access the new information technologies, obtain training in their use and benefits and see others benefit from them, they are then in a position to assess its usefulness and make demand for applications that forward their own needs. Information technology can help the cause of equal opportunities but without access, training and resources the gap between the information rich and the information poor will increase. This is of concern: if the control of information leads to power and the people with least institutional power have least access, their powerlessness is going to grow.

Currently the divisions between those who have access to technology and those who have not appear to be growing. The cost of private ownership of a computer is still a high proportion of the average disposable income and increasingly the ability to obtain information or to work is dependent on having access to, and some knowledge of computers or the ability to use them. Those who have even a simple home terminal can link to databases, bulletin boards and mail boxes worldwide. There are many social and employment uses for the person who can use a computer at home especially if they can also communicate through remote computers.

There is more potential in computers for the average person than the shoot-em-up games played by young males. Computers and information technology could be a real force in the slow progress to equal opportunities for all

sections of the community.

The voluntary sector examples cited above are only a small beginning but they do give us a glimpse of a possible future where individuals really do have the information from which to make choices which will enable them to be independent and improve their lifestyles. The example of teleshopping is illuminating, using it to shop for support services the same way as buying goods from the supermarket; using a computer - logging on and searching the shelves of a human service agency, choosing some respite care and a home help, or booking a counselling session or some family therapy.

If there is to be a debate followed by action to change the current direction of the growth of the use of IT it must begin soon, or the agencies will have set their models of computerisation, the computer industry will fail to be a source of good equal opportunities practice and we will all fail the people that are the reason why human services provision exists.

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Community Information Project, LASA, 88-94 Wentworth Street, London E1 7SA, UK.

CTI Centre for Human Services, Department of Social Work Studies, University of Southampton, SO9 5NH, UK.

Lisson Grove Welfare Benefits Program (T.Blackwell and B.Jarman), Lisson Grove Health Centre, Gateforth Street, London NW8 8EG, UK.

Maximiser II (Phillip Boyd), Ferret Information Systems Ltd., Cheslyn Lodge, Station Street, Cheslyn Hay WS6 7EG, UK.

Womens Computer Centre Limited and The Women's Training Link, 4 Wild Court, Holborn, London WC2B 5AU, UK.

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Computer Aided Problem Management

K.C. Manning and Margaret Manning

Problem management is a key skill that shapes both our personal and professional lives. It could be defined as a goal directed process in managing change from an initial state to a desired state (Mayer, 1983) incorporating three main activities, namely problem solving, decision making and action planning. The purpose of this paper is to explore the suggestion that Information Technology can improve skills in managing problems.

Many Human Service workers may describe themselves as professional problem solvers as they are largely involved in managing change. When this is done well, it is generally administered calmly, effectively, with the minimum of fuss and is hardly noticeable. Done badly it is very noticeable, and often associated with shouting, arguing, threatening and disruption. All of which can aggravate the situation and alienate those involved.

It is fair to say that most people (practitioners and clients alike) will have encountered varying

degrees of bad problem management at some time or other in their lives; the need to improve on such skills should therefore, be appreciated by all. This being such an important component of any problem managers role it is perhaps surprising that the principles of problem management are not taught as a basic skill during training.

Training requires the transfer of both practice skills and reasoning. All too often however, people learn how to handle problems by either being thrown in at the deep end, or by observing

and imitating others. Neither are good for acquiring skills as people can copy both good and bad practice.

This gap in training is further highlighted when individual differences relating to problem management are compared between experienced and inexperienced people. Initially inexperienced people tend to:

1. Form a different mental representation of the problem;
2. Be less able to organise available information;
3. Have difficulty in recalling all the factors involved; and
4. Lack a stylized response to problems.

They are also likely to be slow, make many errors, and become easily distracted (Sartain, North, Strange & Chapman, 1973). Therefore, they would benefit from training in solving and managing problems.

As confidence grows more experienced problem managers increase their work-rate, improve accuracy and display an approach which can become stylised to the point of appearing skilful. This skill develops after years of practice with a particular problem. Larkin, McDermott, Simon and Simon (1980) showed that very experienced people tended to solve problems by drawing on their considerable experience. However, Newell and Simon (1972) speculate that this skill might simply be in the recognition of the many different problem patterns that exist and knowing what response to make, rather than a skill in consciously reasoning a problem through from a body of research knowledge.

Other factors affecting both inexperienced and experienced people when dealing with problems are:

- **confusion** if the problem is complex or difficult;
- **disturbance** if a problem is particularly upsetting;
- **pressure** if time is limited;

- **tension** if conflicting relationships are involved;
- **nervousness** if expectations are high;
- **stress** if heavy workloads are involved.

Regardless of how successful people are at resolving difficulties, an accumulation of the above factors can affect any individual's performance. It is then apparent that training people to have a more conscious and structured approach could save time; improve the quality of response, and accelerate the rate of change.

Even using simple training techniques, for example saying "come on let's solve this problem" has been shown to have a positive effect on a problem situation. A dependency on experienced people for training may, however, not be the best approach for the transfer of skills as:

Firstly, they largely impart experiential rather than researched knowledge.

Secondly, their approach can become less flexible over time.

Thirdly, they are often not explicitly aware of the problem patterns that exist in order to explain them in detail to others.

