



*The Journal of
The Centre for Human Service Technology*

Contents

Care Management, Practice and IT

Social Services and Communications Technology: a user perspective of the implementation of a Care Management System in a Social Services Department

Developing a Decision Support Computer Model for Population Needs Assessment and Resource Allocation in Community Care

Strategic Information Systems Planning in a Social Services Department - An Organizational Approach to Change

A Case Study which Demonstrates the Innovative Use of IT with People who have Learning Disabilities

Editorial Group

New Technology in the Human Services is edited and published from the Centre for Human Service Technology (CHST) at the University of Southampton. The Centre incorporates the Computers in Teaching Initiative (CTI) Human Services.

Members of the CHST Steering Group are:

Walter LaMendola (USA)
David Phillips (University of Sheffield)
Joan Orme (University of Southampton)
Peter Pettit (University of Reading)
Andy Shulkins (University of Southampton)
David Ward (Hampshire County Council)
Laraine Stewart (Central Council for the Education and Training in Social Work - CCETSW)
Jan Steyaert (Universiteit van Antwerpen)

Stuart Toole (University of Central England) is Editorial Consultant.

Overseas Consultants are:

Hein de Graaf (Netherlands)
Rob MacFadden (University of Toronto, Canada)
Dick Schoech (University of Texas, Arlington, USA)

Editorial staff of the Centre are:

Bryan Glastonbury
Ann Wilkinson
Jackie Rafferty
Suki Sitaram

Submissions to the journal

We welcome papers, articles and reviews from both academics and practitioners. Please send your material in hardcopy and on disk, preferably in either WordPerfect 6.0a or Word 6.0, but other formats can

Subscription for the Journal

To subscribe to the journal *New Technology in the Human Services*, contact us at the address below:

Address for all enquiries and subscriptions:
CHST
Department of Social Work Studies
University of Southampton
Highfield
Southampton SO17 1BJ

Tel: 01703 592779/593536
Fax: 01703 592779
Email: CTIHums@soton.ac.uk

Subscription rates (Volume 8)

(Rates are for each Volume of 4 issues)

United Kingdom	
Personal	£10.00
Libraries/Institutions/Agencies	£30.00
CCETSW approved courses and	
HE Institutions	£15.00

Europe (in UK £)	
Personal	£12.00
Libraries/Institutions	£30.00

USA and Australia (in US \$)	
Personal	\$20.00
Libraries/Institutions	\$60.00

be accepted. Informal support is available before papers are submitted to referees. If you are considering writing for the journal, contact any of the Editorial Staff for further information.



Up Front

Social Services Departments are responding to the NHS Care in the Community legislation in a climate of tremendous technological innovation. This has enabled many to develop and resource technology based solutions for planning the provision of social services. A similar source of encouragement cannot be found in the social work education sector. Hence, the growth in awareness of technology and its applications are perhaps lagging behind both in the uniform use of IT in teaching the social work curriculum and in the required content of the Diploma in Social Work.

The creation of internal markets, the need to ensure and demonstrate cost effectiveness and the requirement to be a needs led service has made IT applications attractive to Social Services Departments. However, the development of community care legislation and internal markets has not been complemented with a parallel development in the resourcing and piloting at a central level, of appropriate IT solutions. As a result, different Social Services Departments have had to experiment with different systems, databases, training for staff and the most effective uses of technology. Success has been varied and some experiences are described in the papers in this volume.

The central policy vacuum in introducing IT into social work extends to higher education. CCETSW (Central Council for Education and Training in Social Work) is updating its curriculum, and in the new draft reference to IT and social work education is less than before, and places little or no emphasis on the need to develop IT knowledge or skills. The scope for CCETSW to have an impact is considerable. For example, its policy on anti-discriminatory practice has significantly raised the profile of anti-discriminatory practice on the agenda of teachers and course co-ordinators. In order to put the issue of IT in social work education on the agenda in higher education institutions, CCETSW needs to initiate a

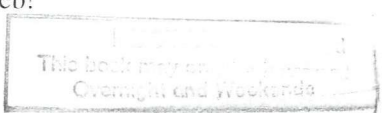
clear direction in favour of the use of technology. After all, students of social work are expecting to be employed in social services departments and ought to be more fully prepared in the changing nature of local authorities and the systems they use.

While a large part of this issue is given to the experiences and uses of IT in agencies, there has been some work done in courseware development in collaboration between the University of Wales College of Cardiff and the University of Southampton, and Southampton is also in a joint venture with Bournemouth University. A later issue will be on the theme of IT and Social Work Education and amongst other papers, will detail the experiences and content of the module piloted at Cardiff. We would welcome papers from any teachers who have been involved in similar developments. This theme is central to a conference in March which we are hosting in collaboration with CCETSW and IBM, Hursley. Exhibitions by software developers (who are few in number in this field) will, we hope, generate enthusiasm to use IT in the teaching of the curriculum.

This journal is one of only two Journals of this kind in the world. A decision has been taken by the Editorial Group to phase this journal into a peer refereed journal over the next few issues.

Finally, the development of World Wide Web and the wider use of the Internet will no doubt increase global debate and interaction between teachers and practitioners of social work in different countries. CHST have now introduced a World Wide Web Home Page and a Social Work Discussion list. Addresses for these are on page 30. See you on the Web!

Suki Sitaram



This book may only be borrowed
overnight and weekends

Social Services and Communication Technology: a User Perspective of the Implementation of a Care Management System in a Social Services Department

Bob Sapey, University of Central Lancashire

Introduction

In April 1993, Cornwall Social Services introduced a computerised information system that made significant use of the potential of new technologies. The Care Management System (CMS) was the winner of the IT Excellence Competition in 1992 and was widely marketed at the time in the social work press. Amongst the claims of the advertisement were the following:

"It is a system that allows greater efficiency of management in our community care programme, and so directly benefits the service users....."

.....Far from being 'ivory tower' technology, it is a system that has been designed to be used by field workers in clients' homes....."

.....The time and energy saved through reduced paperwork, fully costed packages and increased information accuracy, gives professionals the chance to practice real community care, and build strong relationships with their clients - it's the ultimate return on investment."

(Social Work Today 25/6/92)

From April to December 1993, I was employed as a care manager in this department and was able at first hand to experience these promises as a user of the system. Far from being user friendly, the system was so problematic in its design and inappropriate in its application that, rather than freeing fieldworkers up to concentrate on clients, the CMS began to dominate all activities and led to such a degree of demoralization amongst the workforce that people began to talk of it as a health and safety risk.

In reflecting on that experience, it seems appropriate to review it in order to understand this use of technology within an organisation and the contradictory evidence from the experience as opposed to the advertising. The CMS is a good example of the ways in which IT can fail to meet its objectives and, in the process of that failure, can alienate many people from computing.

Computers are essentially a means of processing data and as such

Bob Sapey is a Senior Lecturer in Social Work at the University of Central Lancashire, Preston.

Contact him at:

University of Central Lancashire,
Preston,
Lancashire, PR1 2HE.

Phone: 01772 893468

Fax: 01772 892902

E-mail: R.J.Sapey@uclan.ac.uk

have much in common, not only with the human brain, but with organisations themselves. It has been argued that the understanding of one can be enhanced through the understanding of the other (Beniger 1990), and most managers within the personal social services will have some understanding of organisation theories. In this article I shall use organisation theory, particularly that concerned with policy implementation, to analyse the introduction of the CMS.

Policy Context

The CMS was introduced to assist with the changes that resulted from the National Health Services and Community Care Act 1990. Central amongst these was the transfer of Income Support budgets from the Department of Social Security to Social Services Departments (SSD) and the introduction of internal markets. These created a culture change in service delivery, part of which was a growing belief that the assessment of need for services could be carried out by people without a professional qualification. In addition, Cornwall SSD had decided against block contracts in favour of permitting front line workers the freedom to negotiate services with a wide range of organisations and individuals. This promised to be quite flexible and indeed proved to be so, but the administration of such an approach required new systems.

Although records of the early discussions and decisions were not available to staff, the origins of the CMS appear to have been within the Community Health Trust. In their early plans for the implementation of community care, they conceived the idea that if core assessments were carried out within a database, then assessors from a variety of backgrounds could be assisted to decide when a person's problems had become complex enough to call in a particular specialist. This would permit greater co-operation between health and social services, possibly leading to a single point of entry for service users. Confidentiality would be ensured by structuring the database into various modules so that access could be restricted to particular professional groups.

From the beginning the thinking was dominated by a positivist view of knowledge - the same thinking that has led to the plethora of 'tick box' assessment forms in so many Social Services Departments. Not only does this approach seek to compartmentalise the

uniqueness of individuals into predetermined categories, it also results in a picture of the individual made up of a series of near misses (Middleton 1994). However, it has organisational advantages in that it permits greater analysis and control over a dispersed workforce.

Although this package was turned down by the Social Services Department, the idea was adopted and work began on CMS. Initially it was used as a system aimed at managing the financial implications of devolved budgetary responsibility that would accompany community care. In addition, the impetus to deprofessionalise assessments appeared to be made more achievable by the systematic approach that IT would offer. In effect, a belief that the problems of older and disabled people could be categorised according to their resource implications, led to a conclusion that training in social work would no longer be a necessity for all front line staff.

Design and Purpose

The CMS was a dedicated application based on Microsoft's Foxpro, a relational database, which is a competent system that can be developed as a reasonably user friendly package. The CMS consisted of a number of modules with the main Referral module being used to keep records on all the department's clients, while additional ones were developed specifically for the implementation of the NHS and Community Care Act 1990. These consisted of the Assessment, Care Package and Financial modules. I shall describe them in more detail later, but first it is important to have an overview of the way in which the system was intended for use.

The introduction of CMS was accompanied by the creation of 60 new posts of 'case co-ordinator', who were to be vocationally qualified assessors (NVQ level 3). At the time, debate within social work education was concerned that the DipSW was itself insufficient to meet the demands of working within the new community care responsibilities of local authority social services, yet this move represented a reduction in skill level to that required for entry to social work training.

The case co-ordinators, each of whom had their own laptop computer, would operate from local venues and make twice daily modem links to their local office network. This would enable the transfer of new

referrals received for their area to their laptops and for their assessments and care purchases to be transferred back to the network. The information in the network would then be used by care managers, who were line managers to the case co-ordinators, to monitor decisions on need and financial commitments made by their staff and, to authorise expenditure at the appropriate level. This represented a considerable move from traditional management in social work that was more concerned with ensuring quality on an individual basis, rather than through financial administration. It was also intended that the care plan within the Assessment module would be compared with the care package to identify resource deficits which would have enhanced the management role, but this aspect never worked fully.

Additionally, the system provided three types of message facilities. The first was to advise care managers of new referrals received and in need of allocation. This initially required that the care manager make a positive decision about the level of assessment required but was later modified so that all referrals would be allocated to a case co-ordinator for the lowest level assessment. This resulted in care managers having to regularly view referrals as they would need to cancel their allocation within one working day if it was not appropriate. It created an 'air traffic control' style of management in which care managers became tied to their screens and less able to work in the community.

The second message facility was the so called 'intelligent' one which would result from the nature of the data put in. These would either advise that a specialist assessment was required as a result of the core assessment data or that authorisation for a care package was needed. The latter would be determined by the complexity of the identified problems or cost of the services.

The final type of message was free text communication, up to one line in length, between care managers and case co-ordinators. As this was the only means of communicating inferential, contextual data outside of client records, it is worth noting the extreme limitations this imposed.

The modular design worked as follows:

Referral Module - this would be used by reception staff to gather core information about the referred person and the nature of their needs or problems. At

this stage the system would allocate new clients with an identification number that would be unseen on screen and they would be automatically allocated to a case co-ordinator according to their GP. Core information would be then be transferred to other modules as and when they were used.

Assessment Module - this consisted of two main parts, the core assessment and the care plan. The core assessment was a range of menus and sub menus which imitated the tick box assessments on paper. These were supplemented by free text fields to qualify the responses. Ticking certain boxes would theoretically determine the 'banding' of the person which was a financial concept related to the maximum amount that could be authorised to be spent on services. In addition certain boxes were linked to advisory messages regarding the type of specialist assessment that may be required.

