

New Technology in the Human Services

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Submissions to the journal

We welcome papers, articles and reviews from both academics and practitioners. Please read the guidelines for contributors on the back inside cover and do not hesitate to contact the editor.

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Up Front

On-line

We reported in the last issue that *New Technology in the Human Services* would be going on-line in that full text papers from past volumes will be accessible through the web based version of *caredata*. The National Institute of Social Work (NISW) library develops and maintains *caredata*, a database of publications that "supports management and practice through extensive abstracting of relevant social work and social care literature. It contains over 40,000 abstracts of books, central and local government reports, research papers, and publications of voluntary organisations, and articles from a wide range of journal titles. The database covers UK, North American and other English-language resources." (NISW, 1998)

We are pleased to announce that *caredata* subscribers who have signed up for the web version are now able to access the full text of past papers using their UserID and password. About 60% of the papers are already up and the rest will follow soon. Readers who do not subscribe to *caredata* will be able to access just the journal papers through a special arrangement between NTHS and NISW. This does not achieve the electronic journal we would like to develop but does take us forward. Many of our subscribers are libraries that serve a geographically distributed constituency – for instance in higher education or agencies. In these situations one copy of the journal in the library does not allow easy access to literature on an increasingly important subject area.

If you are interested and would like further information please contact Mary Busby at the Centre for Human Service Technology (address details opposite).

Husita 5

Included with this issue is the Preliminary Programme for HUSITA 5, which is taking place at the end of August in Budapest. NTHS is pleased to announce that we will be publishing papers for the conference in a special pre-conference volume. The journal has a long association with the HUSITA conferences and welcomes the chance to see old friends and make new ones. This is a major opportunity to achieve a global overview of how information and communication technology is impacting on the human services as we head for the next century. Does the information society bridge the gap between rich and poor or add to social exclusion? The conference is shaping up to be an exciting and a 'not to be missed' event. We hope to see you there.

The journal

This issue of the journal picks up some old themes but with a new twist. The two main papers focus on the development of information systems. This subject has been visited before many times but both are set within the context of partnerships in the delivery of services, multi-agency working and the not-for-profit sector.

The first paper authored by Ellis from Wayne State University in the USA describes the participatory design process through which an Internet based information system has been developed for co-located agencies. The system known as the *Senior Information System* crosses the boundaries in not only providing a means of sharing information between agencies but also provides services directly to elders through bulletin boards and email.

Geographically distant, but conceptually close is the paper from Ibaseta, Tamargo and Martinez from Spain that also discusses a participatory design process. This time the focus of their endeavours are Assistance Centres for Homeless People. This project also chose the Internet as their delivery vehicle. Both papers are timely in that the challenge of information sharing across different agencies is one facing all those who are promoting greater integration of service delivery. These contributions highlight both the advantages of their chosen methodologies but also the difficulties of implementation in diverse contexts.

The reviews section contains the second Sapay analysis of the Castells trilogy as well as reviews of three other books and two CD-ROMs.



REFERENCE ONLY



Participatory design of an intranet for providers of aging services

R. Darin Ellis

Abstract

Describes the content and features of an Internet-based information system which is shared by co-located aging-services agencies, and the participatory design process through which it was developed. The design process consisted of 6 steps, including: (1) Build bridges, (2) Develop user model, (3) Map possibilities, (4) Develop prototype, (5) Elicit and integrate feedback, and (6) Continue the iteration. The system has evolved to include WWW-based information relevant to both service professionals and elders, as well as collaborative tools such as email, a shared calendar, bulletin boards, and an electronic directory service.

Introduction

Recent pressures, such as the increasing scarcity of funding resources and changes in service funding models, have forced social service agencies to develop new business practices and strategic alliances. New strategic partnerships form to coordinate their services with other local agencies. In turn, many agencies are looking for new ways to support these efforts with information technology. Information systems that help agencies to increase communication and collaboration enhance the infrastructure for these efforts.

In 1993, the Luella Hannan Memorial Foundation commissioned a comprehensive assessment of the needs facing older adults in Detroit (MI, USA). As a result, the Foundation established a senior service center, in a former home for the aged operated by the foundation, Hannan House. The goal of the service center was to create a 'one-stop-shop' for social services for older clients, supporting a collaborative, coordinated approach to service provision by aging services agencies (referred to here as 'partner agencies'). In the new service center, a number of non-profit (non-governmental) organizations and governmental agencies work collaboratively in partnership with each other and the Foundation (see Table 1). These programs include an information and referral (I&R) center, a program that promotes health and healthier lifestyles, special arts and cultural programs, educational and training programs for both seniors and service providers. This relationship allows all involved to provide more comprehensive and accessible services through cooperation.

To increase the available methods for information sharing and cooperation, the Foundation commissioned the Hannan Senior Information System (SIS). The SIS was conceptualized as a way to use Internet-based information technology to increase opportunities for communication, increase access to information and provide new mechanisms for collaboration among partner agencies. The SIS is a collection of specialized information and applications built on an interactive client-server architecture using open standard Internet protocols.

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Organizational category	Services	Approximate Total Staff	Participating
Foundation	Facilities and program support	5	Entire agency
Non-profit	Job training and placement	40	One of multiple sites
Governmental	Job training and placement	20	Entire agency
Non-profit with Government support	Volunteer placement	10	Entire agency
Non-profit with Government support	Health care advocacy	90	One of multiple sites Program and headquarters located at Hannan House
Non-profit	Economic, development & community activism	5	Entire agency
Non-profit	Case management & senior activity program	100+	One of multiple sites Program located at Hannan house

Table 1: Agencies participating in the SIS project

The WWW and other Internet protocols are particularly useful to organizations that often need to collaborate with outside agencies and communicate with clients and their families. The Internet/Intranet (I-net) architecture is a cost-effective and efficient use of existing infrastructure for non-profit agencies with limited resources. The agencies in the SIS have pooled their resources to improve services and increase communication and collaboration, both among themselves and with the general public.

For many of the agencies involved in the project, the SIS represents their first attempt to integrate information technology into their business practices. Hence, the functionality of the system and the role that it will play in improving service delivery are critical questions to be asked of the information system designers. The answers to these questions must reflect the views of the ultimate users of the system, the social service agency workers, or the system will fail to meet their needs (Wilson, 1986). This paper describes the information system and the participatory design process used in its development. The design process is ongoing, and cyclical in nature.

The project has served as a model for implementing new technology in a way that positively affects the experiences, attitudes, and likelihood of adoption for both service providers and service users. The author's lab has conducted extensive research on the use of information technology, both among aging-services professionals and older adults (Ellis, 1998a; Ellis, 1998b; Ellis, in Press; Ellis & Allaire, in Press; Ellis, Jankowski, & Jasper, in Press; Ellis, Jankowski, Jasper, & Abdul, 1996). Although the populations served by these projects (non-governmental service agencies, government agencies, and clients, i.e., older adults and their families), are quite different in many aspects they are similar in three important respects. These groups are typically geographically dispersed, involved in activity which crosses organizational boundaries, and interested in working cooperatively using computers. The SIS was designed to serve the day-to-day work of the agencies involved in the project while providing a gateway for other agencies and seniors to communicate with the agencies in the project.

System description

Network architecture and technical support

The SIS is accessible through the World Wide Web (<http://www.ezsis.org/>). The server is housed at Wayne State University's Institute of Gerontology (IOG). The agencies housed at Hannan House use approximately 35 computers on an Ethernet network within the building and share a dedicated Internet connection. Data communication between Hannan House and the author's research laboratory take place through the Internet.

The server provides the following applications to the SIS agencies and users: WWW publishing space, email accounts, bulletin boards, directory services, and electronic calendaring. These services are provided using Netscape Communications Corporation SuiteSpot server products due to the favorable licensing conditions for educational institutions and non-profits.

Dedicated project staff consists of two half-time student assistants from the IOG. The first is responsible for face-to-face user support. This individual is the users' first line of contact in the case of problems using the system. The user support technician is also responsible for installing, maintaining, and upgrading the client software used to access the server. The second individual is the server administrator. This person is responsible for maintaining server software, creating and maintaining the user account database, investigating new electronic tools for project partners to pilot test, and assisting users in tasks such as web publishing.