Finally, experienced people can lose the ability to explain the process of how they solve problems altogether as their skill becomes more automatic (Spelke, Hirst, and Neisser, 1976)

This clearly shows that new people are unlikely to receive proper guidance and skill training in the art of problem solving, decision making and action planning. In the short term this can limit their performance, and in the long term restrict their potential for growth. An alternative would be to provide training courses in problem management for people to attend, but this can be expensive, with no guarantees that the knowledge gained will be integrated into practice.

It is then not surprising that organisations are looking more to computer based training, located in the work place for everyone to use. This would apply to a computer aided problem management resource that could provide direct support during actual practice. It is not necessary to use a complicated process to solve simple or routine problems. It would be more appropriate to apply the process to unfamiliar problems where no immediate answer is readily available. As for example clarifying a complex situation, controlling innovations, resolving conflicts or organising change. However, with the natural variations in people's ability it could serve to support them all.

Initially, some form of rule guided expert system which asks questions and gives recommendations would seem an attractive idea. For example, a program on enuresis, would be simple enough to build, but, trying to construct a general problem solving program that works in a similar way, which could provide a fair, reasoned, balanced and practical decision (given **any** problem area) would require a formidable amount of knowledge.

In evaluating any situation, people often have to equate multi-dimensional factors such as:

the type of problem;
the people involved;
situational variation;
social structures;
organisations;
political influences;
plus.....others,

as well as identifying what would be right, proper or worthwhile.

As much of this information changes, often on a day to day basis, it would seem an impossible task to programme a computer to make decisions of this nature. On a practical level people would be reluctant to input all this information into a machine. On a moral level they would not want to surrender the right or responsibility to make such decisions. While on a personal level people

prefer to make subjective decisions as opposed to objective ones. Professor Claudio Ciborra (1990) of the Theseus Institute of France identified that people's decisions were strongly influenced by costs to them in terms of time, money and inconvenience.

Buchanan (1982) found that an expert should offer:

1. A specialised problem solving procedure;
2. Knowledge related to a specific domain.

It is considered that this last point should subdivide into research and experiential knowledge. Bryant (1988) suggests that a problem solving expert claims to offer a special framework of enquiry. It would then seem appropriate to provide a knowledge based problem solving framework which in itself acts as a solution to solve problems.

Research in the area has led to one such program being developed (Manning, 1991). This particular Problem Management program has been modelled on the principles of skill development as it structures the complex process into:

1. A *hierarchical structure*, where the whole process of problem management is presented on the first screen, with the main categories being:

- a) understanding a situation;
- b) organising a plan of action;
- c) implementing the action.

2. An *organised pattern or sequence of response*, where the main categories have been subdivided into sections and arranged into a logical sequence.

These include problem questioning, personal constructs, patterning, mapping, dramaturgical modelling, systems modelling, root causes, assessment, brainstorming, decision making, planning and organisation.

3. *Smaller units of information, arranged in a*

pre-determined order. At this stage the program adopts a check list approach and uses a series of branching menu and text screens to ask relevant questions appropriate to its section.

The information blends into a practical application which in itself does not solve problems. But the progressive sequence of operations acts as a perceptual toolbox to transpose problems into achievable goals.

In terms of learning a skill, Fitts and Posner (1967) suggest that:

- a study or instructional phase is required to understand the rules and learn what is required;
- a period of adjustment is necessary to identify and eliminate errors, and,
- an automatic stage where techniques are frequently practised to the point where they can be performed without conscious thought.

If this process is followed to learn the skill of problem management, then it should make it easier to clarify a task. For those who use the program regularly the technique gradually becomes integrated into practice and the developed skill is applied automatically even when an unexpected need arises. This might encourage early action on problems as Kolb (1983) found that clearly defined tasks would be tackled first.

As the skill develops, there should be:

- an improvement in accuracy;
- an increase in work rate;
- a greater consistency of performance;
- less disruptions from distractions;
- an easier work effort, and,
- a feeling of being more relaxed.

Besides, these factors make learning the skill worthwhile. It has also been noted that problems regularly get passed upwards for managers to

solve within any organisation. By solving problems for others it creates a sense of dependency on the manager. It is then not surprising that as Kaplan (1986) observed, managers are under relentless pressure to solve problems. Consequently, they tend to react to the problem rather than thinking reflectively on how problems could be dealt with in a different way, ie. teaching others to solve their own problems.

Experiments have shown that training in problem solving significantly improves performance. Managers should, therefore, equip their problem helpers with the skills to solve problems. This can be done by helping people to learn the technique rather than just supplying them with an answer.

Problem helpers can in turn teach problem owners these same skills so that they are better able to cope with future difficulties. This helps the person to develop a sense of independence by making them feel more in control of their lives.

The problem management program has been designed to act as a counselling tool and by de-jargonising the information, it is hoped that most people will find it easy to use, whether they are problem managers involved in supervision or counselling, or problem owners on a self help basis. In many ways, they are better placed to resolve their own difficulties as they usually have:

1. The ability to reason;
2. First hand experience of the difficulties;
3. Knowledge of the people involved;
4. An awareness of their own strengths and weaknesses.

The program can then provide a structured technique to process this information through to a suitable conclusion. Unfortunately, there is one missing element, which is a database of research knowledge related to the problem domain. However, having learnt the technique, it then becomes possible to solve other problems

in a similar way. This is not to say that a computer program should be offered in isolation. Some problem owners may prefer a more supportive approach with a problem helper using the program to lead and structure the conversation. Others may need a more open opportunity to explore the problem and communicate their feelings.

