New Technology in the Human Services

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Computerising Belgium's Probation Service

Israel's Decision Support System for Resource Allocation

Educational Software in Holland

Where next for Databases and Information Systems?

ENITH's European Resource Book

CUSSNet Software

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UP FRONT

International activities take centre stage for this issue. On the news front progress is rapid in plans for HUSITA3, set for Maastricht in June 1993. It will be a dual event, linking the International Conference to WELCOM3, a more domestic occasion of presentations for Dutch and Flemish welfare workers. The venue is the MECC, Maastricht Exhibition and Conference Centre, scene of stirring events in European politics. The MECC is spacious and modern. In contrast Maastricht itself is a small city, full of attractive old squares and buildings, a fine place for strolling around or enjoying the famous local "white" beer.

Two Dutch social service groups, LIOSE and NIZW are the sponsors of HUSITA and WELCOM, and they have brought in a project management company, VBM, to provide professional organisation. VBM in turn has contracted with the CREON Foundation for technology and subject expertise. The programme framework for HUSITA was worked out at a gathering of subject experts under the auspices of ENITH (European Network for IT and Human Services), and the call for presentations makes clear that attractive publication arrangements for conference papers are already in place. One new venture is to seek, with the help of Dutch publisher Van Gorcum, to have the main conference volume in print in time to be distributed at the conference.

May saw the culmination of over 2 years planning when the first General Assembly of ENITH was held in the conference centre of University Instelling Antwerp. ENITH has been established as an Association under Swiss law and a Foundation under Dutch law, following expert advice that this gave it maximum scope to pursue its collaborative, educational, research, developmental and dissemination programme. To mark the Antwerp occasion the first edition of the *European Resource Book* was launched, and details of it are given in this issue of *New Technology in the Human Services.*

In keeping with the international flavour of recent activities, this issue of the journal has papers from different countries. Two are from Belgium, but in contrasting styles. Jackie Rombaut, a probation officer, describes in practical terms the use of computers in his service, while ENITH's new secretary, Jan Steyaert, offers a challenging and controversial view of databases and information systems. As an example of a database underpinning a decision support system, Yitzak Berman analyzes the way Israel makes use of computer guidance in deploying social services resources. To complete the international line-up, Albert Visser describes and discusses the important initiatives taken by the Netherlands to promote computer based learning in the social sciences and welfare.

As editor I am often asked about editorial policy. A recent question was about the image of the journal as *academic* or *professional.* The answer is that we are both, as this issue illustrates, with papers from researchers and from those who have to organise and run social services. Our readership is international, from North America to Australasia via the Orient, with subscribers in educational, service and governmental (administrative) sectors. Our aim is to be accessible and useful.

Bryan Glastonbury

Plan for Computerisation in the Belgian Penal Social Service

Jackie Rombaut

The Director, M. F. Wilrycx describes the Service as follows. "The Penitentiary Department Social Service was set up in 1930. Its first aim was to individualise penal servitude and to facilitate the social reintegration of any adult having had serious contacts with Justice. The Social Service wants to set up continuous counselling before, during and after a stay in a penal institution or after a home arrest.

The framework within which the penal social workers operate has been progressively extended and new powers have been granted them. Territorial spreading and differentiation were the two key terms with regard to the operating fields. Personnel of the Social Service and the Probation Service are active in one or more of the following work areas :

* probation service;
* inside prison staff (including Cultural services);
* outside penal institution staff;
* social services of a Commission for the Protection of Society
* supervision of the respect of alternative measures taken under art.35 of the Law on preventive custody;
* creation of a Community Service (part of the special conditions of probation)."

Computerisation Project

Introduction. A few years ago we jotted down some first ideas regarding "Computers and Social Work". That was also the time we started focusing on the potential for computer applications in the field of judicial social work.

The project progressively began to take shape and we started experimenting with a hobby computer. The contacts we established with the VIW (Association of Welfare Institutions, Guimardstraat 1, B-1040 Brussels), the NIMAWO (Dutch Institute for Social Work and Research, Willem de Zwijgerlaan 66, N-2582 ES Den Haag) and with Prof. Van Hove (UIA, Antwerp) proved to be particularly enriching.

The exploratory work of Albert Visser in his book *Informatie Welzijn en Computers* (Social Information and Computers), Samson, 1986, provided the backbone of our computerisation project for Penal Social Work. But the purchase of an IBM compatible computer and an integrated software package called *Framework* were the keys that really opened the door to the computer in our social work.

The encouragement of the late inspector Remi Van Beeck was and still is a source of motivation. Our Director gave us the necessary scope to work on certain ideas which, in turn, moved us forward to the present project on the Computerisation of the Penal Social Service.

Basic Principles of Computerisation. The following points vie for our attention when storing personal data :

* what data will be stored and for what purpose;
* who will be using the data;
* access of the user to his or her data;
* right to correction of erroneous data;
* right to a copy of one's own data;
* maximum storing term upon expiration of which data can be deleted;
* protection against access of unauthorised persons;
* the guarantee that the material will only

be used to serve the objective it was collected for in the first place;

* explicit consent of the person concerned for use by third parties and/or to meet objectives other than those the data had been collected for in the first place;
* possibility for the person concerned to object to what is regarded as improper use of personal data, with a proper compensation system should any such use have caused damages to the person concerned.

We consequently pose the following conditions for any computerisation of social work :

* The protection of the client's privacy;
* personal client information management will be entirely done by the counselling social worker and will never be stored in a network system.

As far as the objectives are concerned, they are:

* faster and more efficient help to the client;
* promotion of a one-time system of data collection;
* promotion of a well organized working method;
* rapid dissemination and usage of existing information (eg. instances of assistance);
* improved use of existing documentation;
* faster on-the-job training of colleagues;
* discovery of trends in the databases on clients and on problems dealt with;
* registration as a sequel to normal reporting procedures;
* encouraging creativity and communication among colleagues;
* adding to the ideas present in the service.

Software Approach. Drafting and usage of this computerisation project take as a starting point an integrated software package called *FRAMEWORK* (Ashton-Tate/Borland) and its computer language FRED. Programs have been designed by myself and I did not receive any special training to that purpose.

Framework is an integrated software for personal computers. Thanks to this software, the user can continuously call upon the instruments s/he will be using for the work: a word processor, a database, a spreadsheet, a graphic programme and telecommunications.

Finally *Framework* allows the design of one's own programs in a very simple way. One really does not have to be a computer programmer or analyzer. It suffices to file away a number of commands in a sub-program called a macro. The general nature of the software allows it to be used for a near indeterminate number of applications.

This then allows the social worker to adapt the software to his or her personal needs and to produce reports in his or her personal style.

Planning the Computerisation Project. Several years of experimenting with *Framework* allowed me to design a valid Probation program. This experimentation was the starting point for five pilot projects, one per sector. A first introductory course was organised on 25th February 1991. I personally took charge of the five pilot projects.

The whole project covered different stages:

1. Getting acquainted with the software. As the teaching material provided by Ashton-Tate was not entirely satisfactory, some individual tuition was inevitable.
2. Creation of specific administrative forms.
3. Getting acquainted with the filing cards and with the field contents.
4. Compilation of new files and printing of various forms.
5. Drafting of standard counselling reports.
6. Drafting of extensive social reports.
7. Adapting and developing the software for further office work and for statistical purposes.
8. (optional) Working with computerised tests.

While going through the various stages, the

original software was progressively improved. In order to guarantee the universal nature of the software, all material regarding the identification of services or counsellors was banned from the program. Such data is user-compiled via a separate set-up program which can be adapted by the user at any time.

A first evaluation of the project took place in June 1991, and the participants in the pilot project reacted favourably to the introduction of the computer into their work. Following this evaluation the definitive field names and field contents were fixed. The software was made ready for use by Dutch speaking services and later translated into French. As FRED only uses English notations, translation will be limited to the screen instructions and the forms.

In August a draft order was ready providing one computer working station per two counsellors. In the course of the first year all the probation services will be equipped with computers and software (26 Dutch speaking working posts and 35 French speaking). Next the penal social services will be computerised (40 Dutch speaking and 25 French speaking).

The following is a description of the programs as they are presently available to the social services.

Social Service Programs

Basic Principles. The active database is a compilation of cards containing information regarding clients. The database is a kind of notebook where information can be stored concerning the client and his/her case history. When retrieving a file any changes in the database are automatically transferred to the file, to the cards and to the report that will have to be made.

When retrieving a client file (social file), the user gets a dated and structured report mentioning the latest changes. The social worker can then make a full report on those changes using an ordinary word processor. S/he can also, simultaneously, add information under the different heads of the social file via a copy or move function.

Database and file cards are in the first place instruments meant to facilitate reporting, work planning and registration. Registration procedure allows the user to respect his or her individual reporting preferences.