Server organization

In order to build on the user population's gradual gains in computer and Internet knowledge, all development takes place in the context of the original WWW-home page. The home page started as a simple description of the Foundation and its partner agencies. As the project evolved, the project team published WWW pages for each of the agencies, then the agencies began to do so themselves. Additional information which cut across organizational boundaries was published on topics such as health care for older adults, and gardening. As partners became more familiar with WWW usage, the project

team introduced an electronic workspace with the tools mentioned above. The SIS now consists of the following main sections: (1) the Home Page, with introductory and site navigation information; (2) the Partner Pages, with information on each of the agencies; (3) the Community Section, where information for both elders and service providers is organized; (4) the Shared Workspace, where gateways to the electronic tools are provided; and (5) the Directory, where users can use and contribute to a shared electronic rolodex. The content and organization of the server evolved gradually over time through the process of participatory design.

Participatory design

Participatory design, also referred to as collaborative or cooperative design, is a design approach which focuses on collaboration with intended users of the service or product, involving them in the design and development process. Participatory design of information technology has been strongly influenced by the Scandinavians (Blomberg & Henderson, 1990; Bodker, Gronbaek, & Kyng, 1993; Ehn, 1988; Floyd, Mehl, Reisin, Schmidt, & Wolf 1989). The process relies on three main tenets: (1) improving the quality of work life, rather than focusing on the technological capability; (2) a collaborative, cooperative orientation; and (3) an iterative, interactive evaluation process which gathers and integrates feedback from intended users. Due to issues such as power balance in organizations, every attempt must be made to include input in a risk-free environment. For that reason, users are often broken down into sub-groups, such as managers and employees. Another critical aspect is that the designers gain knowledge of the work context, so that the new technology explicitly incorporates the values, history and context of the work system (Ehn, 1988).

The SIS development team used a six step process, adapted from Good (1992) and used successfully in similar projects (Ellis, Jankowski, & Jasper, 1998), to translate the values and principles of participatory design into practice. Although neither entirely discrete nor linear, for discussion purposes, the steps are: (1) Build bridges, (2) Develop user model, (3) Map possibilities, (4) Develop prototype(s), (5) Elicit and integrate feedback, and (6) Continue the iteration.

Build bridges

The first step in the development was the constitution of the participatory design team. The bridges were built by ensuring that the design team crossed organizational boundaries, and included members from the Hannan Foundation, the staff and management of the partner agencies, and the author's research group. Drawing from all the organizations involved, the team was able to have members with backgrounds in multiple disciplines, including cognitive psychology, computer engineering, human factors engineering, information technology, public administration and social work. Second, the team had experience with all the design parameters: needs assessment, information systems design, Internet technology, program planning, public policy, and human-computer interface design. Finally, the design team members from the partner agencies understood the work context of their own organization, and were able to both translate context into design requirements and constraints, as well as translate technical capability into opportunities for their fellow professionals.

Although the original design team continues to play an important role, new contributors have arisen due to technological acumen or interest in a particular development area. Within each agency computer skill levels varies. Those staff members whose job responsibilities involved public communications were more familiar with desktop publishing applications, and computers in general, and hence were more comfortable with the World Wide Web than their peers. These staff members readily adapted the technology to develop new capabilities and applications. For instance, the SIS content development was completed in tandem with the physical network infrastructure described above. Technically, this made it possible for agencies to share resources, printers, for example, across organizational boundaries. Some staff members immediately grasped the benefits of this arrangement and worked with the designers and established new printing arrangements to exploit technology available in other organizations. This example highlights the utility of building bridges between designers and users: collaboratively, the two groups can develop new system capabilities by capitalizing on the task knowledge of the users.

Develop user model

Agency-level Model. There have been between 4 and 6 partner agencies participating in system development at any given time, including the foundation itself, government agencies, and non-government agencies. The services offered range from job training to geriatric case management and community development. Most focus on providing services directly to older adults. Their size, services offered and participation are listed in Table 1.

User level Model. Fifty-nine agency professionals in the partner agencies responded to the survey used to develop a conceptual user model for the system, representing a response rate of about 80%. There was a great deal of diversity in the user population with respect to age and education. Age ranged from 22 to 87, with a mean of 46. Education levels were high overall, 35% attaining a bachelor's degree, and 45% completing at least some post-graduate work. About eighty percent of the respondents were full-time paid staff, while the remainder were part-time and volunteers. The respondents' average job tenure was 9 years. In terms of day-to-day job responsibilities, 81% reported that they deal with clients face-to-face in their office, 95% work with professionals in other agencies and 90% perform information and referral services for clients, the public and other professionals.

There was a mean of 7 years of computer experience, using various applications such as word processors and spreadsheets. Overall, 81% of the professionals used a computer in their post. Attitudes were measured with the "Attitudes Toward Computers Questionnaire" (Jay & Willis, 1992). Sample size limitations precluded correlational analyses; however, the survey provided some useful results to inform the construction of the user model. Participants responded on a 5-point Likert scale, ranging from strongly disagree to strongly agree. In particular, there were a significant number of respondents who felt neutral-to-negative with regard to the dehumanizing aspects of computers. For example, 21% were either neutral or agreed to some extent with the statement 'computers are dehumanizing' while 25% responded similarly to the statement 'computers just turn people into a number'. A focus group elicited a strong and prevalent feeling that "I work with people, not computers", indicating a desire to minimize

time in front of a computer terminal and maximize time with clients. There was also a sentiment, not tapped by the attitude scale, which placed a great deal of professional emphasis on data security (i.e. confidentiality of client data).

Integrating this information, a clear conceptual model of the user emerged, depicting a well-educated, experienced professional who spends a great deal of time working directly with clients, interfacing with professionals in other agencies, and accessing information to pass on to clients and other professionals. Further, while these professionals have a fair amount of user experience, they are not enamoured with technology and demand transparent access to information and communication functionality developed for the SIS.

Map possibilities

Before developing a prototype for each iteration of the SIS, the team mapped out user perceptions of future work practices and system usage. This has been accomplished throughout the project using data from at least three sources: (1) Futures Workshops (Greenbaum & Kyng, 1991), (2) surveys of the intended user population; (3) face-to-face interviews and job shadowing. Often the most difficult aspect of developing a new information system is developing the overall model of what users want and need from the system. In the initial design, users have ideas about how the system will integrate with their current workflow processes. Over time, ideas change as new ways of accomplishing tasks and new challenges surface. Hence, it is very important for the developer and the users to map out how work is accomplished today and how users would like to work in the future throughout the process.

One way to accomplish this is to use the Futures Workshop exercise described in Bodker, Gronbaek, and Kyng (1993) and Greenbaum and Kyng (1991). The Scandinavian model focuses on cooperation between the developers and users to create systems that accurately reflect the use situation. Developers contribute their knowledge about how the computer application can work. Users contribute their knowledge of how the task(s) are actually structured. The Futures Workshop allows the users to brainstorm about how they think the task(s) should be structured while allowing the developers to brainstorm about how the system could eventually function.

The Futures Workshop idea was originally developed by Jungk and Mullert (1987) to assist citizens groups with limited resources in presenting their ideas to public policy decision-making bodies. Hence, it is germane to enriching the sense of shared responsibility between designers and users as they attempt to shed light on workflow problems, generate visions about workflow in the future, and discuss how the technology can be used to reach that future. The comments made during the workshop provided insights into how the current mechanisms for information sharing and collaboration fail to meet a work need, as well as expectations for a new system to satisfy that need. Specifically, challenges were mentioned with regard to keeping printed material up-to-date and available, as well as difficulties in distributing information or requests for assistance across the practice community.

After critiquing current work practices, discussion turns to how the ideal system should work. As in all brainstorming, the point is to get as many ideas out on the table as possible and evaluate them, for feasibility, utility, etc., in the next phase. It is here that developers get a real sense of the ultimate purpose of the information system. Users produced a list of specific characteristics of the ideal system. These

characteristics included technical applications (such as email accounts and accounts with which to publish on the WWW site), as well as more general features (such as user-friendliness, technical support, and reliability). They also expressed a vision of where the system should fit in the broad spectrum of services for seniors.

The implementation phase of the Futures Workshop gives the developers a chance to reflect possible scenarios back to users about how the system can meet their ideal goals. Not every idea offered by users is possible or even advisable, so discussion in this phase helps to define limits for how the system will look today and sets directions for where the system will be headed tomorrow. Rather than discussing the detailed aspects of the prototype design, discussion in this phase with the users focused on general look and feel, characteristics of usable systems, and some of the users concerns about moving to an electronic system on the Internet, such as security. Other implementation concerns which arose in an early Futures Workshops included access for the agencies. It was this concern that led to the development of the shared Internet access mentioned above. All agencies participating in the SIS project now have Internet access.