The care plan was based on the Care Package module but was to be used to itemise the range of services needed, as opposed to those that would be provided.

Care Package Module - this would itemise services provided, giving automatic costings and the option to print out the package as a matrix plan that could be given to the client. The information from this would be transferred to the networks to provide an up to date costing on services being provided, thereby enabling the managers to manage their budgets.

Finance Module - this was simply a means of calculating the amount an individual would be expected to contribute towards the cost of their care services.

As I have already mentioned there was a financial report generating facility which gave certain limited information. Budgets could be analysed by staff member, client or type of resource, though not by any cross tabulation of these. Although the Foxpro package includes a report generator (Repgen), which would permit detailed analysis of all data that had been collected, it had been decided by senior management that this facility should only be made available to personnel from the computer section.

Care managers would have to submit written requests for any reports they wanted and these requests would be considered by a group of people to determine if they were necessary, thereby removing from the user, the most essential features of any database - its ability

to process data. Contrary to the claims of the advertising, this decision was based on an ideology of expertise that viewed social services staff as not competent to be trusted other than to input data. The decision was justified on the basis that the hardware would slow down to unacceptable speeds if Repgen was being used, which suggests that the overall design was at fault.

This point is the most informative in terms of the rationale of the CMS. In effect the system had become too important for its users to be trusted to use it. In this way an information system was transformed into a tool of senior management, while the staff who were initially intended to benefit from its introduction were reduced to the level of data inputters. Without access to Repgen, data would have no meaning and without meaning it would not become information.

The lesson of the development of the Apple Mac (Levy 1994) is a vital one for organisations introducing IT - a computer is not simply a communication 'tool', it can become a communication 'medium' that is capable of bringing about a whole new range of possibilities in terms of data and information usage. The potential of computers as a communication medium however, is dependent upon giving the users of that system the means to be creative and this is clearly not the case if vital parts of that software, such as Repgen, are withheld.

CMS and Organisation Theory

From this brief description it is possible to see the extent to which CMS was intended to infiltrate the operations of the Social Services Department. Not only was this unprecedented, but the claims of the advertising was that it would be of benefit to service users.

However, the fact that this was a resource-led system was not only ignored, but disguised through claims that it was needs-led and could lead to a more creative use of resources. In reality, the way that CMS was to be used within the SSD meant that all staff would have to conform to a centrally designed assessment procedure or they would be unable to access resources for their clients. This level of standardisation increased the senior management's control of those activities that were taking place in the clients' homes with no apparent benefit to either staff, clients or even to the introduction of the quasi-market. The only

beneficiary was the extension of bureaucratic authority in a highly disseminated workforce.

The advantages to managers of determining the behaviour of front-line staff have been recognised by Lipsky in terms of controlling the extent of 'street-level bureaucracy' (Hudson 1989) and by Elmore (1979) as a fundamental component of a 'backward mapping' approach to implementation - *"it begins not with a statement of intent, but with a statement of the specific behaviour at the lowest level of the implementation process that generates the need for a policy"*.

There were internal inconsistencies in the development of the CMS, particularly the conflicting methods of implementation. While the original aim seemed to have reflected a backward mapping process in that the nature and role of the staff at the lowest level had been clearly stated, the development of supporting structures for this to take place had tended to follow a traditional top-down approach in which managers saw their purpose as control. As Elmore (1979) explained, *"the crucial difference of perspective stems from whether one chooses to rely primarily on formal devices of command and control that centralise authority or on informal devices of delegation and discretion that disperse authority"*.

The intent of the backward mapping approach is to empower, rather than control front-line staff. In this way, 'street-level bureaucracy' can be seen as forming a healthy part of the professional discretion, even if it results in the challenging of social services agencies, rather than as an impediment to policy implementation. At this point in time however, with the dominance of Economic Theories of Bureaucracy (Niskanen 1973, Tullock 1976), professional workers were seen clearly as only serving their own ends through the expansion of their bureaucracies. As such, managers who had aligned themselves to the political rhetoric of community care were keen to control their street-level workers. This extended beyond the existing professional groups to the new vocational staff that had been appointed.

The failure to conceptualize the CMS as a communication medium was in part due to the focus on control rather than empowerment of front-line workers but also due to the decision making processes. As with many policy and procedural developments in local authorities, the CMS changed

as it progressed. It would, however, appear that the intentions were not communicated or clarified. This led to one group of staff developing a system when they were unclear about the specifications required. Although this reflects the position of most investment in IT in the UK, where some £15b is estimated to be spent on systems that do not meet their specifications (Ravetz), it would appear that a cause of this is lack of clarity about what those specifications are. The introduction of IT as a communication medium represents a radical change and it is insufficient to simply rely on systems as a means of resolving organisational issues.

Outcomes

Although I have alluded to some of the problems that were inherent in the CMS, it is worth being more specific in order to analyse how this very extensive and expensive introduction of IT went so wrong.

The full system had not been field tested and feedback received seemed to be ignored by Social Services managers if it did not conform to what they wanted to hear. One team that had been piloting it had, for example, said that the free text fields were the only part that was adequate for recording the complexity of problems that individuals faced, yet the commitment to the 'tick boxes' remained. Criticism was treated as dissent from a managerial concept of corporate culture and this led to some fear of questioning the policy development process. This meant that in addition to not resolving the technical problems in relation to the transfer of data, design problems concerning the use of the system were not dealt with prior to its introduction.

When case co-ordinators plugged into their modems for the first time on April 1st 1993, they were inundated with referrals which were not for them and this made their immediate task very difficult. Despite the attention paid to confidentiality, all clients were being transferred along with sensitive information regarding child abuse. Not only might this have contravened the Data Protection Act and Department of Health guidelines on confidentiality, it also meant that transfers were taking a very long time. The immediate result of this was that instead of transferring twice daily, staff reduced this to two or three times a week in order to cope.

The data transfer problems persisted and although there were attempts to blame user errors, hardware

faults and even the state of telephone lines in some areas, it was clearly apparent that the software was inadequate for this complex task. There were three types of transfer problems - those that the software recognised and gave error messages for; those that were not recognised and meant information was not transferred and those that were not recognised but involved the transfer of data to the wrong record. Several attempts were made to correct these and although the situation did improve, one revision of the system also caused the loss of a considerable amount of data. This in turn caused some cynicism amongst users of the system with regards the importance of the data and the value of their role in its collection.

Within the first couple of months, the transfer problems were so great that many staff were dependent upon paper systems. The management response to this was to treat it as a control issue and this made matters worse. They had dual priorities - to get the transfer problems resolved so that staff could work with the system, but also to ensure that case co-ordinators were using their laptops within their clients' homes. In order to enforce the latter, case co-ordinators were instructed to create referrals on their laptops from their paper copy of the referral already taken in the office so that they could undertake the assessments by computer. There was a lack of knowledge amongst Social Services managers of how the system they were managing actually worked. This caused duplication of records with different identification numbers and led to yet further transfer problems and false information such as inflated client numbers. Many hours had to be spent putting right the results of this control action, through the merging of files.

This decision not only illustrates the management failure to realise that they were dealing with a communication system, but it also reflects the confused approach to implementation. While it had the appearance of backward mapping, (in that it was the actions of front-line staff that had been determined), it was then imposed with a top-down approach that treated staff as behavioural problems, rather than supporting them to achieve their objectives.

Design problems were various and although most resulted in inconvenience for the users, some were more fundamental and related to the values of the department. One such example was illustrated by an

issue relating to confidentiality that arose from the lack of provision for third party information. Paper records had made provision for these to be kept confidential while letting the client know that they existed. The CMS made no provision for this on the basis that all information collected would be shared. However, this reflected not only the positivist view of the type of 'data' that would be collected, but also the limited understanding of the complexity of needs of people seeking community care. On realising that this may be a problem, the instructions given in the training on this issue was that case co-ordinators should scroll down the free text screens far enough so that it would appear to the client that no further information existed. While this may have been a 'band aid' solution to this problem, it fundamentally changed the open relationships between the department and its clients and as such was imposing a set of values that were in direct contravention of other departmental policies.

Although this solution was unsatisfactory, it reflected the failure to fully field test the system or to be receptive to staff feedback. Two other such faults were the phrasing of Assessment module menus and the confusion of local authority with independent sector services in the Care Package module and, as a consequence, in the financial reports.

When the Assessment module was written, it reflected the overall circumstances of an individual. For example, an option within the menu on mobility may include a phrase such as '*walks with stick*'. However at some stage it was decided that the assessment should only include those matters that were presented as problems at the time of the assessment, so the phrase above would only be chosen if there was a problem with the use of the walking stick. This change arose from a realisation that the bandings would need to reflect levels of problems, rather than those already resolved, but no attempt was made to change the phrases. Rather, it was part of the training for CMS, to instruct people to interpret what they might mean.

The problem was a continual irritation, especially trying to explain to clients that the information did not mean what it said. In addition, the confusion of spending between local authority and independent sector services actually meant that the main purpose of the system, to aid budgetary control, was made impossible as the information generated was inherently inaccurate. There were simple errors such

as the lack of provision for day care services to be costed according to whether they were local authority or private provisions, so the entering of day care within the care package would automatically assume it was private. Given the emphasis that had been placed on the need to manage the budgets that had been transferred from the Department of Social Security, this confusion, in the very system that had been set up to manage them, further illustrated the failure of this non consultative approach to development.

This denial of the value of user experience extended into other aspects of the system. One lesson that had been learnt from an earlier IT system in the department was that, if the staff with responsibility for gathering the data did not themselves benefit from its collection, directly or otherwise, then data collection would be erratic. A feature of CMS was that staff collecting data did not benefit from it.

This was particularly apparent in terms of the Care Package module and the process of ordering services from independent providers. The latter required a labour intensive process of writing out official orders, which repeated the information already put into the CMS which, because of the faults in the design of the financial reports, was not of any value. At the same time, the accountancy section of the County Council had designed a spreadsheet using *Supercalc* which, by inputting data from the order forms was providing a reasonable level of financial information for budget management. Although this situation was pointed out by users to senior management, the response was that the CMS must be kept up to date on the basis that it might eventually work. This degree of faith may have been welcome in less secular organisations but in this department it simply illustrated the continuing failure to recognise the reality of the situation that had developed.

A related problem to this one was that in keeping the information up to date, case co-ordinators were required to make amendments to Care Packages, so that the financial information might be accurate. Given the nature of the department's reorganisation in which case co-ordinators could not close cases while people were continuing to receive a service, they became responsible for an ever increasing number of clients. This soon reached the size where the task of updating care packages was taking them away from new assessments. The process served no useful purpose, as the system did not work, but this could be

compounded if staff ignored the updating in order to ensure that services were provided to their clients. Again, control mechanisms were introduced instead of solutions, so that care managers could not sign orders if the packages were not complete. It was directly the opposite to the advertised claim of the CMS that *"...the time and energy saved through reduced paperwork, fully costed packages and increased information accuracy, gives professionals the chance to practice real community care, and build strong relationships with their clients - its the ultimate return on investment."* It was also unnecessary given that the *Supercalc* system was capable of providing the budgetary information at a much lower level of investment in staff time.

The problem of the CMS becoming time consuming also occurred in relation to the so called 'intelligent' messages. These proved to be so numerous and generally either inaccurate or already communicated in some other way, that they became an obstruction rather than an aid to management. Rather than the database being designed to provide advice from complex data, the messages relating to the need for specialist assessments were in fact triggered by single items that had been selected in the assessment module. This meant that all clients were being treated as if their problems required the same solutions and that the CMS was only masquerading as an expert system.

