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Conference Abstracts

Contents

HUSITA 3 Abstracts, printed in alphabetical order of first author. There are 130 abstracts in all.

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UP FRONT

The week beginning June 14th, 1993, seems set for the largest ever international gathering of people whose work or interest is in the area of Information Technology and the Human Services. We shall be meeting in Maastricht for *HUSITA 3*, which is located in the Maastricht Exhibition and Conference Centre (MECC) and runs in parallel with a more domestic event, *WELCOM*, when Dutch and Flemish welfare workers are shown the latest in IT applications.

For many the pleasure and excitement of the event will be making new contacts, renewing old ones, and meeting face-to-face people who to date have been friendly correspondents on an e-mail network or names on a bulletin board. There could hardly be a better place than Maastricht for enjoying good company. Forget Maastricht as the meeting spot of Heads of State, or as the place where "that Treaty" saw the light of day: think of it instead as a small, old and beautiful city, full of fine buildings and agreeable walks. Think of it also as a crossroads of Europe, relaxed, varied, and at its best in June sunshine.

The MECC is a purpose built conference centre, with modern and comfortable facilities, a special place for some of us because it as there, in 1989, that ENITH was formed. ENITH, the European Network for Information Technology and Human Services, is the presenter of *HUSITA 3*, but this time we have the benefit of professional conference organisers, VBM, who have taken on the task undertaken by the teams of Stuart Toole in 1987 and Marcos Leidermann in 1991.

ENITH and VBM have also benefitted from the help of a number of Dutch bodies, including LIOSE, the Province of Limburg, and the Government of the Netherlands.

This issue of *New Technology in the Human Services* is fatter than usual, and given over to the abstracts of papers timetabled for presentation in Maastricht. No attempt has been made to categorise them, except to note in the title if the presentation is primarily a demonstration. They are offered in alphabetical order of the first author.

By the start of May there were *HUSITA 3* registrations from 34 countries, and the international spread of presentations is also wide. Many are from authors for whom English is a second language, perhaps even a third or fourth. Many more come from across the Atlantic or make use of American rather than English spelling and phraseology. As Editor I had to decide whether to leave these much as they were written, accepting variations in spelling, unusual ordering of sentences, unfamiliar uses of terms, and occasional grammatical errors: or alternatively to rewrite them into conventional English. I chose the former, mainly because any significant modifications on my part might have distorted the author's real meaning. Changes have only been made when the language seriously hindered comprehension, though some authors who provided rather more than the requested single side will find they have been cut.

See you there!

Bryan Glastonbury

An Attempt to Increase IT Acceptance by Professional Workers

Drs J M P Aalbers, Hogeschool Eindhoven, Causa, Netherlands.

Catching practice reality into an information system can no longer be done by technicians alone. The crisis in the IT business shows us that a purely technical approach of system development is a dead end street. Therefore it is necessary that the influence of social information professionals, as well as professional workers has to increase in the process of system development. This paper is based on a personal experience with system development in the institutional care for mentally disabled people. The subject of automation is the basic care for mentally handicapped people in every day life. This is rather new, at least in the Netherlands. This fact confronted us with some difficulties which emerged as key issues. These difficulties have to do with problems of catching the reality in a technical system.

First we have to focus on these key issues to understand the meaning of them, after which we try to apply this knowledge in a system which Causa has developed. For this purpose a fictitious model of an institution for the care of mentally disabled people will be used. The four major issues which need to be answered:

1. Since this is a first attempt, there is no reference framework we can appeal to in this case. System development without a reference framework decreases the probability of building a system conforming to reality.
2. An absolute requirement for automation (of care processes) is that it has to improve quality of care. If the goal of improving the quality of care is based on the formula: productivity = efficiency * effectiveness, the professional workers who are involved (who will immediately agree with a higher level of quality of care) will want to know the consequences for the quality of labour.
3. Trying to catch the entire care organisation of the institute in the system does raise the question of the possibility to adjust the system for local organisational circumstances.
4. The environment of the institute and the institute itself are in a constant process of mutual influence. For the developing system it is necessary to make clear the actual situation in relation to government policy, the social changes in life, and the important developments in society.

An attempt to fit in these issues in the process of system development makes such a system less abstract and more conforming to reality. Involving professional workers in the building process gives insight into the main issues. Introducing these developments in the building process gives the opportunity to use the building process for organisational change. So, in this stage, there is a process of mutual adjustment between the current and the required situation. Mostly, changes in the organisation takes place after introduction of a system.

Education in Saudi Arabia: Issues in School Education

Dr Jamal Al-Sharhan, King Abdulaziz City for Science and Technology, Saudi Arabia.

The aim of this study is to describe in brief the education system in the Kingdom of Saudi Arabia. After an introduction to Saudi Arabia Which included the geography, population, size, and climate, the following points are considered:

1. School Management.
2. School Buildings.
3. Availability of Audio-Visual aids and their use.

Finally, recommendations are made that are intended to help to make the service more effective and to increase the level of use of audio-visual aids in education.

Reliability Issues in the Development of Computerized Information Systems

Dr Gail K Auslander, Israel.

The reliability of measures is an important factor in the degree to which computerized information systems can provide

accurate information which is of maximum utility. This is particularly true in regard to large systems which are used in a variety of settings and by numerous workers in different positions. This paper examines the issue and presents several strategies for improving the reliability of measurement, based on our experience in developing a national hospital social work information system in Israel.

The problem of reliability was first addressed through the careful and explicit definition of categories, which were repeatedly refined during the course of system development. Special attention was devoted to those variables and categories requiring discretionary judgement on the part of the worker. The second was through the assessment of interrater reliability of key variables. This was examined systematically in two ways:

(a) through the analysis of worker recording on a series of case vignettes, derived from authentic case records and selected to represent a range of client and treatment situations; and

(b) through the use of short client descriptions in which variables were systematically manipulated in order to assess accuracy in deciding which patients (among all hospital patients) met the criteria to be included as social work clients vis a vis the information system.

Both types of vignettes were distributed for coding to social workers in three hospitals who participated in the pilot tests of the information system. Analysis of the data confirmed the reliability of most of the items included in the system. It also pointed out a number of problem areas, and served as the basis for further refining variable categories and definitions to overcome difficulties revealed in the study.

Unique Solutions in Aids for Severely Multi-Handicapped People (Demonstration)

Anssi Autere, Juha Kauppila, Katri Markkanen and Juha Nieminen, Adaptation Training Centre for Disabled, Lahti, Finland.

A video presentation, which clarifies how to plan, develop, prepare and teach the use of unique aids for severely multi-handicapped people to help them to use environmental control systems, computer and computerized communication systems (a speech machine) and thereby lead an independent life.

Another demonstration is a databank of aids with a multimedia system (a touch screen). It includes information on the aids mentioned above, with work reports.

The Genesis Initiatives: A Process for Applied Information Technology in Human Development Services and Welfare

Gupi Balija, Strategic Informatics Resources Corp, Fairfield NJ, USA.

The Genesis Initiatives is a unique process in search of definitive solutions through applied information technology to the problems in human development and welfare. The process seeks to polarize, on a global scale, the efforts of various commercial, private and public organizations, researchers, institutions and universities in the quest of applying information technology to solve the human development and welfare problems.

The Genesis Initiatives seeks to use information technology for human development and welfare in terms of changes, choices and empowerment. Under this process, innovative programs and projects are conceived and designed to fulfil effective use of information technology for the betterment of human life, specifically, the quality of living, the quality of services, and the quality of service infrastructure.

The disparities and inequalities in the quality of life of the people of the world are acutely widening as the people of third world nations are lagging behind those of the advanced nations. Strong concerted efforts in a radically different direction are needed to establish in every nation a sustainable, humane and balanced society that satisfies its own needs without jeopardizing the prospects of future generations. The mission of the Genesis Initiative is to address these solutions through

strong implementable programs that are executed with a corporate accountability approach.

The Genesis Initiatives will operate under a framework of international associates to channel their activities through extensive, coordinated and global efforts. It involves enlisting support and help of various public and private institutions and organizations that are active in the area of human development services and program sponsorship in different countries to customize materials to serve the needs of their people.

The program design strategy and the technology enablers are analyzed to ensure the deliverability of the targeted goals and objectives. Further the underlying principles of the applications development are defined for the methodology and approach that will be implemented. The success of The Genesis Initiatives will be dependent on the efficacy and deliverability of the individual programs. As the portfolio of implemented programs increase, so will be its effectiveness and impact in human development services and welfare.

How New Technology can Help Visually Impaired Persons

Nadine Baptiste, Beatrice Mondette and Monique Troquet, Universite Paul Sabatier, Centre TOBIA, Toulouse, France.

This study concerns the daily life of a handicapped person. The research team in which we work has been involved for more than ten years in the area of new technologies in order to help visually handicapped persons. The first result concerns software able to transcribe literary documents in grade 1 and grade 2, books, local newspapers and bank statements (which represent 1700 users). These different areas permit the visually handicapped to have access to cultural, daily life documents and also to be more independent.

Concerning education and professional matters the transcription of scientific documents appeared very difficult. The input realized with common software (graphical or not) presents difficulties when using some of them, and also we have to mention that some of these programs permit only a graphical file. After an evaluation of these common programs we preferred to choose WordPerfect 5.1 and to develop a software using WordPerfect grammar for the transcription of the scientific document. The same problems appeared for the transcription of musical documents when using the usual input systems. Due to that we were obliged to design our own input system. On the other hand as there is no standardization to code musical data (except MIDI file which produces a non complete document), we created our own language which represents all the musical data able to be used by our musical Braille transcription software. Our system is composed of several modules which help Blind people in their musical education and also in their professional musical life (composer or teacher). These softwares aim to be easy to use and efficient.

Computerized Planning and Evaluation System for Interventions at Rehabilitation Centers for the Disabled

Dorit Barak and Aaron Rosen, Hebrew University of Jerusalem, Israel.

The overall goal of this project was the development of a decision support system for planning and evaluating interventions in the area of rehabilitation of disabled people. On the basis of the conceptual framework of systematic and planned social work, the worker's current practice knowledge was mapped out and a model for planning and evaluating interventions was developed.

This system offers process support for a series of clear, rational decisions related to the treatment planning of people undergoing rehabilitation. The system contributes to the rationalization of the decision making process whose significance is:

1) Knowledge of the range of decision alternatives.
2) Legitimation of decision making.
3) The system creates commitment to decision making.

The computerized system contains four sub-systems that serve the interdisciplinary staff in the rehabilitation center: the

social worker system, the assessment system, the rehabilitation system and the placement system.

The computerized system makes use of visual presentations of the problem areas, the outcomes and interventions. Evaluations of the seriousness of the problems or the progress are carried out by raising or lowering the columns. The system is specially designed to foster easy and comfortable use by anyone, including the clients.

The system was developed through a Research and Development approach, and is being implemented, on an experimental base for two years. The main expected contributions of this systems are:

a) The improvement of professional decision making processes.
b) Ensuring the accountability of all members of the system.
c) Involving the clients in the planning and evaluation of their rehabilitation programs.

Collecting Accurate Information about Child Abuse and Neglect, Revisited

Colin Barnes, Coventry Social Services Department, UK.

An investigation is reported of the functioning and accuracy of a computer system geared to the storage of information about clients receiving services from a UK local authority social services department. The paper incorporates a review of the literature concerning similar systems and research about them. The research method used is, in part, a replication of a study carried out in Michigan, USA by Harrod (1987). Like that study it uses quantitative methods to ascertain a "baseline" of accuracy of some of the data held on the computer database. This is supplemented with a descriptive study of how the recording system works and how it was implemented within the organization.

Comparisons are made with the system studied by Harrod (1987) and other databases used within social welfare organizations. An analysis of the quantitative and qualitative data is used to illuminate why inaccuracy occurs. Suggestions are made as to why errors are distributed within the database in the pattern revealed by the quantitative results. Recommendations are made for pragmatic measures which would:

i) enable social services agencies using computer databases for the storage of information to be aware of the level of error in their systems;
ii) enable agencies to reduce the frequency of error occurring in the data held on their systems;
iii) establish a research tradition to inform future developments of computer based recording within human service agencies.

An Evaluation of the Use of IT in Child Care Services and its Implications for the Education and Training of Social Workers

John Bates, M.Ed, North East Wales Institute of Higher Education, Plas Coch, Wrexham, UK.

The paper will report on the first stage of a project that is to investigate the use if IT in a number of social services agencies and voluntary organisations. It is evident that good information is essential to effective child care not only in terms of assessment but also in highlighting the availability and cost of resources. The last few years has seen an increase in the availability of software designed for child care workers in both field and residential settings. The CHIAC system was issued to all local authorities and the CCLAWS program is claimed to be in use by over thirty social services departments. These programs are designed to be readily accessible to workers, offering them an intelligible and up-to-date commentary on all current child care legislation. CHIAC offers, in addition, good practice guides.

This study is designed to illicit:

1. the extent to which workers have access to and utilise available software

2. how time is allocated to train workers in keyboard skills, use of printers and screen displays

3. how information technology is used to assist decision making in child care.

The findings will be analyzed and the implication for training and curriculum design on qualifying training courses will then be discussed.

Design. This paper will report on the first two of the agencies to be examined - one social services department and one small high profile private agency dealing exclusively with sexually abused children and offering therapy, residential care and a consultancy service. The range and extent of hardware and software will be determined. In addition a number of workers will be interviewed in both agencies to ascertain their views and knowledge of IT and social work practice and their attitudes to an IT course being included in the social work curriculum.

The interviews will be conducted using a semi-structured format with a core of standard questions being supplemented by other questions generated from the interviewees responses. The core themes will be:

a) level of knowledge of available software
b) regularity of IT usage in day to day practice
c) exposure level to IT training
d) perceived competency level in using CHIAC or other software
e) an indication of the value of an IT programme on qualifying training courses.

The material generated will then be analyzed and a curriculum model for teaching IT on a social work course will be offered.

Teaching Expert Systems in Social Work

Rami Benbenishty, Hebrew University, Jerusalem, Israel.

Courses on expert systems are becoming a standard in many fields such as computer sciences, engineering, and business administration, but are not as common in the field of social work. The aim of the proposed paper and workshop is to present the conceptual framework, content, and techniques used by the author to teach a course on expert systems in the Graduate Program of the School of Social Work at the Hebrew University.

The central theme is that the design of expert systems in the helping professions is mainly a powerful technique to elicit, reformulate, and to create practice knowledge. Students choose practice area and an expert, and employ a variety of techniques to elicit expertise. They use an expert system shell to design a working prototype. The focus is on the interplay between the structure imposed by available formats to represent knowledge, and the intuitive and free-form ways that professionals in the field use to describe their knowledge.

The paper presents the course curriculum, additional materials and references. A variety of projects initiated by students are presented to illustrate the potential for applications of expert systems in social work. In the discussion the author reviews the students' reactions, and addresses the implications for social work education and practice. A workshop is offered to present course material more fully, including the expert system shell.

Design and Implementation of Clinical Information Systems

Rami Benbenishty, Ph.D, Hebrew University of Jerusalem, Israel, and Daphne Oyserman, Ph.D, Wayne State University, Detroit, USA.

The authors present a conceptual framework and a methodology to design and implement clinical information systems to support direct practice.

The authors present an analysis of the information needs of clinicians in Human Care Service Organizations (HSO). Three main uses of information are identified: monitoring/tracking, communicating/reporting, and learning from

experience/generating knowledge. In order to meet these needs practitioners have to gather information, store it, and process it. Documentation has become an increasingly central function because HSOs are accountable to various other groups and agencies for their activities, and often largely dependent on increasingly hard pressed public and private sources for their funding.

Currently there are many obstacles to effective data gathering, and to accessible, user friendly storage. effectively cutting off practitioners, supervisors, and policy makers form this critical knowledge source. Access and retrieval juggernauts thus limit practitioners' ability to use information to make clinically appropriate decisions and learn from experience, and minimize the impact of practice experience on policy and budgeting decisions.

Computerized information systems are offered as a means of coordinating and structuring data collection, and storing information in meaningful ways that make for user friendly access, planned retrieval, and focus on information use rather than documentation use as an endpoint. Thus information can be efficiently processed and reports generated. Reports can focus on both stable and unique information needs. For example, clientele and services provided can be tracked and monitored, insight gained about the process of care provision on an agency-wide basis, and feedback provided. Clinical information systems are designed with front line practitioners in mind. Information gathered is clinically meaningful, is conceptualized in terms meaningful to and at the level of these workers. Information processing and reporting is designed to maximize the benefits to supervisors, administrators and policy makers.

The authors will demonstrate their methodology and conceptual framework with a series of examples of applications in a variety of human services domains.

D.I.C.S. - Music Therapy and Occupational Therapy

Pieter van den Berk and Pieter Wouda, Hogeschool Nijmegan, Netherlands.

D.I.C.S. is a Documental Information and Communication System, a computer network offering facilities of both areas: in the field of data communication as well as in the field of databank. The system is directed towards one specialty and is based on an international Human Network. In the databank you will find information on the following items:

> books, articles, grey literature, videotapes, professional organizations, clinical facilities, professional journals, educational facilities, commercial information.

D.I.C.S. - Music Therapy, our first D.I.C.S. project, started in 1990 and connects computers stationed at training schools for music therapy and professional associations for music therapy in USA, Australia and various European countries. D.I.C.S. - Occupational Therapy started in October 1992 and is based on the same philosophy; building up, at the same time,. a worldwide Computer Network and Human Network for one profession.

The paper consists of a demonstration of the D.I.C.S. - Music Therapy and Occupational Therapy, an overview of the actual situation and a report of projects were D.I.C.S. - Music Therapy is used by music therapists, music therapy trainers, students and researchers. The development of the same systems for other professions is a further goal.

The INFUSE Grey Document Archive: Viewing Its Future Development

Yitzhak Berman and Patrick Kenis, Israel.

The INFUSE Grey Document Archive began operations in January 1991 and began document retrieval by the end of that year. As of January 1993, there were over 600 documents from 23 countries in the INFUSE Grey Document Archive. Five main areas of concern have been identified for INFUSE documentation:

1. What areas of concern do we share?
2. Which situations require study?
3. What is actually being done?

4. How is it being carried out?
5. Is it fulfilling any positive purpose?

While it is valuable to collect information, the ultimate goal of all databases is to disseminate that information. The issue of greatest concern to INFUSE is dissemination of knowledge and its value to the user.

Four dissemination functions (spread, choice, exchange and implementation) will be identified and discussed. While INFUSE operates as a classic database where one has a *choice* of the information one seeks, its ultimate goal is to operate as an *exchange* facility for a multi-directional flow of information. A model of information exchange will be suggested.

The actors defined here as potential users of grey literature, are social policy-makers. Several questions are raised in this regard. Why do decision-makers not use grey literature as a source of their information and knowledge development? What can be done to expand the impact of the INFUSE Grey Document Archive in particular, and grey document archives in general, to encourage the exchange of information at the user level?

A distinction will be made between (a) knowledge of a programme, (b) utilization of that knowledge and (c) adoption of a programme. It will be noted that INFUSE only relates to knowledge of a programme; while for decision-makers, utilization of the knowledge and information regarding the adoption of the programme may be more relevant. A model will be suggested regarding lesson-drawing (Rose, 1991). Implications will then be made regarding this model and applied to INFUSE.

IT and Race Equality

Kish Bhatti-Sinclair, University of Southampton, UK.

The paper will focus on how IT impacts on the quality of life of racial minorities with reference to the recent rise of racism in the EC and the potential of IT to improve their quality of life.

Information Technology (IT) is not ideologically neutral, it raises fundamental issues about ourselves and our society, questions that inevitably lead to major concerns about its advantages and disadvantages. Rather than acting as a liberating force, IT can reinforce the inequalities in society. Despite its initial appearance, IT nor the science that surrounds it is ideologically neutral.

The European community is becoming increasingly concerned about the rise of racist activity within its member states. All European countries except the UK have constitutions which provide for minority group members who have status as citizens. Citizenship, however, is available to a small number of individuals from racial minorities. Legislation and codes of practice have been enacted only in a limited number of EC countries. Although the UK does not have a constitution, it does have the most extensive legislative structure and the majority of its racial minorities have full citizenship. The EC, therefore, looks to the UK for guidance on policy and practice on equal opportunities. This paper aims to highlight the issue of availability of new technologies to groups who may not have access to full human rights.

Providing Technical Assistance to Community Agencies

Lyndell R Bleyer, MSW, Western Michigan University, USA.

The Community Information System (CIS) is a research unit of the College of Health and Human Services that provides technical assistance to non-profit agencies. Situated in Kalamazoo at Western Michigan University, CIS has been providing technical assistance for fourteen years. Services range form one-time consultation to managing an entire needs assessment, program evaluation or client data base development on a contractual basis.

This style of technical assistance is fairly unique in Michigan. Several universities respond to requests for assistance on a project by project basis, but CIS is one of the few organisations that responds to requests, as well as maintaining a database of information on the local community. The service is genuinely needed, as typically agencies either cannot take

staff from their normal duties or do not have staff with the experience to do this specialized research work.

This presentation will focus on the types of technical assistance offered, providing examples of current and past projects that should be of interest to a general audience. Examples include the development of a client database for a program designed to improve maternal and infant health for minorities; the evaluation of a program to strengthen Head Start pre-school families; and a needs assessment gathering information to improve minority participation in the jury selection process. Depending on audience interest, I will also be prepared to talk about how one would go about setting up a technical assistance unit and other possible models.

Computerized Tagging of Client Records with Census Tract

Lyndell R Bleyer, MSW, Western Michigan University, USA.

The Community Information System (CIS) is a research unit of the College of Health and Human Services at Western Michigen University, that provides technical assistance to non-profit agencies. This paper focuses on the trials, tribulations and triumph of working with other people's databases to add a census tract number that will allow the agency to tally clients served by the census tract. Census tracts are geographic/political units upon which the federal government collects data. Any agency receiving federal funding must report client statistics this way. The computerized program is also used by banks who must report loans and home mortgages by census tract to prove non-discrimination.

Having data on one's clients by census tract allows comparison of client data with a wealth of census data. For example, if an agency serves low-income children age 3 and 4, openings for new children can be filled based on the geographic areas with greatest need. The agency can also examine how well their client's match the characteristics of persons living in any given area. To make it easier to review and comprehend the data, they are often presented on maps in addition to tabled form.

The many hurdles encountered as we worked with databases from several different agencies forced us to become more and more clever to anticipate the multitude of variations for data entry. Not only does this have implications for client databases, but for mailings, and selection of samples for surveys. While census tract encoding may be of greatest interest to those who use tract data, the program and its utility could be adapted to any country's need to tally client or other information by address.

Home Care Programs: a Step towards Computer Aided Development of Health Care Services

E S Bosma, MD and J Thie, MD, Groningen, The Netherlands.

Due to the miniaturization and the increasing reliability and ease of use of technology now employed in the hospital, new possibilities arise for home care and home treatment. Admission into hospital, nursing home or old people's home can thereby be avoided, shortened or postponed. Practice shows, however, the existence of a gap between the technology available and the technology being used. The Quality Institute for Applied Home Care Innovation (Dutch abbreviation: KITTZ), which is an offshoot of the Groningen Province District Nursing Organization, is working hard to bridge this gap. Since 1989, as part of the of the innovation and development programme "Home Care Technology 2000" several technologies are being introduced in home care. Examples are home infusion therapy, traction treatment and a Wound Expert Care System.

Repeatedly a major barrier to the introduction of home care technology turns out to be the conditions that have to be met specifically for each technology. An integrated service of home care has to be developed in which several organizations and disciplines take part. A method of care innovation has been developed that is geared to the complex care situation that is typical of the application of home care technology. This method is based on four aspects, namely infrastructure, materials supply, expertise and information. Before the introduction of certain technology the conditions to be met are charted, problems that may rise are identified and solutions are developed.

Describing the necessary materials to be supplied and care and services to be provided by the participants, existing

documentation can be used. Often protocols, procedures and user manuals are available, describing good practices on which a certain degree of consensus is already established. These documents are screened for completeness and accuracy, and the commitment of the participants to the existing documentation is checked. If necessary, new protocols, procedures and user manuals are developed. The result, called a "Home Care Programme", is an integrated set of documentation describing a multidisciplinary home care service from several viewpoints.

Developing Multi-Problem Multi-Entity Systems

Philip Boyd AKC CQSW MSocSc MSc, Ferret Information Systems Ltd., UK.

A system to determine entitlement to Social Security benefits for a family is typical of this type of development. Not only are there multiple entities, that is each individual member of the family, but they are of different types, adult, child and the family itself. Each entity is potentially entitled to a range of benefits which may or may not have an impact on the entitlement of other entities within the system, and sometimes there are entities (persons) completely outside the system who are nevertheless closely related to the system entities in the real world.