The Social File. The Social File contains card index data (Steekkaart), a social dossier with a range of text files, and files containing social work reports and official documents. The social files author is also recorded. Detailed contents are:

Steekkaart (filing card) contains the following fields:

Surname; first names; gender;
Place of birth; date of birth;
Civil status; occupation;
Telephone; postal code; municipality;
Street code; name of the street and house number;
Name of enquiring social worker, prison director or judge;
Function of the enquiring social worker;
Date of the request first enquiry;
Legal authority; number of the measure;
Other court arrests in execution; judicial situation;
Date of court decision; duration of custody;
Date end of probation; penalty total; probation remission;
Penalty with ordinary remission; penalty fixing;
Penalty register; reason for end of counselling;
Commission or prison client depends upon;
Place of imprisonment; free on probation (date);
Place or prison which s/he has been released from;
Number of the penal file;
Number of Central Social Service File;
National number or national registration number;
File number for local authorities, police or gendarmerie;
Local file number (as saved on computer/DOS file name);
Date or period of gathering the facts;
Description of the facts leading to counselling;
Coded report of the facts;
Civil claims, addresses, contact persons and amounts;
Imposed counselling measures;
Problems the client is confronted with;
Collaboration (instances and persons);
New events during period of counselling;
Additional information tasks during period of counselling;
New arrests or decisions;
Proposals made by the social worker;
Date of the next commission meeting;

Survey of commission meeting;
Date of last counsel report; date of next meeting;
Place and hour of meeting; inventory of absences;
Tasks to be undertaken in the days ahead;
Recently gained information.

Social Dossier. The social file is a text file containing the following heads:

Factual report (1.The Public Prosecutor, 2.Person concerned).
Judicial situation (1.Convictions, 2.Counselling procedure, 3.Police file, 4.Court data).
Actual relations (1.Identification, parent family, 2.Identification, own family, 3.Useful addresses in own environment eg. visitors during stay and other contacts).
Emotional contacts (1.Parent family, 2.Own family, 3.Contacts between person concerned and his/her environment).
Personal data (1.Education, 2.Health, 3.Personality, 4.Fields of interest, points of relaxation).
Material and administrative situation (1.Housing, 2.Professional qualification, 3.Social situation, 4.Financial situation).
Evaluation of assistance (1.Registration, 2.Problems treated, 3.Method of counselling, 4.Evaluation).

In addition there are Verslagen (reports) containing all periodic reports submitted by the social worker; and Notulen en Artikel 17 (minutes and article 17) containing all reports submitted by the probate commission including both the minutes of the commission meetings and the reports made at the request of the court.

The ALT-F1 Feature. The ALT-F1 key facilitates access to a range of menu choices:

a. *Selective card data transfer to active database.* After having opened a new file, the information will have to be transferred from the filing card to a database ready for daily usage. This active database does not contain all the heads of the card. The selection and transfer of the fields from the card to the active database is automatically done by this sub-program.

b. *Library (access to a library with documentation material).* Consultation of various sources of documentation. The user finds him or herself confronted with various sources, examples of which are:

* A library containing texts, books, abstracts, newspaper clippings, law texts, circulars.
* Examples of file cards.
* A list with the codes covering problems, services and facts. Retrieval and print-out of the codes or the code description has been automated via a macro.

In future we would like to have this directory completed with information about problem groups, projects, circular letters, legal techniques, etc.

c. *Caseload, files being dealt with.* The program selects the files that are open and counselled. This selected database is then opened and can be worked with.

d. *Access to database.* The choice of the database is the user's. The computer automatically opens the active database unless instructed to call upon another. Indicating the database of one's choice with the cursor will provide one with a list of the records.

e. *Data selection on field names.* This allows one to select the records and to constitute a particular database consisting only of the records meeting one's requirements.

f. *Grouped data selection in a database/file card index.* Allows the user to select from an existing database the files meeting certain criteria. These criteria are chosen from a menu appearing on the screen (eg. age, gender, type of measure, nature of the facts, problems, evaluation, etc.). The scan program is a sub-program allowing one to look for a text, a word or a group of characters in any database field and in any different position.

g. *Access inventory (of a variety of standard*

documents, forms and programs). Automatic access to the database containing the names, descriptions and destinations of a number of disk files (letters, documentation, standard forms, programs, etc.). This database contains information on the various computer files.

h. *Personalizing a document or a frame.* Personal data concerning the social worker and his or her service can be entered into a standard document that is present in the program. The computer will adapt the contents, the endnotes and footnotes of the document.

i. *Teaching program (automatic start up of Framework teaching program).* At this point the Ashton Tate *Framework* teaching program is loaded and started up.

j. *Social Work services.* This option allows one to call on a file which is a complete list of services including the name, address, telephone numbers, availability, contact persons, nature of their activities. This list can be set up with services one personally collaborates with. The user is also free to delete services s/he does not intend to enter into contact with.

k. *New files (creation of new files).* It is important to distinguish between a new file and a new measure. A new file is a counselling assignment for a person presently not being counselled (though s/he could have been treated in the past). A probation social enquiry will always be dealt with as a new file. A new measure is a new counselling assignment (following an arrest or a Ministerial decree) for a person already being counselled. No new file will now be opened but the existing file will be extended.

On seeking to open a new file questions will be asked concerning the client's identity. A search is conducted to see whether such a file has already been opened in the archive database. If so, the old file number is retrieved.

l. *Retrieval (retrieval, adaptation, drafting a report scheme in an individual counsel file).* Type in the family name and first name to retrieve the full file. The name does not have to typed out completely: the first letters will suffice. If several files correspond to those first letters, the files meeting that requirement will appear on screen and one gets the opportunity to specify one's choice. If the file is non-existent, the program will automatically start up the procedure for the creation of a new file.

When retrieving a file any changes in the database are automatically transferred to the file, to the cards and to the report that will have to be made. When retrieving a client file (social file), the user gets a dated and structured report mentioning the latest changes. The social worker can then make a full report on those changes using an ordinary word processor.

m. *Printing (immediate print-out of a report on paper or saving on disk).* When printing, the user has a choice between different types of report forms:

* Social counselling report;
* Social enquiry report;
* Probation commission minutes;
* Interim preventive custody report;
* evaluation and case history of probation period.

The programme retrieves the selected title page and fills out the appropriate name and work station. The file with the new report is stored on hard disc and a back-up made on a floppy. The report is then printed using a mailmerge procedure. Appropriate changes are also made to the active database.

n. *Report writing (print-out of reports on disk).*

o. *Standard forms (drafting and printing of standard forms, invitations and personal letters).* The standard forms mention the personal social worker data such as his or her name, address, function, telephoning hours. This program allows one to work with:

* Standard letters such as, service letters, fax messages, memos, invitations for home visits or office appointments. Via mailmerge the client particulars are filled out on the various standard letters.
* Agenda: the agenda command provides the user with a statement of records in order of date and hour of appointment with a mention of "things to be done".
* Home visits and office appointments: invitations are printed in order of appointment and with a mention of the identity of the person invited and the date and hour of meeting.
* Stick-on labels with the name and address of the persons invited. These are chain-printed in two groups (home visit and office appointment) and in order of date and hour of appointment.

p. *Moving (moving a card from one database to another).* On closing a counselling session, the corresponding card has to be taken out of the database and moved to an archive database.

q. *Agenda (selecting files for use).* The objective is to retrieve files from the database that will have to be dealt with in the days ahead. This facilitates getting the invitations underway including use of the standard documents for invitations.

r. *Calculation program.* A calculator is displayed on the screen.

s. *Exit (back to a normal Framework environment).*

Statistics

A statistics program is available, using information from the social files, which has been made anonymous. This enables the creation of tables and graphs.

Budget Counselling

This feature helps to draft a budget plan, taking into account the costs of housekeeping and creditor demands. On the basis of the data fed to the program, a monthly budget will be calculated and an instalment plan tested. The program checks through a range of repayment periods, and once a feasible repayment scheme has been established, a repayment frequency can be decided upon per creditor. On the basis of the calculated results, an instalment proposal is then printed and sent to the different creditors. Payments made to the creditors are kept track of and automatically added to the budget plan.

The instalment plan includes the following materials:

* the name of the creditors;
* the creditor reference number;
* postal code and name of municipality of the creditor;
* street and house number of the creditor;
* telephone number of the creditor or a contact person;
* creditor account number;
* initial amount of the debt;
* date of contracting of the debt;
* (to be filled out once decided) frequency of payments;
* agreed amounts of payments;
* dates and amounts of the deposits made;
* date when the creditor agreed to the instalment plan;
* date when the instalment proposal was sent;
* cause of the debt;
* name and personal data concerning the creditor contact person.

This is what the contents of a budget form might look like:

Name and date of the creditor:
Street and house number of the creditor:
Postal code and municipality:
Repayment duration in years:
Interest on debt:
Starting date of instalment plan:
Net monthly income:
Repayment duration in months:

Final date of repayment:
Fixed monthly housekeeping costs:
Original debt:
Total debt with interest charges included:
Yearly total:
Total to be paid back:
Monthly payment:

Housekeeping costs:
House rent:
Other costs:
Miscellaneous costs:
Total monthly expenditure:

Monthly income:
Wage or unemployment allowance, husband:
Wage or unemployment allowance, wife:
Wage children:
Family allowance:
Alimony money:
Extras:
Total monthly income:

Self-Testing

The program contains a questionnaire about social skills containing 155 questions. The results can be processed and grouped under a range of headings. The subject can work directly to the computer, unassisted and without any risk of damage to the program.

Additionally there is a "self-confrontation" facility, based upon the work of Dr. H.J.M. Hermans, *Waardegebieden en hun Ontwikkelng, Theorie en Methode van de Zelf-confrontatie*, ed. 1974, Swets & Zeitlinger b.v. Amsterdam (Fields of Value and their Development, Theory and Method of Self-confrontation). The client is questioned about his or her individual value system and the positive and negative feeling embedded in it. The test is looking for correlations between the different values and feelings, and the client is then confronted with the results. With the help of the counsellor this procedure allows the client to obtain a better insight in his or her value system and emotional life. A periodical testing can help to deepen this insight progressively, and adapt it.