Finally in terms of the outcomes, it is worth noting the restriction on the use of other software packages. The training for CMS did not begin with computer awareness, but followed a 'which button to press' pattern. Many users were unaware that they were using a database or what other applications might be available to them. In addition, a user group had been set up on the office networks for the new system in order to ensure transfers were restricted to those with a right to the information, but this also excluded CMS users from other software available on the office networks, particularly the word processor (RTM) and the graphics package (GEM). *Supercalc* was available, but users were not informed of this and neither were they instructed in its use. In effect, rather than using this investment in technology to open up the potential for communication, the CMS users were kept in the dark about the potential of the computers on their desks. Experienced staff who were skilled in making decisions based upon a wide range of information, were deskilled by being expected to simply push the right button. Such

behaviour may be easier to control, but the loss of both the individual skills and organisational functioning in favour of the CMS is potentially devastating for the quality of service to clients.

Conclusions

There are particular lessons that need to be learnt from the Cornwall experience of using IT within a human services agency, some of which have been discussed in this study. It is worth noting that this study has been highly critical of the CMS, which is in contrast to it having won a prize in the IT Excellence competition in 1992. As a piece of software, it is true that a great deal of skill and innovation went into the development of CMS from the Foxpro database. However, this only serves to illustrate the most important point, which is that technological excellence does not necessarily mean application excellence. The fault lies not with the programming but with the way in which it was used. It is essential that managers introducing IT do not defer to programmers or systems analysts for expertise over its use, but realise that organisational theories are as applicable in this context as they are in any other.

As the system had been developed in such a vacuum of theoretical knowledge, one of the clear messages from research had been ignored - that communication technology should only be introduced if it was going to increase the direct personal contact between staff (Keen 1990). The message facilities of the CMS were an attempt to reduce direct contact and increase communication by modem. This is likely to lead to greater inefficiency, particularly in human service organisations where the complexity of the work is often difficult to write down.

It is not helpful to introduce IT into an organisation without some understanding of the research and potential consequences of that action. It is especially unhelpful to follow the technological opportunism route without analysing the organisation's communication needs. Technology can offer a considerable enhancement of any organisation's ability to use information but is clearly not suitable for all information processing tasks. As Steinfield and Fulk (1990) have identified, one of the reasons why we need a theoretical framework to understand IT is that we need to avoid being driven by the technological opportunities rather than the basic issues of organisational behaviour and communication. Opportunism in this case led to the

use of IT for purposes to which it was not suited and to the deskilling of staff who formed the mainstay of the organisation. Far from being constructive, this can lead to the devaluation and possible loss of skills that are needed by users of the personal social services. The purpose of an SSD can be changed from one of serving people in need to the servicing of a database and, in the process, it can lose its most valuable asset, the goodwill of staff.

As I have shown, the implementation process used to introduce IT is also vital to its success. Top-down processes with their focus on control and centralisation are unlikely to succeed in achieving any more than the imposition of systems that alienate and degrade the workers expected to use the system. In contrast to this, a backward-mapping approach that encourages the discretion of front line workers in combination with a conceptualisation of computers as a communication medium could open up greater processing potential. Organisations need to choose whether they wish to 'Taylorise' professional activities or to foster discretion.

It is the purpose for which IT is needed that should be considered and should be clearly stated. It is not reasonable to advertise a system as being there to help employees when it was so clearly intended to control them. Linked to this is the need for managers to have a clearer idea about how systems for which they are responsible actually work.

Related to this is the choice of hardware and software. The IBM industry standard with its DOS based applications was designed as a system for experts. The development of the PC was deliberately based on this system as IBM had envisaged them as only a temporary phenomenon. Organisations should carefully consider whether their needs are compatible with this standard before deciding what to purchase, as the disadvantages in terms of user friendliness and loss of potential for using computers as a communication medium, rather than as a tool, can far outweigh any benefits that compatibility may bring. With the new generation of RISC machines from Apple, Acorn and even IBM, this may be less of a problem in the future.

Finally, in terms of IT there may be a lack of experience and theoretical knowledge amongst social service managers, but in terms of organisations this is not true. Organisational theories should be applied to the use of IT and managers should consider the

implications on staff morale in relation to new technologies, before imposing control systems on them. Computers have become objects of enthusiasm and obsession to many, while for others they have created an affinity to the cause of the Luddites. A top-down control approach to the introduction of IT is far more likely to create the latter, which in the long term will make it far more difficult to make use of new technologies.

References:

Beniger J R (1990) - 'Conceptualising Information Technology as Organization and Vice Versa', in Eds. Steinfield C W & Fulk J, *Organisations and Communication Technology*, Sage.

Elmore R F (1979) - 'Backward Mapping: Implementation Research and Policy Decisions', *Political Science Quarterly* 94. pp601-616.

Hudson B (1989) - 'Michael Lipsky and Street Level Bureaucracy: a neglected perspective', in Ed. Barton L, *Disability and Dependency*, Falmer Press.

Keen P G W (1990) - 'Telecommunications and Organizational Choice', in Eds. Steinfield C W & Fulk J, *Organisations and Communication Technology*, Sage.

Levy S (1994) - *Insanely Great: the life and times of the Apple Mackintosh, the computer that changed everything*, Viking.

Middleton L (1994) - 'Little Boxes are not enough', *Care Weekly*, 20/1/94.

Niskanen W A (1973) - *Bureaucracy and Representative Government*, Aldine Atherton.

Ravetz J - Personal correspondence.

Steinfield C W & Fulk J, Eds (1990) - 'The Theory Imperative' *Organisations and Communication Technology*, Sage.

Tullock G (1976) - 'The Economic Theory of Bureaucracy' in Ed. Hill M. *The Policy Process: A Reader*, Harvester Wheatsheaf.

Editor's Note: This paper was sent to Cornwall Social Services for their response, but no reply has been received.

Developing a Decision Support Computer Model for Population Needs Assessment and Resource Allocation in Community Care

Judy Wright and Nick Gould

Introduction

It has been suggested that Social Services in the 1990's are experiencing the 'community care crunch' (Henwood, 1992). This is the painful experience of being trapped between a rising level of public expectation, in respect to the services which should be available to maintain a decent community-based quality of life, and the combined pressures brought about by demographic change (in particular an ageing population), increased structural unemployment and discontinuity of employment, and rapid change in patterns of kinship.

To extricate themselves from the discomfort of having to make painful decisions about rationing, central and local government may unhelpfully choose to play political 'pass the parcel' (Langan and Muncie, 1994) whereby central government sets stringent limits on personal social services spending and passes to local government responsibility for apportioning budgets. The parcel is then passed to senior social services managers who delegate to strategic managers and finally a budget is devolved to care managers, where rationing becomes disguised as professional discretion, with allocations built on an incremental case-by-case basis possibly having no relationship to differential, locality-based levels of need.

One explicit intention of the NHS & Community Care Act 1990 and associated policy guidance was (whatever the other agendas) to introduce to this process some notion of rationality. This derived from a philosophy of services led by need, planned strategically from an assessment of the needs of the local population (Department of Health, 1993). Within the social sciences, the concept of need is strongly contested, and it is not the intention of this paper to enter that debate. However, whatever the complexities of the theoretical debate, there is a current requirement upon Social Services Departments (SSDs) to develop models of resource allocation which are predicated upon the profile of the local population.

Judy Wright is a Project Officer and Dr Nick Gould is Deputy Director and Senior Lecturer in Social Work at the Social Services Research and Development Unit (SSRADU), University of Bath, England.

Contact them at:

*SSRADU,
The New Church,
Henry Street,
Bath, BA1 1JR.*

*Phone: 0225 484088
Fax: 0225 330313*

The Department of Health's good practice guidance on population needs assessment defines need as "the ability of an individual or collection of individuals to benefit from care". Consequently population needs assessment is given as "the process of estimating, projecting and categorising the needs of a local population" (Department of Health, 1993). Audit Commission research into services for children suggests that many authorities are struggling with the methodological complexities that population needs assessment requires, lacking the specific expertise and resources required (Audit Commission, 1994). In

an attempt to improve on this situation Bath University's Social Services Research and Development Unit (SSRADU) has been working with Social Services Departments to develop and implement a computerised model of population needs assessment which can support strategic decisions about the allocation of budgets within the authority.

Although it is evident that various authorities have undertaken population projections, primarily for inclusion in their Community Care Plans, and made use of Department of Health key indicators, there is not much evidence that this information has been used extensively to predict future patterns of resource allocation. The SSRADU program uniquely models both sides of the community care crunch; the equation between numbers of people and costs of provision. It projects the estimated levels of demand arising from the population characteristics, but also allows Social Services Departments to configure and cost resources to meet those levels of need. Essentially, it enables managers, planners and practitioners to reduce the level of anxiety engendered by perceived ever-increasing need and decreasing money for its fulfilment.

This paper outlines the process of development of the SSRADU model in collaboration with Social Services Departments who wish to tailor it to their own planning needs and objectives. Whereas one Social Services Department's primary purpose might be to estimate potential populations, in different age groups with different levels of need, another authority might well wish to take it further to develop typical packages of care to meet the needs of specific groups.

Some might wish to concentrate on estimating and matching the needs of their elderly or total adult populations, whereas others are concerned with the specific needs of children in their authority. The paper describes how the variables and functions built into the program can be used and modified, either temporarily to model other scenarios, or permanently as the national profile becomes increasingly refined by local information. Technical specifications for the system, and some thoughts about the way forward for population need assessment will also be discussed.

Predicting Demand

Many authorities have used the Department of Health Good Practice Guidance on population needs assessment (1993) to publish information about their

local populations. The program takes the main principles of this guidance as a starting point but goes on to provide a dynamic medium for gauging the potential numbers of people who may present their needs to Social Services Departments in the legitimate expectation of resource provision.

Before moving to computerisation of the model, the first task has been to review, with Social Services Departments, their approach to recording referrals so that in future information is collected on a basis which is compatible with the codings to be used in the model. Following the Guidance, statistical and research resources were reviewed to decide upon the optimal bases for developing a population profile. These included OPCS surveys of disability, national prevalence rates, census information and population projections or forecasts for the appropriate Social Services Department, as well as other national and local prevalence information.

The program contains three major variables whose limits are defined by the Social Services Department: year (eg 1991-2006); administrative areas or divisions within the Social Services Department (eg 6 Sub Districts) and age group (eg, 0-4, 5-15....75-84, 85+). Although the original intention was to develop the program to project demand for adult services, national prevalence rates for disabilities among children have been included, as well as a rationale for predicting the potential population of all children in need, using a number of indicators agreed with the Social Services Department. For adults as well as children, the model combines OPCS definitions into three severity categories: mild, significant and severe. Though these have been grouped according to the specification of each Social Services Department, it is recommended that:

- 'mild' equates to OPCS severity categories 1-3.
- 'significant' equates to OPCS severity categories 4-6.
- 'severe' equates to OPCS severity categories 7-10.

These levels of severity of disability broadly match the Audit Commission's bandings of need where, for example, an individual with a significant level of disability may well need resources to be provided at least 3 or 4 times a week, whereas someone with a severe level of disability would need daily, if not constant, care provided in either a residential or domiciliary setting.

To gauge demand, planning or organisational staff

can interrogate and cross-tabulate the database in terms of the variables identified above, eg, the number of people there might be with significant disability in a particular age band by a given year. National prevalence rates for specific types of physical and learning disability are given, as well as three levels of severity and three types of mental health problem. We also provide the authority with applicable information on HIV/AIDS, race and ethnicity, long-term illness and carers although these are not as yet modelled into the computer program.

It is evident that many authorities have conducted demographic projections to inform community care planning, but the SSRADU model supersedes these raw numbers by giving staff direct access to predictions for a particular year of numbers of people with specified levels and types of disability within an identified geographical area. Potentially, there could be a methodological problem of double counting where a person has a multiple disability, but this is accommodated by the provision that a person can only appear once within the mutually exclusive age and severity of disability categories.

As we work in partnership with client agencies the demand or population needs side of the model continues to be developed. A present innovation responds to the Audit Commission's finding that authorities are lagging behind the requirements of the Children Act in identifying 'children in need'. As the Commission observed, both health and social services have had conceptual difficulties in moving beyond categorisation of children based on services. The SSRADU model already incorporates children, but this is being extended by the development of an index of childhood deprivation to be applied to local data to estimate potential numbers of children in need.