This paper seeks to describe some of the problems of developing such a system, some techniques which the author has developed and used, some further techniques which the author is developing. The paper goes on to consider the isomorphic approach in this area and to consider the pursuit of correctness, maintainability, usability, efficiency, the validity of data transferred to other systems, the impact of the client group on system development and different interfaces for users with different skill levels.

Maximiser Plus and XQ (Demonstration)

Philip Boyd AKC CQSW MSocSc MSc, Ferret Information Systems Ltd., UK.

Maximiser Plus is a system to determine entitlement to Social Security benefits for a family and for all the individuals within it. It has been in use in the UK for some three years and has the largest customer base for any such program in Europe.

XQ is a text retrieval program designed for social security information. It is not an exciting development but is designed to particular principles:

> It is cheap
> Information must be encrypted
> Information must undergo little if any change to be useful in the program.
> It is designed as an information sharing tool. Users are encouraged to submit their own information to be included in the libraries under their own name and keeping their copyright.

Both packages fit equally easily into either 'quality of living' in that more money enhances the clients' quality of life or into 'quality of service' in that the programs are designed to enable professionals to give a better service in an area where they may have little expertise or into the 'framework' category in that they are concerned with making information and expertise more widely available.

Users are people providing information, advice, representation and advocacy in the area of welfare benefits in the United Kingdom.

The traditional approach is to get information from books and do calculations by hand. The advantages of a computerised approach are completeness and arithmetical accuracy.

Partners in Change - A Model for Widening Opportunities for Disabled Students in Mainstream Provision

Mark Braithwaite, RNIB Vocational College, Loughborough, UK.

RNIB Vocational College, Loughborough, in partnership with a TEC Consortium led by Leicestershire TEC is involved in a major project funded through the National Development Programme of the Employment Department. The project aims to make new training opportunities available for visually impaired people, including those with a hearing impairment, living in the East Midlands. This is to be achieved by using the substantial resources of RNIB's new specialist residential college in Loughborough to enhance the provision of local colleges and training managers in the region. This will give visually impaired people the option of studying locally, with a guarantee of the necessary support to successfully complete courses and programme training.

The project bid was a direct result of the 1991 survey of pilot TECs involved in funding employment training places for disabled students in residential training colleges on behalf of the Employment Department's Residential Training College Unit. The survey acknowledged the TEC's desire to see other local options for disabled trainees made available through enhancing mainstream provision. This has now been given greater urgency by the implications of the Further and Higher Education Bill which, which from April 1993 will raise a statutory obligation in this country to support disabled students in training and education from age 19 to 25.

The paper will look at the background to the project, managing the project, including resource implications and working with existing local networks. There are five TECs in the scheme, Leicestershire TEC, North Nottinghamshire TEC, Coventry and Warwickshire TEC, Greater Nottingham TEC and Lincolnshire TEC. Each TEC has nominated a committed college or training manager for the project and each nominated centre embodies a flexible and progressive approach to education and training. The five centres will be working closely with RNIB Vocational College's Outreach Service in recruiting visually impaired and hearing impaired students and providing the individual resources necessary. The project hopes to provide integrated training and education support for up to forty disabled students over two years, but it is anticipated that the results will have long term national implications for improving the training options available to people with a disability.

Using Advanced Communications and Multi-Media Applications to Provide Real Life Benefits to Remote Rural Communities

Jenny Brogden and Cara Williams, Information Technology Department, Nairn, UK.

Throughout Europe the services and facilities available to people in urban areas are generally far superior to those in the rural areas. The gap between these areas is continually widening with the consequent movement of more and more people from rural areas into the towns. This drift increases the strain on already overloaded services and infrastructures.

Advanced communications could, if concentrated in the cities and within large businesses, further encourage this trend. The BARBARA (Broad range of community based telecommunications applications in rural areas) project is about trying to reverse some of these trends and to improve the quality of life to people in the remote areas of the Highlands. The project is concentrating on how new technologies could be implemented in real life and be of benefit to rural communities.

The main objectives of the project are to provide consumer services over the ISDN (integrated services digital network) and to evaluate the whole process. BARBARA is a European collaborative project under Race (Research into advanced communications in Europe) involving the UK, Greece, Portugal, Ireland, and Netherlands. In the 5 countries 8 different applications are being implemented, but the presentation will concentrate on the 3 applications that are being provided in the UK (Scotland). The applications are:

1. Tele-counter; an interactive information and enquiry service enabling access to services such as social work, welfare benefits, community education, distance learning as well as other council services normally available at council offices.
2. Tele-library; access to the Highland Regional Library catalogue system, museum artifacts, photographic archives, to improve general access to facilities and to wider library catalogues to enhance the distance learning

infrastructures.

3. Tele-twinning; cultural links between schools and community groups within the participating countries using the interactive video, data, and audio links.

The paper will describe the initial research carried out with the local communities and the providers of the services and how this research is being implemented and the local people encouraged to use the new technology.

Facilitating Citizenship

Mr Geoff Busby, UK.

One in ten of the world's population have a disability of some kind during their lives. In pure numerical terms this amounts to 6.2 million in the UK and 33 million in Europe. My paper will argue that, regardless of the varying political idealogies which pertain throughout the world, many disabled people are being denied the kind of choices, chances and empowerment in their lives which are generally considered to be fundamental to the concepts of citizenship, but that through technology these elements can be facilitated. I will take into account the stunted citizenship that many carers are currently faced with. If we accept the concept that for every severely disabled person an average of four lives will be affected, then we are presented with significant numbers of the world's population being denied the equality of opportunity and basic rights of citizenship.

What kinds of choices, chances and empowerment am I talking about? At a simple level, for a severely disabled person, the ability to select a television channel and the chance to decide who to allow to enter their abode are choices and chances which for most are taken for granted. These could, fairly simply, be extended to the disabled by empowering them through technology. At a higher level the right to choose a line of education and vocations not to mention the ability to communicate and or experience activities, previously denied by disability, could equally be empowered. By the same token the inhibitions faced by carers could be minimised by decreasing the burden created through the "knock on" effect of disability.

I have argued above that technology can offer citizenship to millions of people with disability and their carers who represent a significant element in the cultural patchwork which forms the overall pattern of the canvas embroidered with the world's population. What then are the technologies which, in my opinion, could effect such liberation? Most importantly we have to direct ourselves in producing user friendly systems which will accommodate various means of human computer interfaces. This system will jell the sciences of voice recognition/synthesis, cybernetics, optics, artificial intelligence, multi-media and virtual reality into the embryo of systems which will crystallise to accomplish the empowerment discussed above.

If the propositions which I have made are true then the question which I put before you is - can the world reject, ethically, the opportunity to facilitate the complete citizenship of disabled people and their carers? Historically liberation is something people have fought for. I trust that future generations will be less passive and more pro-active in affording these fundamental rights to all of us.

Why is it so Difficult to Meet Social Need? The Rise and Fall of Computerised Home Shopping in the United Kingdom

Dr Michael Cahill, University of Brighton, UK.

Social applications of computer technology have not made much progress in the UK. One of the most promising was teleshopping or computerised home shopping which started with several local authority schemes in the early 1980s and then was taken up by a major British food retailer ASDA. The decision by this firm to close their teleshopping operation which supplied groceries to clients of more than fifteen Social Services Departments at the end of 1992 effectively brought teleshopping to an end. What lessons can be learnt from this story? What does it tell us about the utilisation of computer technology by local authorities and by their efforts to work with the private sector in the mixed economy of welfare? The extent to which the rise and fall of teleshopping illustrates some general lessons about the diffusion of information technology and its potential for the meeting of social needs will be examined.

The author has been monitoring the progress of computerised home shopping over the last four years. In 1990 and 1991 he interviewed over forty older people who used the teleshopping service and has spoken to all the major actors in the teleshopping business in the UK. The paper is based on this research.

Problematical Situations, Risks and Stresses in the Elderly or Disabled Everyday Life: the Most Effective Technologies to Relieve them

Massimo I Campo, David Chiossone Institute for Blind and Visually Impaired People, Genoa, Italy.

The understanding and exact identifying the real needs related to specific problems is one of the most important aspects to be investigated in every study for the application of technologies. This is particularly true when eligible users belong to groups who live subjective experiences, different and unrelated to those of the researchers, as elderly and disabled people are.

In the framework of a project in co-operation with CSELT (Center for Telecommunications Laboratories) we planned a first phase of information collection among different kinds of functional disabilities. The various characteristics of the people selected as experts suggested choosing the Delphi methodology which allows us to achieve in a short time a decision-making process, very rich in information aspects.

A questionnaire was sent to a sample of disabled people to investigate the problems of every day life in their own homes. It asked which king of activities or functional actions produce practical and emotional problems (anxiety, fear, tension and strain). Other questions dealt with the risks connected with the use of different rooms or settings. Finally we asked respondents to list anxious events which can take place in the home or outdoor.

First results showed unexpected elements which should contribute to improve technology's impact on the social and individual life of disabled and elderly people.

Implementation of Client Information Systems (CIS)

C.A.M Cardinaals-Hinssen and M.Praas, Hogeschool Eindhoven, Causa, Netherlands.

The increasing use of Client Information Systems (CIS) in social work is caused by the need for external legitimation for financial support and the increasing importance of business management in social work. Registration in social work faces specific problems because of the autonomy of social workers and their resistance and aversion to registration. Nevertheless the quality of information depends on their cooperation and acceptance of the need of registration. This means a special need for a careful introduction.

The ideas presented in this paper are developed and applied during the introduction of the CIS SPData at Social Pedagogical Services. The goal of the CIS is to support the process of developing national uniformity in procedures and definition of terms. Starting points are the three concepts from sociotechnics: ability to manage, ability to regulate, autonomy. Sociotechnical thinking supposes that the more ability to manage and regulate and the more autonomy there is on lower levels in the organisation, the more people will feel responsible for their work. Translated to the introduction of CIS, this means the more all the levels of the organisation are involved in thinking about the new information system, its use, its goal and the development of procedures around it, the more it will be accepted and fully utilized on all levels.

The starting point is the view of the organisation as a holistic open system; the environment has great influence on the organisation, i.e. the environment pushes the organisation into the use of information systems. Realisation of these ideas is translated in the instruction of managers, social workers and administrators in several settings (instruction, courses, discussion groups, separate and mixed hierarchical groups) and communication after installation (user-groups, newsletter). Problems which are met can be differentiated into internal and external problems.

The introduction of CIS has to be prepared carefully. All levels in the organisation have to be involved, separately and together; separately to meet the needs of that level, together to develop understanding for each other's views and attitudes.

The involvement of all levels brings about a learning process for the whole organisation, which takes time. The importance of time allocation for this cannot be emphasized enough!

Role of Information Technology in Improving the Quality of Living in Forthcoming Era in India

Mrs Damina Choudhary, Kota Open University, Kota, India.

The presentation will start with an introduction to the changing world and its dependence on Technology, including:

a) Meaning of information technology.
b) Different types of information on technology
c) Information technology in developed and developing countries.

The role of information technology in developed and developing countries will be considered, leading to the role of information technology in improving the quality of living in India in the forthcoming era:

a) What the futurologists say about the forthcoming era?
b) What will be the trends of life in the future?
c) Meaning of quality of living in reference to India.
d) How will this technology be a helping hand in the preparation of quality of life.

Discussion will cover both rural and urban areas of India.

Computers in the Criminal Justice System - A Human Service Perspective

David Colombi, West Sussex Probation Service, UK.

The author applies the results of his research into use of computers in one part of the Criminal Justice System in England to the Criminal Justice System as a whole. The presentation identifies how the development of a more integrated approach to computer use within Criminal Justice may lead to a more efficient system but presents threats to individual liberty, and how opportunities for computers meeting human needs are missed.

The starting point is the author's own work from the perspective of a Probation Officer turned Research and Information Officer. This work identifies the domination of computing by management needs for statistical and financial data at the expense of meeting the needs of front line staff to deliver effective services to clients. Development of client information systems relevant to local needs has been slow and minimal emphasis has been put on the use of computers for resource information or for use by professionals and clients as a social work tool.

Applying this perspective to the Criminal Justice System, three broad themes are identified:

1. The development of computer use within each part of the Criminal Justice System - the Police, Prosecution Service, Courts, Probation and Prisons - reflects the traditional isolation and fragmentation of these different parts, but within each we can identify similar themes of limited strategic thinking and narrow perspectives about applications.

2. The development of the Co-ordination of Computerisation in the Criminal Justice System (CCCJS) initiative as a more strategic and integrated approach. This sensibly rejects the notion of a grand integrated national criminal justice system in favour of common data standards and development of links at a local level. However, these links significantly intensify the civil liberties issues inherent in agencies using detailed personal data by enabling data transfer between agencies. These include issues of confidentiality, ownership and control of personal data, legitimacy of access and misuse and illicit use of data. Fundamental issues about the extent to which people should be a victim of their own history are examined in the context of the Probation Service ethos of people's ability to change and of the intentions of the new Criminal Justice Act.

3. The final theme is to examine developments that extend the use of computers for human ends and identify areas in which new opportunities exist. These include actual use of computers in courts, in education and rehabilitation work in prisons and in probation and to support work of victim support schemes. Potential uses identified include information on civil rights at all stages of the process, police questioning and informing and helping victims in relation to court and criminal injuries compensation.

Methods for Epidemiological Assessment of the Disabilities that can use Rehabilitation/Assistance Interventions Based on Assistive Technologies

Dr. Carla Colombo, Dr R Bianchi Bandinelli, Dr Laura Nassi, and Dr Lia Sacchini, Pisa, and Dr Gianni Tognoni, Milan, Italy.

The current market for technology in this area lacks coordination. As a consequence it is difficult for both professional and user to acquire information regarding the availability, application and benefits of devices, equipment and products. There is also a lack of direct knowledge concerning the needs of final users and their problems. Without proper assessment of application and effectiveness of the new technologies, its application remains fragmentary and inefficient. The potential benefits of technologies for assessment, rehabilitation and training for people with severe disabilities are great. Among these is a more precise match of specific user needs and the more effective take up and use of devises and aids.

The use of epidemiological methods to assess the needs of informatics-based devices and resources in the field of rehabilitation/assistance may be seen as a prerequisite to provide:

1) on one side, a reliable estimate of the contribution of new technologies to the solution of the overall burden of disability:
2) on the other side, a qualitative profile of the competencies and expectations of those who are in charge of identifying and assisting the users in various scenarios.

The general scheme of our project foresees a structured evaluation (with questionnaires and case finding) of the mutual suitability of a potential index of patients and of available technologies. It is tested in two complementary settings:

a) a comprehensive survey in a medium size town (200.000 peoples) where around 7000 disabled persons are expected overall;
b) the prospective recruitment into a newly established program with advanced informatic resources of cases screened from the cohort of severely disabled peoples.

Resource Management Information System (Demonstration)

Mr Malcolm Cox, MSc, Dorset Probation Service, UK.

The Personal Social Services are being asked to take on more tasks within existing budgets or cash limitations, but at the same time they are being asked to provided the public with all the "facilities" expected yet still give a quality of service that is real value for money. To do this managers have to be able to solve the following equation, based on the available data within the shortest possible time in order to maximise the best use of the resources available.

Equation: The total number of tasks proportional to the time allocated (real or notional time) for each task completed within the total working time available. Constrained by cash limitations but leading to quality, quantity and effectiveness, and/or to check or predict targeted projections.

$$AT + \text{or} - (\Sigma TSn * TMn) = \quad \text{(Leads too) } P(B\backslash A)\ Q1 <> Q2$$

where C = Monthly or yearly budget
AT = Available working hours per month/year
TSn = Total number of tasks

TMn	=	Total amount of time allocated to each type of task
P(B\A)=		The conditional probability of event B given that event A has already occurred.
Q1	=	Quantity of the task (Event A)
Q2	=	Quantity of the task (Event B)

A system called RMIS is designed to supply user friendly data outputs that will enable the identification at any given point in time the position of the equation viz-a-viz resource management and targeting, in conjunction with a series of measurement data sets using:

a) Task type,
b) Time (real or notional)
c) Budgets divided into:
   i) direct cost eg. salaries
   ii) indirect costs eg. travel, accommodation, local management costs etc.
   iii) overheads, management cost.

The way the formula is set up suggests that this would be a closed system and would not take into account worker skills and other intervening variables. The system should be used in conduction with performance indicators and other monitoring and inspection tools to provide a continuous review process at all levels of the relationship between cost, outcomes and target achievements. This would enable the system to be opened up and to take into account other variables that would influence the actual process and allow a degree of control over the outcomes.

Supercomputer Applications in the Human Services

Dr Shirley E Cox, University of Nevada, Las Vegas, USA.

The requirement for managing mega-databases and the ability to run service demand and provision trend analyses far exceeds any capacity previously imagined for human service computer applications. There is a pressing need to combine child welfare abuse and permanency planning data from each of the various states' datasets and reporting configurations. Numbers and sub-files for analysis of need trends in numerous state aging and other adult service programs are in great demand. Even more critical, for the United States, is the capacity to, in one place and system, house the provider, recipient and service files for the mammoth government health care system promised by the newly elected political system.

The high performance computing/research and development partnership established in 1989 as the UNIVERSITY OF NEVADA, LAS VEGAS/CRAY PROJECT was one of only three university academic centers established to demonstrate the feasibility of utilizing the CRAY YMP 2/216 high performance computer to identify the actual and potential benefits and barriers to mega-health and social service database analysis. Since that time the University has greatly expanded its utilization of the resource to such areas as the cross correlation of health records, environmental restoration, and the US Department of Energy's fossil energy research programs.

The paper presents information on the need for supercomputers in the human services and gives examples of applications to the assembly of data and trends in child welfare services, program planning in adoption services, needs assessments in aging services, and correlation of service provision data in the health services. With each example are criteria for education and training of not only university students and faculty but the governmental service agency staff who interact around these areas of concern. In addition, in each instance, there are suggestions for international linkage of data capabilities in order to facilitate the expansion of communication, planning and service delivery strategies.

Information Technology and Socio-Economic Development in South Africa

Professor J Dewald Roode, University of Pretoria, South Africa.

A recent discussion paper prepared by the World Bank on *The Information Technology Revolution and Economic Development* stated that information technology is the driving force for a new techno-economic paradigm with far reaching

effects for all types of industries and services and for the competitive position of developing countries. It is transforming the industrial and financial sectors and becoming indispensable to economic competition in an increasingly integrated and information-intensive global economy. Even the least developed countries cannot be insulated from its pervasive impact.

One of the conclusions of the report was that, to exploit the immense potential of informatics, developing countries must strengthen their capabilities to manage five key areas: institutional adjustments and managerial practices; informatics policies necessary to support national priorities and to promote the diffusion of best practices in information management and technology adoption; educational and training programs to develop awareness and raise skills of policy makers, managers, professionals, educators, and information and technology specialists; physical and institutional infrastructure for broad application of informatics; and technological capabilities and informatics support services to meet local needs.

These remarks and conclusions come more than twenty years after the United Nations, in its 1970 plan for the decade, wrote:

> "Computers will play an increasingly important role in developing countries which intend to participate in the world economy in ways other than the supply of raw materials. Developing countries will find computers a necessary ticket of admission."

This paper explores, against the background of the above remarks, the current situation in South Africa with respect to the application and use of information technology for socio-economic growth. It will highlight the areas of achievement, and, more importantly, will focus on the areas where so far, little progress has been made. The elements of a national strategy which has been developed as part of a nationwide project to address some of these shortcomings will also be described. The focus is less on the increase in industrial productivity which could be achieved through information technology, as on information technology as an instrument to empower the poor and their organisations with information, skills and opportunities to participate actively in their own upliftment and development.

BSNITH Project - Black Sea Network for IT in the Human Services: Advancing Human Capabilities Through Information Technology

Dr Stephan Drazhev, ACMBUL Chairman, Varna, Bulgaria.

Two years ago the President of Turkey, Turgut Ozal, proposed the idea for the creation of a Black Sea Single Market. Following the first idea for co-operation of the 11 Black Sea region countries (Albania, Armenia, Azerbaijan, Bulgaria, Greece, Georgia, Moldava, Romania, Russia, Turkey, and Ukraine) with a population above 290 millions peoples, and having in mind the consolidating of the international impact of ENITH, we offer the development of the Black Sea Network for Information Technology in the Human Services Project.

The main purpose is cooperation between 11 specific countries to share each others experiences for realization of the programme *Advancing Human Capabilities Through Information Technology*. There is another reason for integration of the countries in the Region, according to targets of ENITH. It is connected with the differences in economic and political development, in living standards of the countries, and as a result, in the development of Human Services Information Technology Applications. In this region there are countries from former communist block (as former Soviet Union, Albania, Bulgaria, Romania), countries awaiting for acceptance into the European Community (as Turkey from 1987), and countries who are the EC members (Greéce). In addition the countries from former Soviet Union as Armenia, Azerbaijan, Georgia, Moldova, Russia and Ukraine, have different economic development.

With the founding of BSNITH, ENITH can help by dealing with such problems as access to desired information via E-mail hosts and electronic connection, local and regional data bases; helping to determine current social needs and to develop new educational programmes, etc.

IT Use by a Central Welfare Administration: The Israeli Experience

Dr A S Eaglestein and Mr Y Berman, Ministry of Labour and Social Affairs, Jerusalem, Israel.

Information technology should improve managerial control and planning abilities regarding a variety of organizational responsibilities, by enabling managers to monitor relevant displays, summaries or analyses of information flows.

The purpose of this study is twofold: firstly, to determine the extent of IT penetration into the planning and control functions of the senior managerial levels of the central Israeli welfare administration within five areas of managerial responsibility - budget, people, programs, administration and policy; and secondly to measure emergent IT generated change and impact regarding the two functions and the five areas of responsibility.

By casting the two functions and the five areas of responsibilities into a table, ten cells are generated, and for each such cell a series of questionnaire items were constructed. Each item appears in three forms: one for determining the current status of IT, one for measuring any change (positive to negative) that has occurred as a result of IT penetration into the managers' work, and finally a personal value judgement concerning the extent to which any reported change was "good".

Additionally, a series of background and supplementary items were constructed to determine, for example - quality of training programs for IT use; non-IT sources of information and their relative importance; desire for and IT mix of more or less or different types of information, or their analysis or the frequency of information reporting; a variety of attitudes concerning work since the advent of IT; issues of security and secrecy.

An Application of Video Telephony to Maintain the Quality of Life of Elderly People with Special Needs

Thomas Erkert and Simon Robinson, Gesellschaff fur Kommunikations und Technologieforschung mbh, Bonn, Germany.

This contribution describes the opportunities for providing support services to elderly persons using video telephony. Such services have been designed and introduced in a field trial in Frankfurt am Main as part of the *Application Pilot for People with Special Needs (APPSN)*, a project in the European Community R&D Programme RACE.

Video telephony offers opportunities to provide services direct to the home, encouraging and supporting an independent way of life, thereby reducing elderly people's need to recourse to institutional care. It has been shown in the Frankfort field trial that services using video telephony in a local care scheme can potentially help maintain social competence, by motivating and enabling continued participation in social activities, and help to prevent a decline into dependence. Other support services included informing the elderly clients about activities and events, providing refresher exercises between regular therapy sessions, and providing general assistance in coping with problems of everyday living. The field trial was evaluated using a number of techniques, including a series of surveys with participants and service staff and automatic logging of usage of the service.

First, an overview of frequency, duration and patterns of calls of users of the new services is given, based on logged information. The focus then moves to the perspective of service staff. Where do they see the most important benefits of the new service? Do they find all aspects of the technology acceptable? Next, survey results are used to report on the benefits as seen by service clients. What kind of service do they want? How did the service influence their life? What did the users like most? What would they like to change? In conclusion, some early results of the successor RACE Project *TeleCommunity* are presented. In *TeleCommunity* opportunities for extending support services to various forms of sheltered accommodation are being explored for an extension of the field trial in Frankfurt am Main.

The results from both these projects suggest that video telephone-based social support services have very considerable potential, and that this technology can effectively assist professional carers in their difficult tasks both in the field, in sheltered housing and in institutional care facilities. Moreover, picture communication has been shown to be capable of meeting some of the special communication needs of elderly people, thereby significantly improving their quality of life.

The Challenge of IT for a Voluntary Organisation

Mrs Shani Fancett and Dr Mike Hughes, Barnardo's, Bridgend, Mid Glamorgan, UK.

As a large national child care charity, Barnardo's has occupied a particularly distinctive position within social welfare provision since the late 19th century. Today, it provides a range of services across five main areas of work, namely families with young children, children needing families, disability, young people with special educational needs, and disadvantaged young people. These services are delivered by 165 projects spread across the UK. This geographic spread and diversity of services poses a real challenge to IT resources which need to be both varied and flexible and, therefore, necessitates a particularly distinctive IT response.