Survey

A survey was distributed to SIS users posing vignettes regarding usage of specific applications at the outset of the project. At that point in time, few people were using email, bulletin boards or online information from sources such as the WWW (16, 9, and 22%, respectively). The user group indicated a strong belief, however, that these applications would become an important part of their professional responsibilities. Email, bulletin boards, and online information sources were identified as being important in the near future for 85, 91, and 75% of respondents, respectively (n = 32)

Job shadowing

Although a structured technique such as the Futures Workshop can lead to many insights, often insight into existing practices and possible alternatives can occur through casual conversation. Hence, the design team spent time maintaining a presence in the work environment, observing and talking to the users as they carried out their job. This strategy served to make users more comfortable with the designers and hence more likely to contribute new ideas. It also allows the designers to observe occasional breakdowns that occur during job performance. When these breakdowns occur, the designers and the users can discuss alternative approaches in the work context where details about the situation are available.

For example, the building which houses the project contains several conference rooms. The staff member who maintained the schedule for booking the rooms experienced great difficulty maintaining reservations schedules. Job shadowing allowed design team members to be present during an episode of this difficulty, stimulating insight which was then used in the development of tools to solve the problem.

Develop prototype

Prototyping is a social process by which designers explicitly convey their ideas to the user community. Users change their expectations (and thereby change the product requirements) as a result of their experience with the prototype. In that sense, users act as an agent developing or improving a prototype. By means of prototyping, a product's functional requirements are

refined very early in the design process. Proper design specification leads to reduced maintenance, training software enhancement costs, and also satisfying the user. Traditional prototyping involves the perspective of developers, analysts or designers who study the system behavior and develop prototypes on their own. Once these prototypes are developed they are demonstrated or tested by the users who give feedback to the designers of the system. This method does not involve active user involvement in the design of system behavior. This participatory design process employed calls for a prototyping method proposed by Bodker and Gronbaek (1991), where the users and designers participate actively and creatively in developing a prototype. This kind of system is called cooperative prototyping. This behavior can be achieved by letting the users experience the fluent work-like situation and by training the users' skills to encounter new technologies. A simulated-future or a real-use work-like situation can be used to aid the training. Breakdowns often occur in the simulated work situation, in that crisis users and designers analyze the situation and discuss the cause of breakdown. Breakdowns caused by bad designs can be rapidly converted to improved ones, so that the fluent work-like situation is re-established. Users can also actively participate in developing or improving these prototypes resulting in a cooperative development.

Elicit and integrate feedback

This step in the process involves the generation, interpretation and incorporation, where appropriate, of feedback from actual users of the system. Integrating feedback from users has resulted in numerous improvements in the system. Initial prototypes of the overall system, developed from the design process, paid careful attention to represent all of the focus areas developed by the design team. The early prototypes were developed before Internet access was commonly available to SIS project partners, so early feedback was elicited in group settings. The development team organized presentations using auditorium-style seating and a projector to introduce the system to two main groups: the partner agencies and the broader service community. As Internet access became more universal, feedback was elicited in a one-on-one fashion with individual users. Now that the system and users are maturing, feedback is obtained through email comments from users to the design team, as well as a monthly users group meeting.

Continuing the iteration

As an information system evolves during the participatory design process, the earlier steps in the process are constantly re-evaluated and revisited. While iterating the design process, the team continues to develop and test user-models and interface designs. Development and participatory design must keep pace with changes in information, technology, and users. In addition, the design team should search for areas in need of improvement and explore application of new advances in technology.

The following is an example of the manner in which system design is revisited in the participatory design process: After the conclusion of the first iteration of the system, many users were convinced of its utility as a work application in the office. Some users, however, expressed concerns with its utility as a communication tool with clients (older adults in the surrounding community). A group of social workers who

became interested in using the system as a discussion tool with clients proposed a gardening section for the system. From their reports, case managers sometimes used personal discussions to acclimatise clients to the client—caseworker relationship. For this particular group, they found discussions about gardening to be particularly effective since many urban African Americans in Detroit migrated from agricultural backgrounds in the South in their youth. Many seniors with this background continue to raise vegetables in their backyards despite the harshness of the Detroit's winter and industrial environment. It was believed that by using the system to reach out to this knowledge base in the community, social workers could use the system to strengthen relationships with clients.

The project team decided to reach out to the community with the development of the SIS section, Urban Gardening in Detroit: A Resource for Mature Gardeners. The section contained photos and text descriptions of actual mature gardeners in Detroit as well as other resources and information. Focus group results indicated that the section demonstrates the utility of the technology to seniors and service providers in the community, and encourages both groups to view computer technology as a tool rather than an end in itself.

In this sense, the new initiative in the project was a direct response to limitations in the original prototype of the SIS. Although the system reflected much of the knowledge of the agencies involved in the original design process, it failed to adequately reach out to the seniors in the community. With new user-participants for the Urban Gardening project, the design team repeated the steps of the process used with the original system prototype. The new users were a local senior citizen, and two social workers from different area agencies. All of the user-participants had an interest in gardening. The design team mapped out possible uses of the section as a discussion aid in local senior centers. The section would be an electronic journal reflecting the experiences of mature urban gardeners in the community both in sight, with photos taken of actual gardens and gardeners, and word, with stories and interviews from around the city.

Paper prototypes, magazine cuttings, and photos were then translated into computerised mock-ups. The team worked to increase the accessibility of the interface to address issues of sensory loss, low reading ability, low computer skills of seniors in the city. The prototype was tested in the field with seniors in focus groups at two sites. The first session yielded poor results as the seniors were interested in learning to use computers but were disheartened to find the subject focused on gardening. The second session, however, yielded surprising results.

The second session was held in the offices of one of the partner agencies. The participants were clients recruited from within the building under the pretense that they would be gathering to discuss gardening. There were six women and one man in the focus group along with the design team. The discussion focused on gardening, and the system was used as a discussion aid. Several of the participants asked if they could get printouts of the information on the system to take home with them. It was at that point that the design team member leading the focus group took the opportunity to show the participants how to print information from the system out for themselves. Each participant took a turn at the computer going through the system and printing the information. In each case, it was the first time they had touched a computer – all were excited about the potential of computers after this short exposure.

Insights from iterating the design

Given knowledge of the topic area, the design team was able to rapidly develop a prototype and deploy new components of the system. The participatory design process's major strength: that it leverages the knowledge of both the users and the designers, resulting in a system that is usable, useful, and technologically 'transparent.' Finally, the system relies on tangible relationships that develop between agencies and people, for example, the Urban Gardening web-site accompanies a 'real-world' Urban Gardening Club that developed from the focus groups and relationships formed between members of the Urban Gardening design team. This past summer the Urban Gardening Club planted flowers and vegetables at the Hannan House.

Discussion and conclusions

The SIS has enjoyed success and popularity among its users thus far. In the first 6 months of operation, 30,000 email messages were sent out by the users, averaging approximately 500 messages per user. Access logs indicate hundreds of WWW-page download requests by SIS users of each others service information. The electronic calendar is used extensively by a smaller group of more technologically enthusiastic users, and is reported to be particularly useful when scheduling meetings involving individuals from multiple partner agencies. Originally, the SIS was an experiment created through the leadership of the Foundation. There was no clamour among the partner agencies indicating a dire need for this technology to improve communication or access to information. With near universal adoption of the SIS by the partner agency staff, its benefits cannot be denied – interviews with users thus far indicate that nearly all would miss the system if it were removed. Further, if the SIS were removed, many users would petition their own agencies to fill the gap with a replacement system.

The participatory design process employed was successful in this project for a number of reasons. First, it engendered commitment from the user community. All users, in varying degrees, have been involved in the system development. This involvement required commitments from individual users, but also from the leadership of their respective organizations. This was particularly important for the agencies which had facilities at Hannan House, but who were headquartered off-site. Second, the process was open to user input, but not hindered by users preconceived notions of what role technology could play in their professional lives. Traditional models of software development focus on the capability of the technology, and rely on market research to determine where to promote the product. However, the process cannot be entirely user driven either: SIS users did not have any idea what they wanted until the design team began introducing technology in the context of the users' work practices.

The project has also encountered barriers to implementing the ideal system. For example, the multi-site agencies involved in the project have benefited from having their Hannan House programs access the technology, their other sites have been excluded from the project. Leaders have to make decisions for the greatest good of their entire agency, and this sometimes leads to non-optimal decisions specifically with regard to SIS project participation.