Conclusions

The above serves to provide the reader with a survey of the range of applications which are now computerised. An English language version has been developed for demonstration purposes.

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A Decision Support System in Resource Allocation: the Political Process in Rational Decision Making

Yitzhak Berman

Decision support systems (DSS) are essentially computer programs designed to enhance the effectiveness of decision makers in organizations (Vogel, 1985). The premise of DSS is that through the construction of a computerised knowledge base the deviation in decision making among decision makers can be minimized, bringing about greater rationality in the decision making process. Programmed decisions are generally repetitive and routine with established decision making procedures and practices (Simon, 1960). The capabilities of DSS from the user's point of view derive from their ability to provide representations or indicators to help conceptualize and communicate to the user the problem or decision situation (Sprague and Carlson, 1982).

Representations/indicators can be criticized as the inherent weakness of a DSS. One can claim that it derationalizes the decision making process. Each representation/indicator is a choice of the information which is to be put into the system. Information from an organizational perspective is necessary for some purpose and contains meaning and significance within a decision making framework. The relationship between information choice and policy decision making is a crucial one in evaluating the rationality of the DSS process. In developing a DSS a data/information choice is being made. In that process someone decides which data/information is necessary (Keen and Scott Morton, 1978).

An additional factor in the DSS process concerns the manner in which the decision produced by DSS is employed. While the decision produced by the DSS may be deemed rational, representative and therefore the "ideal" decision, the decision maker may override this decision. McNown (1986) in an analysis on the uses of the results of econometric models by policy makers, found that human judgement can be introduced in three ways:

1 Values of the variables estimated;
2 Adjustment of the persistence of errors over time; and
3 If the forecast is unreasonable, subjective adjustments are made in the equations and/or variables until a reasonable forecast emerges.

McNown concludes that the addition of human judgement contributes substantially to the reduction in forecast errors produced mechanically by econometric models.

The Ministry of Labour and Social Affairs has developed a DSS to determine the distribution of social work staff among 120 municipal departments of social services. This paper describes how the political process and the struggle over scarce resources influences decision making in the development of a DSS in staff allocation. Specifically it describes that part of the process at which a decision must be made concerning which data/information should be included in the DSS.

Staff Allocation

One of the central problems facing social welfare planners concerns the allocation of staff. The problem becomes acute when available resources cannot meet perceived needs. When such a shortfall occurs, the system comes under political pressure from various interest groups vying for the same pool of limited resources. In Israel, the problem of a shortage of social work staff is a matter of lack of budget and not lack of available professional staff. Budget allocations to the social service departments for professional staff do not enable the employment of the available social workers. Staff utilization is determined by the Ministry of Labour and Social Affairs on all levels of the social service delivery system. Local government may utilize staff outside of this framework only when independent funding is found. Professionals are used on all levels of the social service delivery system. Volunteers play an important role by relieving professionals of administrative work and/or to provide additional needed services when budget is scarce. In order to minimize this pressure on the employable social service staff in allocations to the local social service departments, the Ministry of Labour and Social Affairs has adapted a staff planning allocation system based upon data from a macro information system.

The evaluation of the supply and demand for social work staff has been reported to be very complex and by its nature highly speculative under the best of circumstances (Habib, undated). This problem becomes acute especially in the personal social services where relatively large chunks of the budget go to expensive staff demands under circumstances

where available resources cannot meet perceived needs (Established Social Services Report, 1985; Eaglstein and Pardes, 1983). The continued survival of personal social services may to a great extent depend on the ability of social service planners to better plan staff deployment. This is where a DSS on staff employment can play an important role.

Work has been done to identify a more reliable method based upon objective measures and procedures with which to determine staff allocation (eg. Pardes, 1977, 1978; Eaglstein and Pardes, 1983). These methods are based upon the collection of objective data and their inclusion in a mathematical formula. The approach assures the employment of identical criteria and administrative procedures for the assignment of social workers' positions. The data used by Pardes, and Eaglstein and Pardes included the level of prevailing community distress and population size. Seven variables were identified as measuring the level of community distress:

1. Percent of families with 3+ children;
2. Percent aged 65+ in the population;
3. Dependency ratio;
4. Rate of age 0-18 placed in institutions;
5. Crime rate;
6. Local taxes per capita;
7. Rate of vehicle ownership

(Pardes, 1977, 1978). For rural communities distance from a main metropolitan area is also included in the formula (Eaglstein and Pardes, 1983).

Identifying the DSS Database

Three databases were identified which were found to be relevant to a DSS for staff allocation in the social services. Each database provided an alternative method of measuring staff needs in social service departments.

The first variable is the percent of the population known to the local social service department. This variable measures the actual population who have identified themselves in need of services, and who are known to the social service department. The measure per city is derived at by dividing the number of persons known to the social service department by the population of the city.

The second variable is the average number of treatment hours invested by the social worker per file. This variable encourages the measurement of the intensity of the problems of each file at the social service department. For example, the social worker identifies the problems of a family (file) from a list of problems used by all social service departments. This list includes 37 potential problems (see Appendix 1). Simultaneously the social worker identifies the treatment status of the family: files under periodic review, care at a low level of intensity, and care at a high level of intensity. An expert committee assigns proposed hours of treatment per year for each type of problem by treatment status. The proposed hours of treatment per year range from 5 hours (periodic review) to 150 hours (eg. drug user with care at a high level of intensity). The number of hours for each file is thus determined. The number of treatment hours per social service department is then calculated. This figure is divided by the number of files in the social service department, providing the average number of treatment hours needed by the social worker per file, (our measure of intensity of treatment).

The final variable we included as a possible database in the DSS was the socioeconomic index (community distress) of the city. This variable measures the potential population who are candidates for services at the social service department. The index used is a socioeconomic index based on a factor analysis of 34 variables from the Israeli census of 1983 (Ben-Tuvia et. al., 1988).

The Decision Making Process

Introduction. Presented above are three alternative databases which could be included together and/or separately in a DSS. The

deliberate selection and weighting of the alternative data bases should be a rational process. But, as decision making within a governmental framework is inherently fragmented, there will be resistance to any suggestion of relinquishing control over staffing resources, and therefore the ultimate criteria in the decision making process are based on self interest.

The Setting of the Decision Making Process. The Ministry of Labour and Social Affairs is divided into three administrative districts. These are Jerusalem and South, Haifa and North, and the Tel Aviv and Central District. The Tel Aviv and Central District is made up mainly of large cities and is the major urban metropolis of Israel. It contains 44.9% of the total Israeli population. The Jerusalem and Haifa districts each include one large city and a number of smaller cities and also a large number of small development towns (See Table 1).

Development towns play an important role in the demand on social services in Israel. The first development towns were founded in the 1950's. The original populations of these towns were immigrants "settled" by the government according to a population dispersal policy. Most of the development towns are located in the hinterland of the country. Very few of the development towns have grown into cities and most have populations under 20,000.

The towns are characterized by high unemployment, industrial under-development, social problems, high use of social services and higher migration rates to the more developed larger urban areas located in the centre of the country. A high percentage of the population in development towns are users of services of the social service departments.

A committee was appointed by the Deputy Director General of the Ministry of Labour and Social Affairs which included the directors of the four administrative districts of the Ministry and a social service planner. The mandate of the committee was to determine which data was to be included in a DSS for the allocation of social workers to Israel's 120 social service departments. The committee was appointed as a resuit of the dissatisfaction of the existing social worker allocation formula which was based solely on "community distress" macro variables.

The social service planner presented to the committee the three databases: population known to the social service department, average number of treatment hours invested by the social worker per file, and the socioeconomic (community distress) index of the city. The three databases were accepted by the committee as relevant measures of the activities of the social services departments. Yet, as each district favoured one of the alternate databases that would give it additional staff resources no one database was acceptable to be included in the DSS. The political debate was on.

The Haifa district argued for the status quo in using "community distress" variables to measure social worker staff allocations. This was because of the large number of development towns in the district which had high community distress.

The Jerusalem district preferred the variable percentage of population known to the social service departments. 14.1% of the population of the district was known to the social service departments, a higher percentage than the other two districts. Yet the Jerusalem district was willing to compromise to combine the community distress variables (Jerusalem has 14 development towns) with the percentage of the population known to the social service departments. This would, for the Jerusalem district, mean the best of two worlds.

The Tel Aviv district argued otherwise. The Tel Aviv district includes only 5 development towns, and the lowest percentage of the population known to the social service departments. It has a large urban and economic base. Yet, in numbers alone 41.4% or 229,134 of its population are known to the social service

departments. This is about thirty-five percent more than the Haifa district (see Table 2). The Tel Aviv district argued in favour of the total number of hours of treatment as the variable to use in social worker staff allocation. The Tel Aviv district uses forty-six percent of all treatment hours, and invests the highest number of hours per social problem. These figures indicate a greater intensity of social problems (eg. drug addition, alcoholism, family problems), a phenomenon common to the inner cities.

The issue facing the social service planner was to decide which of the three databases or combination of databases would be most objectively applicable in a social worker staff allocation DSS. But each database measures a different social phenomenon. The importance of each of the social phenomenon was found to be related to alternative social, economic and demographic conditions which are geographically based thereby leading to bureaucratic and political pressure in an otherwise rational planning process.

Conclusions.

The evaluation of which of the databases are best suited for staff allocation is not an objective process for the social service planner, but includes an adjustment by the administration process to make the final proposal "realistic".