Barnardo's is presently developing a computerised client record and monitoring system which will go well beyond the client index model. The Organisation is looking to IT to assist it in identification of need, responses made, and a consideration of outcomes and interventions. Any IT solution will be required to address each of these stages of work with children, young people, families and communities. However, a voluntary child care organisation does not fit the mould for the usual IT solution in the personal social services, and reconciling the differences has been a major challenge for Barnardo's and its potential suppliers.

This work is not being done in isolation. Running concurrent with this IT development is a strategic development in relation to quality assurance.

This paper describes how these two strategies have developed alongside each other. It also outlines the search for an IT solution and highlights the lessons learned in the process.

Automating the Social History Report

Michael Ferriter, Rampton Hospital, Retford, UK.

The system for automating the Social History Report is a relatively simple and obvious idea. Its origins are in a psychiatric social history report interview schedule and a database system to receive multiple choice responses. In addition the system is programmed to reconstruct the multiple-choice response, Y's and N's etc, into sentences and phrases which, in turn are exported to a word processor for final reconstruction as a full report with headings. The report is both saved and printed for later editing. Practitioners can incorporate the structured component (either using a paper and pencil questionnaire with the responses later imputed into a computer or directly into a portable computer) into their interview with patient's parents.

The advantages of the system are as follows. The individual social worker has an aide-memoire but during the interview is not restricted to the structured component alone. The social worker has the content of the structured interview in word processed form but also has the ability to amend or delete at will. Using the system roughly halves the production time for a Social History Report while full editorial control is left to the practitioner.

Those interested in patient populations and subgroups have access to a powerful database that contains information, collected consistently over a wide range of topics including: family structure, obstetric complication, general health, education, employment, relationships, substance abuse, problem behaviour and degree of burden to the family. This database can be relationally linked with the main patients database containing information on diagnosis, offending, etc.

The system is written in a 4GL language, Microsoft Aspect, and currently also requires Word Perfect. However, the system will be adapted to be capable of being used with other major word processors such as Word and WordStar. The author and his organisation are negotiating a partnership with Microsoft Technology Ltd to market the system and to offer a customising service for those in other areas of social work or other disciplines who are already showing interest in the basic principle of the system but will require a different interview content.

An Exploration of Computer-Based Self Help/Mutual Aid Groups

Jenny Finn, Ph.D, Arizona State University West, Phoenix, USA.

Self-help/mutual aid (SHMA) groups have been recognized as a growing and significant resource for helping vast segments of society. SHMA groups have been used to provide support, catharsis, information, education, and therapy for such diverse problems as drug/alcohol addiction, child abuse, mental illness, divorce, disability, eating disorders, medical problems (eg. cancer, amputation and epilepsy), and bereavement. It has been estimated that there are over 400 distinct types of groups serving an estimated 15 million participants, and the number and types of groups continue to expand.

Considerable research exists indicating the reasons for group development and emergence, the pathways that participants use to find groups, the nature of the helping mechanisms of groups, the impact on participants of group involvement, and the use of clearing houses to support development of new groups. The evidence clearly points to the positive outcomes of self-help participation whether the groups are classified as "loss transition" (widows, single parents), "one step removed" (relatives of mentally ill, parents of dwarfs), or "stress coping and support" (problem drinkers, persons with cancer, gamblers). Little is known, however, about the most recent development in the SHMA movement: computer-based SHMA (CSHMA) groups. Commercial telecommunication services such as TELENET, TYMNET, and GENIE as well as several nationwide networks of non-commercial microcomputer based bulletin boards offer computer users the ability to communicate with each other about specific common concerns through special interest groups (SIGS). While these groups originally centered on computer related topics, they have expanded to cover a multitude of political, social, intellectual, and personal concerns. These have included groups similar to and based upon the self-help movement, such as Recovery, AA, AIDS, Development Disability, Physical Disability, Spinal Injury, Brain Injury, Depression, Mental Health, Eating Disorders, and Child Abuse.

An estimated 8 million people are involved with home computers. Over one fifth of these also utilize a modem for computer based telecommunication. There is no information, however, about the extent to which computer based SHMA groups are used. The existence of computer based human service networks and self-help groups has been reported in the human service literature, and there have been anecdotal descriptions of individuals being helped through such groups. Theoretically, computer based SHMA groups offer certain advantages over face-to-face groups despite the lack of personal contact. Members need not be physically present to participate. This is especially advantageous to those with limited transportation, physical lack of mobility or who would not risk personally attending such groups. They offer a new means to distribute information to clients and to human service groups. Computer-based groups allow those with esoteric difficulties a national (even international) population in which to find others with similar concerns.

This paper examines the use of computer based SHMA groups, including:

1) the extent of social problems addressed by computer based SHMA groups;
2) the helping mechanisms and perceived benefits of these groups through content analysis of participants' messages from a sample of CSHMA groups;
3) analysis of the pattern of interaction and use among participants of a sample of CSHMA groups.

Relevance of the Problem. Given the lack of adequate funding for human services and the shortage of helping professionals, new approaches must be found to supplement and in some areas improve upon professional practice. There is considerable evidence showing that SHMA groups are beneficial. Computer based SHMA groups may bring the advantages of such groups to an even greater number of people, creating a stable network of support within a geographically dispersed and mobile society. Since they provide many of the benefits of face-to-face SHMA groups, human service professionals should play a major role in their creation and growth just as they have done with SHMA groups.

Human service professionals must be able to describe the present and projected applications of information technology in order to meet current training and consultation needs and to prepare future workers for the realities of practice. Telecomputing for human service professionals is presently in a stage similar to the early introduction of the telephone. There is much trial and error with regard to its best use and considerable reluctance to adopt this new technology. The social work education and practice are only beginning to explore the uses of information technology. This study will serve to help inform human service professionals of a new information tool and practice resource. It would promote the growth of a potentially vast helping resource and promote human service electronic networking.

Computerized Information Systems: Issues of Access and Use as they Relate to Agency Decision-Making

Dr Daniel J Finnegan, San Diego State University, USA.

Much has been written about the potential opportunities and problems that technological advances post for a diverse culture. One line of argument suggests that technological advances are most readily available to the members of the dominant culture group. This availability in turn tends to reinforce the uneven distribution of power enjoyed by the dominant culture. The countervailing argument is that technological advances do not discriminate. The utility of the technology is potentially available to whatever group or individual expends the time, effort and resources necessary to apply the technology to their situation.

The focus of this presentation is on the potential of current computer technology to empower members of diverse cultures. The paper explicates an approach to mastery of computer technology and computer applications that attempts to increase the ability of members of divers cultures to become effective participants in the decision making processes of social agency administration. A basic assumption of the presentation is that decision-making in organizations is based on a combination of power, values, and information. Moreover, mastery of the ways in which information informs a decision is analyzed, organized, and presented represents a source of power in an organization that can be critical to agency decision-making.

The presentation proceeds in three parts. First, the types of agency decisions that have the greatest potential for being influenced by information are identified. Second, using the data of an existing agency's information system, the ways in which agency data is typically analyzed, organized and presented to influence decision-making are demonstrated. Third, creative approaches to data analysis and presentation are examined for their utility in decision-making.

The presentation concludes with an analysis of the potential of various members of an organization to take advantage of an agency's information system to influence agency decisions. The presentation emphasizes that familiarity with the agency's information system offers all members of the organization occupying positions ranging from the front-line caseworker to the agency executive to influence agency decision-making.

Computer Software Applications Development in Social Work: Moving from *Wouldn't it be Nice* to *Here is How it is Done* (Demonstration)

Dr Daniel J Finnegan, San Diego State University, USA.

The need to develop computer applications suitable for social work tasks is widely discussed in the social work literature. *Computers in Human Services* is a particularly good source for an overview of the current status of this discussion. A review of many of the articles in recent volumes of that journal reveals an interesting discussion of many of the types of software applications that need to be developed. However, most of the articles give limited attention, at best, to the actual development of such applications. This presentation will recount the development of a specific application for use in a School of Social as it seeks suitable field practicums for students. An emphasis will be given to three main themes: the interface between the professional identifying the specifications for the application that is needed and the software developer; data specification, collection, and maintenance; and the interface between the end user of the software and the software's design.

A demonstration of a software application will provide hands-on experience with an application the author considers exemplary. The programming tools and logic to create keys features of the software application (i.e. popup menus, handling of open-ended response categories, and data search capabilities) will be discussed. The presentation will examine the transferability of the key features of the application to other kinds of social work applications. The intent of the presentation is to provide participants with an understanding of the programming techniques utilized in designing software applications that are end user friendly.

Survey of Staff Attitudes Toward Computer-Assisted Instruction for Staff Orientation

John P Flynn, Ph.D, Western Michigan University, Kalamazoo, USA.

The purpose of this presentation is to report on staff attitudes regarding the use of computer-assisted instruction (CAI) for conveying limited aspects of staff orientation information for new employees in a human service agency. Agency personnel in human service organizations consume valuable resources (i.e. staff time) in receiving important information at the time of orientation to the new job. Not all of this needs to be conveyed in personal interaction; rather, some information may be able to be provided by computer-assisted instruction or computer-based training while others may require face-to-face interaction with a work supervisor or colleague. This presentation reports on an actual experience with CAI with 53 staff members in nine human service agencies and considers the issues generated by the experience. The study reported here provided CAI orientation material on the topical issues of confidentiality, recipient rights, and affirmative action.

This approach enables supervisory personnel to use opportunities for face-to-face interaction with employees for issues or topics that benefit from inter-personal interaction, while allowing computing technology to convey those aspects of orientation information that, while important, do not require interaction and the staff time of more than one person. Also, use of information technology enables the organization to keep a tracking record of what information the individual staff member has encountered; consequently, individualized training or orientation plans can then be developed.

Use of computing technology in the manner reported here provides for more appropriate use of both technologically-based and human interaction-based orientation of human staff to their jobs. People-to-people interaction in staff orientation and training is then relieved of the drudgery of unilateral communication in which mere information is passed form one to another. Furthermore, given large rates of turnover of staff in some agencies, appropriate use of CAI for some orientation content enables important information to be conveyed whether or not there is sufficient supervisor time or resources to provide such orientation. Oftentimes, appropriate orientation is not done with new employees until a sufficient critical mass of new staff has been accumulated to make a given orientation session an efficient use of supervisor resources. Consequently, some staff are not oriented in a timely manner.

The approach reported here has obvious implications for judicious use of inter-personal and computer-based orientation of new staff. Some potential subject matter suggested by the participants in this study are also considered.

A DBMS for Managing Child Welfare Worker Training

Douglas Frans, Ph.D, Assistant Professor, University of Arkansas, USA.

This paper describes the development and operation of a database management system developed for the purpose of managing the staff development activities of Family Service Workers within the Arkansas Division of Children and Family Services. As a result of a lawsuit brought by the Centre for Youth Law, Arkansas DCFS negotiated a consent decree that implemented reform initiatives addressing several key deficiencies in the way that Arkansas provided for the protection of its abused and neglected children. Worker training has been a particularly acute concern and it was determined that many line workers needed basic professional training or "re-professionalization". The mandates included requirements to generate individual training needs assessments on all Family Service Workers and to also generate periodic training plans to bring worker skills into line with standards outlined in the reform document. A Child Welfare Training Academy (operated in collaboration with the University of Arkansas) was developed to coordinate all new worker training and re-professionalization activities.

Using Paradox 4.0, a DBMS was developed that automated the process of tracking worker acquisition of skills and competencies through the Training Academy, and that automatically generated training plans based on this information. All worker competencies and deficiencies are stored in various databases and at regular intervals a worker's particular training record is compared to the standard set for their particular classification. Based on the comparison, a training plan is generated that outlines the skill areas the worker needs to address during the next training cycle. Additionally, the system is used to collect evaluation data on the Training Academy and to do some projective testing with workers to determine various responses to the training and re-professionalization process. Training Academy personnel, Staff Training section, human resources, and the University personnel all have limited user views of the data and can use it for various purposes including worker evaluation, program evaluation, placement decisions, and the like. The system is highly flexible in that the information can be applied for a variety of purposes while protecting sensitive information.

Task Analysis in the Design of a Human-Computer Interface for a Ward-Based System

Tony Frascina and Bob Steele, Sheffield Hallam University, UK.

There is currently a trend towards the integration of hospital information systems, with the ward as the focal point for hospital-wide information networks linking existing departmental systems. This has great potential to improve the quality of the workplace for those who actively provide health care. However, such potential will not be fully realised as long as the basis for the design and implementation of such systems is centred around organisational and management needs. Existing systems have been designed using systems analysis methods in which the needs of the users are peripheral. The use of computers by doctors and nurses should be fully integrated with the patient care tasks they primarily undertake, rather than serving aims which are in essence external to their principal role. The needs of the end-users are critical, and their participation in the analysis and design process is imperative in order to achieve systems which complement and enhance their tasks. The quality of their interaction with the computer system will largely determine its success, and the design of the interaction is addressed here.

The paper reports on research being undertaken at Sheffield Hallam University which is seeking to apply user-centred methods to the design of the Human-Computer Interface for a ward-based information system in two large hospitals in the City of Sheffield. The approach taken has been the application of task analysis to the work of junior medical staff, in particular how they request the services of the haematology and clinical chemistry laboratories. A design specification has been produced for the interface between the ward and the pathology laboratory systems. The method used was Task Analysis for Knowledge Descriptions (TAKD), which is aimed at situations where domain knowledge is central to the analysis. The techniques employed are intrinsically user-centred because all of the data which are input come from direct observation of the tasks as they are performed. Background knowledge and experience are brought to bear on the data, and a re-description of the tasks in a formal hierarchical structure is devised. In the process of carrying out the analysis, insights are gained into the underlying task structure, whist the formal TAKD outputs give important quantitative data which contribute to the subsequent design rationale.

A design specification for the interface was produced from the task analysis outputs. The application of TAKD was most valuable in obtaining requirements which related firstly to the general system, i.e. what should and should not be included in the request interface, and secondly to interaction with the system, i.e. what properties the interface should have. It revealed the extent of unnecessary repetitions in tasks, while showing patterns in non-repeated sub-tasks. The wider applicability of TAKD was shown, in that the TDH for one ward needed little adaptation when applied to the second ward, reflecting the similarity in task structure between the two. With further data collection, the analysis could be extended to cope with other requesting systems, and in principle could be applied to the range of information based activities on the ward. We argue that using TAKD was successful in producing a design specification for an inherently usable interface, because the user-centred process by which it was derived gives substantial justification to the design.

TAKD can contribute to the more effective design of the human-computer interface in the ward environment. Whilst inexperienced people can be trained fairly quickly to use TAKD, the acquisition of the domain knowledge essential to make the analysis effective is very time consuming. Medical informatics is necessarily collaborative and the optimal approach for producing a design specification is to combine the skills of the participants: the clinician brings domain expertise to the analysis, the analyst is more detached and provides guidance to maximise the effectiveness of the methodology. TAKD requires that those who use it have considerable domain knowledge. This is quite different from reductionist systems analysis methodologies which aim to describe and model data and data flows, and in doing so overlook the reasons why tasks are carried out in the way that they are. We believe that the approach reported here presents the opportunity to develop computer systems which can enhance the work and the workplace of those involved in an enterprise which is itself inherently ethical and humane, and empowers them to determine how such systems will be incorporated into the workplace.

Building Electronic Communities for Human Services Providers

Philippa Gamse, National Committee for Prevention of Child Abuse, Chicago, and Terry Grunwold, North Carolina Rural Economic Development Center, USA.

The recent dramatic growth in the technology and use of electronic computer networks and bulletin boards provides us with some unprecedented opportunities. More and more people with organisations are using these methods to share ideas and

resources, and to pool their skills and knowledge in various fields of human services. Access to this technology makes it possible for us to transmit information and co-operate in problem solving on a global scale, instantaneously, and (in most cases) at a relatively low cost. However, as the number of available networks proliferates, many potential users find themselves bewildered by the choices open to them, and about ways to organize to ensure optimal use of the new Information Age technologies.

Before making a decision to join an existing "host" network or to develop an independent Bulletin Board for a specific group of users, it will be critical to have an understanding of:

* which organizations can benefit from electronic networking
* the resources needed to launch a new network
* how to plan strategically by determining which shared activities are appropriate for the networking environment
* The criteria and priorities to apply in evaluating "host" systems or possibilities for developing a go-it-alone network.

Once the technology issues are resolved, groups must give careful consideration to:

* attracting appropriate users and sustaining their interest and participation
* developing a plan for user training and technical support
* determining the scope, content, and format for the provision of public information
* establishing a "feel" or "culture" for the network
* generating creative ways to utilize the network to maximum advantage.

The workshop will provide specific guidelines for the development of human services oriented electronic networks. It will address all of the above issues, drawing on the direct experience of the presenters. "How-to" reference materials will be made available.

Networking - A Successful Approach Towards Support Using IT

John Goodacre, North Hertfordshire College, Letchworth, UK.

There is a large group of people in Britain and Europe today who, in the past, have been severely disadvantaged when it comes to education, training and employment. Many have had to overcome extreme difficulties with a form of communication most of us take for granted - communication through the written word. Today, these people are being encouraged to use specialist information technology to develop their strengths and improve their communication skills. For people with sensory, physical or intellectual disabilities, much of their progress has been the direct result of the work of the National Federation of ACCESS Centres.

In the mid 1980's five Colleges of Further Education and one Polytechnic recognised a gap in the support available for disabled people with communication difficulties. Government funding was sought to address the problem and in 1986 the National Federation of ACCESS Centres (NFAC) was born. Its remit was to "assess and support students with physical and/or sensory impairments who wished to take part in mainstream courses in Further or Higher Education."

Over the past six years the Federation has continued to develop and is now a national network of twenty independent Centres with each Centre responding to local needs. It is a Federation where co-operation between Centres and the sharing of expertise and resources are the touchstones of its success. Clients are referred from a variety of sources: education, employment, health and the legal profession, to name a few. Many will be encouraged to use and be trained in the use of specialist information technology to help overcome their difficulties and improve their access to income and employment, education and daily living.

The paper will examine the development of the networking theme adopted by the NFAC; it will emphasise the importance of this type of support for the physically and sensory impaired; it will demonstrate the need for a client-centred approach towards using IT in overcoming communication difficulties; and it puts one of the founder Centres under the microscope to see how it operates in this environment. Case studies will be used to illustrate good practice. Finally the paper looks towards extending this network into Europe and improving the issues of access, through the use of IT, to a wider audience.

Human Service Client Information Systems

Drs Hein de Graaf, CREON, Netherlands, and Prof Bryan Glastonbury, University of Southampton, UK.

The authors of this proposed paper have extensive experience of researching client information, referral and retrieval systems. Hein de Graaf, through Stitching CREON, has acted as consultant to several developments, and Bryan Glastonbury has several publications on the subject since 1985. In 1992, partly under contract from the Colorado Trust, they have collected and analyzed data about 6 major systems on both sides of the Atlantic.

Drawing on this data the paper will seek to develop the concept of *social databanks* in relation to a number of themes, including:

* The way clients are handled at the point of reception.
* The role of computerised assessment.
* The linkage of individual situations to a taxonomy of needs.
* Matching individual situations to appropriate services.
* The usefulness of computerised information services as records of client histories.
* The usefulness of such systems in care planning, service costing and resource allocation.
* The construction of an ethically sound client information system.

Attention will also be given to practical aspects of setting up and managing effective systems, for the scope of such systems to aid communication and the role of intermediaries, and for facilitating multi-disciplinary teamwork.

Results of Rehabilitation of Children with Cleft Palate

Professor Jerzy Grossman and Professor Elzbieta Prominska, Department of Rehabilitation, Academy of Physical Education, Warsaw, Poland.

In the Municipal Rehabilitation Centre in Konstantcin near Warsaw during the last 30 years speech rehabilitation treatment was given to over 2000 children with cleft palate. Their age ranged from 2 to 15 years. The average duration of treatment was 2 months. Using computer methods 36 features influencing speech impairment were analyzed. It was concluded that the value of the obtained correlation coefficient between articulation and speech intelligibility and nasalization shows that the functioning of the systems studied by specialists in speech pathology is highly probabilistic and it is not possible to describe the functioning of these systems in mathematical equations.

IT and Quality Management in Social Work Organisation: the LIRS Case

Drs L J M de Haas, Limburg Institute for Social Service Support, Netherlands.

FMDL, the Limburg Institute for Social Service Support, developed LIRS, the Limburg Information and Registration System, by order of the joint organisations for social work in the Dutch province of Limburg. The first prototype of the system became operational in 1962. LIRS vs.1 was a fixed data model, aimed at collecting data about assistance to client systems. The data were processed (computerized since 1969) by sociologists of the FMDL, who provided statistical figures and analyses for the participating social work institutes. From 1989 these institutes were able to input data and retrieve information by themselves, by means of the PC-software package *Roerstat*, developed by the FMDL. LIRS vs.1 influenced the development of the national information systems, the Joint-system (1982-1992) and the National Registration Systematics (NRS; from 1993), the latter being an application of the Dutch standard for social work information systems, the Information Model Social Work. LIRS vs.1 influenced this model; LIRS vs.2 is an elaborated, operational application of the standard model.

LIRS vs.2's main perspective is not national or regional databanks, but the quality of each specific social work institute, each having its own specific aims and characteristics. The principle aim of social work is also the aim of LIRS; i.e. improvement of the client's ability to manage his/her own life. The presupposition of LIRS is that both social work and

its management are principally rooted into communication. So also, the development and implementation of information systems in a social work organisation are based upon communication. LIRS, as a flexible information model for social work organisations, has been embedded in a communication model. LIRS vs.2's information model and data model are specified by the institute's participants during the structured communication process, always aiming at the service's quality. The IT-tools are just what they are, i.e. tools for communication.

Some examples are given of building an information system for quality management by means of LIRS on the basis of structured communication. The main method of developing the system is structured communication between all participants involved, the professional developer having the functions of structuring the communication and of conceptualizing and visualizing the possible solutions. The communication aims at distinguishing the main sticking points and needed solutions. These solutions are primarily organizational. As information is a function of communication, any solution has also to be organizational. Quality management is a question of specific forms of communication between management and workers; e.g. deliberations on intake and on the progress of specific assistances. Information systems that are to support quality management must be shaped by those communication settings; they are its tools.

Another example is of improving the social worker's expertise in relation to the client. LIRS is being linked to the computerized area network of welfare organisations in Limburg, MipNet, in the development of which FMDL is participating. MipNet opens the social worker's expertise into two directions: (a) it enlarges the social worker's daily available circle of expert colleagues; (b) external databanks are made available; information needed by the client can be retrieved quicker and easier. MipNet enables the process of a self-developing expert system, that is not a programmed information system but an open, dynamic communication system of participating experts, leaving traces in an increasing databank.

Interactive Video as a Social Work Tool (Demonstration)

John Hall, Video Consultant, London, and Richard Banks, CCETSW, UK.

The Central Council for Education and Training in Social Work (CCETSW) have produced a series of computer controlled videodisc based training programmes for use in the training of assessors working with National Vocational Qualifications (NVQs) in Social Care. Most of the 750,000 or so people working in social care are unqualified. NVQs in Social Care provide an opportunity for this workforce to have their skills recognised through testing their competence at their place of work. Assessing competence is, itself, a skill. It was estimated that some 40,000 assessors would be required to be trained hence this programme.

Training assessors to make judgements of competence suggested the need for learning tools. Tools which would enable users to "see" what was meant by competent performance of social care work. This recognition by CCETSW of the inherent problem of being able to "see" standards which are otherwise simply textual statements, is the primary reason for adopting interactive video. At the very least it meant using moving pictures, the ubiquitous video. Beyond this was the need to be able to simulate the assessment process of making judgements against prescribed standards. Hence the decision taken in 1989 by CCETSW to embark on a series of computer controlled interactive videodisc training programmes using the umbrella title of *Assessment in Social Care.*

The first, introductory programme, is in use by more than 130 organisations and is forming the basis of NVQ assessor training. Users work through as series of exercises which explore the basic issues of gathering evidence and assessment. They are then able to practice assessment using two case studies. The second programme *Gathering Evidence* looks in detail at the process of agreeing how to gather evidence, what is appropriate and relevant, how much is needed and the conclusions which can be drawn from the evidence. The case studies are real situations, filmed as they happened and from the perspective of the assessor. Three case studies are used involving care workers in a long stay hospital for elderly women clients with learning difficulties, a home carer who works with a young man with severe multiple sclerosis, and a residential social worker in a children's unit.

In addition to the diversity of the case studies the interactive video programme enables the user to practice the negotiation of evidence gathering opportunities which must take place between the assessor and the candidate. The decision to use IV for this subject was simply because the medium allowed prospective assessors to explore assessment situations and to form conclusions at their own speed and in their own time. The programmes offer feedback and help routines.