Balancing the Care Equation

Having established the potential volume of need within any given population, Social Services Departments will want to be able to estimate what proportion of this population is currently receiving some form of provision, ie, the level of overall take-up. However, they will want to go further than this to be able to model what level of provision could be given if budgets were reduced or how needs could continue to be met if take-up increased. More optimistically they could envisage how would they distribute any increase in the budget, and whether this could be done by providing more of the same at an

increased level, or what innovative provision they now might make.

With one Social Services Department, we developed an approach to the supply side of the care equation by working alongside the authority to produce hypothetical costed 'typical' care packages, whereas with another, the Social Services Department's actual costs and actual numbers of receivers of resource provision for the previous financial year were built into the program.

In the former case, problem scenarios of widely differing presenting problems, drawn from the OPCS surveys, were provided. Operational staff were requested to indicate their judgement of the package of care such individuals would be likely to receive if they were referred or self-referred to the Social Services Department, taking into consideration whether the user was supported or unsupported. This exercise was followed up by a two day workshop, run by SSRADU in conjunction with an external planning consultant, involving operational, planning and managerial staff who make decisions about resource allocation. The brief of the workshop was to collect quantitative information about typical responses to need as well as qualitative indicators about decision-making under conditions of uncertainty, and local and organisational factors which contribute towards differential allocations of resources.

Whereas the model could have simply multiplied typical costings by the number of individuals falling within categories of disability and age (thereby producing spending projections which would be severe over-estimations of future demands on budgets), by factoring in more subtle organisational variables the projections became more realistic. As a retrospective validation of the model, it was found that it could predict with reasonable accuracy from data for previous years the current known number of Social Services Department users against current adult services spending.

In more recent application of the model, where actual information on numbers of users and costs was provided by the Social Services Department, matching the categories in the demand side, the system can model different provision within each age and severity group. This allows the user to see the effect on costs if, for instance, the numbers of people in residential care are increased or decreased.

It will be evident that the computerisation of the model replaces snap-shots of present and estimated supply with a dynamic process whereby information can be continuously fed into the model to provide an increasingly realistic picture. At the same time the variables can be altered to model the outcomes of particular contingencies such as cuts in budgets, or unpredicted pricing changes.

To enable this a "What If?" section of the program allows practitioners and planners to model different types of provision to meet the needs of users in each of the groups, whether supported or unsupported, cost these packages for an individual or for the group as a whole, and yield a total for all clients. It allows them to model the effect of making changes in care provision on the budget, or of the impact of budget and policy changes on provision. These variations can be made on a provisional basis to allow hypothesising about possible changes. Once any changes become confirmed, the main database can be updated permanently. Various assumptions about proportions of take-up rates and informal carer support are built into the system as defaults. These estimates are based on departmental information, research knowledge and knowledge gained through the workshops.

Technical Requirements of the Model

The program is written in Visual Basic, and runs on any IBM-compatible personal computer operating with Windows 3.1 or above. The PC should have at least a 486 processor, and a minimum of 4 megabytes of memory, although 8 is recommended.

Conclusion

This article presents an overview of a model which continues to develop and which, by the very nature of working through partnership with client organisations, will be adapted to local circumstances and requirements. The basic methodology has been developed in work with social services authorities but there is no intrinsic obstacle to it being employed with a range of public service organisations faced with the task of developing an approach to decision-making in relation to resource allocation on a geographical basis. Health authorities and joint planning with social services are an obvious example, and SSRADU has also discussed the approach with a housing association. Another ongoing extension of the model is to incorporate children's needs; as discussed above

we have been able to incorporate children's prevalence rates within the data-base. A further development, building on the approach of researchers such as Jarman (1983) and Townsend (Townsend et al, 1988) to the development of composite indices of deprivation, is the construction of an index of childhood deprivation, which can in turn be applied to population projections. This may help SSD's to get a purchase on potential numbers of children who could come within the 1989 Children Act definition of children in need.

Computer models of population needs assessment and resource allocation are supports to decision-making, and do not provide a 'technical fix' to the intrinsic political issues relating to the determination of priorities within a limited availability of resources. Similarly, the model is neutral in relation to the question of how the concept of need is defined. We do have experience of an authority arranging user involvement in the collaboration stage of model-building, and it is not pre-supposed that the definition of need has to be simply 'top-down'. What it does provide is an explicit, dynamic picture of present and future demand and supply functions at the strategic planning level, as a step towards ensuring that individuals ultimately receive services adapted to their needs.

References:

Audit Commission (1994) *Seen But Not Heard: Co-ordinating Community Child Health and Social Services for Children in Need*, London, HMSO.

Department of Health (1993) *Implementing Community Care: Population Needs Assessment Good Practice Guidance*, London, HMSO.

Jarman, B. (1983) 'Identification of underprivileged areas', *British Medical Journal*, 286, 1705-9.

M Langan and J. Clarke (1994) 'Managing in the Mixed Economy of Care', in Eds. Clarke J., Cochrane A., & McLaughlin E, *Managing Social Policy*, London, Sage.

Townsend, P., Phillimore, P. and Beattie, A. (1988) *Health and Deprivation: Inequality and the North*, London, Croom Helm.

Strategic Information Systems Planning in a Social Services Department - an organizational approach to change

Chris Mowles, Sue Musk and Sarah Charlwood

"There is nothing more difficult to carry out, no more doubtful of success, no more dangerous to handle, than to initiate a new order of things. For the reformer has enemies in all who profit by the old order, and only lukewarm defenders in all those who would profit by the new order. This lukewarmness arises partly from fear of adversaries who have the law in their favour, and partly from the incredulity of mankind who do not truly believe in anything new until they have had actual experience of it."

(Machiavelli, The Prince)

Brief organizational history

Oxfordshire Social Services Department (OSSD) is probably unexceptional among Social Services Departments nationally in having adopted an emergent approach to its information systems and technology needs. With only the client index available County-wide on the County X25 network, most other systems, such as the Child Protection and looked after systems on the children's side, or the home care provider system on the adult side, have been developed as discrete and stand-alone systems in response to emergent strategic need.

Pcs are few and far between, particularly in local offices, and are still used mostly as a resource for administrators and secretaries. Limited resources are managed tightly and opportunistically, to develop a particular system here, or to install a LAN in a local office there, and the Department tries at every turn to maximise the benefits from its facilities management contract, which supports the ongoing replacement and maintenance of existing IT.

Data processing and analysis have been largely handled at the centre, either by the small and sparingly resourced Performance Information Unit, or by the outsourced facilities management company. The main recipients of performance and management information have been the Senior Management Team (SMT), or centrally based Principal Officers, some of whom are more assiduous than others in assuring that the information is disseminated beyond the centre.

Some organizational structures have been set up to inspire discussion about and interest in Information Systems and Technology (IS and T) and how it can facilitate the work, and these groups have been charged with developing thematic or geographical priorities.

With the advent of the Children Act and Care in the Community, OSSD, like all other authorities, engaged in a root and branch review of its social work processes and systems. The new world order gave an enormous impetus to the need for good and user-friendly information systems, as

Chris Mowles works for Oxfordshire Social Services Department as Departmental Systems Officer. Sue Musk is an independent consultant. Sarah Charlwood is a business consultant for Capita Management Services Ltd.

Contact them via:

*Chris Mowles,
Oxfordshire Social Services
Department,
Speedwell House,
Speedwell Street,
Oxford, OX1 1UJ*

Phone: 0895 815853

Roy Griffiths (1988) observed:

"The present lack of refined information systems and management accounting within any of the authorities to whom one might look centrally or locally to be responsible for providing care, would plunge most organizations in the private sector into a quick and merciful liquidation."

Moreover, those workers in OSSD who have already had a taste for what IS and T could do for them are ready for even more information along with more control over inputs and outputs. Those areas of the service as yet untouched by IS and T developments are becoming increasingly aware of the constraints of current working practices, and this is particularly fed by new workers arriving from other authorities where new technology is already well established.

Michael Earl (1989) describes four stages of planning and control of new technology in organizations; initiation, contagion, control and maturity, arguing that each stage demands a different management approach. During 1994 Oxfordshire found itself in the transition between a period of initiation and a likely wave of contagion, and so needed to progress, as Earl describes, from a stage where diffusion of new technology is better achieved by loose direction, to a period where the direction needs integration and tighter reining in. It was time for a strategic approach to IS and T.

In search of a methodology

With IS and T fairly underdeveloped in Oxfordshire, and with the usual scarce resources available in the public services it was important to build a convincing case for an integrated approach to IS and T, particularly in the light of well-publicised failures of other IT projects. The outcome of the exercise would have to be clear and seen as relevant to the Departmental needs.

Public Sector Context. In an article that discusses why certain issues get on to senior managers' agendas and not others, Dutton (1988), argues that the issue has a greater chance of successful inclusion if it is seen as being not too complex, salient, and similar to other subjects encountered in the past. Oxfordshire has had no experience of Strategic Systems Information Planning (SISP), so the choice of planning methodology and the way it was undertaken were likely to be as important decisions as the

product of the methodology itself. A critical success factor was likely to be the convincing of senior managers of the strategic importance of IT as Lederer and Mendolow (1988) have argued. Obviously, a large element of judgment was likely to enter into the calculation about what was likely to be acceptable and successful in Oxfordshire, which could only be arrived at by matching the literature with our understanding of OSSD's cultural context and history.

Lederer and Sethi (1988) define SISP as "the process of deciding the objectives for organizational computing and identifying potential computer applications which the organization should implement." Of the four areas of SISP delineated by the literature, aligning investment in IS with business goals; exploiting IT for competitive advantage; directing efficient and effective management of IS resources; developing technology policies and architecture, Earl (1993) suggests that it is the first two areas that dominate.

How relevant to the public sector is the literature exploring the nexus between organizational strategy and SISP? A literature search reveals that most commentators primarily write from the standpoint of the private sector, and predominantly use more formalistic business planning methodologies. Ward, Griffiths and Whitmore (1990), and Hickey (1993) are both recent examples of contributors to the debate who argue the need to link IS and T strategy to business strategy, and at the same time suggest a number of technical-rational techniques to derive business strategy and tie in the IS and T resources to underpin it. Competitive advantage for profit, the ability to diversify away from over-maturing businesses, and the need to keep abreast of shorter product cycles are frequently cited as the main business drivers of SISP in the private sector.

It is common to find Porter's (1985) five forces analysis among private sector methodologies to derive business strategy, and most of the case studies demonstrate private companies gaining new markets or competitive edge through the adoption of a strategic approach to IS and T.

Would using the language of the market place, and the concept of competitive advantage achieve the necessary results in Oxfordshire? Although there is no case for arguing that Porter and market-oriented business analysis methodologies are irrelevant to the public sector it is important to understand the

concepts underpinning a strategic planning approach yet reinterpret them from a public sector perspective.

Wilkinson and Pedler (1995) argue that, although it is increasingly difficult to demarcate between public and private, there are certain issues, such as accountability, that cannot be delegated away to the market along with policy, equity, access and regulation. The rationale of public sector services is not to make a profit, but to make a difference. The public sector faces political and environmental constraints that produces a very complex environment in which to undertake strategic planning (Tutt, Neale and Warburton, 1992), and this complex public sector environment contributes to the fact that senior managers have shorter planning horizons than those in the private sector, and that information needs in the public sector are likely to be that much harder to identify (Caudle, Gorr and Newcomer, 1991).

Galliers (1993) has argued that even in the private sector competitive advantage was an over used concept, and that a more holistic approach is needed to get the best from new technology. It is not the technology which is important but the way it is used.

How useful is planning anyway? In a highly political and ambiguous environment it is sometimes difficult to sustain an argument about the value of strategic planning. There have long been doubts about the value of strategic planning in general and the tools that are used to delineate business direction, expressed most devastatingly by Quinn (1980):

"A good deal of corporate planning I have observed is like a ritual rain dance; it has no effect on the weather that follows, but those who engage in it think it does. Moreover, it seems to me that much of the advice and instruction related to corporate planning is directed at improving the dancing, not the weather."