The result of this process might be viewed as a compromise between the objectivity of the "expert", the DSS, and the subjectivity of the administrator. The dominance of any of these actors within the governmental decision making process varies. The DSS will play the more dominant role in the process when the quality of service delivered is high (acceptable), thereby increasing the demand of use for that service (Harris, 1989). Can the expert produce a DSS acceptable to the administrator? The administrator will play a central decision making role when the social planner cannot produce a relevant DSS framework which comes to a "realistic" decision. This was demonstrated in the Israel case study.

The solution reached by our staff allocation committee was to include in the DSS a combination of the "community distress" database, the existing database in use, with the average number of treatment hours invested by the social worker per file.

The above study leads to some observations in the development of a social work staff allocation DSS in the personal social services. Alternate databases may be used to represent a given social indicator which in reality may measure different social situations. The DSS is not "representing" an objective situation, and therefore is open to pressures of adjustment in a political/administrative process to mirror a "reality".

Table 1: Total Population and Population Receiving Personal Social Services in Social Service Departments (SSDs) by District.

District	Total Population	Percent	Total Population Known to SSDs	Percent	Percent of Population Known to SSDs
Tel Aviv	2,013,400	44.9	229,134	41.4	11.4
Haifa	1,375,300	30.6	168,690	30.6	12.2
Jerusalem	1,097,900	24.5	154,928	28.0	14.1
Total	4,486,600	100	552,752	100	12.3

Table 2: Total Population in Development Towns and Population in Development Towns Receiving Personal Social Services in Social Service Departments (SSDs) by District.

District	Number of Development Towns	Total Population in Dev. Towns	As Percent Population in District	Total Pop. in Dev. Town Known to SSDs	Percent of Total Pop. Known to SSDs
Tel Aviv	5	34,400	1.7	3,730	1.6
Haifa	35	298,400	21.7	78,850	46.7
Jerusalem	14	180,900	16.5	30,294	19.5
Total	54	513,700	11.4	112,874	20.4

Appendix 1: List of Problems.

1. Old Age
   - problems due to old age

2. Employment
   - lack of vocational training
   - temporary unemployment
   - malfunctioning on the job
   - chronic difficulty in job placement
   - unemployment

3. Health
   - acute and chronic diseases (except for mental illness)
   - physical disabilities (incapacity)
   - mental retardation

4. Deviant Behavior
   - alcoholism
   - gambling (addiction)
   - prostitution and procurement
   - delinquency
   - arrest or imprisonment
   - drugs

5. Psychological and Behavioral Disturbances
   - diagnosed mental illness
   - behavioral disturbances

6. Child and Adolescent Behaviour
   - learning problems
   - behavioral problems
   - girls in distress

7. Impaired Family Relations
   - functioning problems of the mother
   - functioning problems of the father
   - problems in child-parent relations
   - problems between siblings
   - marital problems
   - family violence

8. Single Parent
   - single father
   - single mother

9. Miscellaneous
   - insufficient income
   - impaired household management
   - housing problems
   - impaired relations with the community and environment
   - orphaned minors
   - persons living alone unable to take care of themselves
   - loneliness
   - widowhood
   - other

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Educational Software - Where, When and How?

Albert Visser

A student social worker in Holland nowadays carries a box with floppy disks in her/his bag, and is likely to spend hours looking at a screen, learning, for example, about law and legal matters from a courseware program. In another context, when there is teaching about financial assistance, he/she learns to handle a software package to calculate social benefits. An increasing number of students have a computer of their own. It is hard to recall that until recently student social workers knew nothing about computers, when now computer use penetrates the whole of society, including social work.

Does this mean that social workers become more technical, more impersonal in their professional practice, or can students be taught that the use of computers in professional practice gives them the opportunity to increase the quality of the helping process?

In the following paper I will describe the process of the emergence and integration of computer use and educational software into social work education. Social work will be defined in a very broad way: in Holland it includes community workers, socio-therapists, personnel managers and creative therapists.

1984.

Since 1984 there has been an increasing interest in the use of computers in social work education in the Netherlands. This was partly inspired by developments in professional practice. A growing number of social work agencies used computers for their administration and for research practices, so Schools for Higher Professional Education also needed to adapt their curricula, teaching methods and tools to this changing professional practice. This involved

developing the proper uses of Information Technology for social work education.

In 1984 the Ministry of Education and Science launched a 4 year Special Plan on Informatics (the INSP). It had the intention of stimulating the application of Information Technology in all sectors of Higher Professional Education. The Council for Higher Professional Education (HBO-Raad) initiated a framework for Informatics, to co-ordinate the efforts in all these sectors. Pilot projects were started at 15 Schools for Social Work and Social Welfare (out of nearly 40) within that scheme. The INSP plan was carried out between 1984 and 1989.

The Schools in the project received several assignments, based on the development and provision of a core course in informatics as applied to the social services. The main aim was to give an elementary training to teachers. The freshly trained teachers could then pass on their new knowledge to students and graduates - to the latter in the form of a postgraduate course.

In addition there were assignments for the development of curricula for:

* Social effects of automation and information processing;
* Social and management aspects of systems development;
* Management and supervisory support of social welfare institutions;
* Telematics and the use of on-line databases for social purposes.

The Schools selected for these projects received financial support from the Ministry of Education to set up the further training schemes and curriculum development. The results were expected to have the effect of encouraging informatics developments in other Schools for Social Studies.

Seven of the pilot schools received a small network of PCs (6) and they were supposed to start immediately with the training of teachers and students. Another 8 schools received one PC for research purposes.

By the end of the INSP programme, the HBO-raad and the Ministry for Education realised that, although there was some better awareness of the possible use of information technology in social work education, the actual use of computers in the curricula was still low. This was partly due to the fact that there were still few educational software packages and there was as yet a poor integration of information technology into the curriculum.

This view resulted in two new projects:

1. **About software:**

At the request of the Ministry the HBO-raad issued a call for proposals for a project to develop 1000 hours of courseware (self-contained educational software). The proposal from the HMN-Polytechnic and Courseware Europe got the most support and gained the assignment. For the purpose of developing the courseware a new firm was founded in 1988: Courseware Midden Nederland (CMN).

2. **About curriculum development:**

In 1989 the VIT project (a plan from the Ministry of Education and Science concerning further applications of Information Technology in education) started. The first plan, the INSP project already described, aimed at the development of courses in particular areas of computer use in Social Work and Social Work Education. Though it was a success, it did not reach the stage of producing an integrated curriculum based on IT in social work education. The VIT project, *Social Informatics*, aimed at producing an overall curriculum for computer use in Social Work Education (SWE).

First there was a large survey about the use of computers in the social services. This produced a lot of information about actual developments and needs concerning computer use in professional practice. On the basis of results from this survey the project management team

decided to have 20 modules developed that could be combined in several ways to fit into a connected curriculum. The 20 modules contained one on basic informatics and 19 of a more specialised kind. Peter Rosenboom from the CAUSA Department of the Hogeschool Eindhoven was project manager for this curriculum development project.

Additionally the Ministry developed a policy on the IT infrastructure: every Polytechnic should make its own Informatics Policy Plan which would indicate how the school intended to work on stimulating the use of computers in both administrative and educational contexts. Good policy plans could get extra financial grants from the Ministry.

Not every country could easily copy this Dutch approach. To understand why these centralised initiatives in Holland actually could take place, why the Ministry of Education and Science and the HBO-raad could play such an important role, a little more information is needed about the position of Higher Education in Holland.

Holland is a small country with a densely packed population, a relatively large number of schools of social work, a high number of students, and a large number of employed social workers. The wider context is that, due to government measures to reduce spending, there is an increasing number of unemployed people.

Up to recently we also had a peculiar financial base for the Schools for Social Work. The Ministry decided how much money a school received (related to the number of students) and also indicated what to spend the money on. This facilitated central initiatives. But for the last couple of years the schools are being financed on a lump sum basis. This means that schools receive an amount of money and decide for themselves what to spend it on. Not only does this give schools greater freedom to spend the money, but it also means that every activity has to be calculated. Unlike in the previous system, schools are now less willing to co-operate unless there is an actual calculated benefit.

Fortunately these centralised initiatives were taken when the culture was more favourable to co-operative projects.

The next step: the actual use of computers in Schools of Social Work.

These centralised initiatives of the Ministry and the HBO-raad have resulted in a certain awareness of the possibilities of computer use in social work education. Also developed were some courseware programs that fit in the Social Work curriculum, and even some modules in the field of Social Informatics. But how do you actually get the schools (ie. the teachers) to ***use*** software and courseware in the modified curricula?

First it is important to distinguish between different ways of using the computer in education:

1. To learn about the actual use of computers in field practice, as a tool to improve professional practice (*professional applications*). In reality there should be no question about this kind of computer use: it is the responsibility of schools of social work to teach their students about innovations in professional practice. This is hardly innovative in an educational sense, but rather keeping in touch with processes in society and social work practice.

2. Computers as a *learning tool* of a similar technical type to video or audio systems, but with one important difference: the computer is interactive. Sometimes it is the best way to reach educational goals. For instance, it is not easy to get clients into the classroom to give your students real case experience. With client simulation software you can give students the opportunity to practice ***interactively*** with clients.