The purpose of demonstrating the programmes at HUSITA is partly to create awareness of the techniques which have been developed for this particular programme in social care. It is also to offer a model for using interactive (or multi-media) technology in social work education. Multi-media technology is developing very quickly and offers opportunities to provide a variety of tools which could be applied in social work education. However there is a need to consider structures for the content of such programmes as they might be applied in practice teaching or areas such as child protection. The CCETSW programmes offer a model which, with adaptations, might be valuable in a multi-media context.

Information Technology Offering Citizens Social and Health Care Services

Ms Anita Hallikas, State Computer Center, Jyvaskyla, Finland.

At a time of rapid social and economical change in society, strong measures have to be taken in order to maintain the level of welfare. Cutting the public budget is not enough; there must be a change in the structure of the public services - health care, social security and care-taking and day care - using innovative methods and low-cost tools. This is a tremendous challenge to the public sector. In this field, information technology (IT) has proved its necessity. Standardised information networks form the functional basis. In them, crucial data for the service in question can be transmitted and handled, centrally or in a decentralised fashion. Thanks to networks and software applications, emphasis can be put on producing and distributing services to the citizens.

Front Office is one means of increasing the level of service. In a front office, the client can obtain a wide range of public services at one single service desk. This leads to savings in costs for personnel, equipment and premises. There are many different types of Front Offices. An Information Desk may contain various information services regarding contact information, timetables and availability of services. A Special Services Desk may be dedicated to social services, and the General Desk gives basic municipal services. The Front Office can take the form of a self-service computer terminal, of a staff work-station or of an automatic and animated info service. Multi-media is the key word in this evolution. The Front Office can be located anywhere: in a separate office room, at the entrance to a public building, in the library or even in a show window. What is essential is to bring the information and the services where the clients are, not the opposite.

The City of Jyvaskyla - a medium-sized Finnish city - has implemented this type of a multi- and hyper-media system in its social bureau. The user can obtain information and perform functions on the services by means of a touch-screen. The basic directory has the structure of a human life-cycle and potential fields of difficulty: services needed in the childhood, youth and old age, personal crisis, economical distress. The hyper-text features enable the user to dive into the points of his or her interest. In the informative part of the system, the user can also fill in application forms for eg. day care, and the forms will automatically and electronically be transmitted to the appropriate computer system. It is also possible to perform allowance calculations and net income simulations.

For the future, the state-of-the-art technology offers a variety of possibilities to enhance the services. Smart cards, mobile telephones, pagers, cameras, alarm systems and security phones will be connected into functional systems which allow for even better serving of the citizens.

Towards Consensus in Human Services Computer Networking

Thomas Hanna, Cornell University, USA.

Since the HUSITA 2 Conference in New Brunswick, New Jersey, USA, in 1991, members of the conference's special interest group on computer networking have been involved in a collaborative effort to make the benefits of the technology more accessible to human services providers. As a result, an experiment in connectivity has been undertaken which now links Bitnet list servers, a FIDOnet node and independent conferences operated under the auspices of the Institute for Global Communications, with its links to all the affiliated networks of the Association for Progressive Communications. This paper describes the initial experiences of this consortium of networks which operates under the banner of HumanServe on the PeaceNet host in San Francisco, California. The issues of connectivity and consensus-building to foster wider participation in networking are examined.

In the broader world of computer networking, connectivity continues to be a key concern. While several networks in the human services now exist, the HumanServe example, along with a two-year history of cooperation among human services network coordinators, including those at HandsNet and the Human Services Internet, suggest that the climate for consensus-building on network development is more favorable than at any time in the past. Technological advances have supported part of the change in climate, and international connectivity initiatives have played an important part. New worldwide data access technologies, such as Archie, Gopher and WAIS, are transforming expectations about what computer information sharing can do along the way to solving human problems. But human interaction is the key as well, as users and providers seek ways of accommodating one another. Realization on the part of network service operators that their survival may depend on their willingness to provide connectivity is another important factor.

Group discussion on the technical and non-technical aspects of building computer network access for the human services will be a key aspect of the presentation.

Communication Camps for Children in Finland: the Idea and the Experience

Ms Ritva-Sini Harkonen, Ministry of Education, and Juri Savtschenko, Schoolboy, Finland.

The need to do something serious to improve the basis of future telecommunications was realized in Finland towards the end of the 1980's. Consequently, the Communications Education Society was founded. The society arranges telecommunications summer camps in the countryside for youngsters and children. The aim is to apply new teletechnology to communication needs specially geared to young people. This has meant e.g. making radio, video and TV programmes, editing newspapers, and using electronic mail, electronic bulletin boards, telefax and mobile telephones. The new technological equipment used has been represented by microcomputers, video cameras, radio transmitters, mobile phones, etc.

It is evident that the above activities have given the participating children totally new kinds of experiences in a new way of life, in self-expression, in participation, in taking responsibility. A telecommunications summer camp is a way to adopt and absorb communications and information technology, a way to grow up into a future citizens. But this kind of a camp is more than mere telecommunication technology: it is a way of living and learning together, combining mutual responsibility and individual initiative. The basic value taught and learnt is justness, which includes both the right of self-expression and the duty of taking responsibility of others. Telecommunications summer camps aim at being models for future, basic sites of growth towards individual action and initiative with the ability to fully comprehend one's own life.

Participants start by constructing the networks and setting up the needed equipment. These are then used as means of self-expression: newspapers are edited, videos and radio programmes are produced, data and messages are recorded in databanks and electronic mail systems. Telecommunication technology is utilized in daily chores by making foodstuff orders at the grocery using e-mail and by seeking data about nutritive values of foodstuff in a databank.

From a researcher's viewpoint the telecommunications camp is a field for activity research. This is based on tests of different action models and experiments with the functioning of social insights and ideas. The camp measures the functionality of social innovations on an accelerated schedule. This is why we may well use the term "laboratory of the future".

In this workshop Ms Harkonen will tell about the background, aims, principles and action patterns of the camps. For his part, Mr Savtschenko will present us the opinions of a youngster who has been participating in several camps. What are his experiences, which has been the effect on him? The workshop will be enlivened with videos made by the children and with an on-line communication with children on a camp ongoing in Finland at the same time. The communication will be established by means of a mobile phone, conversations heard through loudspeakers on both sides. The workshop participants will have an opportunity to discuss with children in Finland. If possible, a visual contact between the parties will be established by use of video conference technique. A limited number of copies of the book "The Story of Communications Camp" by Ms Tuula Luokola will also be available, free of charge.

Privacy Legislation and Social Research

Erik Van Hove, University of Antwerp, Belgium.

1. The social context of the new wave of privacy legislation. The heightened interest in privacy protection is certainly due to the increased efficiency of information processing. Equally important, however, are the societal tendencies of increased individualization, pluralism and liberalism. The right to privacy is not a fundamental right in the sense that it is not an *absolute good* by itself; it only serves as a condition for the enjoyment of more fundamental rights.

2. The principles behind the privacy laws as they came about in the seventies and eighties within the framework of the Convention of the Council of Europe of 28 January 1982, in most European countries, culminating in the projected Directive of the EEC.

3. Implications for conducting social research. Most national legislations make special provisions for research. This does not mean, however, that most of us can avoid having to clean up our act considerably. Some requirements on informing respondents will reinforce the general trend towards more non-response.

A Psychiatric Clinical Information System (Demonstration)

Bernard J Huckstep and Dr Simon M Wood, Rampton Hospital, Retford, UK.

The English special hospitals provide psychiatric care for dangerous individuals in secure conditions. The number of disciplines delivering that care, and the volume of data both historical and prospective, means that an information system could offer substantial benefits. In 1990 the Rampton Hospital project team began analysis of an approach to information management using Oracle RDBMS software. We identified the difficulties of systematically recording data from a number of different disciplines each having an established format for paper-based data capture, and the need to allow users a flexible approach which does not dictate their method of practice but which attracts them to use a computer system because of its potential benefits to their clinical work and to patient care. The system is easy to operate, rapid in use, and adaptable to the changing needs of users which will only emerge as they begin to use the technology. Previous efforts at system specification by IT consultants have not succeeded because of an inadequate grasp of the complexities of the clinical requirement. Our approach has instead been to establish a project team of clinicians with some existing knowledge of IT further augmented by specialist training. The development is thus by means of prototyping, on an evolutionary basis. The main features of the system can be described as follows:

a) Patient Clinical Notes: a method of systematically recording free text to replace medical, nursing and other discipline's notes is provided. This has the following advantages: potential access to all users on any terminal; all clinical notes are legible; ability to search all notes by type and or date period; familiar method of note entry for all users and disciplines; elimination of unnecessary data duplication; ability to rapidly cross reference notes between patients. The clinical notes module is regarded as a major system feature which has only recently become possible with current developments in data technology.

b) Document Cataloguing and Control: this complements the clinical notes module and allows users to identify the existence and location of documents or reports not directly held on the database. The module includes an integrated link to word processing packages located on the same hardware system.

c) Document Imaging: a further feature to complement clinical notes allows user access to key images relating to patient care e.g. existing legal documents, EEG recordings, hand written notes, photographic images, newspaper articles etc.

d) Patient Events: significant events in the patient's day can be coded, scored, recorded and subsequently correlated with other events and/or interventions in order to assess patient progress. The module includes features to group and search patient events by type and date period.

e) Drug Prescribing and Administration: this is paperless. The current design includes drug interaction warnings, user-controlled elapsed time warnings and instant access to allergy/sensitivity information together with

consent/second opinion data.

f) Diary Functions: department and patient diaries provide search functions by entry type and date period, and allow user acknowledgement. Patient entries can relate to planned clinical events.

e) Care/Treatment Plans: a basic care plan module records patient problems, assets and proposed interventions together with the role of specified care professionals and their period of involvement.

h) Clinical Graphic Summaries: the clinical graphics system allows coded patient events (e.g. measurable behaviour or symptoms) to be correlated with coded interventions (including drug treatments) in order to assess patient progress. Event frequency/ severity/ intensity can be visually assessed and viewed alongside other events. Trends can be readily identified.

In addition support modules for demographic information, security and user access, and documentation and help features are provided. To give the reader some indication of scale, the prototype currently implements 32 database tables and uses over 100 Oracle SQL*Forms modules which link together to comprise the application. It is emphasised that the application is designed by clinicians for use as a work tool by a clinical team; it will generate data for managers as a by-product. The interest and commitment of users has been encouraging, and by virtue of the prototyping approach evaluation is continuous.

Use of Information Technology for Decisions in the Human Services

Prof. Salvatore Imbrogno, Ph.D, Ohio State University, USA.

Vital to the understanding of the dynamics of deciding and doing in macro-practices is acquiring and utilizing advancement made in information technology. Decisions of preferences and choices are manifested in the complex multi-levels functions in macro-practices. One way to unravel the complexity of these interrelations is to design a horizontal and vertical system for information transfer in decision making.

Decisions in the multi-level functions can be divided into three interrelated informational components and analytical methods: macro-normative in social planning and development, meso-strategic in program planning and management, and micro-tactical in project planning and operations. In this conception to macro-practices, three interdependent functions emerge: macro/meso/micro. Heretofore, these multi-level functions are associated with a horizontal and vertical transfer of information.

Let us enumerate upon the conceptions and specifications that characterize a horizontal/vertical information transfer design. The following encompasses a macroscopic /microscopic of structural complexity within the context of an objective/subjective functional use of information.

1. NORMATIVE: In a horizontal transfer of information, the initiating point of macro-subjectivity in conjecturing moves to the rationality inherent in innovative policy planning and finally, to the objectivity required in arriving at total system dynamics of decisions. In a vertical transfer of information, forecasting begins with conjectures; moves to approximate reality in projections and finally, in practice, mathematical assumptions become the basis for predictions.

2. STRATEGIES: In a horizontal transfer of information, strategic decisions move from the meso-objective predictions of feasible means in development to the meso-subjective judgements on the effectiveness of program planning and management. In a vertical, a strategic decisions become a meso-objective/subjective level of practice in transforming the ideal into reality.

3. TACTICS: In a horizontal transfer of information, tactical decisions in project planning and operations moves from historical probabilities of trends to the certainties of efficiency. In vertical transfer, the experience acquired in actual practice serves as a source of data for both future conjectures and feasibility determination.

In a multi-level integrated decision system, each performs on a different level of structural complexity but with similar functional outcomes. Concurrently, each set of decisions affect and are affected by others. What this means is that all cells are involved in a vertical and horizontal transfer of information (i.e. feedback).

A main focus of this paper is to introduce a conceptual framework for the use of information technology in decision making. A 3X3 contingency model in a horizontal and vertical transfer of information produced the following: created a system design by integrating multi-level functions in macro-practices; disclosed leverage points for constituent access and empowerment; and, concurrently provided a teaching and training model for policy, planning and administration.

Infrastructure and NGO Development in India

Dr R K Jadhav, Jamnalal Bajaj Institute of Management Studies, Bombay, India.

This paper evaluates policies in relation to industrial estate, industrial parks, roads, bridges, and industrial model towns as a part of infrastructure and NGO development in India. Changes have been suggested in the policy towards development of infrastructure in the context of globalisation, financial reforms, privatisation in Indian economy. The industries tend to conglomerate at one place with a view to enjoy certain benefits. If overheads are shared, the cost of such overheads per unit is much less and standards can be ensured. The concept of industrial parks has been developed from the original idea of the industrial estate. Sophisticated industries require sophisticated infrastructure linking such parts to international market via quick information and communication network.

Re. privatisation, before 1990 finance was made available through Central and State budgetary allocations. Direct finance is going to increase due to privatisation and new economic policy in India. Re. roads, bridges, etc., there is vast scope to develop new infrastructure via sea between Nariman Point and Berivli with connections at Gateway of India to Uran.

Project finance can be based on a Toll System. The toll facilities provide better quality roads and maintenance than free facilities. This is because such a facility requires periodic inspection and maintenance. Through global participation model industrial towns would be developed in India. Development of such projects always leads to exploitation of contract labour, distortion in their wages, emergence of slums, beggars, crime rate goes up, due to rural cultural have overs, rate of destitutes, vulnerable children, prostitution, tensions, inequality, unemployment, inflation, corruption, pollution, environment hazards are the problems to be handled by NGOs.

A new approach is to employ SWOT analysis to overcome problems. Selecting management models based on global experiences and mixes. Development of voluntary agencies, that is NGOs, and training them to prepare for the task. Reducing dependence on bureaucracy.

Service on Equal Terms - Disabled and Elderly People's Use of Self-Service Machines

Lars Jönsson, The National Swedish Board for Consumer Policies, Sweden.

Background. Two Years ago The Swedish Handicap Institute and The National Swedish Board for Consumer Policies got an instruction from the Government to look at problems for elderly and disabled people in their use of self-service machines such as automatic teller machines (ATMs), ticket-machines, information boards and so on. In June 1993 we reported to the Government on this matter. Our studies, conclusions and proposals you will find in the report: *Service on Equal Terms - Disabled and Elderly People's Use of Self-Service Machines.*

Results. A basic problem is that personal service more and more is replaced by self-service machines. Many disabled and elderly people prefer personal service as the machines are often difficult to use and cannot replace the flexibility and contact from a human being. On the other hand the "machine service" can give you increased independence. For example, you do not need to visit the bank at certain opening hours. And for some disabled, a deaf person for example, it is easier to handle a machine than to start a dialogue with a person.

The problems are of different kinds:

> the positioning of equipment too often takes place without thought of those with wheelchairs to get near enough and for the visually impaired to find it;

machines are designed so that they require good eyesight to manage them;

text on the displays are small and the contrast poor;

many self-service systems today are complicated for the majority of users - instructions difficult, procedures complex;

They are not uniformly designed, e.g. the positioning of buttons in keyboards varies between different equipments.

The overall demand is to make the situation better for all users and especially elderly and people with disabilities, and that personal service must be available and not more expensive to use for the customers. With help of new technology we think it is possible to adopt self-service machines and their systems to the requirements from the users. And this will benefit all users! Text in displays should be made large, information can be spoken, and so on.

Our proposal is that we need to make special attention to this area and we need a special programme - a five year programme including the following elements:

deeper analyses to identify where to concentrate resources;

a strategy for working with user groups;

research concerning attitudes to new technology;

increasing competence.

Architects, ergonomists, producers and buyers of these systems must become aware of the problems for elderly and disabled. They must get knowledge about this area and together talk about solutions. We also suggest different development projects and experimental activities of different kinds.

Configuring Microcomputer Systems for Persons with Disabilities: Expert Systems and Intelligent Databases

Professor Michael J. Kelly, Ph.D and Professor Larry W. Kreuger, Ph.D, University of Missouri, and Professor John J. Stretch, Ph.D, Saint Louis University, USA.

For many disabled persons the quality of life depends upon securing meaningful employment. In conventional practice, disabled persons learn computer skills to compensate for their "handicaps." Often vocational rehabilitation agencies provide highly specialized computers to their clients. However, most jobs require employees to use computers that the employer has installed and equipped with software. Main-streaming disabled workers means providing hardware and software that adapt the installed equipment of any organization to workers' disabilities. Adaptive equipment and software is being developed at a rapid rate. Configuration problems, selecting the right equipment to adapt the computers, are expert tasks. A good match requires both detailed computer knowledge and the human service skills to determine individual needs.

Configuration problems can be made considerably easier when databases of expert information developed by computer specialists are available. For social workers helping disabled individuals to select and learn the adaptive equipment and software, the task is easier when an intelligent front-end manages the database.

This paper discusses the development of a specialized database of adaptive peripherals and the intelligent front-end. The front end - an expert system - manages inquiries from social workers and provides configuration recommendations. The demonstration database was developed in a popular database manager and the expert system in an inexpensive "rule based" expert system development shell. The system runs on microcomputers available in most social service agencies. The paper concludes with a discussion of distribution issues. Problems include how to make it widely available, keep the database current, and provide training to those using it. One key issue is how to make the system available directly to disabled persons. Finally, the paper discusses some practice issues regarding main-streaming the disabled and computers.

From Supply Driven to Demand Driven Education: New Concepts and the Role of IT Therein

Dr P A Kirschner and Dr M Valcke, Open Univeriteit Valkenburgerweg, Netherlands.

In the traditional approach to the design, production and dissemination of education the supply side (what society or an institute has to offer) has been highly dominant, while the demand side (what the individual needs or wants) has largely been undervalued. Despite strong innovative movements in concepts about education, both theoretical and practical, the provision of education is primarily operationalized and organised independently of the specific needs and demands of the learning individual. Education is delivered as a ready-made and prepared product. At the theoretical level this approach largely neglects both current theories about learning, such as constructivist learning, social constructivism, situated cognition, experiential learning and so forth, as well as current trends in the instructional theories of Bruner, Kilpatrick, Dewey, Ausubel, Kolb, humanistic traditions, etc.

Information Technology can be used as a catalyst in putting the learner and her/his demands in the centre of educational design. In open distance education learning environments instructional designers have been obliged to rethink their approach to what a "course" is and how it can and should be delivered. When conceptualising a course, the demands of the learner, instead of those of the institution or subject matter, play a central role. The instructional designer and developer mediates in a process in which the demand of the learner is matched with a subset of the knowledge base (substantive, syntactic and strategic) of a specific domain, as well as with matching didactic techniques or educational elaborations suited to the learner instead of the material. The use of computers is essential in this perspective.

A "stock" of domain knowledge and associated educational elaborations can be put in a structured computer data base. The structure of the stock is essential since this determines the flexibility to construct specific demand-driven educational provisions. At the Educational Technology Innovation Centre at the Open University of the Netherlands, current research on third generation distance learning is aimed at developing prototypes of such IT learning environments. In these environments learners are supported in making personal decisions in selecting content, content organisation and educational support provisions. Only at the end of this negotiation process is a course delivered.

Actors and Influences - Techniques out of control?

Professor Dr Bernd Kolleck, Fachlochschule fur Sozialarbeit und Sozialpadogogik, Berlin, Germany.

While some opinions hold the inevitability and independency of technical development, at the same time social actors and institutions are confronted with considerable demands concerning definition and performance of technical innovation. These demands frequently exceed their actual possibilities, as their social roles and influences are often not sufficiently considered.

This paper presupposes that several social actors and institutions are involved. Different actors take part in the development of new technologies. Who are these actors, and what is their impact? What are their responsibilities in the field of social services? The contribution reflects on the influence of governments, social movements, producers, social agencies and science.

On the macro-sociological scale, different perceptions hold the influence of structural logics on technical developments. Such logics reflect for instance economical necessities of cultural roots like the jewish-christian origins or patriarchism. Their consequence is often the notion of "technics out of control". How do these ideas match the responsibilities of social actors? How can the process of development be described in the light of both spheres? What does this mean for institutions and actors concerned with the technical development of social work?

SONETT - Network for ENITH (Demonstration)

Professor Dr Bernd Kolleck, Fachlochschule fur Sozialarbeit und Sozialpadogogik, Berlin, Germany.

The presentation shows and explains the "Social Network Telecommunication" (SONETT) which was developed by schools of social work in Germany and now serves as a telecommunication network for ENITH. The demonstration will try to

establish a link to the server in Berlin and to show its facilities. It will be explained how to use the server for the purposes of dialogue, electronic mail, file and program transfer and information retrieval.

Experiences of the ENITH networking will be reported. The discussion will cover the subjective interests of telecommunication for local, national and international cooperation. Also, some hints will be given to everybody who wants to participate in this challenging new technology and who wants to know how to cope with its problems. Further, discussion will consider future development of the international social work network.

Downsizing Homeless Shelter Administration Through Computer Assisted Technology: Model and Method

Dr Larry W Kreuger, University of Missouri-Columbia, Dr John Stretch, Saint Louis University, and Dr Michael Kelly, University of Missouri-Columbia, USA.

The story on the causes and courses of homelessness in families in the United States has been told. Until recently, however, there has been little empirical documentation for the longer term effectiveness of sometimes costly intensive case managed shelter services for the homeless. The authors summarize over five years of outcome evaluation tracking formerly homeless families and find that while intensive shelter-based homeless services work in the short run, they do not serve to prevent recycling of homeless persons over the longer term.

The next step, therefore, is focus attention on efficiency and effectiveness in shelter management by streamlining administration through the application of computer technology. Examined here is a model and method for downsizing homeless shelter administration through microcomputer applications in several homeless shelter environments in the United States.

Planning in Health Care with Geographical Information

P. Krook, Mr Sven-Erik Jäverbring and Miss Maria Pleiborn, Stockholms Stads Dataservice Ab, Sweden.

The presentation on how the planning process works will be exemplified by the speakers on a projection panel. The process is based on the PC-Planning Aid STIKA. STIKA is a new aid for the planning of social and commercial services in Stockholm (STIKA = Stockholm information on map).

The ability to process and analyze statistics on the basis of geographic factors, and to present the results in the form of thematic maps has long been a wish among planners. Comparing the customer base for different commercial locations prior to deciding where to establish a store has previously been a long and involved process. Now the means is available to carry out such analyses quickly and easily. The software and information are available in ready-made STIKA packages.

The STIKA package contains statistics, map and analysis program. You can influence the contents of your own package in terms of type of information or geographic scope. STIKA was developed jointly by Dataservice and the Stockholm Office of Research and Statistics.

STIKA is means to be an aid to efficient planning. Up-to-date statistics, reliable forecasts and an up-to-date digital map are available in Stockholm. These have been combined in STIKA to permit analyses and clear presentations. All you need is an ordinary PC and a STIKA package.

The benefit of the new planning process compared with the old one will be discussed as well as the impact of the planning on the location of new healthcare centers.

Embedding Technology in the Teaching and Learning Process (Demonstration)

Anthony van der Kuyl, Scottish Interactive Technology Centre, Edinburgh, UK.

New standards and expanding capabilities of hardware bring new dimensions to the possibilities for Multimedia in interactive learning; however, Multimedia has failed in any significant way to penetrate United Kingdom classrooms and lecture theatres. This fact, despite the millions spent on the Doomsday project, significant resources funding the various DTI Kickstart projects (IVIS & IVFE), and major investment by independent commercial producers BBC enterprises and Thorn EMI. This is a direct contrast to the position of Multimedia in vocational training within the UK.

In excess of 10,000 Multimedia systems are delivering vocational learning in British Manufacturing and Commercial environments. Much of this learning takes place on-site at the workplace allowing flexible open access for individual and group training activity.

What lessons are to be learned? Firstly no matter how rich a resource may be, if it requires time investment by already over burdened staff there is little chance it will be exploited in classrooms. Secondly, if it is a new technology which has no dimension or recognition of staff awareness needs, it will be relegated to the dusty cupboard along with the other ageing technology gadgets. Thirdly, if the content is rich but not apposite to the curricular need then staff cannot be expected to deploy such resources into an already tightly defined curricula.