More recently Stacey (1991) and Mintzberg (1994), argued that the sheer complexity of most organizations is inadequately served by mostly over rigid and over rational planning methodologies. Mintzberg describes strategy as a "complex, interactive and evolutionary process best described as one of adaptive learning."

In attempting a SISP exercise in Oxfordshire, given how relatively underdeveloped we were, it was

important to be realistic about what could actually be achieved through planning, and to be clear about what else we were attempting alongside the production of a plan. And although planning does have its limitations, Blennerhasset and Galvin (1993) have argued that, because of the long lead-in time of IT, a plan is needed. In addition to the plan we were looking for a process to sustain learning and discussion at the same time in a way that would carry forward all sections of the organization.

The organization's ability to learn through planning, and plan through learning forms the basis of what Huysman, Fischer and Heng (1993) argue contributes to successful SISP, where the formal plan is less important than the emerging learning process. And this view coincides with what Weinstein (1995) thinks is best achieved by a strategic planning exercise, where the planning should stimulate debate, bring issues to the surface, win people's commitment and anticipate the need for change. Strategic thinking should provoke debate, but not be a blueprint.

Organizational learning and the inter-relation between the nature of the organization and its culture, and the impact that this will have on any strategic thinking exercise, are themes which are becoming more explicit and important in the literature that is concerned with thinking through how best to tie in IS and T strategy to the business. Reponen (1993) points out that the questions of IS and T strategy and planning are as much about managerial issues as they are about technical ones, while Chandler (1991) has argued that formal systems analysis methods can often run counter to strategic imperatives - while everyone else in the organization is trying to cope with change and ambiguity, the systems analyst wants to reduce uncertainty to effect a design. Wassenaar (1991) cites organizational culture and management's attitudes to planning in general as well as the organization's existing experience of IS and T as being key variables in linking SISP to business planning.

In a recent report that evaluates the successes and failures of large scale IT projects, Griffiths and Willcocks (1994) cite organizational learning and governance ("how major stakeholders organise themselves to establish objectives") alongside project management and market need as being key determinants of successful IT project implementation. In choosing an organization-appropriate methodology that could work with the particularities of the public

sector during a period of change, as well as the specificities of OSSD, with its lack of wide dispersal of IS and T knowledge and experience, it was important for the project team to take on board the lessons from the broader strategic thinking and SISP debate. The lessons that applied to public and private organizations cited in Griffiths and Willcocks report also applied to OSSD. We needed to take what Earl (1993) in his taxonomy of SISP approaches calls the "organizational approach", one where there is an attempt at continuous integration between the IS function and the organization, where there is an emphasis on process, and especially management understanding and involvement. Senior management need to be tied in at key stages of the process, as described by Knight and Silk (1990), and given opportunities to comment on the problem and on the proposed solution.

It was for these reasons that the project team decided to take a multi-faceted approach to elicit business needs and IS and T strategy, and involve the Department in a process that worked bottom up top down and inside out (Earl, 1989).

Bottom up. A questionnaire was sent to 1 in 5 Departmental employees first and foremost to involve them in the process of SISP planning as well as to elicit a range of different responses:

- ▶ the range and depth of computer use and knowledge, geographically and functionally.
- ▶ staff systems needs for supporting work with clients, posing questions set against four different models of network predicated on client records held on -
 - individual lap-tops
 - local office databases
 - Divisional databases
 - A central database.
- ▶ the respondent's need for e-mail.
- ▶ general needs such as the need to share information with Health, and any other observations.

Top down. The project team sought interviews with all Senior Managers and Principal Officers. Using a structured questionnaire and models to demonstrate possible configurations, the intention was to involve senior managers in the process and raise awareness of

the possibilities. Particular attention was paid to anecdotes, tangents and asides. The structured interview sought to elicit:

- ▶ an overview of their existing systems, their strengths and weaknesses (existing systems portfolios).
- ▶ a sense of the future business direction and therefore how IS and T could help underpin that direction (critical success factors).

Inside out. The project team sought to test out their assumptions and ideas with consultants outside the process. These included lecturers at Brookes University, consultants from Capita managed Services Ltd, and a consultant to the Education Department.

Results - the bottom up questionnaire

The questionnaire was sent out to a random sample of 1 in 5 employees at the end of July 1994. In total 776 questionnaires were distributed and 199 completed forms were received by the deadline of 10 August 1994: an overall response rate of 25%.

Computer literacy. The survey confirms that computer literacy is not widespread within the Department. Overall 53% of respondents do not use any computer applications at present. However there is quite a wide variation between different groups of staff as shown by the following results.

Percentage not using any computer applications:

<i>Staff Group</i>	<i>Percentage</i>
Admin	10
Managers	36
Fieldworkers	61
Care Assistants	89
<i>Client Group</i>	
Working with Elderly Clients	67
Working with Children and Families	44

How workers want to use IS and T. At one end of the spectrum there is very little support for the use of lap top computers in client's homes. However, this may be in part due to lack of exposure to IT amongst workers, and perceptions about levels of awareness and hostility to IT from the Department's clients. Over time, the level of acceptance of IT may change both within and without the Department.

Meanwhile, with the exception of the Mental Health Teams, and a proportion of the Children's Teams the majority of respondents said they would be satisfied with databases at local office level, provided that Divisional and County aggregates could be elicited in a timely, regular, consistent and comprehensible way.

At what level is access to client data required?

Immediate access to client data was generally identified as a top priority. However, there are differences between Divisions, client groups and type of worker as to whether immediate access is required to clients at local or Divisional or County wide level. The survey indicates the following.

- ▶ For most Care Assistants (almost 70%), access to local client data would satisfy their requirements.
- ▶ There is less agreement between Fieldworkers. Access to local client information would satisfy the requirements of 38% of fieldworkers, but 33% require immediate access to County wide data.
- ▶ The survey data suggests that this difference can be explained by the different requirements for different client groups.
- ▶ For those who work with the elderly the main focus is local clients, with 63% of staff seeking access to local client data only.
- ▶ For Mental Health, 57% were seeking access to County wide data and 29 % to Divisional data.
- ▶ For Learning Disabilities there was a greater emphasis on local (53%) and Divisional (41%) data.
- ▶ For Children & Families 34% require access to County wide data whilst 38% seek access to local data only. It is assumed that this reflects the different areas of work within the client group: eg Child Protection compared with

general support for Children & Families.

- ▶ The survey suggests that the requirements of managers also vary, with 42% of managers seeking immediate access to local information only and 39% requiring immediate access to Divisional data. It is assumed that this reflects different spread of responsibilities/ management structures.

Sending and receiving messages. 35% of respondents would be satisfied with a facility to send and receive messages within their own Division. 43 % of respondents want a messaging facility which will operate County wide. The demand for County wide messaging is from finance staff, managers, and fieldworkers, particularly staff working with Mental Health clients and Children & Families.

Sharing data with Health colleagues. Overall 62% of respondents indicated that sharing client data with health colleagues is very important.

Structured interviews with senior managers

14 interviews were conducted with senior managers in the Department according to the methodology outlined above.

The principal observation to make about the interviews with senior managers is that at least five different business models of the Department were operating amongst the senior management team, according to their area of interest and responsibility. There was a much greater sense among interviewees of the Department consisting of a configuration of Strategic Business Units (SBUs), although there was a potentially fundamental disagreement about what the shape of those SBUs are, and a much weaker sense of what the corporate business is, apart from being a loose federation of SBUs, a sum of the parts.

It is possible to describe OSSD at five different physical levels, starting with the cost centre at the lowest level, the area office next, which could be a group of cost centres, the locality at the next level up, which would presume some information sharing with other agencies, a Division as a group of localities and lastly the aggregate County. The members of SMT and Principal Officers placed different emphases on which configuration was most important.

For example, Principal Officers, who have thematic

but not line management responsibility, had a very clear sense of, say, provider units such as Elderly Peoples Homes (EPHs) as being an SBU County wide, while Divisional Directors had a much stronger geographical sense of the SBU as a Divisional group of EPHs. Meanwhile, the Commissioning Team considered the locality and the aggregate County to be of prime importance, while Personnel and Training and Finance wanted to enhance cost centre management and the aggregate County.

To a certain degree the Senior Managers' different perspectives were inevitable given their various roles and responsibilities. The Department is either like a holding company with separate sub-businesses, or it needs to have a clearer corporate view of how the parts relate to the whole.

Some other common themes

There appeared to be a considerable systems development backlog arising in each of the areas of the Department. Interviewees were not always clear about how the development of systems was being formally prioritised and planned.

A number of interviewees felt that the amount of support that they had for the development and project management of systems was inadequate. Divisional Directors in particular felt that the support was over-centralised.

As an addendum to the above, different IS and T models were tested out with respondents, when it was explained that more systems support staff were implied by the models all respondents agreed that this was necessary.

It was clear from the interviews that both the Personnel and Finance Divisions were also driven by factors outside the Department, ie the needs of County Personnel and Finance initiatives, as well as the Departmental imperatives. In the case of Finance, this is likely to slow the progress of development.

Whatever the emphasis concerning configuration, the stronger sense of being an SBU has brought about clearer demands for information to run the "business", whatever shape the business is. Foremost among them has been the call for much better financial information, which is universally regarded as being inadequate for the task of running efficient businesses.

Most interviewees felt that there was inadequate dissemination of equipment, training and software.

The above observation was shared by those respondents who filled in the discursive part of the questionnaire.

There was an acceptance amongst senior managers that timeliness, understandability and consistency were more important than speed. For example, senior managers were prepared to accept a delay in receiving information, except in exceptional circumstances, in return for a consistent and comprehensive picture of what is happening in their area of the Department.

Overall conclusions

Because the overwhelming majority of questionnaire respondents favoured local systems, the project team eventually went to the SMT with a report that recommended a network of networks, with databases built at local office level. The report recommended applications to support better financial management, the children's work, care management, as well as e-mail and a Departmental policy database.

Although the project team is still in discussion with the Department's facilities management company and is still listening to different and perhaps new technological options, the overwhelming priorities for the Department are that the overall architecture should be flexible, devolved and able to meet local users' needs. Because of the lack of penetration of IS and T in the Department the project team concluded that it would be unwise to pursue a highly technological and innovative approach.

Bearing mind that the response rate for such questionnaires is generally low, a response rate of 25% suggests that there is a general interest within the Department for IS&T issues. However, at the moment OSSD is a three speed Department: 50% of the Department's staff cannot use computer applications - this is particularly noticeable among staff who work with the elderly client group; the other half of the Department is divided into the majority who can use basic applications such as word processing and/or the client index, and a small minority who are comfortable with more complex applications.

The project team has used the opportunity to build on the strategic planning exercise by continuing to

discuss the outcomes with end users and with managers, as well as with the Departmental IS and T discussion fora. While the proposal has entered the SMT agenda for discussion and decision the project team is continuing to keep the proposals under review and to research how they might be taken forward in a systematic and tightly managed way.

The problem facing the project team at the beginning of the exercise was how to move forward a Department that had not been in the forefront of embracing technological change, where, according to the literature, the very lack of exposure to IS and T could prejudice successful adoption in the future. Undertaking the exercise has shown that there is a significant groundswell of support for wider use of IT, better systems and more and devolved systems support. Workers and managers in the new environment are hungry for information to run their part of the organisation and are frustrated at current IS and T provision.

The choice of methodology and an exploration of our expectations of what could be achieved have been critical in getting the results on senior managers' agenda, and interest and discussion from the rest of the organization. Using an organizational approach, the project team has generated a rich discussion on the way forward, which can only ease the introduction of new IT and applications when they come.