3. Computers can also be used as *learning machines*, with courseware or so called self-contained software. The software offers a complete course on a special topic, with full feedback and tests for the students. The teacher does not have to be present. Managers in higher

education are especially interested in this type of computer use, as it reduces the cost of teachers' salaries. We can expect a rather large change in the performance of courseware in the near future. Now it is still relatively oriented to text interaction. The expectations for the future are that there will be a mix of software, video, audio, CD Rom and other media to offer a so called multi-media approach in the learning process. However, for social work the equipment is still rather expensive, and the number of applications is still rather meagre.

4. As an *administrative and office automation tool* for the student and teacher, as for instance administration and registration of learning results, and also the more general applications like word processing and database management.

How to start?

There is a practical sequence for getting underway with computer aided teaching.

1. First of all there has to be a favourable attitude by the school management towards the implementation of software and courseware in the curriculum. This should result in an *innovation policy and strategy* (as mentioned above in relation to the Informatics Policy Plan). Part of this strategy is to establish a core group, a committee of decision makers, who decide about everything that concerns the implementation of computers in education. The HMN Polytechnic decided that it would be very important for the Social Work Education sector (FSAO) to have more information technology applications in their curriculum. We succeeded in getting an extra grant from the Ministry to develop 100 hours of courseware especially designed for Social Work education. The development is a co-production of a courseware house (CMN) and the Faculty of HMN. The products are intended to have great practical use for all institutes for Higher Social Education in the Netherlands. Some research was done to identify the best possible topics for developing into courseware, and to find topics that have importance for other Social Work Schools as well. By the middle of 1991 20 teachers of our college were concerned with writing the formal design for the courseware. CMN, the software house linked to the Polytechnic, is programming the courseware. The developed courseware is then intended to be integrated in the curriculum.

2. The next stage is to convince teachers that they need educational software. For this you do not need a computer expert nor an information technology expert. What you need is a *change agent*, with qualities like:

* Experience in change processes;
* Knowledge of courseware and software in professional and educational practice;
* Teaching experience;
* Easy and accessible familiarity with computers;
* Exellent social and communication skills;
* A vision on future developments in computer use in social work and social work education.

The change agent initiates and co-ordinates the change process, and makes changes compatible with the different sub-systems in the organisation. Change processes have to be planned in time and space. Only under these conditions can the implementation of educational software be successful. The management should find a well accepted change agent to manage the implementation process. As in my case it can best be a well accepted colleague, with full management support. This is a very necessary condition, as there is always a strong resistance to any change especially when it concerns applying information technology in the social work curriculum. A very important aim of the change agent is influencing key persons like middle managers.

3. The next step is to make a *directory* of the software that could be used. This is actually a small research project, to investigate what software is used in professional practice and also what courseware has been developed. This can be either specific to social work education or for

several disciplines.

4. A further task is to undertake an *analysis of the curriculum*, to identify for each course possible uses of computerised courseware. There are several reasons for using such courseware (other than its impact on reducing the cost of staffing, where in practice you do have to realise that it takes quite some energy and money to provide good quality material):

* Where the starting level in the course is very heterogeneous and you need a more homogeneous level.
* Where the subject matter is rather dull and having a strong impact on the teacher. It is always helpful to locate teachers with this kind of teaching problem, and suggest to them a possible solution lies in a computer together with educational software.
* Where the subject matter is highly cognitive.
* Where learning results could be improved by exercises and simulations.

5. Make an analysis of the curriculum and scan each course for the possible use of *professional applications.*

6. Next the change agent designs an integrated *plan for implementation* of educational software. The committee of decision makers modify it and adapt it to an accepted framework, and then the actual implementation can take off.

7. Next step is the *actual integration* of the suggested software and courseware into the several curricula. If you just introduce computers and software, then teachers are often hard to convince that they should use them. It helps if you consider with them their teaching practice and their goals related to professional practice. Talk with them about the problems they feel in reaching their goals. These problems can concern the motivation of students, the changing contents of professional work, the rapid moves in knowledge requested to solve professional problems, and the low level of pre-knowledge of undergraduate students.

Then you offer them solutions like using on-line databanks for a rapid exchange of knowledge about professional problems. Or you offer them client simulation software to increase their variety, and so forth.

Teachers are willing to accept computers and software as a solution under the following conditions:

* The offered solution must result in a smaller amount of time he/she invests in the teaching process (a matter of ***time***).
* The teacher must be convinced that this is a good or better way of reaching learning/teaching goals in professional education (a matter of ***content***).
* If the teacher chooses in favour of software and computers, then this decision must be supported by the management and the treasurer (a matter of environmental conditions: ***organisation and money***).

It is very important to show teachers that computers and software do not restrict their own impact on the learning process. Quite the reverse: they have more tools, more means to vary the learning process, and the teacher spends less time on inefficient approaches. What is more, s/he stays in control. In using these new technologies the teacher can be a better teacher.

The individual teacher needs strong support to get familiar with the software and to develop ways of integrating the software into his/her course. The change agent needs special skills for this, like process management and educational knowledge.

8. Often it appears very necessary to have a well designed *training course* for teachers to get familiar with computers and general applications, together with the more professional applications in social work.

9. Then there is the problem of the

infrastructure that has to be solved. How many computers do you need to meet the needs of all your students and teachers? We have moved away from the idea that all learning with computers should take place in the school. Although the number of PCs has increased a lot, we are also looking for other solutions. One is the possibility that students borrow courseware from the media centre of the institute. It is all protected software and, especially for our students, hard to copy. More and more students have PCs of their own. Student home computing can also be facilitated by the use of a bulletin board.

1984 + 10: The Near Future.

Computers are penetrating society. We see them becoming rather common in both educational and professional practice. Some remarks have to be made.

One important point is to be aware of the fact that all of these types of computer use are not in the least objective. The programmer of the educational software, the courseware or of the professional software brought in his or her own norms, values and convictions. There is a good example in the Dutch situation. One of the Dutch universities developed an expert system for the calculation of social benefits. It was supposed to be a rather good one. They carried out an experiment: one group of clients used the expert system and it made a decision whether they did or did not get social benefits. The other group had an interview with a social worker and the social worker made the decision. Which group had the best results? That depends on your point of view. The group with the computer system had the best formal outcomes according to legal standards, but the lowest number of benefits granted. The other group, with the social worker, actually seemed to interpret rules from the legal system to increase what they saw as higher social justice. They awarded a higher number of benefits!

Apparently the expert system was designed to make formal decisions, and in any case of reasonable doubt choose the alternative that was best for the organisation that provided the money. The social worker based alternative could consider personal circumstances and make the choice in favour of the client. This involves you with your value system, your norms, your convictions. For the application of educational software it means that you should not only judge programs on aspects like user interface and content, but also on the values that are at stake!

Another comment is about the changing role of the change agent. In my own experience there are 3 phases in the change process:

1. The first phase concerns a strong rejection of computer use by teachers in social work education. The change agent is working only with the "enthusiastic early adapter" (and is most likely also one him or herself!).

2. In the next phase people are becoming enthusiastic: they are embracing computers for everything and more people are joining the use of computers in their lessons. The change agent is supporting and withdrawing a bit out of the actual informatics lessons.

3. Then the last phase: when the user group and the number of programs is growing you have to put on the brakes: teach your colleagues to use computers when it is useful and necessary, and refrain if other means or tools are better to reach the desired results. The final goal of the change process is for the teacher to get a critical awareness of how and when and why to use computers in the teaching of social workers.

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Databases and information systems in human services: Where do we go from here?

Jan Steyaert

Introduction

In order to answer the question posed in the title, I will first outline what I understand to be databases and information systems. Afterwards, I will describe where we are at the moment by discussing the main issues, citing some of the most important examples, people and publications. Finally, I will describe what I think will be (or ought to be) the main future developments.

The contents of databases and information systems will be different for every person you ask to define them. For me, the following IT applications are part of databases and information systems: client information systems, case management systems, information and referral systems, registration systems, management information systems and public information systems. These different applications can be implemented on several hardware platforms or in different software environments.

Main issues in the field of databases and information systems.

The self-fulfilling prophecy of information technology in social work. Self-fulfilling prophecies are described by the theorem of Thomas: "if people perceive situations as real, they are real in their consequences". The most famous example was of course the Wall Street crash in 1929. Social workers have long seen computers as a threat to their profession and as an attack on their professional values. They have therefore never taken up the challenge of integrating IT applications in their work. For several years social workers succeeded in keeping computers out of their work situation. However, several evolutions now force computers into the workplace. Government wants more control and urges social workers to make formal case files, computers are getting extremely cheap, younger social workers are more familiar with a screen-culture, ...

Because social workers never really took up the challenge, the present introduction of IT applications does not follow social work rationality but the rationality of system analysts. Therefore the present introductions are a threat to social work and social work values. This is clearly a vicious circle.

We urgently need one or several elements to break out of this circle. Social work schools can contribute to a large extent, by offering their students special courses that integrate social work and information technology. A specialised fair, like the WELCOM series in Holland, can contribute by offering concrete recognisable examples of IT applications in social work. A clearing house with usable software for social work can also contribute. This clearing house should not only distribute software (like CUSSNet, CTI or SONETT) but also information on the context of the software (where is this software used, for which means, what is the reaction of social workers, what is the improvement for them or for the clients, and so forth).

The impact of the increased availability of information. It is beyond doubt that the different applications of information technology have enlarged the availability of information to a large extent. It is, however, more doubtful whether this has led to a greater and better use of information.