The lessons then are clear. Step one must be to engage staff in the use of Multimedia technology; it must be an engagement which utilises the technology to help solve their staff development needs. The materials must be designed to encourage use at the school or college site by individuals or groups of teachers. This process of using Multimedia for staff development will encourage the transfer of Multimedia expertise into teaching and learning situations.

The Scottish Office Education Department (SOED), Moray House Institute of Education (MIHE), Grampian Regional Authority (GRC), the Scottish Council for Educational Technology (SCET) and the Scottish Interactive Technology Centre (SITC) are all developing Multimedia resources for staff development. These include Head Teacher Management Training resources, 14-16 pedagogy styles and techniques, Primary Environmental Education, Interview skills for Appraisal, Information Technology for Special Needs, Teaching Secondary Mathematics and Assessing Human Movement.

Scottish Education Authorities which choose to use Multimedia for the delivery of staff development in priority areas are eligible for subsidy through specific grant from SOED. This offer has been taken up in significant numbers.

The first significant long term steps aimed at embedding Multimedia firmly into teaching and learning have been taken in Scotland.

The Nuffield Interactive Book System (Demonstration)

Robert Lauder, The Access Centre, Hereward College of Further Education, Coventry, UK.

The following text will be integrated with an on-screen demonstration.

The Interactive Book was conceived to realise the potential of many disabled students who have difficulty handling books and paper, by letting them study when they wanted for as long as they needed, without a helper. The demonstration will show the use of the full-screen browser to select a particular book, topic and item, read and view diagrams; mark text; colour it in; make a new document from the marked text, edit it and show how the links are automatically maintained to the original document. Basic literacy materials will be shown, including digitized speech buttons, and one-direction linear/cyclical books for the real beginner.

Other demonstrations will include:

1. Clerical and Administrative training materials, showing the use of answer panels and external Visual Basic forms.

2. Accreditation of prior learning module, showing the record-keeping and marking functions, and the picture-based

interface.

3. Database aspect with the catalogue of equipment used by the National Federation of ACCESS Centres.

Discussion will cover the chief methods of data capture; skills required; integrating the software into a college environment; European languages and materials initiatives through the Horizon programme.

Correlates of Social Workers' Attitudes Towards Computers

Amnon Lazar, DSW, University of Haifa, Israel.

The importance of integrating computers into social work has been recognized since the early eighties. Nevertheless, the use of computers in the profession does not adhere to the rapid development of its technology and to the varied possibilities of its application (Cnaan, 1989; Ezel, 1991; Munson, 1988). Among the reasons mentioned in the literature were the reluctant attitudes of social workers and their fear for their autonomy. The paper will present findings of a study exploring the attitudes of social workers toward computers and its predictors. The sample includes senior undergraduate students, and experienced social workers studying for the MSW degree in a northern university in Israel.

The dependent variable in the study is attitudes toward computers, as measured by the Computer Attitude Scale (Nickell and Pinto, 1986). The main independent variables are locus of control, as measured by the Behavioroid I-E Scale (Russell, 1982); previous and present experiences with computers; perception of skills needed for skilful computer use; recency and frequency of computer use; computer literacy; matriculation examination scores; university entrance examination scores; GPA in the university; and sociodemographic variables such as age, gender, and parents' education and occupation.

Computer-Mediated Distance Education in Public and Community Health: Perspectives from the US and Canada

Andrew B Lefton, MA, University of Florida, USA, and Professor Sam Lanfranco, Ph.D, York University, Toronto, Canada.

Public and community health nurse practitioners, as well as other human service workers, increasingly confront an environment in which both the knowledge base for service provision and the policy setting are subject to rapid change. At the same time economic constraints are pressing for increased effectiveness with reduced resources. While it is generally recognized that computer based technologies may be suited to increased efficiency and effectiveness in service delivery, the use of computer mediated technologies for continuous professional development has been underexplored.

Access to continuing education for public and community health practitioners in Canada and the US continues to focus on traditional methods which include classroom attendance, seminars, conferences and the distribution of print material. The traditional approaches have two weaknesses and one strength. One weakness is the necessity for service providers to set aside common blocks of time to participate in time and site specific educational activities. An additional weakness is that the timing of offerings may not correspond to the timing of needs of service providers. The one strength is the ability of service providers to come together to share experiences, wisdom and the like.

The rapid development of computer based electronic networks, and the increasingly routine introduction of the equipment to the service provider's desk, presents public and community health nurse practitioners with the means to participate in two types of continuing professional development in a more flexible, less costly and timely manner, while incorporating important elements of a peered seminar and feedback to instructors. Computer mediated technologies can give the user access to a "Just in Time Open Learning Environment" (JITOL) where nurses can access a variety of educational resources (databases, seminar, colleagues and expert) to carry out their learning on an "as needed" basis. They can also be used to efficiently deliver a "curriculum". In contrast to traditional print based approaches, where the burden is to distribute current material, the computer mediated approach puts its stress on access to current material.

This paper examines the work and insights of two practitioners of telecommunications and distance learning. Professor Sam Lanfranco, an educator/economist, in Canada, has approached the area of distance learning from the perspective of

computer-mediated technologies and social process, with an economist's interest in the use of the technology in the production, storage, distribution and use of knowledge. Andrew Lefton, a public health practice telecommunications program director, has implemented a national information and telecommunications network for maternal and child health in the United States. He has approached this problem as an information systems manager trained in organizational design and systems development.

Within this paper the authors will explore an approach to curricular and self-directed approaches, to what is often referred to as teleteaching and telelearning, with reference to continuing professional development and service provision in the area of public and community health, as a prototype for human services in general. Rather than promote a single technological approach to computer mediated distance education, we will instead examine a number of related distance education/knowledge distribution models and propose a vision in which educational resources (objects, agents and events) support an open learning environment which in turn serves the needs of health services providers, policy makers and clients alike.

The presentation will help delineate the degree to which the challenge is not one of technological capacity but, rather, one of the creation of the appropriate organizational and professional environment, one which supports individual effort in an open learning environment, as well as a collaborative and interactive approach by practitioners, clients and educators alike.

"More than Computers": The Development of Learning Materials for IT Education in the Dutch Schools of Social Work

Dr H J M van Lieshout, Hogeschool Eindhoven Causa, Netherlands.

Information Technology (IT) may be considered as a possible tool for support and/or improvement of the working practice of both social services managers and executive social workers. In educating and training social workers, Schools of Social Work in the Netherlands are increasingly paying attention to IT. This means, however, not just introducing computers and their applications into the curriculum. In social work practice, professional social workers meet IT as an *inclusive* aspect of their activities. Their information needs arise from the working problems and functional demands they are confronted with. That's why IT education in Schools of Social Work is best served by an approach to computer applications integrated into other disciplines of the existing curriculum.

An elaboration of this approach is to be found it the Dutch National Curriculum on Social Informatics for Social Work Education: the so called VIT Curriculum Social Informatics. In 1992 the National Council of Higher Education (HBO-Raad) decided to sponsor an innovation project regarding the implementation of this VIT Curriculum into the Schools of Social Work. One of the instrumental goals is the production of learning materials (including professional software applications) for 16 modules of the curriculum.

Those learning materials will have to meet various educational environments (school organizations) and different demands of individual teachers. Furthermore the development of the materials has to be in concert with the basic philosophy of the VIT Curriculum:

1. focusing on information in social work practice, rather than on use of computers and computer applications;
2. integration of social informatics into the courses of other disciplines in the Schools of Social Work.

Therefore, the core of the materials consists of a "model" - a description of an organization or a social work situation. A professional software application will be filled with data according to this model. One or several cases (working problems, points of decision) are developed for the students to work upon. Students learn to make use of the applications by means of programmed instruction with regard to case items. Finally, a teacher's guide gives information on the educational use of the model, the application and the cases.

The products are not intended to be ready-made courses or lessons. They rather consist of interconnected educational tools which serve as the basic materials for the teacher to shape his/her own teaching practice. In the implementation phase of the development project, much attention will be paid to teacher's training and consultancy on the produced materials.

Computer Use in Social Work in Denmark - A Research Project to Find New Ways and Methods of Applications in Social Work

Morten Lindstrom, Lone Verner Nielsen and Soren Larsen, Den Sociale Hojskole, Denmark.

The project was financed by the Social Ministry and the Ministry of Industry. We had 2 parallel developments. One was in a local area of the old part of centre in Aarhus. Together with inhabitants of the area and shop staff, a development project ended up with a computer system. The computer was tested after a test period of 4 months. Some of the results are:

- The program was user friendly.
- A great number of inhabitants wanted to use the program.
- Primarily the users came from the local area.
- Several expressed a wish to have several interconnected computers in the local community.
- Several found the program more useful than alternatives like bulletin boards, newspapers or adverts.
- No user feared data recording.
- Older people cannot use the program (sight).
- Some people were afraid of the alienating element of computing.

The typical user was a person between 16 and 34 years of age, with 12-13 years at school, with some knowledge of computers and often students or unemployed.

The second development project was in a social service department in Aarhus City Council. One social aids group with social workers and secretaries went into cooperation with the project. The main theme was computer use within the administration of social aid and counselling. The aim was to produce an analysis of the work done in the group, with unemployment as a theme. After the problem analysis a number of visions on computer use were listed. Two of these have been developed into an integrated computer system. It is used when you make agreements with clients. Client gets a copy (and have thereby a copy of the file entry as well), and can also get "tailor made" information on personal rights and duties when you get support from a social aids program. The system was never tested due to lack of time and money, but the methods used for the development has been very useful. The project produced 3 books and a video of the local community part.

Switch Access to Windows 3 (SAW) - A New Enabling Tool

Andrew Lysley, Ormerod School, Headington, Oxford, UK.

SAW provides disabled students and employees (switch users and those using mouse/trackerball/optical pointers) with a sophisticated and versatile software emulator for Microsoft's Windows 3 environment. Via a library of personalised selection sets which can be created or modified with SAW's unique 'designer', users can efficiently access standard Windows applications.

SAW has emerged from a ten year history of keyboard emulation development to provide a unique and powerful scripting language specifically for designing switch selection sets. This concept of providing a high level programming language to address a unique set of issues is quite new. For the first time SAW gives the designer of a selection set full control over the appearance and, above all, behaviour of its individual parts. SAW supports a hierarchical design of selection set. Thus scanning orders and directions can be defined to suit the individual user or macros can be embedded by the scripting language within an item to perform at a single switch press a sequence of complex and time-consuming actions.

The arrival of Windows 3 has given us the opportunity to offer switch users not only access to a robust and integrated software environment - an environment which, in significantly benefiting the able-bodied user, was potentially hostile to switch accessibility. Windows applications which provide keystroke equivalents to the ubiquitous mouse operated functions are particularly welcomed by SAW. Switch users can then focus on producing real work and developing their ideas rather than endlessly pushing a pointer around the screen, simply to activate a tool or open a dialogue box.

SAW has three main attributes:

1. Selection sets from which the user makes selections. This can have a hierarchical design within which complex scripts can be attached to any item.

2. Settings which specify the selection method from single switch to direct selection options.

3. A desktop file of associated applications (for example, a word processor, drawing package and equation editor) which contains the window size and position.

Preliminary trials indicate that SAW's performance in reducing the amount of pointer movement and in providing fast access to Windows dialogue boxes and pull-down menus is impressive. As anticipated it works best with applications which offer a full array of keyboard commands in parallel to the mouse interface.

The IT Paradigm and Knowledge Development in Human Services

Robert J MacFadden, Ph.D, University of Toronto, Canada.

This presentation explores the effect of information technology on knowledge development. The professional knowledge base is part of the environment of the service providers and a component of the theoretical framework of IT developments. Discussion of the influence of IT on the development of knowledge is fundamental. Knowledge affects practice and service provision.

Information technology imposes a certain paradigm on knowledge development and utilization. Historically, much knowledge in human services has been developed from multiple sources, with minimal empirical grounding. Concepts tend to be abstract and pre-operational. The term "soft knowledge" has been coined to describe the looseness and abstraction of many of these concepts and frameworks.

IT values certain qualities of information. Data needs to be well-defined and discrete. Like oil in water, loose conceptualizations, ambiguities, and faulty logic do not mix with the input requirements of IT.

As information technology grows in use and prominence, the IT paradigm will increasingly act as a knowledge "sieve", screening out "soft" information and encouraging the reformulation of existing and new knowledge into more operational terms. More specification and standardization will occur as taxonomies and data dictionaries are created.

Minimal recognition of the impact of IT on the epistemology of human service professions has been evident in the literature. What effect will these "new" knowledge requirements have on the nature of knowledge and its utilization? How will services be affected? What will happen when this digital, atomistic, scientific perspective confronts the analogic, artistic and creative components of knowledge development? Is accommodation possible or will the "hard" requirements of IT dominate?

Some feminist critics have argued that the scientific paradigm is inherently male based. The IT paradigm has been similarly critiqued. Yet developments using IT applications and Ethnography, as one example, suggest that these "hard" requirements can be utilized with traditionally "soft" data to inform each other.

In summary, this presentation argues that awareness and dialogue on the fundamental impact of IT on our knowledge base is essential. We need to be able to capitalize on the strengths of information technology without sacrificing our commitment to humanistic values and improvement in the quality of life and services.

Implementing Case Management Technology in a Multi-Service Welfare Organisation

Pam McCulloch, Melbourne Citymission North West Region, Australia.

The paper is essentially a case study of the introduction to a multi-service welfare agency of a central case management system for all client records, word-processing and cash management.

Commencing with a situation where all case and other client records were in separate hard copy files, and some eighty staff used the services of one secretary for word processing, we have, in stages, introduced computer technology to all staff and moved attitudes and practice to a substantively more professional plane.

The paper will present the changes in four parts:

1. The technology.
    (a) hardware
    (b) software
2. Staff attitudes.
3. Staff practice including new uses such as "auditable" Court data.
4. Management use as:
    (a) planning data
    (b) advocacy
    (c) budgeting data

Facing Global Change Through Telecognition

Michael D McDonald MPH, Environmental Science and Policy Institute, Berkeley, USA.

When projecting present trends in the consumption and availability of resources (e.g. water, cropland, energy) out toward the year 2100, the probability of catastrophic drops in health and human prosperity increases at an alarming rate. Some models of global change indicate the high probability of discontinuities adversely affecting both quality and length of life for billions of humans even before 2040. These unfortunate projected conditions result from the increasing negative impacts of resource shortages and environmental degradation on human populations. Such conditions must be averted at all costs, and may be able to be avoided with better scientific visualization and communications, technologies which assist in improving global cooperation regarding issues of sustainable development.

Over the next 15 years, it is projected that the advanced nations of the developed world will have near ubiquitous access to the intelligent network (high bandwidth, digital, switched networks supporting media that merge the television, telephone and computer). Connectivity will be global - in that those with the financial means will be able to access information and individuals instantaneously worldwide. Much of the world's decision-making will happen on-line, whether in the governmental, professional, or corporate sectors. Global models with nested local and regional subsystems will allow decision-makers to track changes in health and human prosperity in real-time as well as simulate future conditions given present or anticipated trends and variables. These types of applications will allow us to face the macro challenges of the twenty-first century at a level of collaboration and collective cognitive functionality never before possible.

Expert Systems in Labour Market Systems

Theo Mensen, Arbeids Voorzeining Zuid-Umburg, Maastricht, Netherlands.

Health and wealth are strongly related to employment. Most people not only have high expectations of their work, they also set great store by being in employment at all. Employment is considered as extremely important since both material and non-material benefits are derived from it. Unemployment is regarded as a structural failure of the market and of labour market policies. Long term unemployment is not accepted and affects the whole set of norms on the right and duty to work. Attitudes about sex, marital status, age, nationality and ethnic background are taken into account when employees are getting a job, dismissed or promoted resulting in group-related unemployment.

Dominant in the Dutch Labour Market policy is the tripartite responsibility for a just and efficient matching of people and jobs. For reaching this goal an enormous amount of resources for information, advice, consultancy and training is available. Yet there is still a great problem in getting an efficient and effective way of matching and allocation of resources in the Labour Market Services. A main problem is to handle the enormous amount of information about jobs and job seekers. The storage of very different and more or less trendy names for broadly similar jobs and very vague and unclear

descriptions of tasks, makes it difficult or even impossible to get a proper match between demand and supply side information in using relational database management systems.

Comparison of qualifications needed for a good performance in the offered job and the (formal) qualifications of job seekers is normally done by job consultants and personnel officers, both experts in labour matching tasks. The multi-attributed decision problem of these experts on an operational level causes problems in implementing strategic policies. The flexibility needed and the weak formalisation of the information and decision making process are responsible for the relative autonomy of experts and the problems of managing this process.

Introduction of decision support systems or expert systems can help solving these problems in Labour Market Services. Insofar as these labour market services can be viewed as information services, new information technologies can be used as instrument on operational level as well as on strategic level. Using the enormous amount of stored data on qualifications and labour market experience one could close the gap between the information that potentially is available and could be used in consulting new clients, and the little information an experienced labour market consultant actually is using.

Assessment And Training of People with Disabilities

John Morgan, The Access Centre, Bridgend College of Technology, UK.

New technologies have found rapid advancement in industry and commerce. Consequently companies are able to provide a much better service with the aid of computer systems. This advancement has had positive benefits for the disabled. The power of computer processors has increased with the size of the devices decreasing. The advancement of lap-top computing has brought with it powerful portability that was once just a dream. The once mandatory QWERTY keyboard is now just one of an array of input devices, many of which are far more 'disabled user friendly'. For example, those people without the use of their hands can enter text or commands with switches, head pointers or even voice input. The list of devices and adaptations is endless with new ideas bringing a wealth of advanced systems suitable for the disabled user.

The initial assessment to establish correct equipment is vital in ensuring the successful partnership between the disabled user and the new technology. In the same way commissioning of equipment, special adaptations and training, all play their part in raising the quality of life of the individual.

This paper will address some of the key issues which are essential in order to provide proper assessment and recommendations for appropriate equipment.

Management of a High Technology Voice Output Device with a Language Disordered Adult

Gillian Nelms and Andsrew Lysley, ACE Centre, Ormerod School, Headington, Oxford, UK.

David is a 30 year old man with severe receptive and expressive language disorder, severe articulatory, oral and constructional dyspraxia and poor literacy skills. He has had no consistent communication system during his life. He lives in a hostel with adults with severe learning difficulties and attends a day centre with the same population. (David does not have severe learning difficulties). He uses a mixture of signing, text and a speech output device (Touch Talker - a dedicated computer for social communications, linkable to a number of different software packages). He has used the Touch Talker with a software package called *Language Living and Learning* for two years. In the last six months he has been using just the Touch Talker extremely effectively in a variety of circumstances.

Aims of the Presentation:

1. To consider the issues and problems raised in conjunction with the use of a highly sophisticated technological speech output device.

    a) Time required to program and plan the introduction of a device.
    b) Time needed to teach and train the user and carers.

c) Time needed to promote functional use of a communication system.
d) Funding of a device.

2. To demonstrate the importance of using a total communication system with a non-speaking language disordered individual.

a) To aid receptive language abilities.
b) To provide appropriate mediums for expression, i.e. signing, text and speech output device.
c) To raise individual confidence.

3. To consider the environmental difficulties related to the use of a high-tech communication device.

a) A training centre refusing to participate in an individual's communication programme.
b) A residential placement prepared to devote time to develop an individual's communication system.
c) Parental involvement with an adult living in care.
d) Self-advocacy.

Organizational Influences on Management Information Systems in the Human Services

Bernard Neugeboren, Rutgers, The State University of New Jersey, USA.

Successful development and implementation of MIS requires an understanding of how organizational goals and structures constrain and/or facilitate MIS. Some organizational factors influencing MIS are: ideology, staff resistance, power structure, efficiency vs. effectiveness, agency stability, leadership, organizational change and politics and self interest. Strategies to overcome these barriers are: structural location of MIS; user involvement in MIS design and implementation; and organizational analysis as prerequisite for MIS.

Inference and Reasoning Habits: A Neglected Component of Training for Effective Practice

Dr Paula Nurius, University of Washington and Dr Walter Hudson, Arizona State University, USA.

Expertise ... intuition ... practice wisdom ... the art of practice. These are all ways that human service professionals have attempted to speak about the essential yet elusive capacities that underlay practice inference and reasoning. Although interest in this topic is growing, we have not yet achieved the kind of understanding of this more procedural component of practice relative to the more substantive component, and this gap is evident in the training, supervision, and decision supports typically available to direct service providers. Current advances in the domains of social cognition and information processing do, however, provide a clearer framework within which to specify the structures and processes governing procedural knowledge and to design computer supports to strengthen reasoning habits and skills.

This paper lays out the needs and issues involved in enhancing the quality of this aspect of human services. In so doing, the authors draw upon a developmental research program involving computer-assisted training for practice reasoning. The paper first briefly encapsulates recent literatures that operationalizes forms of practice reasoning bias and error as well as directions for training of critical thinking in practice reasoning. The paper then highlights findings from three computer-assisted practice projects undertaken by the authors. This includes

1) a prototype expert system (a cost-benefit analysis of the process of development),
2) development and use of an automated clinical assessment, monitoring, and evaluation system, and
3) a query and advisory system designed to increase users' mindfulness of their own reasoning tendencies and to reinforce use of more comprehensive, valid, and reliable inference and reasoning strategies. The latter is initially targeted for classroom instruction as a complement to traditional content training in both direct practice and practice research courses.

An underlying emphasis of this paper is on ways in which the process of using computer supports in direct practice

influences the quality of the practice or service itself. This would include, for example, the ways in which different information gathering tools and interpretation aids bias practitioners' and consumers' attention toward certain directions over others. The goal, therefore, is to consider carefully attentional and information processing effects of computer supports so as to maximise their positive potential.

A Supervisory Decision Support System for Case Assignment in Child Welfare

Gregory N O'Beirne, Fourtech, and Carrie Friedman, Rhode Island Department for Children Youth and Families, USA.

Public child protection and child welfare agencies (CPCW) in the US are characterized as requiring a range of service delivery decisions under a complex and often contradictory set of operating requirements. Decisions within these agencies are made in relation to cases on a range of levels including client, worker, supervisor and administrative. While on the surface decision support systems (DSS) for agency staff are an appealing idea, the actual success of such systems appears to be quite limited. Most prior efforts have concentrated on decisions made by workers, particularly decisions such as whether to investigate a report of abuse or neglect, to open a case for services, or to place a child. Reasons cited for this apparent lack of success include the lack of adequate design and funding, the inexperience of workers in using the technology, and the difficulty of defining decision criteria.

The authors describe efforts to design and implement a decision support system in a state child welfare agency aimed at supervisors. The DSS is designed to assist supervisors determine which cases to assign to the workers under their management. The fundamental underpinning of the DSS is to establish and maintain workload equity. Equity is based upon the formulation and use of workload standards expressed as the percent of time each month required to provide a specific child welfare service to a case. The DSS provides a range of case assignment strategies to the supervisor including the assignment of single and multiple cases. The system also incorporates criteria in addition to workload, such as the training or experience of the worker.

As currently configured, the system operates under Object Vision in Windows 3.1. It is designed to operate off existing information system files, and to update data needed for case assignment through the use of data extract files

ALFO1 Training Management System: Supporting Quality Human Services (Demonstration)

Alfonso Ortiz, David P Wegenast, Robert Spaner and Alan Bookhagen, State University College of Buffalo, New York, USA.

The Centre for Development of Human Services is a research, education, and training organization with the mission of assisting community agencies to improve the quality of their services through the professional development of their staff. Included in that mission is the promotion and dissemination of research innovations and policy information in the field of human welfare. During its 15-year history, the Center has provided training to over 25,000 employees of - local departments of social service; state departments of health, mental hygiene, and long-term care; child welfare agencies; human service agencies; schools; foster parents; and staff in food and nutrition programs and health-related disciplines. The Center advances professional competence through consultation, training, organizational development, systems development, and technical assistance, including the development of in-service training programs, conferences, published curricula, manuals, management information systems, needs assessment studies, and training and program evaluations. Although the Center has extended its services to include other disciplines, it has maintained a commitment to fundamental social work values: an ecological systems perspective that facilitates the linkage of individuals through environmental networks to increase their resources and opportunities; respect for individual dignity and equality while recognizing differences and diversity; and self-determination and empowerment for staff and client systems, especially for the disenfranchised in society.

The Center has expanded into the field of IT by providing programming, consultation, hardware installation, training, support, and technical assistance on computerized information management systems for human welfare agencies. A project in this area is the development by the Center of ALFO1, a menu-driven staff development and training software application. This program was created, piloted, and refined in conjunction with the county departments and the state central office of the Office of Human Resource Development of the New York State Department of Social Services. The program is now

in use in 52 counties statewide and 65 sites in New York City.