However, a computerised problem management service provides a very private and confidential research based resource which may encourage some people to use it, who otherwise would not seek help. At least by making such a resource available it allows people the choice as to which service they would prefer.

To conclude, this paper would support the premise that Information Technology can assist in improving skills in problem management. It has highlighted the importance of adding knowledge to practice, and training to develop a good procedural approach as being essential elements in developing an expertise. This computer program has both elements, with the problem management information being the specific knowledge and its operational function being a good procedural approach.

Its availability and accessibility as a resource has certain advantages over a human expert as it can:

- be made available to all;
- be continuously available regardless of nights, weekends, holidays, sickness, or promotional re-deployment of the expert;
- repeat information accurately and endlessly;
- be present at any number of locations at the same time.

The programme itself is:

- very private and confidential;
- flexible and supportive to management, training and practice;
- transportable when coupled with a portable computer;
- very inexpensive in comparison to people

engaged in similar activities.

Although this program is a useful tool for developing skills in problem management, it is considered that this type of resource should be used in addition to supervision and training and not as a replacement.

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SONETT - An ENITH Telecommunication Device

Bernd Kolley

Social **N**ETwork **T**elecommunication (SONETT) is the name of a computer network that links members of the ENITH group as well as all who are interested in the progress of information technology applications in the human services. The network is used for communication and information storage and retrieval. A SONETT server is accessible for everybody with a connection to Internet, Bitnet or a national science or academic network like Janet, Switch, etc., linked to the European backbone network IXI.

Purposes and Contents

Computer networking has proven to be a powerful tool for international co-operation, fostering fast, broad, multilateral communication between many people at different places, without demanding their presence at the time an information is passed, and with all facilities of personal computing.

ENITH has good experience of working with it, for instance during the summer meeting of 1992 when its Standing Committee operated a daily concurrent e-mail information service that allowed the participation and comment of other members. The exchange of electronic mail is already a primary purpose for networking and will certainly gain importance in the future.

Joint production of publications is much easier with an electronic network, as all authors can send their files to the editor, who can react and communicate at short notice with a gain of time

and better co-ordination. The editing of the first ENITH Resource Book was successfully supported by electronic file transmission, and the same holds for ENITH contributions to this journal (like this paper!).

Preparing conferences means passing information to many persons and establishing a network linking organisers, programme committee, contributors, members of the jury, sponsors and participants in different ways. The conference announcement, call for presentations and other information concerning the HUSITA3 conference in Maastricht, June 15-18, 1993 is placed on the SONETT server so that everybody can access it.

Two special list-servers are prepared for HUSITA, allowing the storage and copying of contributions. Another information board on the server contains ENITH reports and messages, like minutes of the General Assembly and other events. All important undertakings are announced there, so everybody interested can get the

information in time. Also, the first edition of the ENITH Resource Book can be read there in total.

The server offers a software service with information on actual programs for social services along with sharable programs themselves. Mainly software from the American CUSSNet service, some Dutch, English and German demonstration programs are available. They can be copied by e-mail or using the FTAM, FTP or Kermit file transfer programs.

Part of the information board contains descriptions of national and international computer networks and some hints on how to use the downloading facilities.

It is further planned to foster the application of computer networking in practical social work. Therefore, practitioners and clients will be given entry to the server, and a special modem access will be set up. This is aimed at fostering the development of local rather than national and international networking.

A further purpose of the network is data exchange for scientific reasons. Using computer networks, the transmission of statistical and other data between scientists and databases becomes much easier than in the past, and the European scope of welfare policy makes it necessary to initiate more cross-national social research and data storage.

How to use the SONETT Server

To access the SONETT server you need a net address. You can use either Internet (via a Telnet gateway), or an IXI address, or a German science network (WIN) address. The numbers and procedures are:

WIN: 45050230905

IXI: 02043624230905

Internet: 192.124.246.1 (not yet though soon to be initiated)

Using IXI or WIN: you may have a software Pad, or a hardware Pad on your computer,

according to which one of the following procedures may be successful. Otherwise please ask your local staff.

> Pad 02043624230905 (software Pad)

> Call 02043624230905 (hardware Pad)

> x29 (another software-pad)

Using Internet: please try the Telnet/x.29-gateway:

>telnet <CR>

TELNET>open 192.88.108.250

TRYING 192.88.108.250

CONNECTED TO 192.88.108.250.

ESCAPE CHARACTER IS '^['.

ENTER help FOR HELP AND quit TO TERMINATE

DFNCPT>pad 45050230905

If and when you are successfully attached to the server in Berlin, you are asked to enter a user name (login) and a password. In order to access the ENITH sectors please type:

LOGIN:enith<CR>

PASSWORD:antwerpen<CR>

The terminal emulation of your local terminal should be VT100, but in case of problems please again ask your local staff.

The server welcomes you and presents a main menu. Please read the instructions of this and the sub-menus before proceeding. To contact the system operator, please e-mail to:

gorling@comz.fhss-berlin.dbp.de

Listservers for the HUSITA3 Conference in Maastricht, June 15-18, 1993.