Decision making situations (core to social work,

social service management and indeed daily life) are frequently characterised by uncertainty and ambiguity. They can be compared with walking in a dark room. You do not have an idea about where you are, where the walls of the room are and where your target might be placed. Information is the light beam you can use to analyze your position and your environment, plan your target and ways to reach it and actually reach it.

Continuing the metaphor of the light beam, much research, publication or application focuses on the construction of the torch, the different parts of it, the quality of the lamp, the type of energy supply, and so forth. Some research focuses on the light beam that comes from the torch, the clarity and the diffuseness of it. Very seldom is attention given to the person holding the torch, the way he (or she) uses it to find a way around in the room, and the improvement the torch gives for reaching the targets.

In order to improve the quality of the current IT applications in human services, we should stop our preoccupation with the implement, the torch, and start dealing with the complete picture: the person holding the torch, his or her aims, the room and all the things in it, as well as the torch itself.

Adams described in one of his novels a software program "that allowed you to specify in advance what decision you wished it to reach, and only then to give it all the facts. The program's task, which it was able to accomplish with consummate ease, was simply to construct a plausible series of logical-sounding steps to connect the premises with the conclusion" (1987, pp 69-70). What does this kind of model of decision making imply for information and information systems?

The reliability of information gathered by and stored in databases. Several empirical findings suggest we had better devote some attention to the reliability of the data getting into information systems. We all know about the "Garbage In: Garbage Out" (GIGO) principle, but we still tend to analyze information systems mainly by the quality of the output. The quality of the input is rarely assessed.

If information systems are intended to give us a better insight into social events, data about these events will have to succeed in the elimination race between event and registered event. An example may help to clarify my worries (Steyaert, 1991). At this moment Belgian general practitioners are obliged to report the incidence of contagious and venereal diseases to the health inspector. The bad and unreliable pursuit of this duty to report has led to the situation where the resulting figures diminish insight into the health condition of the Belgian population, rather than increase it.

We can assume that most people with sexually transmittable diseases will be aware of their condition (step 1 in the elimination race); they will recognise it as a disease (step 2) that requires doctor consultation (step 3). The doctors will surely recognise it as a sexually transmittable disease (step 4). Up to this point, there is little loss of data. The last step (5) however is problematic. Research pointed out that the number of registered cases of sexually transmittable diseases like gonorrhoea have to be multiplied by a factor of 10 to 70, to get an idea of the actual number of **reported** cases. For instance in 1980 62% of the number of registered cases of gonorrhoea came from 1 district (Brabant) and mostly from 1 hospital (the only one that executed the registration in a correct way).

Last year, a small experiment was conducted by giving a description of a fictitious client case to 22 social workers. They were asked to register this case. **No two registrations were completely the same.** Only the sex of the client was correct in all registrations. Age, although explicitly mentioned in the description, was once mentioned as missing, problem and treatment profile were completely different for all registrations.

The questionable quality of our registration activities has far reaching consequences. One problematic aspect is the fact that a lot of research is based on these data (Harrod, 1988).

The information-model. In developing public information systems, we always assumed that clients are looking for information, and that formal information systems, accessible in public libraries, shopping centers, etc. could provide them with the necessary information. Many empirical studies of the usage of these systems indicate that clients do not follow this information model, but tend to prefer the same information offered by social workers.

The information model pathways therefore needs to be updated from information -> client to information -> intermediary -> client. This implies totally different public information systems. Hein De Graaf outlines this in his paper presented at HUSITA II (1991).

Whose quality of life? A last issue concerning databases and information systems (but not the least important) deals with the impact of these new technologies and applications on the quality of life. Rather than asking which or how much quality is added, the question can be put better as, whose lives get more quality?

Information is power, and after raw materials and labour, a very important source for the wealth of nations. Although some persons or some countries may have improved their situations because of information capacities, the impression is that inequality of information distribution only enforces the already existing inequality of income distributions. This constitutes a major ethical dilemma.

Classical development models will no longer provide solutions. We can no longer try to develop poor people or poor countries towards our quality and style of life. This would mean ecological suicide. Giving all Chinese people the basic hygienic tool of toilet paper would cause all existing trees to vanish within one year. We have therefore the dilemma of either evolving towards an ethical disaster (huge inequalities) or towards an ecological one.
We are probably not in a position to solve this dilemma, but we could devote some attention towards the question of whether and how information systems can contribute to the solution (see, for example, Damachi, et al., 1987; Midgley, 1981).

Important examples of applications of databases and information systems

Registration programs for social services. An enormous number of special programs have been developed to make registration easy for social workers. The idea behind all of them is that during the transformation proces of the social services (those things that happen between the referral to the organization and the output, eg. intake, decisions about treatment, treatment, financial support, therapy, etc.), information about the client or the client system and the actions taking place are recorded. This recording can take place on a structured sheet of paper, or directly in the program.

The aggregated data can later be used by management to evaluate treatment processes, work done by several social workers, or to make the annual reports for those bodies that give financial aid. It is difficult to identify one program as a typical example of registration programs. Holland and Flanders have some 15 different commercial programs and more are being developed.

It should be noted that these programs have a lot of disadvantages. In practice, social workers supply the necessary information not at the moment the work is being done or the intake of the client is being done, but at the end of the week, month or even year. Moreover, different social workers use the registration in a totally different way. Reliability of registration data is often very poor.

Some new registration programs try to link client information systems and registration of data. This improves reliability and usage, but

presupposes a high ratio of computers versus social workers. I have not seen many social service agencies with a ratio of 1 computer for 2 social workers. Agencies with lower ratios discover that social workers have an electronic file and a paper one, cumulating the disadvantages of the two systems.

Another evolution is that registration or case management programs have client profiles available. Social workers can then always use these outlined profiles to compare with the treatment they are giving their clients.

Information system of Foster Parents organization in Israel (Benbenishty and Oyserman, 1991). The clinical information system for Israel's foster care was set up in 1988. Every worker gathers information about each of the children in his or her care on a series of standardized forms. Of the approximately 1700 children currently in care in Israel, 800 are served by social workers who are utilizing the clinical information system.

This client information covers the five stages of the problem solving process of social work: information collection, information processing, professional judgement, decision making and action. These stages are viewed as stages in a feedback loop such that the action sequence of one cycle leads to an information collection stage in the subsequent cycle.

The client information system has impact on all levels of the organisation. Professional staff, human service and government management, and social scientists all make use of the available data. These impacts have been described in a series of papers presented at HUSITA II (Oyserman and Benbenishty, 1991).

This clinical information system is surely not unique. Another similar information system is described by Grasso and Epstein (1989). Yet another example is the public agency for social wellbeing of Antwerp which uses a system very similar to the one described by Oyserman and Benbenishty. This information systems covers the area of the city of Antwerp (approximately 500.000 inhabitants), is used by the 200 social workers of the different decentralized agencies and gathers information about more than 10,000 clients each year. The information is used by the social workers, by agency management and local government and by social scientists.

Expert systems. A large part of social work activities include the translation of client's needs into social security provisions. This requires an enormous amount of knowledge of social security legislation, different types of allowances, etc. on the part of the social worker.

Several programs have been developed to assist social workers in knowing and assessing this complex system of the welfare state's provisions. They have been labelled "expert systems". They are expert systems in the sense that they provide expert knowledge, or knowledge that normally only experts have. They can be expert systems from a technical point of view (programmed in artificial intelligence environment) but this is not essential for the user.

Examples include the *ADDI* series in Holland, *Handipak* in Flanders or the *Maximiser Plus* program by Ferret in UK.

Information and referral. Annual reports of social service agencies are rarely very interesting literature. However, one thing that can be learned from them is that a large percentage of clients coming to the agency is not given any treatment but is referred to other agencies. Clients are constantly swapped from one agency to another. From these observations, we can only conclude that referral systems are highly relevant to social workers.

Recently, a special issue of *Information and Referral* (Manikowski and Maas, 1990) described the process of automation of referral systems. Several applications are described, as well as 12 empty "shells" of referral programs.

Public Information Systems. Several experiments with public information systems are being done.

In Flanders, 3 different systems of automated information supply to the broad public exist. First, there is the system of the information kiosks. These are independent unities, basically formed by a screen and a keyboard, sometimes integrated by video. Everyone can consult the information without charge. Many local governments make use of this technology to free their own administrative services. The information supply in the social field is rather small as most information is aimed at tourists. Still, some experiments try to use the technique to provide information to social clients. One experiment from state government provides information about refresher courses and retraining courses for the unemployed.

Secondly, there is the system of teletext, where a number of text screens can be consulted on a normal television screen. The information of teletext is mostly associated with television or radio programmes.

Lastly, there is the system called VIDEOTEX. It can be consulted by means of a personal computer with a modem. This system is similar to the French MINITEL, including an electronic telephone directory. It is mostly used by firms to create a mailbox system between several branches. Shortly, these VIDEOTEX services will also be available on experimental bases through interactive television. It is still too early to evaluate.

Recently, the City of Antwerp started a new system with a "speaking database" that can be consulted through the telephone. This database gives information on tourism, culture, and city administration. The information is provided in Dutch, but will be made available in other languages (French, English, German and Spanish, and also Turkish and Arab for immigrants). This system, called "city foon" contains information relevant to social clients about doctors, dentists, ambulatory social services (addresses, telephones, etc.). The service is free (apart from the telephone cost) for users and is being sponsored by commercial organisations such as a local newspaper and a local free radio.

Important people concerning databases and information systems in human services.