The purpose of ALFO1 is to enable a district, county, or private agency to efficiently maintain, monitor and manage training and personnel information. The actual and intended users of ALFO1 are Training and Staff Development Directors of human service agencies. The program is user-friendly and can be easily learned by other staff as needed. Support staff responsible for recording personnel data and maintaining employee and/or training records can use the program, as can supervisory or administrative staff responsible for programmatic reports and employee performance plans and evaluations.

There is no question of the advantages of ALFO1 over the traditional approaches of manually recording, maintaining, and organizing the types of data the program handles. It has easy-to-use menus and pop-up windows, which speed up the data-entry process and reduce errors. Information collected includes: training calendars and schedules; registration information; course content areas; course titles; course training sessions; training session attenders; and a variety of trainee employment, educational, and demographic data. Using this program, various combinations of data on training session deliveries and attenders can be generated. This data can be used as the basis for monthly, quarterly, and yearly reports. They can also serve as valuable input for decision-making and planning activities regarding training needs, staff development, employee evaluations, resource management, and curriculum and program development. Consequently, the direct and indirect users and beneficiaries of the software are all levels of human resource and welfare staff, including clerical workers, direct service providers, supervisors, program administrators, and policy makers.

Ethical issues have not arisen for the application of this program. While there may be some concern about the personal information collected, such as social security number, age, gender, and race or ethnicity, this is the kind of data that is ordinarily recorded for employees. Such information can be used to encourage the recruitment of trainees who are ethnically and racially representative of the larger culture and the clients served. The ethical issue of information confidentiality is addressed by the requirement of a password for any user's access to the program.

There are numerous implications and potential uses of this program for training and policy-making. Clearly, an accurate record of the training being delivered and characteristics of the trainees must be the basis from which to contemplate any changes in training or related policy. These data can also be used in comparative analyses in which correlations between staff training and client outcomes might be established for a variety of factors.

Inventory and Coordination of Research on Handicapped Persons in the Netherlands

W J den Ouden, Research Coordinator of the Interministerial Steering Group on Policy for the disabled, Rijswijk, Netherlands.

About the year 1980 research projects on technical aids and on motor and sensory disabilities in the Netherlands were drawn into inventories. After discussion of the results of these inventories 4 recommendations were made:

1. a continuous inventory of research projects on disabilities should be available;
2. an innovative research and development program on technical aids should be started;
3. a research program on quality and usefulness of technical aids should be started;
4. research on disabilities should be coordinated.

The second and third recommendation led to programs financed by the Dutch government during 4 years.

In 1985 a research commission was installed by the Interministerial Steering Group on policy for the disabled (ISG). This research commission stipulates that inventories should use the same questionnaires and the same database programs. Since the beginning of 1992 a first version of an inventory of research on rehabilitation and (motor, sensory and mental) disablement was available. This inventory is a combination of the inventories of BBIk, NIMAWO and RIC. In the first half of 1993 a continuous inventory will be available.

Based on inventories and policy issues research will be coordinated by this research commission.

In the paper these topics will be described:

a. the development of a continuous inventory on this subject and the problems met;
b. effects of the research programs mentioned;
c. methods used for research coordination.

A Clinical Information System to Support Direct Practice: The Case of Foster Care

Daphne Oyserman, Wayne State University, Detroit, USA, and Rami Benbenishty, Hebrew University of Jerusalem, Israel.

For the last several years our team has been developing a conceptual framework, a methodology, and software tools to design and implement clinical information systems to support a range of human services. The aim of the paper is to present a system being developed and implemented to support foster care in the Detroit area, and to discuss the implications for human services in other areas.

Foster care practitioners face a very complex and demanding environment. They intervene and make clinical decisions about issues critical to the physical and mental well-being of children and their families. The courts demand full accountability from workers responsible for children removed from their parents' custody, and the public is truly concerned and often enraged when children in foster care are hurt or lost in the system.

As required by the enormity of the responsibility, meticulous and extensive data collection and documentation is the rule. However, because traditional information collection and storage techniques do not focus on making information and therefore knowledge easily accessible, it is often extremely difficult to access and retrieve information documented, and the potential this information has to support practice, practitioners, and administrators is not being achieved. Thus there is a clear need to structure information gathering and documentation, so that information can be adequately processed, assessed and knowledge disseminated.

In order to support foster care, we designed an information system that structures and formalizes information gathering, report generation, knowledge accumulation for staff, supervisors and policy makers. The paper describes in detail our analysis of information needs, the system being developed, the variety of reports to be generated, and aspects of the implementation process. Our discussion emphasizes the generalizability of our approach to analysis and development process to a wide variety of human service organisations such as nursing homes, residential care facilities, therapeutic communities for substantive abusers and more.

Quality Assurance, Consumer Input, and Perhaps, Policy Impact: The Case of Foster Care

Daphne Oyserman, Ph.D, Wayne State University, Detroit, USA, and Rami Benbenishty, Hebrew University of Jerusalem, Israel.

Accountability has been and continues to be a critical issue for Human Service Organisations (HSO). Clinicians, and the HSOs within which they are employed, are to be accountable for their actions, able to give a reckoning of what services they provided and with what rationale. Accountability is frequently operationalized as detailed, extensive documentation following administrative guidelines or mandates about service provision. Documentation is assumed to provide the data base with which to respond to any future query about services provided, assessments on which service decisions were based, and perhaps also client change subsequent to or in the process of, service provision.

Though an important starting point, such documentation efforts have not proved to be a panacea. Documentation and its oversight have proved to be so time-consuming that documentation is often mistakenly accorded the status of goal or endstate. Yet even with massive documentation, HSOs are likely to be unable to maintain a bird's eye view of the process and outcomes of their efforts. Focusing on the specific example of foster care, we suggest that documentation as it is now carried out is cumbersome, time-consuming, and provides neither basic tracking nor more complex pictures of clientele, services provided, or client change in forms of use to clinicians, supervisors, administrators, or policy makers.

Moreover, current documentation efforts fail to provide on-line quality assurance protocols and are routinely based solely on practitioner report and assessment. Thus documentation often fails to record assessments of client units in the course

of, and satisfaction subsequent to, service provision. Problems with this course of action are highlighted and examples given of the interplay between the kind of information collected, the way it is collected and stored, quality assurance, and consumer satisfaction. For example, in September (1992) the Michigan Department of Social Services rescinded foster care and adoption regulations giving first consideration to placing sibships together and to placing a child with a family of the same racial identity. Though these regulations were set up in the hope that the security, sense of belonging, and ethnic identity of children would thus be protected and promoted, one of the results of these regulations was that children in sibships, particularly large ones, and those with an ethnicity other than white, remained in temporary care situations (e.g. shelters) longer, or permanently, undermining the very security these regulations sought to promote. Because information about children, though documented, was not available in a format that allowed for easy analyses, the relationship between entering care as part of a sibship and ethnicity and consignment to temporary care situations was not available to policy makers. The system-wide nature of the problem was unknown until a foster care provider was sued with regard to the process of care for a specific child. Had information been available about the process of care for various clusters of children (e.g. children who enter care in sibships and so on), perhaps the regulations would have been set up along with the provision of resources which would have allowed, for example, for the recruitment of ethnically under-represented foster families or foster families equipped to take in larger sibships.

Emergency Planning: Information Technology and Change

Catherine Peterson, Kent County Council, and David Preston, South Bank University, UK.

In order to understand the current necessity for change in Emergency Planning, we present a review of Civil Defence. Historically organized populations have almost always attempted to protect its citizens. The two World Wars created dramatic changes in Civil Defence provision leading to the Civil Defence Act of 1948. This legislation forms the basis of most present Emergency Planning.

We overview the more recent legislation for peacetime emergency planning: Local Government Act (1972); CIMAH Regulations (1984); Civil Protection in Peacetime (1986); Local Government and Housing Act (1989). It is recognised that effective emergency planning is the result of securing cooperation and coordination of many agencies. Normally this is only achievable with responsive Information Technology.

We introduce the problems currently facing Emergency Planning at Kent County Council and the type of emergency faced; discuss how through joint workshops we have come to appreciate how common these would appear to be. Broadly these problems are caused by: ill-defined local authority roles; lack of inter-local authorities coordination; lack of coordination between local authorities and emergency services. Indeed a report by Civil Emergencies Adviser, Peter Brook, concluded that the position was sufficiently serious to be both unsafe and unsatisfactory, with metropolitan areas singled out for particular criticism.

We produce the conclusions of the two main workshops of Chief and Regional Planners, held in November 1990 and April 1992 respectively. We focus on the need to provide a much improved modern support service and the future role of IT within it.

Two Faces of Information Technology: what does the Social Worker See in the Mirror?

David Phillips, University of Sheffield, UK, and Yitzhak Berman, Ministry of Labour and Social Affairs, Jerusalem, Israel.

How do social service workers respond to, relate to and interact with information technology? Individuals have stereotypical responses to information technology which can be classified as follows: Computer Enthusiasts, Ruthless Computer Salespeople, Forceful Managers, Luddites, Militant Libertarians, and Sceptics. Just as individuals have different attitudes towards computerisation, there are different manifestations of IT within organisations. We can rank computerisation in an organisation on four levels:

(1) Nonexistent;
(2) Low level of computerisation which includes tokenism and marginalisation;

(3) Intermediate level of computerisation which includes compartmentalisation, and routinisation; and
(4) High level of computerisation which includes integration and innovation.

The nature that IT takes within a social service agency is related to the perspectives of social service personnel. Two perceptions of IT by social service workers are presented. The first is the "techno-value systems" which gives IT a central place within the organisational framework. This perception sees IT as having a will of its own - it can help you but only on its own terms. The second perception views IT as a technological process in achieving organisational goals. This approach sees IT as a service facility - a process in achieving goals.

Two examples are presented demonstrating the different perspectives. The two perspectives of IT in the social services also exists in the area of IT education for social workers, thus perpetuating the dichotomy within the social services. A review of IT curriculum for social workers in presented. A proposal for synthesizing the two "faces" of IT is made using a SCIENCE-TECHNOLOGY-ART continuum. An application of this proposal is made within the framework of IT and client empowerment.

Enhancing Services Through On-Line Technology - PLANet, Child Planning Resource Network

John M Pierce, Ph.D, JD and Marc R Thibault, MA, Pennsylvania Council of Children's Services, Harrisburg, USA.

PLANet is a service of the Pennsylvania Council of Children's Services (PCCS), a private, non-profit association established in 1924. The mission of PCCS is to advocate for the improvement of services to children through the combined efforts of its members. Towards that end, PLANet was established to provide 24 hour computer access to a wide range of available children's resources using a searchable database updated daily by participating providers.

Following a two year development period, PLANet became operational in May of 1990. PLANet combines a searchable database (4GL) with Sprintmail and a series of public and private bulletin boards into a 24 hour/day communication system for human services. PLANet achieves 99.9% "up time" by combining a "redundant" mainframe with the US Sprint public data network of local phone nodes located throughout the US.

Since PLANet's introduction, a number of states have adopted it because of its power and simplicity. Its power is the system's capability to link up providers and purchasers of children's services across a state or across the country through a comprehensive communications network. Its simplicity is that the system was developed for the non-expert user and works with any personal computer, modem and telephone line. Since 95% of agencies have a computer there are no significant barriers to their immediate participation.

The strength of the system is the 24 hour nature of its availability which establishes a win-win relationship for participants. For the providers, maintaining availability on-line assures instant awareness of that available slot throughout their service area, thus reducing undesired vacancies and enhancing efficiency and cash flow. For the placing workers, PLANet provides the ability to search the database using the individual child's needs as search criteria, thus connecting with the most appropriate agencies having availability.

PLANet takes advantage of practical technology for child welfare professionals at rates that make it very affordable. PLANet has been established as a database which allows each locale (state, city or organization) to administer their own PLANet version, using familiar terminology (e.g. licenses held, program types, exceptional need categories, etc.) while at the same time connecting all participating states in a single professional network.

PLANet's electronic mail, provided by US Sprint, provides a confidential means of communicating messages or large files electronically (even by FAX), 24 hours a day. The e-mail component eliminates missed messages and speeds up the placement process. Finally, the PLANet Bulletin Boards carry the latest professional updates regarding news, public policy, treatment issues, professional job listings, conferences, and training sessions. This feature "connects" child welfare advocates nationally.

IT Programs for Practitioners in the Probation Service (Demonstration)

A J F Pipe, Cheshire, UK.

The programs provide relevant knowledge, pertinent to the circumstances of particular clients, and to the practitioners involved with them, on specific areas of difficulty. The applications are designed to improve the level and quality of service offered by practitioners to their clients in terms of rapid and effective assessment and the delivery of appropriate and effective interventions. The programs are designed to be used by practitioners in conjunction with their clients. The most effective use has been found to be the simultaneous consultation of the applications by the practitioner and client conjointly.

The programs attempt to address areas of lack of professional knowledge, areas of practitioner 'skill gaps', confidence, and client motivation. There is ample evidence to support the contention that clients react positively to IT presentations, often more openly and honestly than to face to face interview. The programs also generate an immediate feeling of clients 'owning' the process. The immediate generation of hard copy information, knowledge and assessment creates the impression to the client and practitioner alike of tangible progress being made.

The question of machine generated decisions being provided to practitioners is certainly raised, but the programs are specifically designed to offer options to the practitioner who can then proceed, in conjunction with the client, to make their own decisions. These decisions can be made on the basis of the programs having generated appropriate information and knowledge pertinent to the particular circumstances.

The programs provide the opportunity of imparting knowledge to practitioners through their use. They encourage, and at times enforce, a logical, thorough and consistent approach to difficult areas of work. Knowledge and information is immediately available in an easy and acceptable form.

There are considerable resource implications raised, as although the programs make assessment and intervention faster, more accurate and more effective, thus saving resources, they also aim to raise the standard and scope of service offered to the clients, therefore generating additional demand on those resources.

The Use of a Databank in General Social Work

Drs Jos Potting, Federation for Social Service, Limburg, Netherlands.

In general social work in Limburg for more that 25 years, a lot of quantitative attention has been paid to the client population, their problems and the help they have been offered. It all began with the desire to know more about the client and his or her problems. Now - 25 years later and not only in Limburg but all over the Netherlands - the distinct feeling has come up that without an adequate system for client registration it will be impossible to survive.

Quantitative support for theoretical, methodical and even financial prognosis or discussions is essential nowadays. This thesis evokes at least two questions:

- Why can't social work do without this support?
- How and for whom should this quantitative data be presented?

But there is more: apart from social work or the institution for social work there is the social worker. Can he or she do without a databank? In which aspects can the helper be supported by quantitative data? The paper and the presentation will give answers on these questions from an experience of over 25 years collecting data. But whatever these answers might be, the past will be rendered out of date by the reality of today. Each day something new will be brought to the market and be (made) of good use to the help, the management of the institutions, to the client who asks for the help. It needs an institution on provincial or national level to sort these things out and make them fit for the work in the field. The Federation for Social Service in Limburg is such an institution.

Registration in Youth Services

Drs J D W Prickarts, Drs D J Smorenburg and Dr M H Polak, SRJV, Utrecht, Netherlands

The SRJV (Registration Foundation of Youth Facilities) is a national organisation that is responsible for the importation, processing, exportation and supervision of data. The main task of the Foundation is to generate information for government policy and management information for the involved organisations. In this paper we discuss the subject of how the national information system is set up. This could be described in relation to three lines of approach. The first one is the method that we used to start the registration, and what is new in this approach. The second point of view is the problem of standardization between the youth care organisations. The third point of view is the relation between information and policy making.

We would like to demonstrate the use of a Bulletin Board System, specially designed for youth care, and the system that takes care of the data processing. There has also been started a special project in Amsterdam, by which the SRJV gives the technical facilities (BBS). The purpose of this RAP-system (Regional Application Point) is to gain an insight into waiting lists of clients and to make prognoses of available resources in the youth service.

This BBS is an electronic information system which can be used by all youth services all over the Netherlands for quick and immediate information retrieval and exchange. The information includes the possibility to compare the figures of an institution with figures of colleague institutions in the region, the provinces and the country. The users of this system are administration, management and policy-makers within the field of youth care. By creating several possibilities for information exchange, coordination and co-operation between agencies has improved. A specially adapted modem is used, in addition to standard safety precautions, to guard against unauthorized use.

Analysis of the Determinants of Rehabilitation Treatment of Children with Cleft Palate

Professor Elzbieta Prominska and Professor Jerzy Grossman, Department of Rehabilitation, Academy of Physical Education, Warsaw, Poland.

Analysis of the determinants of rehabilitation treatment results in children with cleft palate proved that the degree of speech intelligibility is determined by a number of different factors which are interrelated. Of essential prognostic significance is the degree of palatal mobility. The rehabilitation treatment given could not compensate for the shortcomings of previous therapy, if any had been given. Knowing in advance before the beginning of the rehabilitation process the importance of such features as articulation, nasalization, hearing acuity, orthodontic deformities and the size of palatal fistulae we can, with some relatively slight error predict quality of articulation at the time of discharge from hospital.

Quality of Life as a Category of Humanistic Education

Professor Dr Andrzej Radziewicz-Winnicki, Universtiy of Silesia, Katowice, Poland.

The basic purpose of this paper is to try to establish precisely what is "quality of life" in humanistic interpretation in the literature of social sciences. It is argued - in behavioral interpretation - that the four approaches present radically different ways of contextualising this specific point of view. The major point of reference will be to present the distinction between behavioral and liberal education approaches, which are explored at the background of chosen problems of educating for peace in modern post-communist societies. "Quality of life as a category of humanistic education" is seen in my interpretation as an ideology of production regulating education rather than as an educational ideology servicing production.

Using Information Technology to Effectively Prevent Disease

Scott Ratzan, MD, MPA and Holly Massett, MA, Emerson College, Boston, USA.

This paper/presentation will discuss the varying degrees of communication technologies employed throughout the world to improve public health. The focus will be on analyzing existing preventive messages relating to individual health care decisions - diet, lifestyle, medical advice, etc. - with recommendations of how to maximise the use of information technology to disseminate the information to the public and change their behaviour.

Advertising, marketing, public relations and other communication techniques will be explored to identify the appropriate message design for any given audience and technological application. The efficacy of delivering health messages given the technological availability (e.g., mass media access or interactive video) as well as cultural differences inherent in different countries will be further discussed. Particular strategies employing shared decision making, social marketing and mass media strategies/theories will be described.

Specifically, the paper/presentation will include a comparison of health campaigns on a single disease entity (e.g., breast cancer, HIV, hypertension, etc.) implemented in different regions throughout the world, with descriptions of the effectiveness, messages, tactics, audience, and information technology employed by the respective source.

Information Technology Support Systems in the Human Services: The Problem of Expertise and the Ethical and Organisational Behavioral Consequences

Joe Ravetz, University of Central Lancashire, UK.

Information systems ranging from simple management information systems through decision support systems to complex expert systems are expected to enhance the quality of decision making across a range of human service and welfare agencies. Certainly a wide variety of systems are now on the market. The system may be an information management system for magistrates courts, designed to enhance the efficient delivery of justice, or an expert system for diagnosis in geriatric psychiatry, *Methusulah* being such an example. It may be a relatively simple legal system to advise on sexual and marital discrimination at work.

Systems designed to increase efficiency in welfare services may result in technology driven organisational behaviour that ignores key ethical considerations. In the instance of the magistrates courts system 'justice rushed may be justice denied'. *Methusulah* has the potential to extend 'diagnostic and treatment' knowledge to people, working beyond the confines of a geriatric support team. But is there a price to be paid in therapeutic creativity if a 'model of reality' is freely available and offers instant and professional assessment?

At HUSITA 2 the author's paper explored the conceptual limits to knowledge creation and representation in decision support and expert systems. For HUSITA 3 the paper raises questions about the practical requirements of drawing out expertise, the ethical issues in design of and use of a system, and the resultant dangers of naive application by human services professional and unskilled personnel.

Topics covered:

1. The nature of expertise and expertise as 'social construct'. Any person asked to contribute to the development of an agency system is giving 'expert witness'.
2. Practical problems of knowledge acquisition, 'reading between the lines'.
3. Pitfalls in communication, the necessity of good communication skills.
4. Ethical and 'knowledge model' premises underlying systems; the requirement to communicate suppositions to the targeted users.
5. User ethical and professional dilemmas arising from IT support systems, organisational behaviour issues.

Markov Matrices, System Dynamics Models and the Funding/Service Paradox

Richard Reinoehl, Oberlin College, Ohio, and Greg Stosuy, Rutgers University, USA.

One of the ironies found in most human service delivery systems is that while funding decreases during general economic slowdowns, demand for service goes up. This funding/service paradox frequently resolves itself through: raising the qualifications for service so that proportionally fewer people receive care, creating extensive waiting periods for service; and lowering the quality of service, increasing overwork and burnout among workers. This inverse relationship between funding and demand also contributes to a crisis orientation toward service provision. A notable corollary is that evaluation and planning for organizational effectiveness occurs in a rushed and superficial manner, if at all. Thus, solutions to this paradox, and other persisting problems are never fully addressed. Computers, a valuable resource as a problem solving tool, are also being substantially under-utilized by most organizations.

Two very powerful tools that can be brought to bear on this situation are Markov matrix analysis and system dynamics modelling, both of which can use data likely already on an agency's computer. Markov models can be used to enhance agency functioning by: predicting consumer mobility and choices for care alternatives, linking costs with care, suggesting optimal allocation of scarce resources, and suggesting improvement in the sequencing of jobs and consumer queuing. New software need not be purchased to perform Markov matrix analysis. A spreadsheet or database with an internal programming language is adequate. The Markov process also has modest data requirements and avoids much of the complexity of other analytic methods. System dynamics modelling can be used to enhance agency functioning by first projecting possible future consequences of current structure and functioning, and then by comparing projected outcomes of possible changes of the current arrangements. System dynamics modelling software, which uses a user friendly graphics interface is available on microcomputer.

Combined, the simplicity and power of these tools to aid in resolving the funding/service paradox, as well as for other systemic problems, is virtually unparalleled. However, the organizations who most need them, those already overwhelmed by consumer demands, are the least likely to implement them. In these cases consultants, brought in through short term development grants may be the best course of action. Organisations under less pressure can implement these tools themselves after minimal training. University educators and professional organizations should also consider the issue of including these tools in appropriate courses.

The Computer Dilemma: Damaging the Helpers

Richard Reinoehl, Oberlin College, Ohio, Diane Wallings, Wallings Association, and Greg Stosuy, Rutgers University, USA.

As computer use in human service organisations increases, so will the number of workers susceptible to soft tissue and joint dysfunction.

A. Causal factors and costs
    1. Non-ergonomic factors
    2. Factors in ergonomic settings
    3. Organisational costs
B. Treatment and costs
    1. Medical interventions
    2. Organizational costs
C. Implementation of preventive program
    1. Organization changes
    2. Organizational costs/benefits

It is ironic that most health and human service organisations, dedicated to improving the quality of life for their consumers are unwittingly damaging this quality of life for many of their workers. As we move towards a future of increased computer use, we move toward a future of increased computer related disabilities such as soft tissue and joint dysfunction. Often simply viewed as a physiological problem of individuals, this is a systemic problem with ramifications throughout an organization.

Recent studies show that the under-utilization of ergonomic principles for computer work stations will, over time, lead to physical disabilities such as myofacial pain syndrome, chronic tendinitis, carpal tunnel syndrome and other disabling conditions. Observations of computer utilization in health and human service organizations in New Jersey show very little practice of ergonomic principles. A random checking of organizations in other states suggests this may be a problem of national, even international scope. Unfortunately, even the strictest adherence to ergonomic guidelines can lead (albeit more slowly) to the same end.

The medical interventions to treat these occupational diseases can be extensive - including surgery. Considerable expense can be involved in treatment of the diseases, in the form of worker disability payments, and in employee morale and turnover - as well as the physiological and emotional suffering of the affected workers. The fiscal drain and poor morale brought on by a worker's disability and constant pain can also undermine the effectiveness of service delivery in an organization. When the latter is combined with anxiety, such as stress from work deadlines, and inter-office conflicts, it can result in dysfunctional organizational dynamics similar to those found in dysfunctional extended families. Fortunately these debilitating conditions can be prevented by introducing some simple systemic changes in how human service organizations and their employees work with their computers.

Survey of Interactive Electronic Technology in Human Service Education

Professor Hy Resnick, Ph.D, USA.

This presentation will describe and discuss interactive electronic technology - in particular multi-media, video-disc and "traditional" computer programs currently being used to educate and train human service students at the Universities of Michigan, Tennessee, Wisconsin, Indiana and De Paul. Common themes, problems, strategies in the development, utilization and effectiveness of these electronic programs as well as various changes in the role and function of instructors, students, administrators that will likely emerge, will be identified and discussed.