Another concern has involved the manner in which users involve themselves. While the team strived to get everyone involved, some users get more involved than others. Typically, these individuals have some predisposition towards

information technology. When these 'power users' emerge, we have observed that they can actually generate complacency in other users, especially novices (i.e. "we have someone representing us, so now I don't have to spend my time in that manner"). An obvious drawback is that this lessens the diversity of opinion developers have to draw on. Quite often in a participatory design effort, the best insights for system improvement are provided by novices. A less obvious drawback is that when responsibility for providing development input and promoting usage rests disproportionately with one person in an agency, that person can be a weak link in overall system evolution. The project team terms the "turnover = start-over" phenomenon. Several times throughout the process, organizations have lost key people involved in the design process, resulting in delays in further development and sub-optimal system usage. To avoid this issue in the future, and to promote equity in participation, the project team is empowering the entire user community. This involves promoting usage of technical support (mentioned above), providing training in system usage, supporting a formal users group which meets regularly, and promoting usage of applications which have personal relevance, such as using the WWW to make vacation plans or using email to contact a distant family member.

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Information and communication: new technologies in assistance centres for homeless people

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Abstract

This article discusses a problem of practical interest: the design of information management systems for Assistance Centres for Homeless People (ACHs, within which are included hostels for homeless people, soup kitchens and other services with diverse, interrelated aims).

The functions of ACHs are described, their special characteristics as non profit-making organisations, their services (complex routes for personalised social reinstatement) and their organisational models (informality, collaboration between hired and voluntary staff, a high degree of heterogeneity...). The conclusions of the study carried out demonstrate difficulties that may be summarised as a lack of co-ordination (both the centres as well as the posts function like isolated units) and poor management of information (the use of a multiplicity of forms, manual processing of data, infrequent and/or incorrect access to computer tools...). The solution proposed, which is currently being implemented, is based on the interconnection of the ACHs via the Internet to a centralised database in which will be stored the personal data of homeless people, their individual problems, the services given and other necessary information. The article analyses the alternative methods considered and the advantages that the selected system will offer to its users, the people who work in the centres, but also fundamentally to homeless people for whom social reintegration is the goal.

Introduction

This study focuses on the use of new communication and information technologies to improve the management of Assistance Centres for the Homeless (ACHs). The project, whose initial results are presented in this article, arose from a proposal made to the non-governmental organisation (NGO) *Cáritas* (in Asturias, a region in Northern Spain) at the beginning of 1997 by one of the authors. *Cáritas* is a religious NGO with a long tradition of work with fringe groups. Among its many activities is the management of a network of ACHs. The author had been working, as a volunteer, for a number of years in one of the *Cáritas* ACHs. This meant that he was able to observe that the users' data were manually collected on file cards and that the cards were frequently misplaced or lost. This form of managing information made it difficult to obtain statistics (average monthly occupation of the hostel, services provided annually, rotation of users...). It was also very difficult to carry out sociological studies, such as the routes followed by homeless people (centres visited) or the success of social reinstatement programmes. After a number of meetings, *Cáritas* requested the collaboration of another NGO, *Ingeniería Sin Fronteras* (Engineering Without Frontiers), which contributed its experience in the management of non profit organisations and the development of technical instruments.

Finally, all these partners came together in a research project that is being carried out at the University of Oviedo. The project is employing a participatory, multidisciplinary methodology, an immediately practical application approach, network logic and has the goal of serving as a pilot project, which will be able to incorporate more centres after the initial system is implemented.

The characteristics of the problem detected are described in the following sections, along with the general technical lines of our proposed computing intervention. The article finally concludes with a number of general reflections that are the result of the experience accumulated.

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The problem

Homeless population in Asturias

The homeless population in the European Union is estimated to be over 2.5 million. It is impossible to give an accurate figure, as some people are reluctant to go to social services (Cáritas Española, 1996).

In Spain, the homeless population seems to be increasing and is reaching 50,000, because of unemployment and other new urban problems. In Asturias, we do not have precise information but from April 1996 to March 1997 7,000 cases were recorded in the ACHs. But as these cases reflect the services given rather than the number of people requiring services it is estimated that the true figure is about 3,600 homeless people. (Alvarez, 1998). An instance of this is: Centre A could provide 200 meals to 75 people, Centre B provide 300 meals to 125 people. The total of meals provided is therefore 500 but it is impossible to say how many individuals received meals as they may well have eaten more than one meal in more than one centre. We summarised the problems of the Asturian homeless population in Table 1.

In other words, we know exactly how many cases there were but we don't know the real number of people involved and their particular problems. Our research addresses these questions. We believe this is an innovation in the field of information management literature.

Problems	%
Unemployment	57.2
Lack of income	40.5
Family break up	40.0
Drug addiction	21.4
Chronic physical diseases	21.0
Alcoholism	18.4
Mental diseases	10.8
Bad resource administration	3.9
Aids	1.9
Others	8.2

Table 1: Social Problems of Homeless People in Asturias
Source: Alvarez (1998)

What is an ACH?

The ACHs are centres whose main function revolves around any type of social intervention with homeless people, the longest standing and most well known being Hostels, though they are not the only type. The Model of Social Intervention with homeless people developed in Cáritas España (1996) establishes the following classification (see Table 2)¹:

Reception Centres: receive people who arrive in a state of need, they help them with their problems and study their cases, informing them of existing resources. They also aim to coordinate the organisations that concern themselves with these people, facilitating their access to a hostel, to an Advancement Centre or channelling them towards other centres or resources that are appropriate to their problems. Finally, statistical or other types of studies concerning the problems of this collective group are carried out through these centres.

Advancement Centres: offer lodging to users. There are three kinds, phased to move people towards social reinstatement and independence.

- 1) **Preparation Centres:** it is here that the process of advancement begins, each situation being analysed in depth and a personalised plan developed between the service user and the workers at the centre.
- 2) **Centres for Integral Attention:** here, the life of the homeless person is gradually transformed through the application of the personal plan, moving towards full autonomy, which means that they can be reintegrated into society.
- 3) **Flats for Reinstatement:** places of residence where the process of advancement towards independence is completed. These serve as a bridge to the culmination of the process.

Hostels: by means of the regime followed during their stay, the dignity of the life of the homeless person is improved, starting off by solving some of their immediate problems and subsequently involving them in the process of reinstatement.

Management of the ACHs

It is worth commenting on the characteristics of the majority of ACHs as organisations belonging to the third sector or non profit sector (Sajardo Moreno, 1996). As such, a number of problems are emphasised: dependence on public resources, a low level of professionalism, organisational diversity and excessive atomisation. All this implies the need for co-ordination to combine resources and capacities, thus obtaining greater volume and flexibility as a whole (Rodríguez & Monserrat, 1996). To achieve this coordination, cooperation agreements have to be established between the ACHs in such a way that these different organisations work together by configuring networking supra-organisations, which have to be flexible. (Fernández Sánchez, 1993). An example of these co-ordination agreements is the creation of the Asturian Platform for Assisting Homeless Collectives, in which difficulties of co-ordination are to be observed with respect to the heterogeneity of the participating agencies.

Another type of agreement is the one that the ACHs establish with the State by which the latter cedes certain social services that are traditionally its responsibility to private organisations. The public administration is the primary source of funding for the ACHs. This, along with additional income via donations and voluntary work, generates a series of dysfunctions that translate into the subsequent poor management and difficulties in long-term planning. This latter problem related to planning/control may be explained fundamentally by the dependence on external resources, which take a long time to arrive and which are difficult to control, together with the characteristics of the information to be managed, which is bulky, dispersed and often collected in distinct formats. Other management related aspects which may be highlighted are:

- informal organisation, which always influences this type of organisation;
- the combined presence of different types of workers with distinct organisational cultures and levels of involvement (paid lay workers, members of religious orders, voluntary workers...);

¹ In a real or physically existing centre, different theoretical centres or areas of functioning may be found.

CENTRES						
		Reception Centres	Hostels	Advancement Centres		
				Preparation Centre	Integral Attention Centre	Flat for Reinstatement
T A S K S	Reception of the homeless person	First interview and first report	To report on the aim and functioning of the centre Reinstatement in the community Assignment of tasks			
	Channelling and co-ordination	With the rest of the ACHs and others				
	Statistical	The carrying out of studies				
	Analysis		The legal, penal and health situation and the reality of being homeless			
	The bringing up-to-date of documentation		ID number, Social Security Services ...			
	Activities		Alternative ways of using free time and/or fomenting creativity			
	Training		Cultural and health	Vocational training, adult education courses, domestic organisation	In daily life and in the workplace	
	The family	To establish contact with the homeless person's family				
	Personal Plan		Help in its elaboration	Bringing up-to-date and follow-up		
	Group work		Development via activities			
	Specific treatments and standardisation		Carry out	Start	Continue	
	Participatory channels			In decision making		
	Employment			Starting the search, National Employment Institute	Starting work	
	Housing		Managing housing or the hostel for regular and chronic users		Searching for housing	
	With regular users		Retirement and other arrangements			
With chronic users		Detection and treatment of their deterioration				

Table 2: Basic activities in the ACHs

Source: Developed by the authors from a detailed description in *Cáritas Española (1996)*

- and the fact that the management function consists in correctly co-ordinating internal and external resources.