References:

- Blennerhasset, L 'The strategic dimension', in *IT Strategy for Business*, Ed Peppard, J and Galvin, E, Pitman, 1993.
- Caudle, S.L, Gorr, WL and Newcomer, K, 'Key Information Systems Management Issues for the Public Sector', in *MIS Quarterly*, Vol.15 No.2, June 1991.
- Chandler, R "Why systems analysis methodologies fail to respond to strategic change, " in *Business Strategy and Information Technology*, Eds Sutherland, E and Morieux, Y, Routledge, 1991.
- Dutton, J "Understanding strategic agenda building and its implications for managing change, " in *Managing Ambiguity and Change*, Eds Pondy, L , Boland, R and Thomas, H, Wiley, 1988.
- Earl, M, *Management Strategies for Information Technology*, Prentice Hall, 1989.
- Earl, M 'Experiences in Strategic Information systems planning', *MIS Quarterly*, Vol.17 No.1, March 1993.
- Galliers, RD, 'IT strategies:beyond competitive advantage', in *Journal of Information Systems*, Vol.2 No.4, Dec 93.
- Griffiths, R, *Community Care: Agenda for Action*, HMSO, 1988.
- Griffiths, C and Willcocks, L, 'Are major information technology projects worth the risk?', Oxford Institute of Information Management, Templeton College, 1994.
- Hickey, G, 'Strategic IS and T Planning', in *IT Strategy for Business*, Ed Peppard, J, Pitman, 1993.
- Huysman, M, Fischer, SJ and Heng MSH 'An Organizational Learning Perspective on Information Systems Planning', *Journal of Strategic Information Systems*, Vol .3 No.3, 1993.
- Knight, AV and Silk DJ, *Managing Information*, McGraw-Hill, 1990.
- Lederer, AL and Sethi, V 'The Implementation of Strategic Information Systems Planning Methodologies', *MIS Quarterly*, Vol.12 No.3, 1988.
- Lederer, AL and Mendelow , A, 'Convincing top management of the strategic potential of Information Systems," in *MIS Quarterly*, Vol.12 No. 4, 1988.
- Mintzberg, H *The Rise and Fall of Strategic Planning*, Prentice Hall, 1994.
- Porter, M *Competitive Advantage*, Free Press, 1985.
- Reponen, T, 'Strategic Information Systems - a Conceptual Analysis', *Journal of Strategic Information Systems*, Vol .2 No.2, June 1993.
- Stacey, R, *The Chaos Frontier: Creative Strategic Control for Business*, Butterworth Heineman, 1991.
- Tutt, N, Neale, J and Warburton, W 'Strategic Management in Social Services', in Ed Pollitt, C, *A Handbook of Public Service Management*, Blackwell, 1992.
- Ward, J, Griffiths, P and Whitmore, P, *Strategic Planning for Information Systems*, Wiley, 1990.

Wassenaar, A, 'Linking Information Systems Planning to Business Planning', in Eds Sutherland, E and Morieux, Y, *Business Strategy and Information Technology*, Routledge, 1991.

Wilkinson, D and Pedler, M, 'Strategic thinking in Public Service,' in Ed Garratt, B, *Developing Strategic Thought*, McGraw-Hill, 1995.

Weinstein, B, 'The Use of Scenario Thinking: can a scenario a day keep the doctor away?', in Ed Garratt, B, *Developing Strategic Thought*, McGraw-Hill, 1995.

A Case Study which Demonstrates the Innovative Use of IT with People who have Learning Disabilities

John Bates and Richard Pugh

The Intensive Support Team

The Intensive Support Team (IST), funded by the All Wales Strategy (1983), was established in 1989 and became operational in the spring of 1990. The team works closely with all of the relevant services within Clwyd County Council, and with other independent agencies. Its primary role is to provide additional support, resources and advice to carers working with people with learning difficulties whose support in the community is threatened by their challenging behaviour.

The team are careful in their use of the term "challenging behaviour" not to adopt a pathological approach in which the causes of the problem are always assumed to lie with the individual service user. Early definitions concentrated on the negative effects the behaviour was having on those around the person. (Emerson et al, 1987; Towel, 1987). In reviewing these effects Emerson et al (1987) reported that challenging behaviour often led to the breakdown of community living arrangements, elevated stress levels in carers and increased the risk of abuse, exclusion or rejection. The team argue that:

"....two perspectives need to be taken into account; that of the individual and that of the relevant service or community. Combining these perspectives, in our view, helps to define the challenge more precisely in terms of the development of services such that fewer behaviours function as a barrier to community integration and social participation".

(IST, 1992, p2)

This more comprehensive approach is reflected in the team's definition of challenging behaviour, which they describe as:

"enduring patterns of behaviour which, at a given point in time, render what would be considered the ordinary range of services temporarily ineffective either as a function of the frequency, intensity or duration of

John Bates is a Senior Lecturer in Social Work and Richard Pugh a Principal Lecturer in Social Work at the North East Wales Institute of Higher Education, Wrexham.

Contact them at:

North East Wales Institute of Higher Education,
Plas Coch,
Wrexham, LL11 2AW.
Phone: (John Bates): 0743 367305
E-mail: batesj@newi.ac.uk

the behaviour itself, or because of its negative consequences upon the life style of the people concerned."

(IST, 1992, p2)

Challenging behaviour thus encompasses such activities as self injury, extreme repetition, inappropriate sexual behaviour, aggression and physical violence.

Currently, anyone can refer to the IST, but the team have maintained a policy of working intensively with only a few clients rather than spreading themselves thinly across the county. Thus they have a small highly focused case load, selected after an initial interview by the following criteria:

1. The severity of the challenge
2. The risk of exclusion from the community
3. The ability of local services to take on the implications of a proposed intervention plan.

Consequently, the team works with people irrespective of their degree of handicap: children or adults from a wide range of community-based settings including shared living, work places, schools and family homes.

Assessment

Assessment which involves existing local service providers is based upon the methodology proposed by La Vigna, Willis and Shaul (1990). It is a paper-based format which includes:

- ▶ the reason for referral
- ▶ a description of services
- ▶ a person portrait
- ▶ current and previous living arrangements
- ▶ current and previous day/education placements
- ▶ current and previous health and medical status
- ▶ previous and current interventions
- ▶ description of challenging behaviour
- ▶ history of behavioural challenges
- ▶ an ecological analysis
- ▶ a consequence analysis
- ▶ an analysis of meaning
- ▶ a motivational analysis
- ▶ a mediator analysis

In addition to this information, staff from the team together with locally based staff, will collect base line

data. It is at this point that information technology is used to accurately record the following data:

- ▶ the frequency and/or duration of challenging behaviour
- ▶ the extent to which community facilities are used
- ▶ the extent to which participation occurs
- ▶ the extent to which relationships are evident
- ▶ the pattern, style and content of carer/client interactions

The IST have found that this level of intensive measurement is crucial in order to accurately assess the problem, to plan for its reduction and replacement and to evaluate the success of intervention. For staff trying to cope with a very difficult and disturbed client it is easy to misjudge the frequency and intensity of these behaviours - "she does it all the time". Often, it is argued, the behaviour is, in fact, rare but can be so distressing to staff or families that it appears continuous. The team suggest that such an intensive assessment is essential, because all behaviours are variable in frequency, duration and intensity. Making an accurate definition of the behaviours to be observed and recorded, however, can in itself be difficult. When is a scream a scream? When does a temper tantrum actually finish? Interestingly, as one of the team pointed out, the actual measuring process itself seems to be beneficial in that staff/families see something is being done. We will return to this point later in this paper.

The analysis of the challenging behaviour also attempts to record the sequence of behaviour and identify its possible functions. This analysis of the behaviour is completed by interview, direct or participant observation, analogue assessment and/or real time event recording. Of course, measuring baseline behaviour and conducting functional analyses is not new. Conventionally many of these observations have been conducted with pen and paper, by observing an individual repeatedly at set intervals. The collection of the data is rather like taking a series of still photographs and as a result of these observations a picture is built up of how much time the behaviour occupies and the function that it may serve for the client. So while event recording, time sampling and functional analyses using analogue assessments have been around for many years, what is interesting is how the IST have adopted the use of information technology to record and then analyse their data.

For the recording of their data, the IST have adopted the CTS program developed by McGill, Hewson and Emerson at the Centre for Applied Psychology of Social Care at the University of Kent. The program was written for the Psion Organiser and enables recording of the frequency and duration of up to 26 events. The IST have found that the unobtrusive nature of the Psion a distinct advantage as it allows for relatively discreet data collection.

Up to 26 keys on the Psion can be allocated to particular behaviours and used as event or duration recorders. For example, Key A may be defined as an event record of self injurious behaviour (SIB), to be pressed each time an instance of SIB occurs. The program will then provide information about the frequency, the time of occurrence and the duration of each instance of SIB. Key Y may be defined as a duration record of looking out of the window, it will thus be pressed every time the person looks out of the window to "start" the record and pressed again when the person stops looking out of the window to "finish" the record. The program is therefore able to provide information about particular defined events and to record other simultaneous or overlapping behaviours.

The program is set up with a number of mutually exclusive key sets, which remove the necessity to manually "turn off" an event when it is replaced by another member of the same set. For example, as in Figure 1, the keys G, H, I, J, K, L, might identify six mutually exclusive kinds of activity in which a person could be engaged - say: active/passive; talking/not talking; sleeping/waking. If the person starts off doing nothing key G will be "on" but will be automatically switched off when the person starts doing the housework and key I is pressed.

Figure 1:

The program comes set with default keys as follows:

Frequency keys:
 ABCDEF

Mutually exclusive keys:

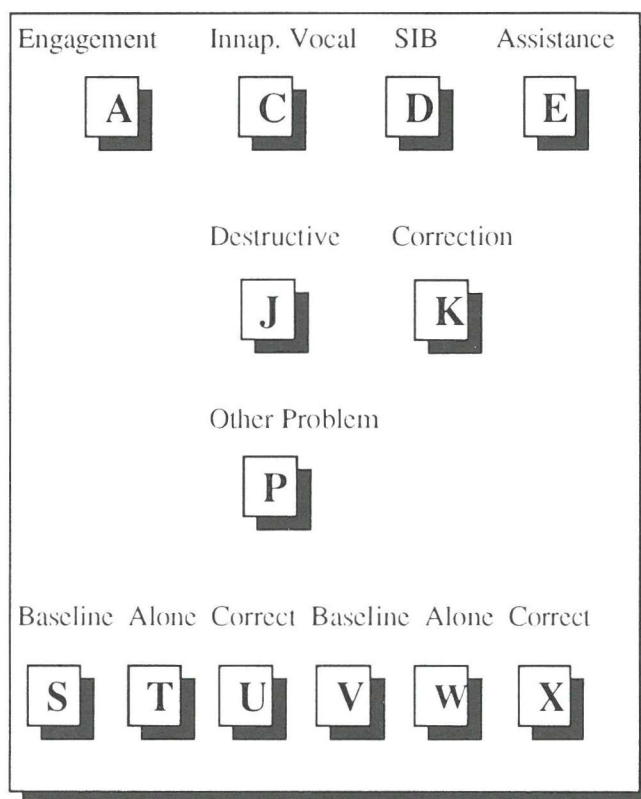
 Set 1 GHIJKL

 Set 2 MNOPQR

Depending upon the analysis they are engaged in, team members may ignore the default settings and use

a smaller range of clustered keys, rather than ones spread out over the entire keyboard. If the default is not used it allows the worker to "cluster" keys to suit their particular needs and the type of assessment being undertaken. This makes it easier to enter the data and reflects the fact that typically there are less than four factors being recorded, thus a wide range of options is not required.

Figure 2:



In this example (Fig. 2) 13 keys are organised into four clusters, the first containing A only, refers to client engagement. The second, C, D, J, P refers to the client's challenging behaviour. The third cluster E and K, refers to staff behaviour (assistance and correction) and the fourth cluster, S, T, U, V, W, X, refers to the type of context in which the observations were made.

At the end of the session the Psion will print out raw data stating the filename, date and start time. Each set of data is given, timed from a zero start point and includes information on the frequency and duration (Fig. 3).