The premise of this presentation is that multi-media technology (the next wave of electronic innovations) will be the hardware-software combination that will change/revolutionize not only the class room in human service educational organisations but the very structure, culture and administration of these educational institutions. Some of these interactive multi=media or video disc programs will be described in detail and then analyzed to find common themes and dilemmas facing their design and implementation in the class room. Advantage and disadvantages of these tools for students and faculty will be addressed.

Supporting Independent Living through Adaptable Smart Home (ASH) Technologies

Simon Richardson, Dr David Poulson and Colette Nicolle, Loughborough University of Technology, UK.

This paper describes the preliminary results of an assessment of three adaptable smart home (ASH) demonstrators implemented as part of the ASHoRED (adaptable Smarter Homes for Residents who are Elderly and Disabled) project within the pilot phase of the TIDE CEC programme. The objectives of this project have been to explore the requirements of the elderly and the visually impaired for ASH technology with particular emphasis on the extent to which this technology will support independent living. In addition the project has explored issues relating to the successful adoption of this technology including the necessary social and care support infrastructure needed.

There is a major crisis facing the provision of health care in the western world as increased life expectancy leads to a progressively more elderly population. In addition, as the likelihood of individual disability increases with age this adds significantly to the needs for effective care provision. The cost implications of this are significant. In the UK alone in 1988/89 the cost of local authority spending on personal care services for the elderly are reported to be £1.5 billion - almost half of the social services budget. This does not include the expenditure on hospital and community health services which are estimated at some £6.4 billion. This represents more than half of all hospital and community health service expenditure. During the period in question, the proportion of elderly people in the population was estimated at approximately 16%. This proportion is expected to increase to over 20% by the year 2031.

The current and anticipated high costs of providing such care has led to an exploration of new ways to provide care services. One option is to use increasingly flexible and sophisticated technology within the home and as part of the social services infrastructure. In addition such technology provides the possibility to support independent living, thus extending the period in which the elderly in particular can be self sufficient in their own homes and be less reliant on external services. ASH technologies enable devices, networks and control mechanisms to be configured to meet the individual requirements of elderly and disabled householders and in addition can be adapted to the changing circumstances of the occupants. In addition such technology can provide remote access to the home for social services and medical purposes.

ASHoRED has formulated user requirements for ASH technology amongst a sample of elderly and visually impaired end users. These requirements reflect amongst other things a concern for security, safety, social contact and privacy. The investigation also revealed the essential requirement for the technology to support the tasks of everyday living. Three demonstrator sites using these findings have been implemented in Finland, Germany and Spain. The results of an assessment of these sites indicate that the ASH technologies have enormous potential to address many of the problems facing the elderly, the disabled and the care services responsible for them. This paper reports the main findings to have emerged form this work with particular reference to the needs expressed by the elderly and the visually impaired. In addition, the paper describes the lessons learnt from the project relating to the social and user acceptability of the technology.

Integration of Computer and Social Work Culture: A Developmental Model

Barry D Rock, DSW, Paula Kaminsky, ACSW and Charles Auerbach, DSW, USA.

The evolutionary process of integrating computer technology into the professional culture of a large complex Department of Social Work in a multi-campus academic medical center will be presented. It will include a review of the past fifteen years of computerization, from word processing to sophisticated data bases, from manual statistical collection to computerized social work information systems operating on a local area network, and from clerical usage to practitioner interactive use. A description of various applications and original programs such as entitlements and patient and recruitment tracking data bases will be delineated. The advantages will be explored of utilizing these systems to augment clinical practice, promote and conduct research, data analysis, and service monitoring. These systems provide a technological and systematic approach to many facets in the field of social work. Although the profession has begun to embrace the technological revolution, there is much evidence of widespread computer illiteracy among social workers. Practitioners and social service agencies will suffer significant losses in funding, data retrieval, and program maintenance if they cannot advance and incorporate the use of technology. This model of professional culture development and integration will be of use throughout the human services.

In Search of Hidden Knowledge: Retrieve more Information from your Client Database

Drs Robert van Roon, Faculty WAG, Rotterdam, Netherlands.

Dutch social work is making an increasing use of registration systems for storage of client and process data. Stored information is seldom used for the evaluation of treatment methods or for the creation of client profiles.

In our school we train students to obtain more information from the database. This is not a traditional statistic problem because instead of a sample you can use the whole database. Obviously, this is only possible if evaluation data is registered. We start the discussion with our students answering the question - in what way can you operationalize "success of treatment"?. Should this be done objectively or subjectively?
The process then moves on to the second phase, creating contrasting groups and using them as the basis for a crosstable analysis. These crosstabulations seek to answer the question - in what way is a successful treatment causally related to certain client or process data? Students soon come to the conclusion that it is impossible to analyze all possible crosstables.

In the third phase we will use software which will generate all possible correlations between the elements of a database, thus solving the problems of the second phase. Then the phase is reached in which client profiles can be deduced; treatment methodology is typically suited to a group of clients with specific characteristics.

In the last phase we talk with our students about 'case-based reasoning': given an input specification, a case-based system will search its memory for an existing case that matches the input specification or we retrieve a case that is similar to out input situation. We use software tools to assign new clients, with certain characteristics, to a treatment.

Computers in Therapy - Possibilities and Problems

Klaus Roos, Central Institute of Mental Heath, Mannheim, Germany.

Based on empirical results using computers in therapy with autistic and mentally disabled persons current and prospective possibilities of computer use in therapeutical settings are discussed.

Computer animation, several input and output devices (like special switches, touch screens, drawing tablets) can help to adapt the computer to the special needs of the patient. Though research is still at the beginning in this area results show positive effects of computer-aided therapy on motivation, learning, behaviour problems, social activity and other variables depending on features of the computer program and patient characteristics.

But there is a lack of a conceptual theoretical background to integrate computer-aided therapy into the overall therapeutical context. Differential diagnostic criteria for using the computer, transfer problems into real life as well as standardized evaluation criterias, are main problems of the field. Also the adaption to special needs and purposes is still a problem.

Computer programs should be easier to construct (like authoring systems), more flexible, adaptable to special needs and more intelligent (i.e. from drill-and-practice to intelligent therapeutical systems).

Solving the Problems of Computer Use in Social Work

Drs Peter Roosenboom, Causa, Hogeschool Eindhoven, Netherlands.

Implementation of information technology in social work is proven to be difficult. Literature puts the blame on the attitude of social workers; they do not appreciate computers and they often show a strong resistance of using them. This problem is not to be neglected, but it is not the main problem. The main problem is not only for social work, but a problem of implementation in every field of activity. At the moment no more existing administrative processes are automated (automation), but new automated information generating processes are implemented (information). Implementation of information technology in social work means mostly informatisation and generates the typical problems of it.

Bed, Cooker and Washing Machine Control Through the Home Bus for Elderly and Disabled People

Professor Armando Roy, Ph.D, University of Zaragoza, Antonio Remartinez, Ph.D, Bioingenieria Aragonesa, and Javier Sancho, Balay, Spain.

This paper describes part of the work performed under the TIDE project ASHoRED (Adaptable Smarter Homes for Residents who are Elderly or Disabled People). In particular, it considers the adaptation and computer control of an induction cooker, a washing machine and an articulated motorized bed oriented to help elderly and disabled people. For this purpose, a Home Bus is used, following the Home System Specification (HSS) with twisted pair type 1 (TP-P).

Induction cooking is the best solution for elderly and visually impaired people because there is no fire danger. Induction cooking is an electromagnetic effect and there is no flame. In contrast to convection or conduction heating, induction heating is usually faster because of the lower thermal mass associated with induction heating systems. The adapted apparatus has an adjustable height, and the symbols on the cooking surface and the control unit are dark with a white background (contrast for people with visual problems). The cooking surface is totally flat with easy clean.

The adapted washing machine is a front loading one. The control elements are on the front vertical plane, and they are very easy to operate because there is no programmer. There are only four elements:

- A two position on/off knob with a light for feedback.
- A two position knob to select wool or not wool.
- A big push-button for opening the door.
- A soap and softener tray with a big handle to open it.

The washing machine control is based on a 68HC11 microcontroller, and it presents some "intelligent" characteristics, receiving the necessary information from a set of sensors located in different places of the machine. It is able to select the best programme by testing some clothing parameters. Some acoustic signals announce the end of a washing programme, or a system failure. On a failure happening, the washing machine reacts by minimizing its consequences. It incorporates a self-test system to verify the right operation and user security. The washing machine is connected to the Home Bus, to centralize handling and information. On handling, it is possible to select a washing programme and turn on/off the machine. On information, the machine is able to notify the washing state and two kinds of failures:

- Failures that may be corrected by the user: closed tap or opened door.
- Failures that require technical assistance: spoiled drain pump, water leak or other spoiled elements.

While any of these failures are on the washing machine cannot start its program.

We are considering now, as future improvements, the connection to the Home Bus of other appliances, such as a TV set for message displaying. From the economic viewpoint, our approach, which requires minor changes in standard appliances, and low-cost hardware, may substantially improve the quality of life for elderly people, and, at the same time, reduce the social costs because of their increased autonomy.

Information Technology and Telecommunication in Continuous Communication Services

P. de Ruiter, Netherlands.

With the increase of home care in both quantity and complexity, there is an increasing need for home care organizations to provide services continually during day and night and at the weekend. To provide these services telecommunication technology is crucial. While the office is closed clients are to be brought in contact with the home care worker on duty, wherever they may be. This is realized by a special communications center, using telephone, semaphone and special equipment for personal alarms.

According to our customers, service quality is crucial to the success of this service. Apart from the importance of a service oriented attitude from personnel of the communications center, service quality highly depends on the immediate availability of accurate and up to date information at the communication center. Using a special information system remarkably increases the fast availability and accuracy of the information. Telefax is used for fast update of the information without loss of accuracy. Both technologies also allow the detailed registration that is necessary for systematic quality assurance.

The paper will explain how the different technologies are used in an integrated way to realize a good service quality. Special attention will be payed to the possibilities and limitations of the future use of Electronic Data Interchange (EDI) and expert systems for a further increase of the quality of existing services and the development of new services.

Demonstration of an Expert System for Wound Treatment and Care (Demonstration)

P. de Ruiter, Netherlands.

The technical possibilities that enable people to keep living independently despite loss of functions due to old age, disease or handicap are rapidly increasing. The Quality Institute for Applied Home Care Innovation (Dutch Abbreviation: KITTZ), which is an offshoot of the Groningen Province District Nursing Organisation, is working on the introduction of

technologies in home care that will expand the range of possibilities for treatment and nursing care at home. Since 1989, as part of the innovation and development programme "Home Care Technology 2000" various projects have been in progress, in which realization of the necessary conditions for application of home care technology is being actively worked on. It is this focus on the conditions for providing home care in combination with our attention to the quality of care that has led to the remarkable project *Development of an Expert System for the Treatment of Wounds.*

The purpose of the expert system for the treatment of wounds is to improve the quality of wound care by compiling expert knowledge on the subject of wounds and making it available to a much wider group of less specialized health care workers. In hospitals, nursing homes and home care, a considerable number of wounds occur. Nurses and doctors are confronted with a variety of wounds, ranging from simple bedsores to (surgical incision and assorted) very complicated conditions. An increasing number of products are available for treating wounds.

The expert system for the treatment of wounds can be used by several groups:

- District nurses
- Workers in nursing homes and old peoples homes
- General practitioners and their assistants
- Pharmacists and their assistants
- Nurses in hospitals
- Institutes for training and education

The expert system can be used with the following tasks:
- Defining the type of the wound
- Selecting the appropriate treatment
- Selecting the appropriate product to use in the treatment
- Using the product

The expert system can be used for decision support in health care practice and for education of health care workers. It does provide the user with knowledge tailored to the situation the user is facing. The expert system does not take over work of the user, neither does it take responsibility for the user's decisions. It does create a condition for health care workers to realize a better quality of wound treatment and care: the availability of well-established knowledge.

Quality Management in the Care and Welfare Sector and the Contribution to Quality Management of the Field-Specific Registration System for Local Welfare Work Developed by WOZON

M J H M Sauren and M H C Kremers, Werkcentrum Opbouwwerk Zuid-Oost Nederland, Netherlands.

Quality management concerns both professional behaviour (qualification issue) and the professional service itself (quality issue). Quality management sets a number of requirements to be met by local welfare institutions:

- institutions must determine what quality standards apply to the services they offer to their clients;
- on the basis of these standards, institutions must set the quality requirements set with respect to professional behaviour;
- institutions must develop a quality assessment system in order to be able to determine whether the services provided on a daily basis meet the quality requirements set.

The field-specific registration system for local social welfare work, developed by WOZON, contributes positively to the process of quality management. The system will be described in detail.

Utilization of Data to Improve Practice in a Hospital Social Work Department

Ilana Ben Shahar, Sheba Medical Center, and Gail K Auslander, Hebrew University at Jerusalem, Israel.

Social work has made significant progress in recent years in developing tools for promoting the quality of care, including computerized information systems. The utilization of those tools for service provision within social work services has lagged behind technical development. This paper suggests a model for the application of data, based on our experience during the pilot stages of developing a computerized information system for hospital social work departments in Israel, through the joint efforts of the Ministry of Health, the Sick Fund of the General Worker's Federation, the Hadassah Medical Organization, and the JDC-Brookdale and JDC-Israel.

Successive stages in the process of data application are delineated. These stages include definition of a quality assurance issue through the use of data generated by the information system; validation of the data; hypothesis formation regarding discrepancies between observed, expected and desired patterns of care; in-depth analysis of these hypotheses through individual case examples; and formation of change strategies. We present a case study based on two elements of the information resolving those problems. Application of the model is illustrated, as well as a description and analysis of the process used to explore and apply the findings directly to the work of individual social workers.

Impact of Computerized Decision Support System on Decision Practice in an Organizational Environment: an Example and some Tentative Generalizations

Monica Shapira, Ph.D, the Hebrew University, Jerusalem, Israel.

The difficulties of assessing the impact of DSS decision aids on complex decisions with long-range ill-defined consequences are well known. Nonetheless, such evaluation becomes a necessity when decisions regarding institutionalization of a DSS in a human service organization are to be made. Data on circa 1200 decisions after 4 years of operating a DSS in an authentic organizational setting were analyzed to assess the utility of the DSS, designed and implemented in the Youth Probation Service in Israel. The DSS was intended to aid Probation Officers in making equitable and fair disposition decisions for juvenile offenders and in improving organizational policies.

The paper reviews theoretical and methodological issues involved in assessing the impact of DSS on decisions with unknown or indeterminate outcomes and describes an attempt to resolve empirically these issues in the particular case of DSS.

The principles and the process of assessment are based on the following assumptions:

1) The DSS shares with other technological devices a pragmatic and prescriptive character. This implies that the utility of a decision aid is gauged in terms of its capacity to perform adequately the function in changing a given decision process.

2) Availability of a "behaviorally grounded" model of practice which combines descriptive and prescriptive features and thus represents "the best that can be done in the present state of the art".

3) The impact of the use of decision aid in decision processes and decision behavior can be inferred only from observable changes in decision behavior and its consequences. Therefore the focus of our assessment is not on the computational capabilities of the DSS but rather on behavioral aspects of decision process.

4) Since the behavioral approach to assessment of decision aids involves considering the process of learning as a main agent of change, it requires measuring changes in the attitudinal and cognitive structures of decision-makers.

Within the framework of these assumptions we describe the results of our assessment of changes induced by the use of the DSS in terms of enhancement of consistency of decisions, progress towards replacement of case-by-case by rule-by-rule decisions, and some broader aspects of increased awareness and understanding of decisions. In order to assess the extent of learning, we attempted to acquire data on changes in cognitive structures and the attitudes of the decision-makers who used the DSS.

The results of our empirical study confirm our expectation with regard to the impact of DSS on decision process. They also indicate the importance of changes in cognitive-attitudinal structures of decision-makers for further improvement of the decision process.

Finally, the paper discusses the ethical and social implication of computerized decision technology on decisions affecting people.

The Use of Computerised Tools with Residents of Old Age Houses

Dr Moshe Sherer, Tel Aviv University, Israel.

This presentation will deal with the rationale of using computerized tools with residents of old age houses, and specifically with the results of a study on the implementation of various computerized tools with residents of old age homes and a day care center.

Old people suffer from the fact that they are no longer needed by their family members. This feeling is intense for those who live in homes for the aged, who are disconnected from their significant people and neighbourhood. As a result, many share various degrees of loneliness and low esteem. People who work with residents of homes for the aged are looking constantly for different means to fill up their time with meaningful activities. The introduction of the computer is meant to solve some of these problems.

Specifically, the objectives of our study include:

a. To enable old people to learn how to operate a computer and to use it for various purposes such as for producing a weekly newsletter in the home for the aged.
b. To learn from this project about the actual and potential abilities of the residents in the use of computers.
c. To introduce new activities into the cultural life of the residents.
d. To improve residents' self esteem.
e. To create new ways of communication between residents and their children and grandchildren.
f. To enable team members to study residents physical (coordination) and social (playing a computerized game with other residents) activities.
g. To enable team members to assess residents' ability to learn, as a result of studying their activities with the computer.

Our presentation will deal with the operation of a steering committee that included few workers and representatives of the residents, the various tools that were used, the process of the project, the results of the intervention and implications for other aged or helpers.

The DeltaGuide: More than a Social Database on Disk (Demonstration)

Robby Siera and Ludo Serrien, FJiAC, Antwerp, Belgium.

In this demonstration we want to show you *DeltaGuide* and how it was developed. *DeltaGuide* is a social database. It has been created to be used by youth workers throughout Flanders to help them give correct information to youngsters. The database has been designed in dialogue between providers and end-users. A continuous intense cooperation guarantees that the information is kept up-to-date and accurate; periodic updates are distributed on disk. Furthermore, *DeltaGuide* is embedded in a whole range of support products like end-user support, training programmes, quality control mechanisms. etc.

Our goal with *DeltaGuide* was to stimulate certain youth organisations in taking on the task of informing youngsters. First of all we investigated what hindered them from taking on their information task. Not having accurate, up-to-date information was an important reason, but it was not the only one. Based on all the collected information we developed "the ideal product". The obstacles we met were numerous: on the one hand the high cost of software development

constituted an important financial barrier: on the other hand the difficulty of the software formed a technical obstacle. Another technical but also human barrier is the insufficiently experienced end-user. Lastly, we had to cope with two ethical matters: first, end-users may forget how to search vital information themselves and second specialists may disappear.

Taking into account these financial, technical and ethical restraints to the ideal product we came to the "practicable product" of which DeltaGuide is only one element. Although DeltaGuide may not be the perfect solution, it the best solution possible under the circumstances. This process of design and development is exactly what we want to present and discuss. What was our goal? What were our circumstances? And how did we combine these two? These are the questions we would like to investigate in our presentation.

Community Computing: Linking Health and Human Service Resources to the Community

Diane J. Skiba, Ph.D and Drew Mirque, B.A, Colorado, USA.

The mission of the Denver Free-Net project is to promote the concept of community computing to citizens in the state of Colorado. Community computing, as described by the National Public Telecomputing Network, establishes a community resource that is freely accessible by citizens through a computerized network. The community, through the use of a personal computer, telecommunications software and a modem, can access the Denver Free-Net on a 24 hour basis. The community itself defines the information resources and provides the necessary support to maintain the information resources as well as to sustain the concept of an electronic community.

The Denver Free-Net, modeled after the successful Cleveland Free-Net, is the direct result of the operation of an electronic bulletin board system for nurses. Several factors precipitated the evolution from an electronic bulletin board to community computing. First, our belief of free and equal access to health and human service information and the need to empower citizens to participate in their decisions about health and lifestyles. Second, the health care initiatives promoted in the Healthy People 2000 government document. Third, an acknowledgement of the "healthy community" concept espoused by the World Health Organization. Fourth, the belief that health, human and economic development of a community are inextricably connected. Fifth, the success of several community computing projects throughout the United States.

The Denver Free-Net is conceptualized as an electronic city where a user enters buildings such as the Post Office, School House and the Health Care Community. It is a menu-driven system that provides information in several formats: read only text information, databases, question and answer forums, and on-line conversational mode. A sample of information available in the Health Care Community Building and the Community Center Building are as follows: HIV/AIDS, Cancer, and Alzheimer Information Centers, Paediatric Illness Database, United Way Services, and Support Group Center.

Participation in the community from two viewpoints, volunteer information providers and citizen usage, and the impact of the Denver Free-Net on the community will be also be included in the presentation. Impact will be discussed in terms of usage/access, dissemination and diffusion, promotion of telecommunications and the development of a community computing infrastructure within the state of Colorado. Implications for future developments as well as potential electronic connections to other worldwide community computing resources will be discussed.

Dissemination, the Ultimate Empowerment of Information

Professor N J Smith, Ph.D, University of Queensland, Australia and Professor F H Bolitho, Ph.D, University of Calgary, Canada.

Information is an essential pre-requisite in the generation and knowledge building process. We have seen great strides in the use of information technology in the knowledge industry, particularly in the early stages of the research process. Much use has been made of the technology to increase our conceptual ability by the provision of more complex manipulation of data through database applications, and decision support systems. Communication technology, coupled with application generators have enabled more sophisticated, speedier and far reaching opportunities for data collection. Statistical and qualitative analysis software has increased our testing procedures. But what of the dissemination of research findings to complete the knowledge picture? Whilst the stock of information has increased it is still in its pre-computer format, in

written form, not easily accessible, particularly for the non specialist or cross- disciplinarian.

The increased use of information in the provision of Human Services has led to a belief that this has automatically contributed to a better quality of life, in terms of service provision, because of its decisional capacity. But little has been done to increase the Human Service worker's decisional capacities or to consider the fact that the way information is presented and disseminated can help or hinder the decisional process itself. In particular, we do not seem to have paid much attention to ways of using information technology to enable information from research to be disseminated to cater for different user needs. As such we have neglected an avenue that could increase the general quality of life and service provision by allowing wider access to information which caters for the non-specialist as well as specialist user.

The aim of this paper is to discuss three ways in which information technology could be used to make research findings accessible, in a format suitable for different user needs. The first way allows the access of available information globally and only requires a low level of computer literacy. Therefore, it could used by students or the general public in a library setting, as well as specialist users. The second way is by the use of hypertext in a multi-media environment, in which the results of studies can be made available for different user levels of knowledge or literacy. Finally we will consider the feasibility and conceptualisation of software which caters for all of the research process being integrated and contained on the same media. This would allow for copies of the whole of the research project to be available to other researchers in a short time frame for them to use as reference, further analysis of data, complimentary checking of findings, etc.

This technological knowledge is available. It only requires us as human service professionals to recognise that information cannot improve services or human development unless its full power is realised through its dissemination, and to concentrate on developing this process.

The Use of IT to Aid Access of Overall Market Demands and Demographic Breakdown for Planning Accessible Services

Tony Stephens, Passenger Transport Research, Birmingham, UK.

There is a growing need for accessible transport as the population is ageing. There are thus service demands on transport providers and no doubt soon legislation to force the issue (as there already is policy at EC level). There is a growing need to design a tool to look at planning provision and to fine tune the indicators and methodologies already being used to address the issue. This tool can then be used to plan accessible services, improve those already in existence and to bring about the improvement of conventional services.

From the work being undertaken it will be possible to link available data to a Geographical Information System in order to better understand the demands on an accessible service and thereby make that service more efficient by being able to target resources more effectively. It is expected that a database will be designed as a framework for firstly the analysis of statistics and secondly as a platform onto which a Geographical Information System can be run.

By the design and storage of information in a database it will be possible to bring many sources of data together into a single reference point. It will make for rapid interrogation of the system and thus rapid response to queries. It will be possible to change variables and variable ranges and redraw these demographically quickly. The application of IT will make analysis quicker, and it will be easier to present any results in both a graphic and cartographic format. From this it is expected that the most appropriate areas for accessible transport services could be planned and from information stored within the database corridors could be proposed for future service routed provision. Any service resulting initiative could then be monitored against original indicators of demand that were applied.

Client/Management Information Systems and their Built-in Values

Jan Steyaert, National Fund for Scientific Research, Belgium.

The use of IT in human services can have many faces. It can be information and referral systems, expert systems, client assessment systems, training systems, ... and lots of other possible applications. The one application most evident is the

use of IT in the development and use of a Client and/or Management Information Systems (CMIS). These information systems have existed in human services for nearly a century without the use of modern IT. The advantages and disadvantages of client and management information systems have been described as early as the 1920's.

With the introduction of new information technology, the information processing capacity has increased tremendously. A new interest in CMIS has followed. Many human service agencies use the new possibilities of IT to establish CMIS. However, while introducing IT based CMIS in their agency they also introduce the values implied in IT and CMIS. These values are an important aspect of the agency's information process, but are often not recognised. IT is often a Trojan horse bringing in more that just some hardware and software into the social service agency.