Within this context, communications are vital, the telephone being extensively used with great frequency for arrangements and/or consultations between ACHs and with other institutions. The mail and the fax are also used to a lesser degree. Until very recently, Information Systems (IS) were limited almost exclusively to private, profit-making companies. Although interest in the use of computers in the Social Services is not new², their use in this field is under-developed (Phillips & Berman, 1995). Until the 90's, the Social Services, and in particular the ACHs, were not seen to accept information technology as an unstoppable phenomenon, which is extremely interesting for the type of activity managed by these organisations. This has been even more evident during the expansion of the Internet during the second half of the decade and the progressive lowering in cost of information technology. The features of a good IS for ACHs are: suitability to the needs of the users, ease in collecting and returning information, a low cost and information reliability and validity. For all of these it is necessary to train and motivate personnel (Alvira, 1996). In fact, we understand that in order to seriously take on this challenge, close collaboration between specialised professionals in: social services, organisations' management, information engineering, legislation, etc. is needed along with training and involvement of the users of the IS in the whole design process.

Our empirical study

Bearing in mind the ideas of the above paragraph, a multidisciplinary field study was designed and the results are summed up in Tables 3 and 4. This study involved the future users of the made-to-measure IS from the start, via a participatory research approach. What is presented here summarises the first phase of implantation of the system. Our participatory multidisciplinary methodology includes:

- Design of a theoretical model of ACH management and a cases study of each centre.
- Review of the theoretical model documentation by ACH professionals (social workers, nuns and voluntary workers).
- Meeting with all the ACH professionals: technical showcase and agreement about the technical characteristics of the system to be designed.
- Partial and periodic meetings with a representative group of ACH professionals to feedback each step of the information system design.
- A reciprocal process between the ACH professionals and the technical team that involves training on basic computer use, Internet navigation, e-mail, and testing of each part of the IS being implemented.
- Running a test, asking homeless³ people in two ACHs for authorisation to manage their personal data in an Information System. Almost everyone gave us the authorisation. We learnt from that experience the relevance of giving homeless people confidence to build trusting relationships with staff.

The following conclusions were reached from the empirical study:

- The typology of the centres is very diverse with regard to organisation and services offered. There are centres in which food and lodging is provided, while in others clients are only allowed to spend the night or arrangements are made for them to stay in other centres (*channeling*). (See Table 3)
- The information on homeless people collected in each centre varied in content and in format. Although file cards were widely used in the centres to collect the details of the homeless, no unified model existed. (See Table 4)
- Scarce or no implementation at all of information technology in the centres, in many cases computers did not exist or were poorly used. (See Table 4)
- Although some ACHs had management applications, this software suffered design defects (poor identification of needs, the use of obsolete techniques...), that meant that some centres did not use them. (See Table 4)
- A lack of co-ordination between centres, duplication of effort and irrational bureaucratisation. As we have already stated, each centre kept files in which information relating to all clients assisted in the centre was recorded, without this information being shared with other ACHs. In general, an 'island' mentality existed amongst the staff of some centres, which though forming part of a network of ACHs, act independently, not co-ordinating their actions with the rest. (See Table 4).
- A lack of knowledge, preconceived ideas and a lack of trust on the part of the social workers with respect to the benefits that information technology can bring to their daily work

Intervention proposal

Our proposal

The proposal presented to the NGO and the centres consisted in connecting them via the Internet to a centralised database in which the personal details of homeless people would be stored, along with their diverse problems (e.g. hygiene, work...), and any other information necessary for adequately carrying out the work of social assistance. Information would also be collected in this database relative to the passage through and stay of each person, as well as the services received (food, lodging...). The storage of this information using a database support would make the administrative work of the social workers easier, simplifying to a great extent the preparation of reports and sociological studies at the same time as making up-to-date information available to them.

Content of the database

The set of interventions with respect to homeless people ACHs may be classified into two processes: the Reception Process and the Monitoring Process.

The **Reception Process** is basically the responsibility of the Reception Centres. It is carried out on a particular date and consists mainly of the reception of the homeless person and an interview where information is obtained concerning his or her problems. The homeless person subsequently receives advice and/or is channelled towards another ACH or the appropriate service.

² For example, CUSSN (Computer Use In Social Services Network) was created in 1981.

³ In fact, we do not forget that homeless people are the final clients of our information system.

Centre (location)		Carries out tasks related to	Type of stay	Average monthly number of users
Information Office for the Homeless (Gijón)		Reception Centre	Do not offer lodging	548
Soup kitchen (Pola de Siero)		Soup kitchen		32
Network of Centres (Avilés)	Centre for Assisting the Homeless	Reception Centre		105
	Overnight-stays Centre	Hostel	3 nights	65
	Shelter Flats	Hostel Advancement Centre	Undefined	15
Cano Mata-Vigil Shelter Centre (Oviedo)	Hostel	Reception centre Hostel	3 days	227
	Shelter	Hostel Advancement centre	Undefined	
Municipal Hostel (Langreo)		Reception centre Hostel	3 days	41
Inn for the Homeless (Cudillero)		Hostel	1 day	43
Flats for the homeless (Gijón)		Advancement centre	6 months	29
Meeting and Shelter Centre (Oviedo)		Reception centre Hostel for drug addicts	15 days	14

Table 3: General data on the sample of ACHs studied

The **Monitoring Process**, which is the responsibility of the rest of the centres, is carried out during a specific period of time and consists of all the actions included in Assistance and Reinstatement Programs, such as attention to basic needs (food, lodging, clothes...), training and others (the search for work and housing or channelling towards other centres or services).

Keeping in mind the above, the Information Service will be made up of three modules:

Basic Data Module: a database will be managed in this module, consisting mainly of data identifying the users of the ACHs. The majority of the information will be gathered the first time that a person is assisted in one of the centres with

access to the system, The Basic Data has been divided into:

Fixed data: Information that does not vary with time, such as forename, surname, birthplace and ID number.

Variable Data: Information that is susceptible to change over time, though infrequently (data that varies frequently is collected in the Intervention and Monitoring Modules), such as marital status or nationality.

Intervention Data Module: this will manage a database of interventions with respect to the users of the ACHs. Said data will be collected whenever a reception process takes place. The intervention data, which will have an associated date in common, will consist of:

Centre	Institutions involved in their management	Personnel present				Format found for information	Use of information technology
		HL	R	V	O		
Information Office for the Homeless	Cáritas Interparroquial. Town Council. Asociación Gijonesa de la Caridad. Hostel Covadonga.	X		X		Their own file cards Their own coding system	Word processor
Soup kitchen	Cáritas Parroquial			X		Blue file card	Non-existent
Network of Centres	Cáritas Interparroquial	X	X	X		Reception card Their own file cards	Database programs run on the DOS environment Word processor
Shelter Centre Cano Mata-Vigil	Cáritas Diocesana	X	X	X	X	Reception card Their own file cards	Specific database program run on the DOS environment Word processor
Municipal Hostel	Town Council	X				Their own file cards	Specific program used by the state administration
Inn for the Homeless	Cáritas Parroquial		X	X		Blue file card	Word processor
Flats for the Homeless	Cáritas Interparroquial	X	X	X		Reception card Their own file cards	Word processor
Meeting and Shelter Centre	Cáritas Diocesana	X		X	X	Reception card Their own file cards	Non-existent

Table 4: Management of the ACHs belonging to the sample studied

HL= Hired Lay workers, R = Members of Religious Orders,
V = Voluntary workers,
O = Conscientious Objectors (in Spain, compulsory military service may be substituted by community services).
The blue file cards and the reception cards are ones normally used in Caritas.
Interparroquial = Inter-parish: Parroquial = Parish: Diocesana = Diocesan.

Centre, client, date and time
Point of origin (geographical, centre or service and type of housing)
Problems (health, addiction to drugs, access to resources, training and employment...)
Services (in the centre, channelling to other centres)
Remarks

Level of integration (psychosocial development, health, housing...)
Comments

At the same time, it is very important for the greater part of this information to be saved in a codified form so as to facilitate its management and the establishment of measures that guarantee confidentiality. Thus:

Monitoring Data Module: this will manage a monitoring database of the users of the ACHs. This information will be gathered in the centres that offer lodging (for a period of time longer than one day) to those people channelled there after the reception process. The monitoring data, which will have an associated time period, will consist of:

1. Access to the system will be limited to duly authorised users who will be supplied with a user name and a password.
2. Two levels of access to the data saved in the system will be established:
3. Data available to everyone with permission to enter the system.
4. Data available only to people with permission to enter the system belonging to the centre with which said data is associated.
5. The data that identifies the homeless person (forename, surname, ID number) will be saved in encrypted form.