Identifying the most important people in the field of IT applications in human services is fairly easy. The same names keep popping up at conferences, meetings, journals, etc. I will therefore try to identify not those who are already known persons, but a few who are important but less well known.

The first person is **Yeheskel Hasenfeld**. He used to be associated with the School of Social Work at the University of Michigan, together with Irwing Epstein and Rosemary Sarri. Lately, he transferred to the School of Social Welfare at the University of California, Los Angeles. Hasenfeld can be considered to be a leading figure in the field of social administration. Social administration can be the study of social policy (as it is typically in UK.) or the study of the organisational context of social work (as it is in USA.).

Hasenfeld's work includes the description of social service organisations as people processing, people sustaining or people changing. These descriptions refer to the nature of the transformation technologies used. People processing organisations include college admissions offices, credit rating bureau, educational advice offices, and so forth. People sustaining organisations include most of the social security offices (payments of unemployment allowance, children's allowance.). People changing include hospitals, schools and all social services giving different kinds of therapy.

Hasenfeld's main publication is *Human Service Organizations*, a book describing the main characteristics of these organisations. These include special organisation environment relations, unclear organisational goals, undetermined organisational technology, and non-tangible product or services. All of these characteristics have their implications for IT-

applications.

Hasenfeld himself only wrote one article about information systems Mutschler and Hasenfeld, 1986), linking direct practice and administrative decision making. His ideas have however been taken up by others, writing more specifically about information systems (eg. Caputo, see section on publications).

A second important person from the same area of social administration is **Burton Gummer**, associated with State University of New York at Albany. He writes frequently for *Administration in Social Work* and recently published a book on social administration (1990).

Gummer starts from a political perspective on organisations and administrations. He immediately acknowledges this contains an assault on organisational rationality. We are all Children of the Enlightment and its ideas, and we view organisations as tools, constructed for reaching certain aims. But there is another side of the coin. Organisations can also be seen as arenas of competing interests that vie for control of organisational resources and processes (p. 12). This view does not make research easier, because researchers in organisational politics are in somewhat the same position as psychoanalysts who contend that their patients' stated reasons for their actions are not the real ones (p. 16).

We all know situations where computers are being used as a status element, rather than as a productive instrument. The same goes for information systems and other IT applications. (Who has the first colour screen, the person needing it or his/her boss?)

Another person whose ideas are relevant to the field of databases in human services is **C. David Garson**, Associate Dean and Professor of Political Science in the College of Humanities and Social Sciences at North Carolina State University, Raleigh, and Editor of the journal *Social Science Computer Review.*

The relations between social sciences and social work have not always been easy. Social workers tend to associate themselves more with the kind of professionalisation of medical careers than with sociologists. Their work is mostly curative and only marginally preventive. Just as medical practitioners can learn a lot from epidemiology, so social workers could learn from social science. This debate recently has drawn a lot of attention in journals like *Social Casework, Social Service Review* and *Social Work Research and Abstracts.*

Openings between social work and sociology should be stimulated, and why shouldn't we stimulate contacts between researchers of IT applications in sociology and IT applications in social work? Garson's publications include regular overviews of new software in the journal and articles on (inductive) expert systems and neural networks.

Important publications in the field of database and information systems

Again, it would be very easy to find the 5 most important publications by doing a citation analysis. I chose not to do this, because you then get the 5 most known publications, that everybody feels s/he has to cite to be part of the club. I tried to identify 5 important publications for our topic that were not so known, but contained vital information.

I also want to point out that the most important information sources about IT in human services are the journals of Dick Schoech and Bryan Glastonbury, together with the HUSITA and ENITH meetings. Following publications don't diminish the importance of these sources, but try to offer enlargements.

The first important publications about information systems and databases dates from 1973. It is the book by Henry Mintzberg, *The Nature of Managerial Work.* This book is the result of a time study of the daily activities of managers. It gives important descriptive information, and the conclusions for information systems are astonishing. It demystifies the fairy

tale that managers are rational, systematic planners and need aggregated, formal information from a MIS. The facts are that managerial work is characterized by extreme brevity of actions, reaction to things happening rather than acting, and that managers need and want informal, verbal information (gossip) more than anything else.

This study has been replicated and the results have been supported, not only by studies in profit organizations (eg. by Rosemary Stewart, Jane Hannaway) but also by studies in human services. One example is the research T.D. Wilson did some years ago at the university of Sheffield. Results have been presented in several publications (1977, 1979, 1981, 1982).

Another, more recent example is the HUSITA II paper from Ph. Schervish (1991). This paper contains the results of research in community mental health centres. The research explored patterns with which specific pieces of information are used by professional staff. It concludes that there does not appear to be a strong congruence between the information professional staff report using and what organizational and practice theory suggests they need to know.

Everybody will agree that information has three levels of usage in a human service organization. The first level is the usage of information by the professional staff for treatment of the client. The second level is the usage of this same information, together with information from the external environment of the organization by the manager, in order to manage his of her organization. The third level is the usage of again this same information together with information from surveys and other sources by social scientists, perhaps in order to construct a social welfare epidemiology to outline treatment or preventive programs.

The first person to outline these levels, and to point out the difficulties that exist between them was Ernest Burgess, sociologist from the Chicago School (1928). Burgess is the person that suggested ways in which facts collected for normal administrative purposes are adaptable for use in research context. He also urged authorities to define administrative areas and to maintain those for a long period, in order to be able to compare results over the years. Every country now has so called statistical areas.

Information technology, not available at that time, can provide new ways to integrate the information needs on the three indicated levels. In my paper for HUSITA II (1991), I presented the case of the "Public Centre for Social Well-being" in Antwerp and the way this organisation used an automated client information system to gather management and scientific information. What I did not include, and what remains an important question, is the solution computerisation cannot offer. This includes the way results from scientific research are being used by professional staff in their daily practice. What is the relationship between social work and social science, and how can this relation be improved by introducing information technology?

One possible solution was indicated by R. Carlson in his papers presented at HUSITA II (1991 and others). His suggestion is that effective expertise is based more on memory than on analysis and logic. Memory based expertise can be developed by computerised case simulations.

Some publications deal with this existing gap between the rational organisation upon which normative literature is based and the natural systems organization that exists in reality. Matheson (1991) considers the question why some human service organisations are more innovative in their use of computers than others. Dealing with the question of technological innovation, he also touches upon the impact of information systems on strategic planning in organisations: "while shifts from less to more rational planning modes were apparent among organizations advanced in their use of computers, the managers involved believed that such shifts in emphasis and technique would

have occured anyway, with or without the technology ... While the availability of data may have little to do with its influence in decision making, it is likely to promote the consideration of more factual evidence and the exploration of a wider range of alternatives".

Another important publication is Richard Caputo's recent book (1988). This book start from three central concepts: authority, decision load and information systems. It describes these concepts and the effect of them on each other, using material from social administration (Hasenfeld) and from business shools (management theory).

Caputo's other publications include an article on information systems and program evaluation, and an article with R. Cnaan on the availability and usage of computers in social schools. This material was also presented at HUSITA II.

I already mentioned the issue of reliability and validity of information. The problematic nature of both aspects was formulated by the ethnomethodologists. They criticized the usage of administrative data on grounds of the social construction process of registration. The most important publication was written by H. Garfinkel (1967). "When clinic records are looked at in this way (quality of contents) the least interesting thing one can say about them is that they are "carelessly" kept. The crux of the phenomenon lies elsewhere, namely in the ties between records and the social system that services and is serviced by these records. There is an organizational rationale to the investigator's (or information system's) difficulties".

Important future developments of databases and information systems

Nobody will doubt that changes in the field of databases and information systems are occurring at a very high speed. Several of these changes can be traced. One of them is that hardware gets cheaper every day and technical capacity is increasing with the minute. While hardly anyone thought about a hard disk of more than 40Mb some years ago, we are now talking about gigabyte hard disks for a reasonable price.

Software also gets better and better. Not only user interfaces get more friendly with the introduction of graphical user interfaces (GUI's like Windows 3.0), but the diversity of software has evolved towards *de facto* standards, based on major programs such as WordPerfect, Dbase and Lotus.

These evolutions can not be considered to be dramatic changes in the nature of computing, like the shift from mini to micro or from batch processing to interactive working were. Outlining those movements which will have the quality of dramatic changes is more or less looking into a crystal ball. I think two elements can be indicated. Both can be described by the word "connectivity".

The first evolution is the developments in the field of neural networks. This software is of relatively recent origin, still in development and has not yet filtered into our attentions. Neural networks perform brain simulations by constructing neural networks in the computer memory. These networks can learn from cases offered to them in a non-structured way. It assigns different weights to links between neurons. This is not done analytically (as in expert systems) but by experience. This is similar to inductive expert systems. Cases typically contain background information, action taken and outcome. After the learning phase, the neural network can apply its knowledge to new cases and give advice about the action to be taken.

Examples are neural networks that give loan advice. After processing several cases with background information, the given loan advice and the outcome (succesful or not) during the learning phase, the neural network will be able to give loan advice for new cases. Results from neural networks tend to be better than those from expert systems doing the same tasks.

Similar applications could be developed for

several tasks of social workers (matching foster parents and children, choosing the appropriate treatment or therapy for child neglect or abuse cases, etc.). I have no knowledge of such experiments at the moment.

One disadvantage of neural networks is that they are still not able to explain why they give certain recommendations. They seem to be fairly good, but the logic applied by the software is unclear and therefore unreliable. This is of course very similar to human expertise. A social worker will be able to match a certain child to a certain foster family, but asked for reasons, will not be able to give adequate answers.