Figure 3:

Frequency - totals for each specified key
Duration - (for each specified key) :-
 number of episodes/total time/average time per episode
 minimum time per episode/ maximum time per episode
 standard deviation

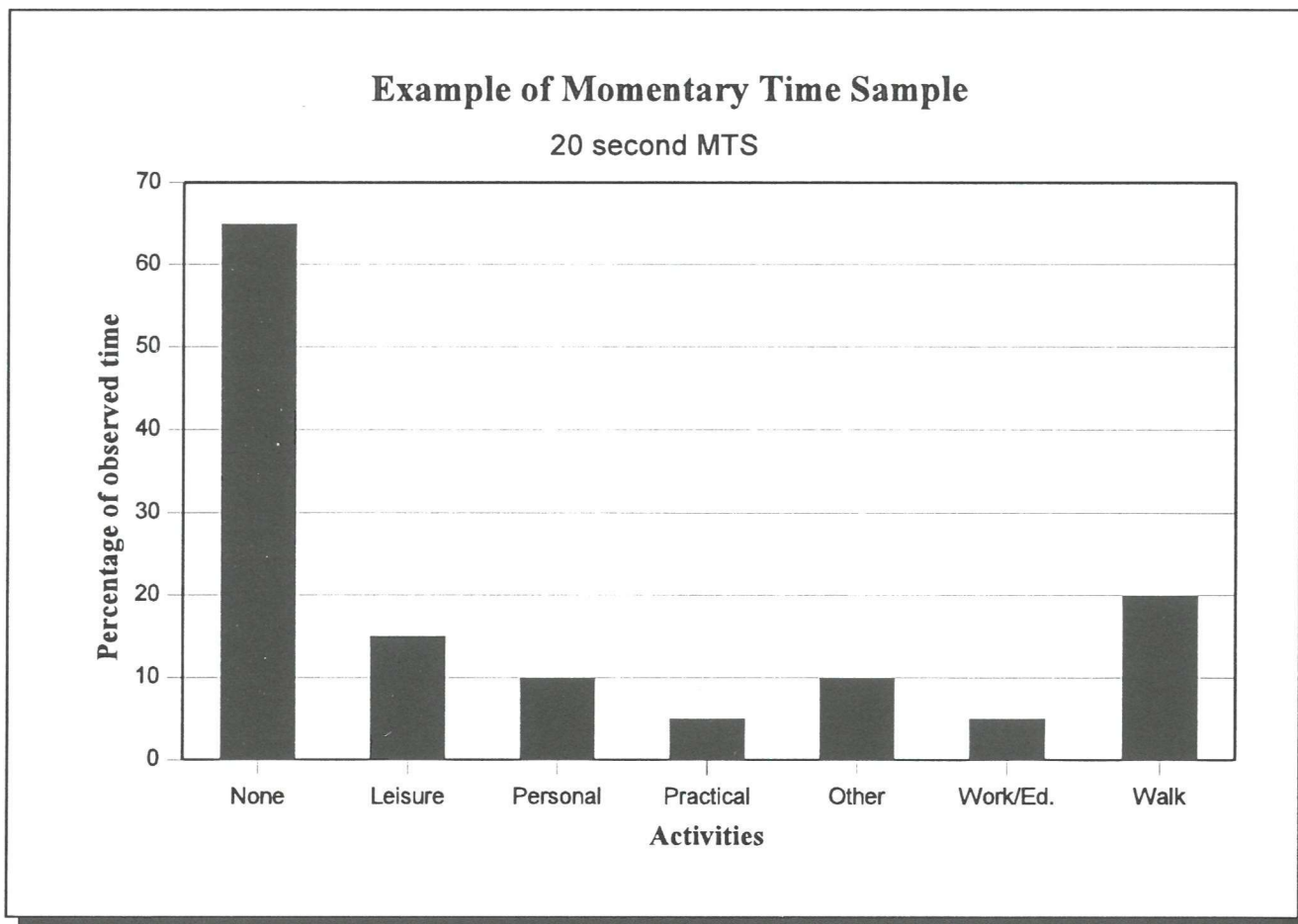
The "Analyse" function on the program will produce data to reveal the frequency and duration for each key for a pre-specified interval. Although this analytical facility is available within the program, the team tend to upload files to a PC using a Comms Link. These are transferred as ASCII files into a text editor or a word processor. Graphical representation of the data is obtained by entering the data manually into *SuperCalc* or *Lotus 123*.

An additional component of the appraisal process is the Ecological Assessment. This also necessitates the collection of data which is needed to review other

factors, such as social contact; meaningful activities, educational activities and positive/negative staff contact. Such analyses may be conducted over a period of several weeks until a clear picture of the client and his/her environment begins to emerge. In addition, carers may be asked to collect data in the form of a weekly log of community activity or household activities and so on. The intensive nature and breadth of data gathering is intended to produce a more accurate picture of the person's activity/ disturbance levels and offer a balance over time. This is important, because if, for example, the person is very active one week but does little in the following one, perhaps because the staff are busy and have less time for stimulating activities with the client, then it may have a bearing upon the individuals challenging behaviour. Research shows challenging behaviour revealing inappropriate vocalisation taking place at about 30% of the observed time.

Fig. 4 shows the results for part of the ecological analysis and indicates the client's social activity level to be quite low for almost 70% of the observed time.

Figure 4:



The IST believe that these graphical representations have the advantage of focusing carers attention on the problem in hand and, most importantly, facilitate a more focused intervention. The summary data in Fig. 5 clearly reveals the assessment results.

Figure 5:

ASSESSMENT AND INTERVENTION PLAN

Summary data - momentary time sample
948 data entry points

ACTIVITY	DOMAIN	% OF OBSERVED TIME
	None	71.92
	Leisure	08.97
	Personal	10.13
	Practical (electrical appliances)	00.42
	Practical (all other)	04.83
	Work/education	00.00
	Walking	43.06

SOCIAL CLIENTS PERSPECTIVE	DOMAIN	% OF OBSERVED TIME
	None	68.83
	Clear interaction	23.93
	Unclear interaction	00.99
	To observer	06.10

CONTACT FROM STAFF	DOMAIN	% OF OBSERVED TIME
	None	79.08
	Positive	09.13
	Negative	00.42
	Neutral	08.26
	Assistance	02.63
	Other client	00.00

PROBLEM	None	Stim	SIB	Agg.	Dam.	Voc.	Door	Quest's
BEHAVIOUR	78.86	00.70	00.90	00.00	00.09	07.04	02.43	10.91

Occasionally, the IST conduct analogue assessments to clarify what function an individual's challenging behaviour serves for them. These additional assessments attempt to selectively control some of the relevant causative factors in order to determine their effect. The procedure requires brief but repeated changes to the person's environment under controlled conditions, this only takes place after the construction of a working hypothesis, which is usually drawn up after a period of informal observation and discussion with staff. Experimental conditions are then designed to replicate conditions which an observer would expect to see operating in the natural environment. For example, if the client is violent and abusive it may be then possible to establish whether they use such behaviour to avoid demands, or to obtain access to preferred objects or activities, or as a form of self stimulation. Frequency and duration data is again gathered using the Psion and analysed. Sometimes, the team will use video recordings of the behaviour to aid the analysis. The data is then recorded using software designed for lag sequential analysis and the resulting data transferred from the Psion to the PC via a Comms link. The data is analysed using *HARCLAG*, a program designed at Manchester University and is then produced on a *Lotus 123* spread sheet. Entering the data entry is a slow process and the whole process is thought by the IST to be rather complex and time consuming.

Outcomes

The intervention plan, involving all interested parties, is drawn up after the initial data gathering and analysis. There is a wide range of possible forms of intervention, short term behavioural objectives may be set, or the environment manipulated in some way to increase the client's sense of well-being and thus reduce the potential for further challenging behaviour. Programmes for staff skill development may be considered together with planned response strategies, to enable them to react more effectively to the potentially troubling behaviour. The IST may remain involved for up to two years, though the responsibility of case management always remains at the local level.

Data collection will continue in order to evaluate the effectiveness of the interventions. This is especially helpful in identifying more gradual changes which may easily be missed in the day to day interactions between the client and the staff and carers. This continuing data collection may clarify uncertainties

and help expunge mistaken beliefs about the challenging behaviour. An independent evaluation of consumer satisfaction (Gilbert 1992) revealed a high level of satisfaction with the IST, which interestingly was independent of any improvements in behaviour. For those serving the clients directly, i.e. community staff, families and so on, the general results indicated a high degree of satisfaction with the service.

As with all behavioural approaches one of the main concerns is the ethical propriety of the assessment and intervention. Within the IST, ethical considerations and the risk of the further oppression of already disadvantaged people, is a constant area of discussion. Safeguards intended to prevent distress or potential abuse, such as pro forma checklists, are built in to every assessment and intervention plan. Many of the clients have no language and limited communication skills and many lack formal advocates to represent their interests, thus issues around consent or "informed choice" remain a prime focus of concern.

The introduction of an extensive use of information technology in this area, thus raises further ethical dilemmas such as, who controls, has access to and is free to use the information generated? Computers are not ethically neutral. As Glastonbury and La Mendola have argued:

"Information technology offers intelligence without integrity. As such it can take on whatever rules or moral standards its designers and controllers choose"

(1992)

Discussion

The results of this approach seem positive especially in terms of the opportunities it offers in the quantification, analysis and interpretation of what might otherwise be seen as random, unconnected events or simply viewed as pathological aspects of the service user's behaviour. Team members believe that IT has made a positive contribution to their work, through facilitating the handling and comprehension of complex data. New staff to the team seem to adapt remarkably quickly to a method of working that is both novel and challenging. The use of Information Technology within a clinical context has been an evolutionary one for the IST, and they recognise the need for a single piece of software that will allow data transfer, manipulation, analysis and graphical

representation. Currently many team members leave the statistical analysis and representation to one proficient member of the team, because of its complex and time consuming nature.

Although carers and family members are always involved in the assessment process it is possible that the use of such sophisticated and "scientific" presentations may in fact obfuscate events or even be counter productive in terms of their effective participation. As argued elsewhere, (Bates 1995) social work takes place within a "messy" environment, a "swampy lowland" (Schon, 1983) of uncertainty influenced by conflicting values, political differences, ambiguity and inadequate theoretical constructs. For many residential and community workers beset with problems of under-resourcing, poor training, and professional isolation, effective interaction with this technological approach may simply be impossible. In addition, workers may have suspicions about the use of Information Technology which they may perceive to be at odds with their expectations of their role within their agency.

The application of Information Technology also raises the more general question of whether social work processes and outcomes can ever be subject to such detailed measurement for the purpose of intervention or outcome evaluation. The imprecise nature of social work activity may encourage an uncritical acceptance of a technology which seems to offer clarity and precision, while at the same time, discouraging creativity, intuition and experience. In an uncertain world where human behaviour is multi-causal, IT can make the world seem simpler and more clear.

The following discussion elaborates upon these themes and should not be read as a criticism of the IST and their methods, it is intended as a more general reflection upon the use of IT within human services.

Technology constructing reality

The use of Information Technology within human services has the potential to shape the reality of the people who use it. This aspect of the impact of technology has, historically, been thought to be problematic. The Luddites' destruction of machinery was primarily a demonstration of their resistance to its capacity for making them redundant, but arguably, it also reflected a more general suspicion of the role

of technology in social life. Many writers, of whom Marx was amongst the first, have sought to understand what the implications of "new" technology, and new ideas about how to use it, might be. Marx (1963). In his description and analysis of alienation, he proposed that the "new" industrial technology and the systems of production organised around it, were profoundly damaging to humans and their social relations. Perhaps the most significant factor of this alienation was the propensity to dehumanise other people, to treat them as objects rather than as fellow humans.

This tendency towards the objectification of the other, is not of course, the sole preserve of technology, but it is perhaps more pervasive. The capacity of technology to magnify human efforts or to do new things, has always been a powerful influence in ensuring its acceptance. We may find it easy to accept that the awesome power of the first nuclear explosion was in part, responsible for the acceptance of nuclear weapons, but we may ignore the seemingly more modest adaptations of thought that have been made. These adaptations to technology create or sustain particular views of the world and other people in three main ways.