Arrival date, departure date, person who carried out the monitoring
Services (in the centre, channelling to and/or co-ordination with other centres...)

A centralised or a distributed database?

When speaking of a database, one normally assumes that the data resides in one single computer. When a number of geographically dispersed users need to have access to the same data, this situation is usually resolved following the classical client-server philosophy in a network of computers. In this communication model, the central computer acts as a store for the data and the remaining nodes can consult and/or modify the database. This would be the configuration of a centralised database system.

A distributed database, however, is a collection of data that logically belongs to the same system but which is physically shared out among the nodes of a computer network. The main advantages of this type of system in comparison with a centralised one are that it facilitates the management of naturally distributed databases (which is the case of organisations with different branches, like banks), they increase availability (in a centralised system, a failure in the central computer makes the rest of the nodes unusable) and it improves performance (lower response times to local requests, a greater number of requests processed per unit of time).

However, in spite of these advantages, distributed database systems have a number of associated inconveniences that may be summed up in the need for a greater degree of complexity to guarantee adequate co-ordination between the different nodes of the network. This translates into prohibitive economic costs for connecting all the centres and the necessary software. As this type of system is only advisable for organisations in which the economic benefits are greater than the operational costs, almost the opposite case to the present one, we opted for a centralised model.

Nowadays, a centralised database constitutes the most substantial part of client-server applications. This programming paradigm is currently well known by the majority of developers, there being abundant information, examples and literature on the subject. Perhaps its main weakness lies in the fact that the database resides in a central computer to which the clients connect (via conventional telephone lines, local network...). Hence if the central node fails, then all the clients are unable to work. However, this inconvenience is lessening as the drop in hardware prices permits solutions that tolerate failures; such as mirroring of discs and controllers, equipment with redundant power sources as well as the availability of a wide range of UPS (Uninterrupted Power Supplies) that, at a relatively low cost, allow the system to keep functioning when faced with potential power drops.

The database management systems software available on the market aimed at centralised systems is less costly than the distributed software, and also its capabilities are well tested in a large number of applications.

As only one place of residence exists for the data, which is accessed by the clients for consultations and/or its modification, it is easier to implement security and access control policies. For the same reason, there is no need for the users at the ACHs to have a high level of knowledge of databases, as its maintenance along with that of the server where it resides is carried out in the central node itself.

And what role does the Internet play in all this?

The Internet network links hundreds of thousands of heterogeneous local networks. Presently, its use is radically

changing ways of communicating, learning, working and carrying out commercial exchanges. A large part of the enormous popularity achieved by the Internet phenomenon is due to the introduction of the Web in 1990. The Web (World Wide Web) develops a system for distributing information based on hypertext pages. Although the concept of hypertext was not new, its application to the immense amount of information accessible via Internet revolutionised its use. Initially conceived of as a system for distributing information based on hypertext, it has evolved to become a truly hypermedia system, in which the pages allow access to images, sound or video, which has notably increased its appeal and utility.

The Web is based on the client-server model (Orfali et al., 1996). The Web client (browser) is a program which allows the user to interact in order to request information from a Web server, which the client then receives in the form of HTML (HyperText Mark-up Language) format pages. Links are to be found in these pages to other Web pages, together with text, graphics, sound, etc.; the browser's job being to interpret and show to the user all this in the right way.

A great number of Web pages are static, i.e. they are designed off-line using specific development tools. Once the page has been designed, its contents are published on the only cost the ACHs will have to cover will be that of local telephone calls to connect to the Internet via Infovía. Another aspect to keep in mind is the presence of the database server on the Internet. As we mentioned above, a Web application that accesses a database resident in a central server is currently being developed. Thanks to these types of solutions the user can consult a database using a Web page as an entry-form and receive a page from the server with the result of their request. Thus any PC with access to the Internet can become a client of a Web application that uses this type of technology. Furthermore, secure communication protocols exist, that allow information in transit to be encrypted in a simple way (transparent for the user) and at a minimum cost, thus avoiding access by unauthorised users.

The adoption of the Internet for connecting the centre with the database server has other advantages like, for example, the economic cost of communications. Connection to the Internet in Spain is carried out via the Infovia service. The aim of this service, launched in 1995 by Telefonica de Espana (Spain's main telephone company), is to facilitate the relationships between users and companies via computer technology. From the user's point of view, Infovia permits contact with a large number of Internet Services Providers from anywhere in the country for the price of a local call. Currently the rates of these services range between 1,000 and 3,000 pesetas⁴ a month.

In the ACHs, the minimum equipment needed to access the Information System to be implemented consists of a PC with a Pentium or higher processor, that runs Windows '95 or Windows '98 operating system and a 33,600 bps or higher speed modem. The cost of this hardware was covered by means of a subsidy to the sum of 800,000 pesetas, conceded by the Regional Government of Asturias for connecting non profit-making organisations with social aims to the Internet. The only cost the ACHs will have to cover will be that of local telephone calls to connect to the Internet via Infovia. Another aspect to keep in mind is the presence of the database server on the Internet. As we mentioned above, a Web application that

⁴ 150 pesetas = approximately 1 US\$.

accesses a database resident in a central server is currently being developed. This server will have to be permanently present on the Internet so as to be accessible from all the centres. In order to minimise its running costs, the University of Oviedo has agreed to indefinitely assign an IP address to the server and to incorporate it into the University network (which is directly connected to the Internet) at no cost to the network of centres. Even in the case of the server's connection to the Internet not being sponsored, the use of this communication network will turn out to be the most economical solution for communicating between geographically dispersed computers.

Conclusions

The fundamental conclusion lies in the fact that we consider the co-ordination function to be more critical in the management of ACHs than in other types of organisations. In order to successfully carry out this function, a number of mechanisms were identified, among which we would highlight co-operation agreements and the made-to-measure design of Information Systems.

The motivation and training of the future users of the System, involving them in the design of said system and eliminating the distrust observed with respect to using information technology in their daily work.

Finally, some of the most obvious advantages that this pilot project may bring to the ACH networks are:

The formulation itself of this project has meant that its potential users have met to discuss their methods of working with the homeless. The result of these meetings, which were carried out during the analysis phase of the project, is the content of the Information System to be implanted.

The system seeks to facilitate the collection and processing of information, allowing the social worker to concentrate on personal contact with the homeless.

Use of the enormous possibilities that Internet offers to the traditional means of communication in the ACHs: electronic mail (a simple, more efficient and cheaper alternative to the majority of the numerous, necessary telephone conversations), access to information via the Web, meetings

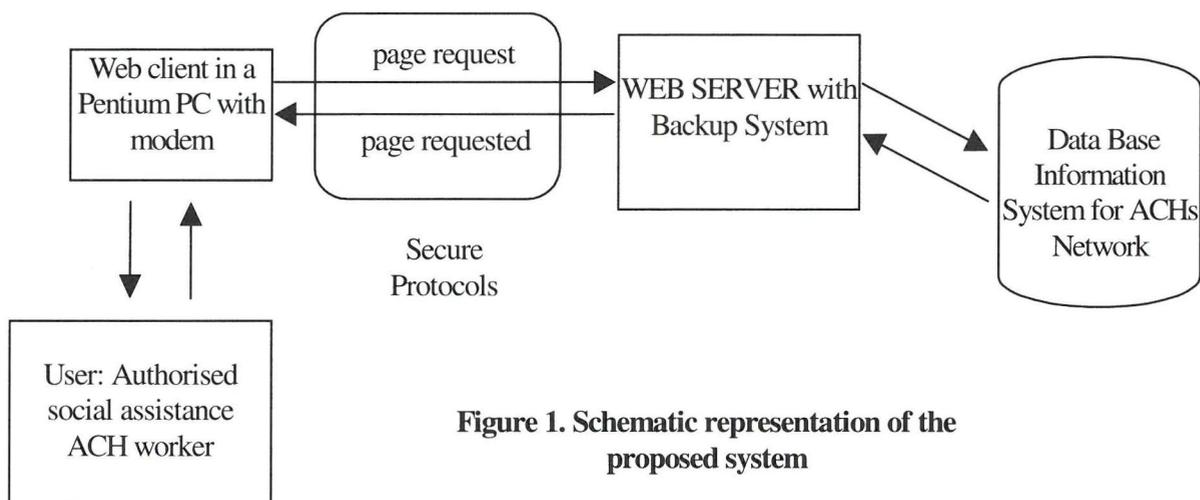


Figure 1. Schematic representation of the proposed system

At present, there are a number of problems that impede effective co-ordination: the large number of participating institutions; the existence of mistrust between certain organisations; and, above all, poor management of information demonstrated by the use of multiple formats for collection and storage, manual processing of data and scarce or incorrect access to computer technology tools.