There are two free listservers for the conference. One is at Cornell University in New York and provides you with general information on HUSITA3. Its address is:

Listserv@cornell.edu

To subscribe to HUSITA.3 listserv, send the following command in electronic mail to listserv@cornell.edu:

SUB HUSITA.3 firstname lastname

If you have any questions about the HUSITA3 listserver at Cornell contact Tom Hanna, the list owner, at:

Tom_Hanna@qmrelay.mail.cornell.edu

If you have any questions about listserv, contact the listserv manager at:

Listmgr@cornell.edu

The other listserver is in Berlin and offers special information on ENITH3, which is the European part of the HUSITA3 Conference, with the e-mail address:

listserv@zrz.tu-berlin.de.

To subscribe to ENITH-listserv, please send the following command to listserv@zrz.tu-berlin.de:

SUB ENITH-L firstname lastname

If you have questions about HUSITA3 and ENITH3, please feel free to contact Bernd Kolley at:

Kolley@comz.fhss-berlin.dbp.de.

If you have problems with the listserver, please contact the listserv maintainer at:

Elsner@zrz.tu-berlin.de

Technical and Organisational Background

SONETT was initiated by a group of computer teachers at schools of social work in Germany. It uses the German research network and is funded by the Ministry of Science and Research. A

research network association started in 1982 with the aim to provide universities and polytechnics a telecommunication service. Since 1989 a special net called WIN (Wissenschaftsnetz) has been established. Each institution can participate at a fixed annual fee and without accounting for the amount of data or the use of the network.

WIN is a package oriented service offering accesses at 9.6, 64 and 2,000 MB/sec. Higher velocities through glass fibre technique are in development and test phase. There is a connection to normal (paid by amount of data) package data services as well as to other national research networks like Csnet, Janet, Switch, Surfnet and others via the European backbone network IXI.

Gateways also provide links to other than OSI-normed networks like Bitnet and Internet.

By 1987, the government had started a program of funding user groups of the WIN. Money was given for technical devices, servers and personnel. The group of computer teachers in schools of social work, meeting regularly twice a year in Frankfurt, decided to become users and take advantage of the free, high quality services. So a project called SONETT was started with the support of WIN association.

The main aims were to explore the exciting and challenging new facilities for the benefit of social work. Clearly, the international dimension was an important incentive and goal for the group.

For these reasons the SONETT facilities are open for international social work access. Moreover, SONETT is prepared to give support to all who want to access and use the services or share their own capacities in a thriving international undertaking.

Bernd Kolley is Professor at the Berlin School of Social Work and a member of the ENITH Executive Committee.

The Integrity of Intelligence: Towards an Ethical Framework for Information Technology

Bryan Glastonbury

This is not an academic paper: it is a plea, a plea to look carefully at the ethical dimensions of a major change in our lives. Change provokes debate about the rights and wrongs of development - about traditional values being superseded, about the desirability of the new paths down which we are moving, or about the new situation which we expect to emerge. Always there is a comparative element, of past, perhaps some image of "the good old days", against future, with prejudice favouring what is familiar rather than what is unknown. Always, too, there is a speculative element, based on an image of future reality which can be and often is subsequently shown to be well wide of the mark. Sometimes the change to our lives is so forcefully brought to our attention, so dramatically demonstrated, that it is easy to identify the ethical agenda. The nuclear bomb is an example. Sometimes aspects of the change are more concealed, the exposed image seemingly more gentle and seductive, so the development of ethical debate is fragmented and delayed. This is the case with IT.

That IT has changed and will continue to change our lives is undoubted, whether we focus on computer controlled weaponry, office automation, the transformation of the job market, or others from the myriad of applications. The cumulative scale of change is possibly less appreciated, given that information has become the most rapidly expanding business in the global economy. The ethical context has still to be explored in all but a fragmented and occasionally distorted manner.

What do we know about the rights and wrongs, good and bad features of IT? Generally IT has escaped the attention bestowed on "dirty" industries because it is not, in a major way, polluting the environment or wasting scarce resources. Evidence is gathering of risks to the eyesight and joints of people who sit for long hours in front of a computer, but this is not viewed as life threatening. There may also be a significant threat to employment levels, but this has been partly hidden in recent years within the wider impact of global recession. It is possible to argue strongly that IT is almost unique in an industrialised society, in that it has enabled people to be replaced by machines in many of those tasks which have traditionally put us at risk. The vulnerable and fallible human element, so the argument goes, has been replaced by the tireless, unflappable, infallible micro-processor,

whether in spotting and communicating the build up of lethal gasses in a mine, or guiding an airliner through a difficult landing in appalling weather conditions. Going still further, IT can be shown to enhance human existence in many varied ways, by strengthening social relationships, as British Telecom advertising has so cleverly shown, or by bringing a fuller life-style nearer to those who are deprived through disability.

Fallible Humanity

Overall, then, we can accept and rejoice in the many clear benefits flowing from the development of IT. Yet warning signs are there to be picked up, to guide us towards an ethical agenda. The basis of personal and social behaviour is a code, formal and informal, structured and unstructured, derived from generations of human experience, from the working out of beliefs, and from processes of reasoning about how we can live together peacefully and fruitfully. How should we react, therefore, to the notion that new technologies are emerging which ought to be allowed to take over human judgement and decision-making, because they do it better?

Can we afford to downgrade human judgement by making it subservient to computer judgement?