The problem of reductivism. By treating human behaviour as a quantifiable phenomenon there is almost inevitably a reduction in the complexity of the behaviour under examination. This reductivism lies at the heart of most systematisation of human behaviour into conceptual frameworks or models. Since the main aim is to identify regularities of action in ways which seem to have some explanatory or predictive potential, in recording and transferring meaningful events into numerical data, something of their meaning may be lost or altered. This can operate through the possible negation of the service user's perspective on events. Admittedly, this may not be readily ascertainable in the case of people with severe learning disabilities, but that does not mean that it does not exist. Unfortunately, computers are most likely to be used when positivistic approaches to human behaviour are being adopted, since it is the quantitative aspects that are most amenable to their use. Obviously, the technology itself does not initially construct a particular approach, but its usage does represent and reiterate particular perspectives.

The distancing effect of objectification. The distancing effect of computer based recording occurs because the observer is required to become separate

or distant from the unfolding action, or is at least encouraged to stand back from it. Unless the underpinning theoretical position and the methodology of data collection takes cognisance of this, then the effects of the observers actions are unknown. Perhaps it is this aspect that explains why workers frequently think that the process of recording alone seems to help the situation. In this instance one might speculate that either the use of the Psion to record frequency of behaviour actually influences the service user's behaviour, or alternatively that the process leads to a more "realistic" appreciation by the workers of the actual incidence of challenging behaviour. These possibilities need not be mutually exclusive.

Creating greater tolerance or the illusion of control? The use of IT is not simply neutral in its effects. By definition, service users in this case only come to the attention when there is a danger of exclusion or a severe challenge to those who provide the service. This is likely to be at a point of some stress for all concerned. The introduction of a system for recording data is likely, at the very least, to provide a mental distraction for a stressed worker, whose emotions may be protected by the intervening action of recording. This intervening action may encourage a greater intellectualisation of the challenging behaviour, which in itself may help to reduce the worker's anxiety. In such interactions the reduction of anxiety alone, may affect the service user's subsequent behaviour. Additionally, some reified belief in the power of the IT system may also operate to increase confidence and reduce stress. In situations where the worker's perception of the challenging behaviour has reached the point at which "something should be done", it is likely that any approach that promises the additional attention and support of specialists, or brings an orderly approach to disorderly circumstances, will be welcomed.

Technology obscuring or disguising theory

Data collection with predefined categorisation may pattern the recorder's perception of events. It can lead to problems of omission or lack of recognition of other perhaps more valid categories. For example, until social workers were alerted to the signs of sexual abuse in young children, many failed to recognise the prevalence of this type of behaviour. Of course, the technology itself does not create or presume the definitions and categorisation employed, but it can make it more difficult to recognise their

limitations. This effect can be magnified by the awe or powerlessness many people feel in the presence of a technology they think they cannot understand nor control.

Thus the technology of IT, the computers and the programs, may tend to obscure and disguise the underpinning theoretical assumptions. Whilst IT may ease the processes of recording and analysis, it can make the theory less accessible. If the determining factors have already been categorised, if the conceptual framework has already been elucidated, and the potential hypothesis identified, then the reduction of the role of most workers into apparatchiks of the machine based process, reduces the possibility of explicit disagreement. The potential for alternative inspirations may be greatly reduced since fewer people are involved in the thinking role, and fewer people are likely to be able to understand and directly address the prevailing conceptions embodied in the programs.

All technologies carry with them, some more or less explicit, presuppositions for their employment. A hammer, for example, presupposes the application of force through it. In the case of IT these premises are not yet fully explicit. Clearly, a case could be made for arguing that, as IT presently operates, it innately presumes an ordered perception of the world. A world in which there are regularities of action and meanings are assumed to remain relatively constant. Arguably, there is more to be learnt from the discontinuities and ambiguities of action and meaning than from the repetitions. Thus it is the epistemological assumptions inherent in the use of IT that are suspect, largely because these remain implicit.

Technology sustaining control

Information Technology may sustain the control or power of dominant individuals or groups in two ways. First, it may not be an accessible technology, thus service users and most first-line workers will probably not understand it. Consequently, their opportunities to manipulate it and have ready access to the data is limited; and perhaps inhibited by technophobia or reification of its capabilities.

Second, the delimitation of ideas and explanations as discussed in the previous section, obscures the question of whose definitions and theories prevail. How self-critical will service providers be when it

might be their own practices that are flawed? By presenting the technology as simply a neutral tool, the system that it supports may also be assumed to be neutral. The political choices and presumptions about services and who provides them may be disguised or ignored. At the level of the service user, the presumption that the service is in their interest is not likely to be questioned by those whose livelihood is dependant upon it.

Clearly, it is unfair to attribute all of these possibilities to IT itself, but just as a hammer can be used to hit a head or a nail, so can computers be used to present and sustain particular views of the world. They do not necessarily create the discourse but they may delimit it in a manner which further reinforces the powerlessness of disadvantaged people.

References and Bibliography:

- Emerson. E., Barrett.S., Bell. C., Cummings.R., McCool. C., Toogood. A., and Mansell. J. (1987) *Developing Services for people with severe learning difficulties and challenging behaviours*. CAPSC. University of Kent, Canterbury.
- Gilbert. C., (1992) *A consumer evaluation of an intensive support team for persons with a learning difficulty who exhibit severe challenging behaviour*. Research dissertation. University of Wales, Bangor.
- Glastonbury. B., and La Mendola. W., (1992) *The Integrity of Intelligence*, Macmillan and St.Martin's Press.
- LaVigna. G.W., Willis.T.J. and Shaul. J.F., (1990). *Assessment and analysis of severe and challenging behaviour.*, IABA, Los Angeles.
- Mc Brien.J., and Felce. D., (1992) *Working with people who have severe learning difficulty and challenging behaviour*, BIMH Publications.
- Marx, K. (1963) *Alienated Labour*, in T.B. Bottomore ed. *Karl Marx: Early Writings*, Penguin, Harmondsworth.
- Three Year Evaluation report on the Intensive Support Team; Clwdian Shadow Trust, 1992
- Towell. D., (1987) Foreword in R. Blunden and D. Allen (eds), *Facing the challenge-an ordinary life for people with learning difficulties and challenging behaviour*. Kings Fund, Publishing Office, London
- Welsh Office (1983) *The All Wales Strategy for the development of services for mentally handicapped people*. Welsh Office, Cardiff.

Courseware for Social Work Educators and Trainers

1995 will see an accelerated rate of software for teaching and training being produced for UK Social Work educators. Finally, Windows based programs are being developed which can be integrated into the DipSW curriculum

The March conference being hosted by IBM and organised by CTI Human Services and CCETSW will provide you with a preview of courseware from SSRADU at the University of Bath and from ProCare, a Teaching and Learning Technology Project, based at the Universities of Bournemouth and Southampton. So if you have been looking for technology based learning around Care Management, Interpersonal Skills, IT in Social Work or Research Methods do not miss this opportunity. The date is 24th March 1995, the place is IBM Hursley, Near Winchester. The cost is £50. See the last page of the journal for more details.

Internet News

Ann Wilkinson

The Centre for Human Services has been 'surfing the Internet' and capturing information which will be of use to our readers. We have also opened a discussion list on new technology in the human services and put up a home page on the world wide web.

Discussion list:

A discussion list has been opened on Mailbase the UK's Higher Education electronic mailing list service which enables groups to manage their own discussion topics and associated files. We have opened a list called `cti-soc-work-uk` on Mailbase.

To join send a message to:

mailbase@mailbase.ac.uk

subject: (you may leave this blank)

text of message: join `cti-soc-work-uk` [your firstname] [your lastname]

e.g. join `cti-soc-work-uk` ann wilkinson

NB: Do not attach a signature to your message as the message is read automatically and will not be able to interpret additional text at the end of the message.

You should receive a message from Mailbase informing you that you have joined the list and giving you information on how to participate. Members should follow the following basic rules:

- a) Messages for the list should be sent to:
`cti-soc-work-uk@mailbase.ac.uk`
- b) Messages about leaving or joining the list should be sent to: `mailbase@mailbase.ac.uk`
- c) The list is primarily for discussion of new technology in the human services by UK staff in higher education. This includes posting information about developments and conferences but not advertising material, personal chats with colleagues or material not appropriate to human services.

World Wide Web

The CTI Centre Human Services has now developed a web page which provides information on our activities and links to other contacts in the Human Services. It is still being developed and there will be regular changes as colleagues provide information.

The URL is

<http://ilc/ecs/soton.ac.uk/chst/hompaghs.htm>

An URL is a location address.

In order to access world wide web it is necessary to have appropriate software such as Mosaic. If you are working in a higher education institution see your computing service adviser to get more information.

Other readers may like to visit their book shop and find one of the many publications on accessing the Internet. It is not possible to cover all the variations in hardware and software in this piece. New material is becoming available every day and in a future issue we will publish a list of sources which we have tried and found useful. The CTI Centre is going through a rapid education process.

Other useful URLs are provided below and we will publish others as they emerge. Those below can also be accessed through the CTI home page.

The European Network for Information Technology in the Human Services (ENITH) has developed a new page which went live in January 1995.

URL **<http://www.uia.ua.ac.be/u/enith>**

The Teaching and Learning Technology Programme (TLTP) is an HEFC funded programme to develop courseware for higher education in the UK. The Centre for Human Service Technology is in partnership with Bournemouth University to develop material for social work and nursing students under the name *ProCare*.

URL **<http://www.icbl.hw.ac.uk/tltp/>**

The Social Science Information Gateway (SOSIG) is an ESRC funded project to provide researchers and social scientists with a centralised means of accessing relevant information sources over the networks. the Service is based at the University of Bristol. URL **<http://sosig.esrc.bris.ac.uk>**

The central www site for the Computers in Teaching Initiative (CTI) provides links to all the other CTI Centres. URL **<http://sable.ox.ac.uk/cti/>**

Forthcoming Events

Workshop on Computers in Social Work Education and Training

Friday, 24th March 1995 9.30 am to 4.30 pm

CTI and CCETSW (Central Council in Education and Training in Social Work) will be presenting a one-day workshop, at IBM Hursley, near Winchester. This will offer an opportunity for social work educators and trainers to view and discuss developments in the field of information technology, social work and social care education and training.

The workshop will have a plenary session followed by breakout groups and demonstrations of developments in software.

There will be an exhibition of software relevant to social work educators including prototypes from the Teaching and Learning Technology Programme (TLTP) ProCare project and material from the Social Services Research and Development Unit (SSRADU).

For further information and booking forms contact:

Ann Wilkinson or Suki Sitaram
CTI Human Services
Centre for Human Service Technology
Department of Social Work Studies
University of Southampton
Southampton SO17 1BJ

Tel: 01703 - 592779/593536
Fax: 01703 - 592779
Email: annw@chst.soton.ac.uk

Supported by IBM (UK) Labs

EDITOR'S NOTE:

The publication of this issue of the journal has been delayed. We would like to apologise to all subscribers for any inconvenience caused as a result of this.

HUSITA 4 - Human Services Information Technology Applications

11th - 14th June 1996, Finland, University of Lapland

The fourth international conference of information technology applications in social welfare will take place in Finland, at Rovaniemi, from 11th - 14th June, 1996. It will be organised by the National Research and Development Centre for Welfare and Health in co-operation with the University of Lapland.

There is no sign that the pace of developing information technology applications is slowing down, but many challenges have to be faced in the health and welfare services.

What is the continuing role of the information technology in this process?

What is the situation today?

What goals we are striving for tomorrow?

How do we achieve synergy between technology and the services?

These are challenges for each country and for the international community.

The conference is intended for people working in the field of health and welfare, or information technology, such as professionals in the caring services; managers and volunteers in these sectors; administrators and politicians; university researchers, teachers and students; and staff of technology and software industries, whether from the production, marketing or consultative sectors.

The conference language is English. Alongside the conference there will be a trade fair.

For further information contact:

HUSITA 4
National R & D Centre for Welfare and Health
P.O.Box 220
00531 Helsinki, Finland

Tel: +358 0 3967 2110 (Victor Savtschenko)
Fax: +358 0 3967 2001
Email: Husita4@stakes.fi