In order to improve this situation, there is a proposal to design a networked information system for a pre-established set of ACHs. The efficacy of this solution depends on a number of requisites, amongst which the following stand out:

The guarantee of confidentiality of the personal data that is introduced into the system, respecting the guarantees for protecting personal privacy present in Spanish legislation (see BOE⁵, 1992).

of the personnel in the centres using video-conferencing software...

Facilitation of the writing of up-to-date reports: statistics on levels of occupation in the centres, services supplied, sociological analyses of the phenomenon of transience, monitoring of the routes taken by the homeless and evaluation of social intervention programs.

Publication in Internet of information relative to the work of ACHs with the homeless, their projects and needs.

Finally to support the social reinsertion of the homeless, as up-to-date information on them is available.

⁵ The Official Bulletin of Spain

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Making sense of the internet: a guide for small voluntary organisations

Book review by Steph Petrie and Andy Richardson

Watson M (1998)

Making sense of the internet: a guide for small voluntary organisations

National Institute for Social Work

ISBN 1 899942 23 8

Paperback £9.50 (£6.50 for small voluntary groups), pp39

Making Sense of the Internet has been written with the small voluntary organisation in mind, especially those whose paid and unpaid staff have not yet had access to, or become familiar with the Internet. In our experience the voluntary sector, as Mark Watson points out, often struggle with limited resources, old equipment and lack of technical expertise. Booklets such as this are an indication of the rapid growth and use of the Internet as an important form of communication for voluntary sector organisations and are much needed.

This slim volume begins with a general introduction to the project which led to this publication and the management of information and knowledge in general. Subsequent chapters are devoted to particular ways of using the net, such as email and websites, and throughout attempts are made to address the likely issues and interests of the voluntary sector. There is a wealth of useful information and advice although the most relevant sections come in later chapters. Beginning with an outline of a workshop for voluntary organisations on using the Internet and a cursory discussion of information and knowledge management hardly encourages the reader to plough on as there is little in this early chapter to grab the attention. However perseverance brings rewards.

Among a number of useful chapters covering such topics as the World Wide Web, getting files from the Internet and Usenet newsgroups the chapter on email is worthy of special note. For most new users of the Internet, email is the most likely starting point and the most interactive. Results are immediate and rewarding unlike other activities, such as surfing, which can initially seem frustrating and pointless. Part 3 gives a thorough introduction to both technological and cultural aspects of the use of email including sending and receiving mail, protocol and mailing lists. It would have been reassuring at this point to have had some quotes from people who had gone online - what were the benefits, problems and issues. What information is out there and how did email help? This would have been more central to the purpose of the book, which is after all to encourage people to use the Internet, rather than the quotes in Part 1 which primarily refer to participants experience of the initial workshop.

Throughout there are highlighted sections of specialist advice and information including full page sections devoted to choosing an Internet Service Provider and understanding email addresses and these are clear and comprehensive. However in trying to offer a comprehensive introduction the wealth of detail is occasionally overwhelming. It is here the layout and structure of the booklet could be improved. Such a variety of issues requires a

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structure that facilitates easy access to relevant information. The liberal use of green and highlighted boxes for everything from detailed technological information to purchasing advice, makes it hard to select what may be of relevance. The structure often appears to be drawn from the technology not the audience and as a result is not always accessible. Starting with easy steps and offering detail for the more interested or knowledgeable later would perhaps be more engaging and encouraging than technical information on modems early in Part 2.

Threaded throughout, however, are some interesting observations on the Internet and power. In Part 4 the valid point is made that websites rarely seem to *belong* to the whole organisation and that they *should* be used by voluntary organisations as 'a gateway to their staff'.

The Web should be used to inform your staff and your organisation, to inform the Web audience about your staff and your organisation, and to act as a link between your staff and the Web audience (Watson 1998: 29)

Access is a key issue but these points are sadly not developed. Will the hierarchy of an organisation and its management culture affect how the Internet is used and by whom? We have come across numerous voluntary and public sector organisations who limit use of email to senior staff alone, thus undercutting the potential advantages outlined above.

Some of these issues are revisited in a brief discussion in Part 7 'Next Steps'. Mark Watson points to the use of the

net as a platform for collective action, as a means of reaching large audiences at low cost, and as a way of reaching actual and potential funders. It would have enhanced this final section if some indicative costing for a small/ medium organisation could have been included, as in our experience this is primary concern to management committees and funders. However it is appreciated that information of this kind quickly becomes out of date. He does emphasise, however, the importance of maintaining voluntary sector culture.

There is also a need for the voluntary sector to take an approach which is more in keeping with the co-operative, self-help ethos of the sector, rather than the commercial ethos of the Web..

We believe this is fundamental to any small voluntary organisation 'Making sense of the Internet' if they are to preserve their own identity and independence. A list of useful websites conclude this chapter and provide a starting point for strategic activities.

Making sense of the Internet provides a comprehensive guide to what, for many, is a confusing and intimidating technology and, despite some structural problems, provides an informative and useful resource for small voluntary organisations and others such as students. Perhaps the next step could be a further book dealing with some of the organisational and cultural issues, raised by Mark Watson, surrounding Internet usage by the voluntary sector.

A tool for the trade? the use of information technology in the care management process.

Book review by Steve Wells

Newiss, G. (1998)

A tool for the trade? the use of information technology in the care management process

Social Research Publications, University of Lincolnshire and Humberside

ISBN 1-874474-21-4

Paperback £7.50, pp. 24

This slim volume asks an important question in its title, but unfortunately one will have to look elsewhere for the answer. Based on a small study of three departments, none of which one suspects would win any plaudits for their systems from the SSI/Audit commission review process, Newiss himself can only draw limited observations about some key issues. The major question raised in the title needs a longer and more sophisticated look at a wider range of Departments and their systems, including some that have adopted integrated bought packages, such as SSIS (Social Services Information System).

The first chapter provides an introduction to the study, which is described as, "an analytical account of how information systems and, in particular, information technology (IT), has been utilised by Social Services Departments (SSDs) to administer community care." (p.2). Chapter Two discusses the methods used in the study and a background description of the departments included in the study, though it does not make it clear why these two County authorities and one unitary City authority were chosen. The research was conducted between mid-February and mid-April 1996 with the fieldwork in each authority taking only between one or two days.

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Chapter Three looks at the way that IT systems are used by the three departments and concludes that mostly their systems are used for the preservation of data. One department had tried to use the data to analyse patterns but; *"Any attempt to retrieve information for planning purposes from the assessment and care planning modules was obstructed by denying statisticians access to these details."* (p. 8). Integration within the systems was also limited with financial information being stored on separate systems and the duplication of paper and computerised records continuing in the departments studied.

Chapter Four looks at reactions to the introduction of the information systems and restates the importance of user involvement in systems and the need for appropriate training. But it concludes with the important warning that; *"The use of IT, for its part, may prove to be symptomatic of a conflict which has seen the traditional values and roles of a social worker eroded by the continued advance of managerial rationalism."* (p. 14). Chapter Five develops this theme of whether IT can be seen as a threat or an aid to social work practice. Whilst some users were found to be subverting systems to make them better meet their needs, most appeared to complain of the straight-jacket it was felt data collection placed on their professional judgement. But of course accurate data collection requires the adoption of common standards. These can appear at odds with supposedly needed assessment and can help make systems appear the enemy rather than the friend of front-line staff.

The final chapter pulls together the themes that came out of the research and draws together some useful pointers for those introducing IT systems into SSDs. However whilst rightly stressing the need for systems to offer something to users and be designed from the bottom-up, the conflict with the need of managers for more and more information, regardless of its use to practitioners is rather glossed over. Though Newiss himself recognises on the final page; *"Accompanied by the "new managerialism" and a concern for efficiency and cost effectiveness, the result has been a fundamental change in the ethos of social services."* (p. 22).

So to return to the question posed in the title, can IT be a tool for the trade, or is it more a necessary device for managers to produce more and more reports on their standards of operation? As the recent Local Authority Circular, "Modernising Health and Social Services"¹ has put it;

"Public services are delivered locally. They need to be shaped to meet local needs and the wishes of users and carers. But the devolution of responsibility must be matched by accountability for standards. Local services must be judged against national standards." (para. 13)

To show conformity against those national standards, which in this circular include specifics such as increasing the number of children leaving care with a GCSE or GNVQ, more information will have to be gathered from front-line staff.