What would be the impact on us if we did allow the rules for conducting our lives and the arbitration of our disputes to be determined by an intelligent machine? Certainly we cannot ignore the impact on human self-confidence and on the motivation for our behaviour. We live our lives as far as we are able on the basis of trusting that those around us, those with whom we have dealings, share fundamental values and have an understanding of what is right and wrong. The fact that we may have to be careful, sometimes suspicious, only serves to illustrate that we want to see the mugger and rapist as exceptions to the general rule. If, however, human judgement is progressively devalued, then we must expect the motives for our behaviour to place less reliance on our hearts and minds, and more on externally imposed standards.

Before we can accept decisions made by computers we have to be sure that such decisions are right, both in the sense of being accurate and of being morally correct. In theory computers are always accurate. They do exactly what they are asked to do, over and over again, without variation or flaw. Sometimes we accept this, as instanced by the trust we put in computer control of flying: sometimes we ridicule it because too many of us have examples of errors on computer generated credit card accounts or "personally" directed advertising.

Computers are held to be ethically neutral because they do not discriminate: everyone is treated in exactly the same way. This argument, however, is largely irrelevant and false. Human and many animal behaviour systems are based on much more sophisticated premises than simplistic non-discrimination. We can note, for example, the debate about positive discrimination in favour of underprivileged groups, or those who have a history of being victims of discrimination. Perhaps more importantly as far as IT is concerned, because it is a rarely considered area, computer applications have to be seen for what they are, a reflection of the ethical standpoints of their creators and adaptors. To get a flavour of this we need go no further than the word processor on which this paper was written. The

thesaurus has a quaint line in ethnic and gender "neutrality". "Black" is described, amongst others, as "evil, nefarious, wicked"; "white" as "pure, spotless, undefiled". "Man" is "humanity, chap, guy"; "woman" is "handmaiden, housekeeper, maid". When this paper was discussed at the 1992 Science Festival a contributor from the audience suggested adding "virgin" to the list, where the antitheses are "wife" and "prostitute"!

What has all this to do with the Human Services?

The reader of a journal specialising in matters related to welfare services may well be asking already about the relevance of a paper which appears to address general issues, and to be primarily directed towards the IT and Information industries. There are two responses. First of all the social services are about standards, about the conditions in which people live, and what can be done to rectify matters when they fall below desired levels. A community's value system, the respect which is or is not given to all of us, represents an aspect of the agenda for working with clients. The way we are treated by computer systems is as much a matter of concern as the way the Gas Board reacts to someone who has problems paying a bill, or the way a landlord harasses a tenant.

In the second place, welfare workers are society's advocates for sections of the community who are underprivileged or discriminated against. Again it matters whether people are treated well or badly by organisations using the full force of IT.

In a general ideological sense staff of the human services are part of what can be called "the ethics industry", joining with priests, doctors, lawyers, journalists and many other groups who play an active part in establishing, reviewing and revising the moral basis of daily life.

Ethics for the IT Industry

The IT industry, with much government support, would like us to accept the premise that there are

really only two moral issues to be considered. One is about how we protect manufacturers from hardware cloning and software piracy. The other is about how we protect the data held by the information industry, and ensure its accuracy. Action in these areas represents the limit of governmental involvement in most countries.

At best this view of the issues shows a narrowly blinkered view of IT: at worst it is sectarian special pleading. An objective in protecting IT manufacturers is to ensure that the well established principles embedded in the notions of patents and copyrights are extended to new technologies. It seems fair and reasonable that those who provide new inventions, or who invest heavily in development work, should be helped to reap benefits from their work. Yet there is another side to the debate. At what point does exploitation of a patent or copyright spill over into monopoly control of part of an industry? Perhaps even more fundamentally, at what point is the strength of the protectionist argument outweighed by the needs of poor societies for technology transfer? There is a romantic vision of the patent as blocking large predatory industries from simply gobbling up the inventions of the genius in the small shed at the bottom of the garden. Reality is that invention and its commercial exploitation is mostly carried out within or in close association with large corporations. Zealous protection is ensuring, therefore, that more prospects will be given to those who are already well established. From the point of view of global society, and especially from countries striving for development, this can be seen as ensuring that the rich get ever richer, while the poor stay poor and dependent.

Haves and Have Nots

Traditional approaches to relationships between developing and developed countries have tended to focus on a context of wealth from industrialisation in contrast to poverty from dependence on agriculture, or on the exploitation of raw materials for manufacturing profits. IT shares some of this tradition of power through production, particularly in the design of systems,

control of output, and pricing policies. Systems may be made up of components manufactured in poor communities, like India and Taiwan, but they are designed to fit into a modern western industrial infrastructure. Stable power supplies, modern telecommunications and basic literacy are taken for granted, though they are not part of the reality of living for a majority of the world's population. Preferred output may be for an open world market, but political considerations have closed off many communities. Years of banning sales of PCs to Eastern Europe have left those countries with a backlog of unmet need, and now the market has opened up there are signs that they have fallen for buying equipment which would be dismissed as obsolete in the UK or USA. Pricing ensures that IT gets more expensive, and less well supported, in the poorest communities.

The difference for IT lies in the use to which it is put. Much of the more sophisticated equipment in place in the poorest countries, aside from national military systems, is likely to be under the control of foreign companies. These are the multi-nationals, linked 24 hours a day by global telecommunications, and aided by their own vast information systems. Such companies can use their networks to manoeuvre on a global stage, to buy whatever they wish where prices are most advantageous, to move production to spots where local regulations offer the chance of highest profits. This sort of behaviour puts indigenous companies at a competitive disadvantage, serves to inhibit the development of a stronger local infrastructure, and in the last resort can be used to subvert local political decisions.