Another disadvantage of neural networks is that you have to gather information about as many cases as possible, not only concerning the background of the cases and the treatment or therapy given, but also about the outcome. Most client information systems, whether manual or automated, do not contain information about the outcome of the social work process.

Artificial intelligence (AI) products (like neural networks or expert systems) will become interesting for human services if they can be integrated into information systems. As separate applications they have limited uses for social workers (and other users). Integrated with client information systems, they will more readily be used. They can even provide useful incentives for social workers to use client information systems and provide information that can be used on other levels (management or social science).

This brings me to the second major evolution of this moment. Both hardware and software should become more and more connected to each other. Transport of information between different systems of software or hardware is becoming easier every day. Hardware evolution of this trend towards connectivity includes the recent agreement between IBM and Apple, the introduction of cheap and good local networks in the market, the introduction of telecommunications stimulated by cheap modems, easy to use software and networks like internet, experiments like the RIBA-platform of ICL, multimedia applications that combine computers, CD-ROM's, video's, and others.

Software evolution in this context include the high transferability of files between different machines and software programs, the integration of data, text and graphics in the same program (eg. Superbase 4.0 or Hypercard) or Hypertext. Hypertext introduces the capability to move rapidly from one part of a document to another by means of associative links. The non-sequential, incremental way of searching information of daily life now has an automated, interactive version.

As I already outlined when describing the main issues in the field of databases and information systems, an important development that ought to take place is a shift in our attention from hardware and software towards the reality of its use. The complete picture of hardware and software within its application environment should be drawn. This includes complete analysis of the involvement of the user, his (or her) aims and position, and analysis of the social work process taking place between professional and client, or client and information system.

This is however an evolution that will not be very easy. It implies leaving the secure ground of technology, and taking up the challenge to assess, construct and evaluate social systems.

Conclusion

Databases and information systems in human services have received considerable attention in the past. Several case studies have been published in the journals or have been presented at conferences. The most important aspects of both hardware and software have been described at considerable length. New evolutions promise a continuing challenge between information systems and human services, at a higher level. These evolutions promise interesting new horizons and hard labour for future years.

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The ENITH Resource Book

One of the early decisions taken by those who met at Maastricht in December 1989 to form the European Network for Information Technology and Human Services (ENITH) was to establish an accessible set of information about circumstances in a variety of countries. The editorial task was entrusted to Lars Qvortrup (Denmark), Bryan Glastonbury (UK) and Hein de Graaf (Netherlands).

Lars Qvortrup designed a paradigm for IT in human services, with the social worker/client relationship at its core, surrounded and influenced by the public welfare system, the education system, the administrative context of social work, and the labour market. From this paradigm he derived a set of topics and guidelines for national case studies, and the task then began of finding national researchers and authors who would make contributions.

Twenty-three countries were approached, and when the tight deadline for submissions arrived 9 had produced country profiles. They are Denmark, Spain, UK, Ireland, Germany, Norway, Netherlands, Israel and Belgium (Flanders). Authors from several other countries are still at work, but their efforts will have to await a second edition.

Editorial work was supported by the Netherlands Institute for Care and Welfare (NIZW), who have also published the first edition.

The ENITH Resource Book starts with an explanation of the conceptual paradigm and the guidelines given to national authors, and then offers an overview of the 9 case studies which follow. The overview follows the same pattern as that set down for national contributions, looking at IT in Human Services under 12 main headings:

1. The general public and private human service system.
2. Social benefits calculation systems.
3. Client assessment systems.
4. Client counselling support systems.
5. Treatment support systems.
6. Training support systems.
7. Working tools for disabled persons.
8. IT supported systems directly accessible by clients/citizens.
9. Client records or information systems.
10. Human service databanks.
11. IT supported administrative systems.
12. Other initiatives.

After the case studies there are sections on EC projects in the subject area (useful for anyone thinking of applying for a grant), and European software (mostly British and familiar to readers of this journal).

This first issue makes no claims to being comprehensive, but its 60,000 or more words offer a valuable insight into the way other countries are approaching the use of IT in their personal social services.

ENITH European Resource Book (126pp, A4, ISBN 0854 324437), is free as part of the membership package for anyone who joins ENITH. Further copies are available to ENITH members for £6 each, p & p included. For non-members the price is £9. Copies of the book and information about ENITH membership from the CTI Centre for Human Services, Department of Social Work Studies, University of Southampton, SO9 5NH.

Bryan Glastonbury

CUSSNet Software

The following software is taken from the latest CUSSNet list. The symbols used are:

D = Demo. The disk highlights a product and gives you a flavour of how it operates.
F = Freeware. Full working version, with no restrictions on use.
L = Limited use version. You can examine the entire product, but limitations prevent further use.
U = User supported shareware. Full working copy, but you are expected to register and pay if you choose to use it.
IBM = Usable on any IBM or compatible computer.
HD = Requires hard disk to run.
C = Requires a colour graphics card.

Disks can be ordered via the CTI Centre for Human Services, Department of Social Work Studies, University of Southampton. Prices are £9 for a single disk program, £14 for a 2 disk program, and increasing by increments of £5 for 3 or 4 disk programs. The price includes VAT, post and packing, and any excise duty payable when the disks are mailed from CUSSNet.

Mental Health

ASH+ (1 disk) D, IBM. Demo of program that administers 401 item social history questionnaire, covering 13 areas including religion, family, education, employment, addictions, interests, criminal and medical histories.

ARES (1 disk) D, IBM. Demo of 20 individual surveys consisting of over 700 items designed to identify multiple risk factors, problems, issues or personal concerns.

Decisionbase (2 disks) D, HD, IBM. Fully functional but limited sampler of integrated mental health software, intended to allow the therapist or client to generate a social history or diagnosis.

Depression Tests (1 disk) F, IBM. Scoring and data file creation programs for 10 depression tests.

DIS (1 disk) D, IBM. Demos a structured interview to obtain data for most adult psychiatric diagnoses. Designed for patient/client completion with minimal staff assistance.

Help-Software (1 disk) D, IBM. A sampler of 3 client administered self-help software programs, concerned with assertiveness, self-esteem and stress.

PsychSpell (1 disk) F, IBM. 2000 psychological terms for incorporation into a word processor spell checker or dictionary.

PSYSEARCH (1 disk) D, IBM. Demo of an interactive diagnosis aid for client use, based on yes/no answers to questions. Leads to 70+ possible diagnostic conclusions.

Tests 1 and 2 (1 disk each) F, IBM. A range of personal tests, mostly for use as games.

Welfare/Child Protection

EVOLV (1 disk) D, IBM. Presents the menus of a system for administration, case management, progress notes, adoptions, foster parent management, structured programmes, health services and others.

Foster Care Protection (3 disks) HD, C, F, IBM. Shareware system for auditing foster care records. Linked to US law, but Prolog source code included to enable modification.

Developmental Disabilities

AUGMENT (1 disk) F, IBM. Informs teachers, parents and social workers about a client's situation regarding augmentative communications technologies.

DD Connection (1 disk) F, IBM. Illustration of a disability bulletin board and database.

FreeBoard (1 disk) D, IBM. Demo of program which allows users to work with most software by trackball, mouse, joystick, optical pointer, etc., rather than keyboard.

Freedom Writer (1 disk) D, IBM. Demos a word processor for people with limited mobility. Keyboard actions are replaced by use of other technologies.

Spell Games (1 disk) U, IBM. Game designed to help people learn to spell.

WKP (1 disk) U, IBM. Large font word processor, designed for young children, with a screen version aimed at those with a visual handicap.

Education and Training

DALE (1 disk) D, IBM. Demo of a drug abuse education system designed to help young people to awareness of the health and social consequences of substance abuse.

Empirical Practice (3 disks) F, IBM. Materials for a course on some aspects of research methods. From Walter Hudson.

PC-CAI (1 disk) U, IBM. Shareware software for creating computer aided teaching without having to know a programming language. Uses sound, graphics, animation and colour. Has a testing facility.

PC-PASS (1 disk) D, IBM. Demo of an authoring system to construct tutorials, test and score tutees. Two social policy tutorials are included in the demonstration.

SWBIB (3 disks) F, IBM. 280 page (690k ASCII) indexed bibliography of computers in social work.

Understanding Statistics (1 disk) D, C, IBM. Demo of a system which provides 10+ hours of tuition and testing on statistical methods, including sampling, hypothesis testing, correlation and regression.

Negotiator Pro (1 disk) D, HD, IBM (MAC version also available). Demo of a program that teaches negotiating skills (theory, issues and tactics). Hypertext.

Computers in Mental Health: A Selected Bibliography

Compiled by Bruce W. Vieweg and James L. Hedlund of the Department of Psychiatry, Missouri Institute of Mental Health, 5247 Fyler Avenue, St. Louis, MO 63139, USA. Phone contact is 314 644 8872, fax 314 644 8834, and e-mail (Bitnet) MEDMIP@UMCVMB.

Published in 1992, this is 45 page (A4) listing of bibliographic material not only specifically in mental health, but also in a range of areas relevant to other caring professions, such as expert systems, computer aided instruction, legal and ethical issues, and computerised interviewing.

Independence through Technology

Paper and disk version of 15 papers given to this conference in Leeds (November 1991). Contact Graham Watson, G6 Burton Lodge, Portinscale Road, London, SW15 2HT.