In this paper, we wish to outline the common values used in different paradigms of human service technology, using the cognitive continuum theory. We will also describe and compare the values built in several commercial CMIS systems. Finally, we will compare the values of human services with CMIS values and argue that most CMIS systems only cover one possible set of human service values. Other possible sets are not (yet) represented in appropriate CMIS.

Simulating an Expert Agency

Gregory A Stosuy, Rutgers University, and Richard Reinoehl, Oberlin College, Ohio, USA.

Many, perhaps most, health and human service organisations in the United States now have at least one computer. Unfortunately, most of these computers are not being used to their maximum potential; instead, they are being used as more efficient typewriters/word processors or calculators. Equally as distressing is the observation that these agencies, in 1993, are still facing some of the same problems that prevailed in 1983, i.e. a crisis orientation to service provision and constricted access to information, now stored on a disk rather than in a filing cabinet.

There are a variety of reasons for this situation. For instance, in small organizations there is often a lack of computer expertise among personnel. Staff may have some hands-on experience through workshops or other means but there is no understanding of a computer's full potential. Large organizations frequently have the technical expertise but the computer technicians are isolated from the human service professionals. Therefore much of the IT training the technicians provide is often incomprehensible or not provided in a timely manner. Additionally, they have considerable control over agency IT development but have limited knowledge of human service issues and information needs, and rarely involve human service professionals in the planning and development process. Thus the human service professionals continue with limited access to meaningful IT.

Even in organizations where these difficulties do not exist, knowledge of IT is conveyed in incremental, task specific training modules. Thus the human service professionals who most need it do not receive a gestalt overview of an integrated IT approach to organizational functioning. It is this awareness (of both computer and human services functioning) that is essential to the productive, integrated development of IT in Human services. One solution to this perplexing dilemma is the development of an "expert agency". This gestalt learning center would simulate typical agency conditions but with appropriate IT applications responding to the holistic, integrated information needs of the organization. Included in this system could be: a microcomputer on virtually every desk; internal networking with e-mail and bulletin boards, as well as external links to other organizations; natural language database query abilities; expert and decision support systems; dynamic modelling systems; and, graphics and desktop publishing abilities. Trainees would initially occupy the position they hold in their agency but as training progressed could rotate into other roles to better understand an integrated IT approach.

This approach would enable human service professionals to develop an understanding of the dynamics of organizational structure and process when an integrated IT approach is used. This could foster a more cooperative effort among staff as well as providing a model for their own development of a clearly defined communication structure within an integrated organizational plan. This coordinated use of computer technology would enable an organization to better provide for client needs and for a more efficient sharing and use of shrinking resources.

Development of Information Technology and Social Welfare and Health - a Dialectic Process?

Ms Vappu Taipale. National Research and Development Centre for Welfare and Health, Helsinki, Finland.

In all European countries the recession and demographic changes lead to a need to increase efficiency and effectiveness of health and social welfare services. How to do this progressively is not so clear, and the role of technology in this process is largely underestimated. If we want to solve today's care crisis, it needs to be addressed by today's technology. However, in the field of "care-technology" (sometimes called "techno-care"), there are too few projects addressing the care sector despite the major activities of EC and COST in the field of technology. The problem is mutual. The care workers and administrators do not know what today's technology can do to help them, and the technology and industry do not understand the needs and structure of the market for health and social welfare services.

We need to start this dialectic process. Administrators and care providers are experts of care networks in their countries, which really differ from each other in respect of the relationship between public and private, volunteering and charging. Representatives of technology and industry are informed about the newest products and developments to be tested. But, the user, the client, be he/she a child, an elderly or a disabled person, has become a focal person in the developmental process. The more we are user oriented, the better products and the larger markets.

The crucial questions for the care workers is to address their possibility to influence on the development of technology. Using technology to change ways of working, even of thinking. When only replacing some part of the previous work with technical devices any real welfare gain or economic gain cannot be reached. Introducing new technology changes the work, but the needs of the user change the technology as well. If this part of the developmental process is neglected, real gains do not emerge. On the contrary, technology then may increase inequity between urban and rural, between healthy and incapacitated, between rich and poor and sharpen the problems of production and reproduction.

Using Information Technology to Explicate Quality of Service in Information Technology

David Thorpe and Corinne Wattam, Lancaster University, UK.

The "invisible" work of child protection is only made "visible" in the text of case records and case conference minutes (Pitthome, 1987). Knowledge about child protection programmes and quality of service is organisationally constructed in an *ad hoc* way and pays attention primarily to the most serious cases. Very little attention is paid to outcomes and quality control measures. Information technology has been the potential to quite dramatically change this picture when it uses the "Career Heuristic" as a rich outcome measure which explores outcomes within the context of text (Thorpe 1991, Wattam 1992, Thorpe and Denman 1992).

The "work" in child protection, consisting of both assessment and service delivery, can be represented separately on a computer by means of identifying the signifiers (the language used to describe "work" which is currently "invisible") and then subjected to computer analysis to discern patterns of "work" and their relationship with patterns of outcome. The paper will show how these signifiers and patterns can be used in quality control procedures. A demonstration of the INTERACT programme using a child protection database will illustrate this process. The theoretical underpinnings of this development are those of social systems theory, ethnomethodology (situated moral reasoning) and semiotics.

Patient Classification in Community Health Care

Drs L Tiesenga, Drs J T Algera-Osinga, Dr R Halfens and Prof.dr.lt. Arie Hasman, University of Maastricht and National Association for Community Nursing and Home Help Services, Netherlands.

Patient Classification Systems are essential for implementing information technology in nursing practice. In this contribution a patient classification system (PCS) is described that is developed for community nursing. The system classified the care to be provided to the patient. With the help of the PCS the workload of community nurses is classified. The classification results can be used for management purposes: in this way a better insight is obtained in the demand for care. Also the system can be used for quality assessment of the care provided.

Although a number of systems are now available for community health care these systems are not suitable for implementation in the Netherlands due to organizational and cultural differences between the Dutch health care system and the health care systems of the countries where the published classification systems were developed.

PCS can be of two types: factor evaluation systems and prototype evaluation systems. In factor evaluation systems a number of indicators of care requirements are separately rated and then combined to designate the patient's category. A prototype evaluation system described the characteristics of the patients typical to each category. The patient classification system described here is of the prototype evaluation system type. It contains three axes along which the care to the patient is described: according to the type of care (e.g. psycho-social support and education, physical and hygienic activities), length of service (e.g. one month at most minimally six months) and number of home visits per week (e.g. at most twice a week, minimally eight times a week). The values of these three factors are predicted by the nurse after the first visit to the patient. The mean duration of a visit for each of the care types was determined in the valuation phase.

The PCS was evaluated on a group of about 1000 patients. The predictive validity, homogeneity, inter-rater reliability and stability of the PCS were determined. It could be concluded that the type of care (the first axis) was adequately classified by the nurses. This conclusion was reached on the basis of the types of activity performed in each care type. From the evaluation data norm times could be established for the various care types. These norm times were in agreement with published data, when these data were available. The number of home visits per week was consistently overestimated. This phenomenon was also observed in another study in the Netherlands. Because the study reported here had a duration of three months and more than 50% of the patients stayed in service for more than three months nothing could be said about the validity of the third axis.

Because in the evaluation phase the activities performed during home visits were recorded it could be also studied how good a factor evaluation system based on activities performed would work. To this end a regression analysis was performed with visit duration as the dependent variable and the various activities as the independent variables. About 36% of the variance in the duration of the home visits could be explained by the activities.

It could be concluded that the PCS can be used at the moment for supporting nursing management in the budget negotiations. For short term planning the system is not yet useful. Among others the various nursing skill levels were not taken into account. For the development of the PCS grants were obtained from the Dutch Ministry of Welfare, Health and Cultural Affairs.

Information Technology Based Initiative by the College of Occupational Therapists to Support the Research Activities of its Members

Rachel Toum, College of Occupational Therapists, UK.

This paper describes an information technology-based initiative by the College of Occupational Therapists (COT) to support the research activities of its members. Research in occupational therapy is a new and rapidly growing field and plays a vital role in the continued improvement of health care. Recent changes in the NHS and in the nature of occupational therapy education have encouraged more therapists to undertake research. However, a great deal of occupational therapy research is carried out in a clinical environment. Many therapists engaged on research, therefore, do not have research colleagues with whom to discuss problems and issues arising from their work. It has also been difficult in the past to obtain full and accurate information about occupational therapy research at a national level.

COT is the professional association for occupational therapists in the UK. It has a strong commitment to supporting its members in their research activities and recently set up the Disability Information and Study Centre (DISC) to provide occupational therapists with a specialised information service. A major DISC initiative has been the development of a database of occupational therapy research. The information held in this database is not available from any other source. It consists of details of projects currently underway and recently completed, together with information about the researchers themselves. The database is being used to facilitate networking amongst occupational therapists involved in research in an attempt to overcome problems of isolation. It is also used to provide COT with facts and figures giving a general profile of research activity and which provide a basis for the formulation of research strategy at a national level. DISC has an ongoing arrangement with the British Library for the publication of the database in hard copy.

This paper describes the design of the database and the uses to which it is put. It then highlights a number of practical and ethical issues which arose during the development of the database and discuss the implications of the service for occupational therapists and their work.

The Technological Impact of the Americans with Disabilities Act

Ben Tunkelang, Ph.D, Computer Specialist for the City of New York, USA.

July 26, 1992 was an historical date for the largest American minority: on that day a battery of sweeping civil rights protection laws was issued - the implementation of the American with Disabilities Act (ADA) had begun. This paper examines the technological impact of ADA on the quality of living of the disabled who are the largest and poorest American minority; it also considers the benefits derived by the rest of the population at large.

ADA mandates equal employment opportunity and requires reasonable efforts to provide equal access to public accommodations for all people with disabilities. In many cases the standards for "equal opportunity" and "reasonable efforts" have yet to be established; however, it is already clear that we are at the dawn of a vastly improved world for the disabled. In the scope of this paper we focus our discussion on the direct and indirect impact of the ADA legislation on removing the barriers of communication, transportation, and information that have traditionally confronted the large majority of the disabled and have deprived them of the equal opportunity to work, play, study, train, and compete with their abled peers.

The removal of these barriers requires that four issues be addressed:

1. What are the major causes of these barriers?
2. What are the actions that will alleviate and, hopefully, eliminate these causes?
3. What is the best strategy to implement these actions?
4. What are the tools required to implement these actions?

It turns out to be expedient to deal with each of these steps in reverse order.

Issue 4 (in the USA): It is relatively easy to respond to the question in this issue - enforce thoroughly and vigilantly the recently minted ADA legislation, and spread its gospel to the five continents.

Issue 3: The complexity of the problem requires a short term as well as a long term strategy, In the short term we should try to optimize the limited budget available so as to liberate as much as possible the largest number of disabled from the barriers that separate them today from their abled peers. In the long term, we should monitor and train the disabled as soon as possible after their birth or their disability. We should create and provide them with assistive technology at school, at home, at the workplace, and at play. We should enable them to communicate and travel like their abled peers.

Issues 1 and 2: During the last twelve years an extraordinary technological revolution has and is taking place at an accelerating rate coupled with a drastic reduction of its cost. It is evident that this revolution has already given us some major assistive tool aids for the Disabled, e.g. speech boards for the visually impaired, TDD technology for the hard of hearing, voice synthesizers for the speech impaired, sip and puff technology for the motor impaired. Many, if not most, of these new tools are quickly co-opted by their abled peers: this development is good since it brings down the cost and helps standardise the assistive technology. The wide availability of multimedia boards and vast storage on CD ROMs will undoubtedly unite, in the foreseeable future, the abled with the disabled in their common goals of improving their quality of life and services.

Quality of Care in Social Health Services: a Training Program Bottom-up

F A Turhsma, Hogeschool Eindhoven, Netherlands.

Quality development in social health services has been topical in the Netherlands since 1986. In that year an advisory

committee of the Dutch National Government suggested it in relation to the Health Institutions of the Netherlands. Efforts have been made in the standardisation of the health process and by these means quantifying health processes. Pre-eminently Health Institutions for learning deficient persons made several attempts at introducing IT as means of quality control. In addition to the usual problems of implementing IT I want to focus on a combination of conditions which makes the task more difficult:

1) Developing and describing quality (standards) in the Netherlands is situated in non-profit organisations which make their own policy.

2) ISO-norms for social services are hardly known and if so not yet adapted.

3) In many organisations the implementation of IT has been a focused on administrative procedures.

4) Learning deficient persons (and their families) are not (yet) able to receive equality of approach.

5) Focusing on external quality control leads to a top-down implementation of IT, where possible gaps will exist between the external and the internal control system.

These conditions and their effects deserve further exploration.

Introduction of IT in the Implementation on the Social Services in Turkey: a Model Design

Dr Erden Unlu and Prof Dr Sema Kut, Hacettepe Universitesi, Ankara, Turkey.

This paper attempts to develop a model for the implementation of IT in the social services in Turkey. The problem is approached through an overall analysis and assessment of the central and provincial administrative levels of social services in order to identify the impact of the service delivery system on the improvement of quality of life. The analysis indicates that the effectiveness and efficiency of social services are not up to the standard needed to contribute for the betterment of quality of life in regard to policy making, program planning, research, management information systems, benefit information provision systems, referral systems, supervision, recording, evaluation, etc.

Keeping these in mind, the model is designed to cover the following practice areas of social work: policy/community planning, agency management, direct service, client self-help and education. Supervision, decision support systems for practitioners, record keeping and monitoring progress, research and networking of organisations which are found lacking in the existing system need to be integrated in the above practice areas.

The following ethical issues are emphasised and efforts are explored in order to prevent their occurrence: factors which might hinder the introduction and application of IT in social services; fear of dehumanisation, practice limitations, worker and client resistance; impact of the use of computer on clients, practitioners and politicians.

The model also proposes strategies on timing, priorities, resources and expansion to establish IT in Turkey. This model can be operationalized with the participation of innovative and dedicated researchers, cooperative commitment of the School of Social Work and interest expressed by the government.

EVERGREEN - A Microcomputer Simulation in the Planning of Services for the Elderly People

Ms Marja Vaarama, National Research and Development Centre for Welfare and Health, Helsinki, Finland.

In Finland the number and proportion of aged people is increasing and the national economy is getting worse. At the same time legislation is moving in a direction where autonomy of municipalities is strengthened and the central governmental regulation is reduced. In this situation it becomes important for municipalities and provincial boards, as well as for governmental agencies, to concentrate their efforts on the planning of welfare and health services for the elderly. To meet this challenge and to improve the quality of planning and decision making, The National Agency for Welfare and Health

(currently called National R & D Centre for Welfare and Health) developed a simulation application to be run on a microcomputer. The application is called *Evergreen* and it is for sale for a low price. The application was developed as a part of the Old Age Policy Project. The primary aim of the project was to produce a nation-wide, long-term development programme for elderly policy.

In this session the problems faced during developing the application and the experiences of the municipalities testing the application will be discussed. The structure and the functions of the application will be explained and an English version of the software will be demonstrated on a microcomputer. By means of the computer simulation it is possible to visualize alternative service policies and make tangible given operational models regarding services, resources and costs. The application includes four planning models and a key file of approximately 200 variables -"data bank" of welfare of the elderly. Each model gives the user, among other things, the following information: the number of clients in each form of service, the resources required in personnel, funds and room, as well as costs of the services both in total and per head. The application enables e.g. the study of the present situation, as well as short-term, intermediate and long-term planning. It also gives scope for outlining the division of service production between the public and private sectors.

Two of the above mentioned models (called the *Laissez Faire-Model* and the *Normative Model*) represent a traditional way of planning in which aims of development are set up and in which the population structure is a decisive factor. The other two (called the *Humanist Model* and the *Economist Model*) represent a new philosophy of planning. They are dynamic and open planning models in which the user can change almost every item. The application also includes an intermediate game of optimization between the Humanist and Economist models fitting together the needs and resources.

Training in Computer Related Occupations: An Opportunity for Vocational Rehabilitation of Physically Challenged Individuals

Professor John G Vafeas, Kutztown University, Lancaster, USA.

About 15 years ago IBM initiated computer programmer training projects for physically challenged individuals across the United States. These programs were based on a model in which a collaborative effort was undertaken by IBM, local private industries, the state vocational rehabilitation system, and a local educational institution which hosted the training program. The presenter worked for ten years in one of these projects and has seen its development from the initial stages to maturity. The presentation will cover all phases of training, beginning with the recruitment and selection of trainees, methods of assessment, the curriculum, the socio-psychological supports during training, and the placement effort. The industry's involvement with all aspects of the program from curriculum prescription, to selection of candidates and placement will be examined. Emphasis will be placed on the training process and the curriculum, and the special role of social work in binding all elements of the model together in a synergistic fashion.

With the advent of microcomputers and their popularity throughout the world, a unique market of computer related occupations is developing for physically challenged individuals. The use of the model for training other groups and the use of this model in other countries will also be discussed.

Computerized Planning and Evaluation System for Interventions at Rehabilitation Centers for the Disabled (Demonstration)

Avi Vaknin, Dina Alon, and Magi Ammara, Ashkelon Vocational Rehabilitation Center, Israel.

For the content of the demonstration see the parallel paper presentation of Barak and Rosen.

Independence to the Blind and Handicapped in Asia Through Modern Assistive Devices

Dr Joseph E Varghese, Ability Aids India International, India.

60% of the world population live in Asia. 10-15% of the population are totally disabled. In order to overcome any disability special devices are imperative. The visually impaired of the United States and Europe have talking computers, reading machines and sophisticated computer software. The physically handicapped and mobility impaired have electric wheelchairs and other mobility devices. The hearing impaired do have very effective and miniaturised hearing aids and several other devices to combat their disabilities.

It is estimated that there are around 100 million disabled people in India alone. This is more than three times the population of Canada. The disabled in India and Asia are not in possession of many devices with which they may combat their disabilities. Some of them do have access to low level technical devices. Very few have access to medium-tech devices. Only a handful have access to high-tech items. Production, distribution and promotion of assistive devices for the handicapped low, medium and high-tech can be dome only through active co-operation of trans-national agencies. This is the need of the handicapped of Asia today.

Development of a Provider-Supporting Information System for the Home Care Services in the Netherlands

Dr E A M J Verkaar, Netherlands Institute of Care and Welfare/NIZW.

This paper will describe the aims and process of developing a provider supporting information system for integrated home care services in the Netherlands. This developing process was started by the NIZW in September 1992, based on earlier developed concepts, and will continue to September 1994. In this paper the concept of the information system will be explained, the process of developing this system will be described, and as well important interim results will be shown. Complementary to this paper there will be a demonstration of two prototypes which are part of this information system.

The NIZW has developed a concept of integrated home care (Verkaar et al, 1992). Integrated home care concerns the cooperation and integration of the former disciplines "home help service" and "community nursing". Mostly, integration of these two former disciplines leads to the foundation of one new organisation. In the Netherlands lots of organisations for community nursing and for home help services are moving forward into this kink of integration. Another outcome of this process of integration can be a model of close cooperation instead of merging.

When working together more closely, a need for more information and better ways of processing it is felt. The NIZW has also taken the initiative to develop an information system which helps people who provide home care to do their job better: the system will make better communication possible between all kind of workers and between workers and management. The NIZW hopes that the new information system will lead to better care, because of the existence of more (and better available) information and because of a more structured process of decision making while providing care.

An information system can be seen as an instrument to better the process of information gathering and information processing. Information is always related to the process of providing care. The information system which is being developed by the NIZW, is therefore structured by the care providing process. The NIZW information system consists of four modules: mediation between supply and demand (intake); assignment of tasks, providing care and evaluation of the whole helping process. In this paper the characteristics of these modules will be presented.

The information system which is being developed by the NIZW is not an administrative system. It is also not a management system. This system can be characterised as a care provider supporting system, which can supply information for other (administrative - or management information) systems. The NIZW system will also be designed to be connected to existing administrative or management information systems.

In this paper the process of developing the system will be described. A choice for prototyping has been made and will be explained. Also the cooperation between developing parties will be mentioned and their tasks and activities will be described. At the end of this paper some questions will be raised, related to the problem of implementing a new information system like this.

Innovations in Learning

Albert Visser and Henri Roosdorp, Hogeschool Midden Nederland, Netherlands.

The department for Social Work at Hogeschool Midden Nederland will make a presentation which has its origins in the development of a strategy for the implementation of information technology applications in the Social Work Curriculum. Additionally teachers from the department together with CMN developed 20 package of learning software. These two streams were combined into a curriculum-innovation process.

This situation will be presented as a case study for curriculum innovation. There will be a theoretical explanation of the process and examples of implementations. Furthermore there will be demonstrations of courseware and professional applications. The session is expected to be interactive with participants, which will give it the character of a workshop.

Computer Access for People with Special Needs

Harald Weber, Professor Gerhard Zimmermann and Professor Klaus J Zink, Forschungsstelle Technologie und Arbeit Universitat, Kaiserslauten, Germany.

The influence of computers in private life and in public or workplace is continuously growing. In view of an information glut the fields of information retrieval or exchange forces support through electronic aids. Computers in public places are becoming common whilst reducing personal services.

Most actual (hardware and software) designs are made for a "standard user". That is a human being, able to manipulate a keyboard and a mouse, to see and understand the screen output and to handle important switches. This assumption of a "standard user" covers many of the potential users, but leaves out especially those people who would have more chances and choices to create their lives with the support of computers. People with handicaps, inexperienced computer users, elderly people or children are excluded from use because of some mental or physical limitation.

The presentation will show some ways to reach a better accessibility by following basic design rules during computer development. These design rules are adapted to the special needs of a much larger target group than has been achieved so far. The preferable way to reach this goal of direct access incorporates some important advantages. First, computers in public places, where no *ad hoc* soft or hardware manipulation is possible to support the special needs of the actual user, would be accessible. Second, every user gains in using easier user-computer interfaces of multi-modal software. Third, there are (almost) no additional expenses for the producer to implement this concept, so every new computer could be equipped with this extended software.

Basic explorations of the special needs of different target groups with physical limitations will be presented. Along with this several input devices will be analyzed. Then, different ways of simulating a keyboard or a mouse will be discussed with attention to eye and ear dependency. Last, the screen output will be accompanied by sound and speech output to support multi-sensitive communication.

The whole concept will be embedded into an operating system to make it multi-modal. Equipped with the new features even standard software will be accessible for most of those people who cannot handle a keyboard or a mouse. Access to the additional input and output possibilities for software developers will be strongly supported. The presentation will be finished with design rules for the construction of user-computer interfaces and software for people with mental limitations.

The Automation of Leisure Services

Professor Myron E Weiner, Weiner Associates, Bloomfield, USA.

Leisure, in all its variety, is at the core of our individual and collective striving for an improved quality of life. In one form or another leisure is a vehicle for the pursuit of societal goals in such areas as education, "wellness", mental health, therapy in all of its forms, children-youth-family and elderly services, arts and culture, corporate employee relations, commerce and

industry, resource conservation and environmental protection. Leisure, recreation and park services are also a major aspect of economic development of society. The automation of leisure services is, therefore, critical to the utilization of information technology for the quality of life and services. This paper describes, and discusses, the development and implementation of a plan for an MIS in a recreation, parks and community service department of the City of New Britain, Connecticut, USA - a community with a population of 70,000.

Traditionally, municipal leisure department have had only two options available for automation: (1) use of terminal interconnected with the city central computer; or (2) acquisition of one or more desk top computers. Both options presented limitations. Only very large cities, with the necessary resources, could consider acquiring their own computer telecommunication network dedicated to leisure services. The City of New Britain designed a third option - the creation of a LAN/satellite network computer center. Operating its own LAN, several interconnected desktop computers were tied into a server, which was interconnected the network to the City's central computer. The new technology opened up a broad spectrum of options for more effective use of computers for leisure services. This technology also broadened the potential for more fully exploiting the leisure services for improving the quality of life and services of the inhabitants of a community or a large geographic area. The implications and impacts of this facet of information technology for the total human services complex is explored in this paper.

The Use of IT to Provide Access to Higher Education for People with Disabilities: a Model of Good Practice in Providing Equal Access to Tertiary Education for Students with Disability

Ann Wilkinson, University of Southampton, UK.

The author has visited a number of American higher education institutions in search of exemplars of good practice. The case of Columbus State Community college is offered as a paradigm of good practice. This case study demonstrates that although new technology has an important place in providing access to people with disabilities it is the will of the whole institution to provide equal opportunities that is central. Careful assessment of the needs of the local population were undertaken to provide a profile of the potential students. The mission of the college was then prepared with the aim of providing equal opportunity for all adults to achieve the education they required. Handicapped Students Services is just one of a group of support services available but it is recognised by the Association on Higher Education and Disability as providing an exceptional service.