In short, the global IT market is not free, the playing field not level. All the commanding heights are held by industrialised interests, with the result that there is little development of technologies particularly suited to poor communities, and limited commitment to technology transfer.

Discrimination and Privilege

Of course there are rays of sunshine breaking

through the gloom. Many IT companies have an excellent record of charitable contribution, and some have given a high profile to offering practical help to disadvantaged people. In the lead must be the significant uses of IT and micro-processor technology to help people overcome the effects of disability. The range of aids is large and impressive, from control systems for natural and artificial limbs, through communications for persons with sensory deprivation, complex switching devices to compensate for loss of body movement, to aids to mobility. IT has played a leading role in offering the potential for people with disabilities to live fuller lives.

The weakness of the current situation is that these developments, marvellous as scientific achievements, are inaccessible to 99 percent of the world's disabled population because they are too expensive, or no scope exists to adapt them to local conditions. This is not a failure of the IT companies, but of global political will. The chance is there to improve the lives of millions of people, and it is being spurned.

As it has developed, IT has become a focus not just of unfulfilled potential, but also of discrimination. With a few significant exceptions, such as Japan, we have global IT designed for wealthy English speaking communities. A working knowledge of the English (or American) language is essential, along with some technical terms. System design, the program range on offer, and advertising perpetuate and reinforce a male dominance which starts from childhood. There is increasing evidence that boys get more opportunity to use IT at school than girls, and the commercial computer games market is dominated by militarism and violence. From the start IT has turned away from areas of female interest, promoting only the secretarial image of the word processor taking over from the typewriter.

Much of the problem lies in the failure of IT to adapt to individual cultures. In Britain, for example, there are few programs which acknowledge the ethnic make-up of our

population, or the range of languages we use. Most boxes we buy, whether they contain hardware or software, are the same boxes that we would find in North America, or Europe, or the Far East.

The Information Industry

This lack of cultural adaptation contrasts strongly with a primary aim of the information industry, which is to build up and maintain a detailed understanding of each of us as individuals. There are three basic facts we need to keep in the forefront when considering the information industry. The first is that the raw material of that industry is predominantly data about us, all of us. Every time we use a credit card, fill in a warranty form for a new purchase, or undertake any one of a range of transactions we provide a bit more raw material for the industry.

The second fact is that all those snippets of personal data are moved around and linked together to build up a portrait of each of us, to convert isolated items of data into information. Computers have the capacity to store and recall all this data, and to "process" it into more coherent and "useful" information. The resultant information is then used for a variety of purposes, to track our movements and activities, to build up a picture of how we behave and what we spend our money on (or whether we have any money to spend), to guide the conduct of our lives by, for example, influencing our purchases, and in the last resort to control us both individually and corporately. We should not forget that IT is Big Brother, and both set out to convince us of their benevolence.

The third fact is that data and information is a marketable commodity, and the stories of our lives are traded across the world.

Given our necessary part in the whole process it seems fair to suggest that we should exercise some control over the rules of conduct of the information industry. Indeed, data protection was noted earlier on as one of the areas of government involvement. But is it involvement

on our behalf? The broad trend in data protection legislation is to accept that vast personal data stores are legitimate, but should be regulated as to their uses, should (with many exceptions) be open for each of us to see what is held about us, and should give us the right to correct inaccuracies. How far such protection for the citizen is or can be effectively implemented is debatable. We know that instances of the damaging impact of inaccurate information are not uncommon. One problem is that IT permits such massive and fast movement of data between information systems that an inaccuracy is like an infectious disease: it can be treated and cured in one place while remaining rampant elsewhere.

Who Owns Personal Information?

A more central ethical concern is about the ownership of personal information. The standard market gospel is that information is a marketable commodity, owned by one company and traded to others. Hence ownership rights have to be protected, and this is at the root of most data protection legislation.

Yet who should own our personal histories? The industry claims that it owns whatever it can gather by legitimate means, and sets about persuading us, or forcing us, to provide the raw materials. Handing over personal data is not usually a voluntary activity on our part, but a required component of a wider transaction. For example, the author recently tried to open a bank account solely to be a depositor, and declined to provide the personal data requested on the application form. The request to open the account was refused.

Is material gathered by the information industry in this way a sufficient basis for their claim of ownership? Legal systems have tended to support their position, but ethically it seems dubious. Surely the initial premise has to be that our history belongs to each one of us. It is our property, and if it is marketable then it is for each of us to decide to whom we give or sell it, and for what price. Indeed, it is arguable that a person should never be put in the position of

having to dispose of his or her history on a permanent basis. The response of the industry has been to avoid this debate by creating a smoke screen of spurious argument. The most persistent suggestion is that personal information is like other commodities, to be owned and protected as they are, whether it is copyright for authorship, patenting an invention, or ownership stemming from legitimate possession. A counter argument is that personal information is different, simply because it is "personal".

Basis for a Bill of Rights

Do we need a strategy for ethical IT in a global context? If the answer is "Yes" then one approach is to consider the notion of a Bill of Rights. But first there are priorities on which a Bill would be based.

The first priority is that IT be subjected to an analysis, from the developmental stage onward, which takes into account social, historical, cultural, and ethical factors, and which assesses their potential contribution to an agreed set of social goals.

The usual situation is that IT applications are not being developed with enough thought and consideration given to human benefits and costs. They tend to reflect purely market considerations, the creative ideas of designers, or pressures to make use of the capacities of leading edge hardware. As many commentators have argued, IT must serve humans first, technology second.

The second priority is to assess IT developments for their potential impact on democratic principles and individual freedom.

On balance IT has augmented the powers of dominant groups in society, whether in organizations or government, and has increased what Gross (1980) calls "friendly fascism". More importantly IT has the capacity both to encourage democratic processes, and to strengthen overt dictatorships. Therefore this priority is preventive and looking to future threats.

The third priority is to set an agenda to identify and guide the emerging characteristics of societies that use information technologies.

There has been considerable debate concerning the issue of whether or not the form of society which is developing is a different form of industrial society, an information society, or a technocratic society. The difficulty with emerging paradigms is that they often cannot be assessed from the prevailing point of view of, for example, industrial forces and problems. Nevertheless, whatever is emerging is presently far enough along to suggest a number of problems, all of which need investigation. Perhaps we must change our view in order to work on this priority, from one that treats IT as a series of products and services, to one that views it within the context of social development.

The fourth priority is to recognize and evaluate the human choices which are being made in the application of information technologies in terms of moral values.

The application of IT is not moving along of its own accord. We are not subject to a form of technological determinism that threatens our individualism and form of government: we are making choices that do so. These choices are being made by the forces that were in charge before information technologies came into widespread use. What feels out of control to the common person are the vagaries of being driven by market forces, commercialism, and material interests.

The fifth priority is to subject those same choices to an economic and social audit as to their sustainability, to identify and feed into decision making clear statements about who will profit or lose, in what ways, and to what extent.

The results of purposeful choices have both costs and benefits. Benefits abound, but so do costs.

The sixth priority is to subject all IT developments and applications to scrutiny

regarding their impact on forms of discrimination.

In an age when there is a rapidly growing sensitivity to issues of discrimination, in areas of race, gender and disability, the overall position is that IT appears insensitive to notions of equal opportunities, and riddled with examples of serious discrimination.

The seventh priority is to create a set of evolving guidelines which lead to accurate, detailed product descriptions for IT applications, in a wide range of user languages, and composed in terms which are widely understood and free of mystique or technical jargon.

What is being emphasised here is the importance of all of us being clear about what is happening, about exactly what each IT application will do and not do.

The eight priority is to establish national IT plans or policies.

IT sees itself as a global market, and therefore there is a task of adaptation to local cultures. Countries which have given attention to the development of IT plans tend to have gained more benefits and experienced fewer disadvantages. Further, the planning process allows for the introduction of concerns (eg. "people" issues) which usually get excluded from the narrower and fragmented framework of free market decision making.

The ninth priority is to seek an international system, or a structure for regional or bilateral agreements, which sets IT firmly within a sympathetic framework of open technology transfer as a form of international aid, not market exploitation.

IT has become enmeshed in a system of technology transfer which is restrictive as a result of political decision and over-pricing, and too closely allied to the international arms market. IT has strengthened the divisions between rich and poor through discrimination

against Third World countries, and ignores the need for technologies and their transfer to be sensitive to the social characteristics of recipient communities.

The tenth priority is to recognise that as well as a global arena and agenda, there is a localised, personal, family and community arena, which sets IT firmly on the path of integration with the valued parts of existing daily life patterns.

There is not a single set of values for IT, with a single frame of reference. On the one hand there are global principles and priorities, and on the other, there are cultures and ways of living which vary widely across the world, and are equally cherished by those who enjoy them. These should play their part in determining the future of IT. At the same time there is deprivation, again both in a global and theoretical sense, as well as in the details of daily lives in many communities. Combatting deprivation is a major challenge for IT.

Rights for People

In his book *Protecting Privacy in Surveillance Societies* David H Flaherty (1989, p8) draws up a succinct list of rights derived from the privacy interests it is reasonable for all of us to expect in relation to data about ourselves. He lists rights:

- to individual autonomy
- to be left alone
- to a private life
- to control information about ourselves
- to limit accessibility
- to exclusive control of access to private realms
- to minimise intrusiveness
- to expect confidentiality
- to enjoy solitude
- to enjoy intimacy
- to enjoy anonymity
- to enjoy reserve
- to secrecy

For all of us as citizens these are vital issues, because they are so closely personal to our daily

lives. They are humanity's cry of exasperation and desperation about IT's invasion of work, home, relationships, personality, and deepest feelings. They are a challenge to the IT industry to put its house in order. Any Bill of Rights must try to incorporate some sense of the threat to the individual, alongside principles which would have the effect of enabling and regulating the IT industry. The Bill proposed here does not aim or claim to be all-embracing. Nevertheless, it aims to range as widely as possible within the IT framework, and acknowledge that the consumer viewpoint, however important, is not the only one.

A Proposed Bill of Rights for the Information Age

1. Human rights should be reasonably and prudently considered in all processes of IT development, use, and application. The consideration should take place in the widest public forum feasible, and involve representatives of all of those who will be affected, as well as appropriate expert, legally mandated, and ethical authorities.
2. Decisions which directly affect a human being may not be made by an IT device alone. IT systems can be used as an aid to decision making, but only in circumstances where a designated person is accountable for the decision.
3. Humans affected by IT device-aided decisions should be fully informed at all times, and have an incontrovertible right to appeal all such decisions through the courts of law or through formal appeal processes.
4. Personal data is the property of the person who is the subject of the data, or that person's legal parent or legal guardian where that person is a juvenile or unable to act on her/his own behalf. Such property rights are irrevocable. Permission must be obtained from the owner for use of personal data for all

uses, including personal reports, aggregated formats, linkage to other data or transfer to other computer systems.

5. Unintended or unrecognized consequences of any type resulting from the application of information technologies are the responsibility of those who have implemented the application, and subject to remedy and compensation for actual or perceived damages. A court should be able to award damages to an individual or group.
6. If IT devices or applications displace human workers, they should be compensated and provided retraining within their local communities. If the IT usage is unsatisfactory and a worker is to be employed again, the displaced worker should be given the first right to the job.
7. All IT devices and applications should be accompanied by a full, complete, and understandable written statement of operating instructions, the functions and performance of the device or application, and any known or suspected hazards connected with use. The written statement should be provided in all languages in use within the community where marketing occurs. Statements about the performance of devices or applications which prove to be unwarranted should be open to redress through court action.
8. All IT applications should conform to best equal opportunities standards, as should the IT industry.
9. An independent Commission should be established to register and review the content and use of all networks and databases containing personal material, and to register all new applications. The Commission should have power to seek modification, ban or proceed to court action in relation to any failure to meet appropriate standards or the terms of this
10. All IT applications and devices for which a purpose or use is surveillance should be regulated in the public interest. No private or commercial sale of such devices to the public should be allowed. All use of such instruments by any government for any reasons should be approved by a court of law prior to use.
11. Specific legislation should be passed to ensure the protection of personal data, prevent unauthorised access to computer systems, and protect the copyright or patent rights of IT designers, except that no such copyright or patent shall be issued which infringes upon the human tradition of knowledge sharing or limits the common good.
12. Customers in any country should have the right to purchase equipment or programs from manufacturers at the lowest price the manufacturer offers in any location, with due allowance for differences relating to costs of transport, installation and local taxation.
13. Information technologies should be confined to developments for peaceful uses and should be freely transferrable to all countries. An international aid fund should be established to assist in technology transfer to poor communities, with an expert sub-committee charged with responsibility for establishing sensitive processes for cross-cultural transfers.
14. An independent body, linked to the Commission identified in 9 above, should be established to keep this Bill of Rights under review, and to co-ordinate and in other ways enhance the ethical soundness of IT progress.

Bill of Rights. Given a reasonable warning, devices or applications currently in use must conform or be dismantled.

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15. The rights of individuals stated in this Bill should be the entitlement of all people of whatever country.

Bills of Rights are fine notions, an outward sign of democracy at work. They are, however, a necessary and regular reassertion of humanity's control over its own scientific inventions. John Stuart Mill expressed the true emotions with grace and insight - "I am not charmed with an ideal of life held out by those who think that the normal state of human beings is that of struggling to get on; that the trampling, crushing, elbowing, and treading on each other's heels, which form the existing type of social life, are the most desirable lot of human kind, or anything but the disagreeable symptoms of one of the phases of industrial progress." Let us overcome those disagreeable symptoms, bring out the greatness of these new technologies, and have them flow with us, gently, sensitively, creatively, a help and companion to all peoples, a technology to support and sustain humanity.

References:

Flaherty, D. (1989). *Protecting Privacy in Surveillance Societies*. The University of North Carolina Press, Chapel Hill.

Gross, B. (1980). *Friendly Facism*. South End Press, Boston.

The author, Bryan Glastonbury, is Director of the Computers in Teaching Initiative (CTI) Centre for Human Services at the University of Southampton. The material for the paper is taken from a book written with Walter LaMendola, Vice President for Research of the Colorado Trust. The book, The Integrity of Intelligence, is scheduled for publication in 1992 by Macmillan in Europe and St. Martin's Press in North America.

ENITH and HUSITA Notes

Flemish human services have looked jealously at the I and R systems of other countries. These applications offer a tool for finding out who is providing services, where, for whom, and how. It is a human service map (called *sociale kaart* in Dutch) to help service providers find their way around. Now there is a Flemish system, called *SOKAflits*, developed at a low budget and containing materials on more than 11,000 services. For details phone/fax 32 3 238 72 74.

Flanders has also launched the DELTA Project, a co-operative venture between the private sector youth information and advice bureaux and public sector youth counsellors. The aim is to have relevant social information readily available, initially through on line videotex. However, hypertext environments are also being looked at, and several hypertext programs are being evaluated. Provisionally it looks as though

HyperHelper may be a useful hypertext program, and a trial version can be ordered through SONETT.

Abstracts for papers and presentations for HUSITA3 are beginning to come in. How about you telling a Maastricht workshop about your IT work, or demonstrating some software? If you haven't got the call for presentations get in touch with the CTI Centre for Human Services and we will send you a copy.

Also from the CTI Centre, *ENITH European Resource Book*, describing human services IT in nine countries. It costs £9, p & p included, or comes free if you join ENITH. We can give you details of the cost (very low) and benefits (considerable) of ENITH membership.