Increasingly departments are being called to account for a greater variety of performance indicators and specific funds are to be tied to achievement of particular standards.

So more and more management information is going to be needed to complete these returns of performance indicators. This is going to challenge even more the professional ethos of social workers, whose tradition has been based on individual work with individual clients. This has been highlighted by the Audit Commission/SSI Joint Review process. The recent publication "Messages for Managers"² states

"Overall, however, standards are still seen as professional property. Councils rely too much on one-to-one supervision and could enhance staff performance by collecting better information on workload and performance and sharing [it] with their staff." (p. 42)

It is hard to imagine this being accomplished without further development of IT systems that capture the data required. Newiss cites Sapey's³ article that appeared in this Journal, as an example of the problems that there can be with IT systems. Interestingly "Messages for Managers"(p. 60) praises the Cornwall system as an example of the kind of system advocated by Newiss, designed specifically to meet operational requirements rather than a theoretical or technological model. Something obviously must have changed over the past few years to make this a successful system and it would be interesting to know how this has been achieved.

To answer this and the question posed in the title of this pamphlet we need a lot more than we are given here. As a starter paper, raising some of the issues it can be recommended. There is, however, no doubt that a more detailed study of systems would be of benefit to those who are struggling to manage existing systems, at the same time as having to meet the increased expectations of the government and partner agencies for more performance data. What works; how can systems be integrated; how have the human resource implications been best managed; are all questions that need more thorough examination than they receive here. Then of course there is the big question that is hinted at. What exactly is the trade that social services departments are engaged in today?

² The Audit Commission (1998) "Messages for Managers: Learning the Lessons from Joint Reviews of Social Services"

³ Sapey, B. (1995), "Social Services and Communication Technology: A User Perspective of the Implementation of a Care Management System in a Social Services Department", *New Technology in the Human Services*, 8 (1), 2-9

¹ DOH (1998), "LAC(98)22 Modernising Health and Social Services: National Priorities Guidance 1999/00 - 2000/02"

The information age: economy, society and culture: volume II - the power of identity

Book review by Bob Sapey

Manuel Castells, 1997

The information age: economy, society and culture: volume II - the power of identity

Blackwell Publishers Inc., Massachusetts

ISBN -55786-874-3

Paperback £16.99, pp. 461

In the first of these three volumes (reviewed in NTHS (11.2)), Castells described the impact of the globalisation of capital and the informational economy on the structure of organisations, the nature of work and the social meaning of space and time. In this second volume, he moves on to describe the nature of resistance throughout the planet to this revolution. His focus is on the issues of identity and culture within the social movements that have grown in the final decades of the 20th century, while his analysis is based on the concepts of *legitimizing, resistance and project* identities. He uses these to examine the new forms of social structures emerging at the end of this millennium.

He argues that the sources of the legitimizing identities that have dominated throughout the industrial era are disappearing. *'Political ideologies that emanate from industrial institutions and organizations, from nation-state-based democratic liberalism to labor-based socialism, find themselves deprived of actual meaning in the new social context. . . . The institutions and organizations of civil society that were constructed around the democratic state, and around the social contract between capital and labor, have become, by and large, empty shells, decreasingly able to relate to people's lives and values in most societies'* (p. 354-5). While many writers have portrayed this millennial chaos as the dawn of a postmodern era, Castells takes a different approach. Based upon a massive amount of empirical evidence, he examines the processes that are causing the crisis of democracy and the reduction of power of the nation-state, analyses the development of resistance identities that appear in social movements - ranging from the religious fundamentalism of both Muslims and Christians to the variety of environmentalists throughout the world, from the revolutionary activities of the Zapatistas in Mexico or the American Militia in the USA to the global development of feminism and the downfall of patriarchy - and speculates on how these are developing as projects that might lead to new forms of legitimation.

The relevance of all this to the study of social work is that, as in the first volume, Castells is providing us with an examination of the social structures that are taking shape throughout the world as the informational revolution proceeds. Social work takes place within this context and just as we have in the past looked to sociology for an understanding of organizational and familial structures that have formed our 20th century societies, so must we look to it at the beginning of the 21st century. The managerialist solutions that have come to dominate the public sector tend, as did social administration in the past, to view the task of welfare in simple instrumental ways. This does little to construct a positive means of working in the social spheres of individuals and what is clear to anyone retaining any of the values of social work is that an alternative is needed. Just as critical sociology helped to expose the unquestioning assumptions of social administration, it must now challenge the new hegemony of managerialism.

There is something quite daring in the approach Castells takes to his analysis. Although his personal sympathies lie with those movements that occupy the ground traditional to the political left, he does not shy away from taking an almost objective view of the foundations, aims and purpose of organizations like the American Militia or Aum Shinrikyo. It may seem

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unusual to include movements that aim to uphold the values that have dominated social order in the past, but it is the parallels he draws between these and other organizations that might be considered their political opponents that makes this analysis important. His aim in this is to demonstrate the responses of citizens throughout the planet to the massive social upheaval being caused by the informational revolution and as he terms it in the title of his second chapter, these are all 'social movements against the new global order'.

There is the question then of whether this raises his analysis to a level of grand theorising and in a sense it does. However, rather than succeeding in presenting a new and totalising theory for understanding informationalism, much of this is a critical analysis. It is not my impression that he intends this to be an end, but it does provide a beginning to an alternative way of viewing the current phase of our history and development.

As this work is daring, it is important to understand its difference from much of the more partisan literature that is familiar to social work education. For example, in chapter four, *The End of Patriarchalism: Social Movements, Family, and Sexuality in the Information Age*, Castells examines the changes that have taken place in the roles of women across a range of societies in the last quarter of this century. He is prepared to conclude that we are at a stage in history in which patriarchy is diminishing and that it will continue to do so. This is not to say that full equality has been achieved or that there is no need to remain vigilant over the gains that have been won, but that the processes set in place appear, by analysis of the evidence, to be essential to the development of an informational economy. There are those who might challenge such a notion, particularly as it has been written by a man. While this might be appropriate if the concern is with the immediate issues that those within particular movements face, it would be reflective of the way in which much academic, political and social thought is restrained by the binary oppositions of those involved in the fights for change. Castells is analysing these issues in a different manner. His concern is with the way such movements are changing the nature of social life and hence how they impact on all people. Such changes do not of course only affect able-bodied women of working age - they affect men, older people, disabled people, heterosexuals and homosexuals. In fact they affect everybody living on the Earth and as such require more than a partisan academic interest.

Similarly, his analysis of the importance of issues such as religious fundamentalism and ethnicity are not restrained by political or social commitment to the causes that such identities have as their immediate aims. Rather, he is interested in such issues for the role they are playing within the development of new identities. So, although some movements such as the Christian and Islamic fundamentalists are clearly in opposition in their aims to those of gay liberationists, their commonality of interest is in the process through which they provide people with a form of identity at a stage in history when, as I have already said, he argues that much traditional legitimisation has been lost. The difficulty for students is to distance themselves sufficiently from their own political allegiances, to observe both those movements with which they have sympathy and those they oppose with equal rigour. This contradicts the doctrine of academic study built up by such movements - for example, the linking of ethnicity and social work to anti-racist practice quite rightly dictates an ethical outcome, but if we are to comprehend the impact of ethnicity

as an identity issue, it is essential to take one step back and review its impact on the lives of people in different social groupings.

In later chapters, Castells extends and deepens his analysis of identity by examining the changing role of democracy within the nation-state. He argues that in order to retain any influence within the globalised economy, national governments are forced into forming international networks, such as the European Union. This powerlessness of governments is forcing a crisis of democracy. Simultaneously there is a growing tendency to view local democracy as important to the continuation of our current institutions, and to the formation of new ones through social movements - for example, Green politics. Thus, while local governments throughout the world are unable to compete with or control the forces of capitalism, they nevertheless are attempting to rival the increasingly powerless national or federal institutions. Once again, the struggle of the local and the global is being played out in our lives.

Castells concludes this volume with an introduction to the third, *End of the Millennium* which I shall review later. His concern now is to identify the project identities that might be arising from the *resistance* identities. Not all resistance will result in projects, some will simply remain as resistance. But those that do may become the foundation of *new legitimizing* identities that will form the new social structures of the informational age.

Cyberspace divide: equality, agency and policy in the information society

Book review by Michael Hardey

Loader BD (1998)

Cyberspace divide: equality, agency and policy in the information society

Routledge

ISBN 0-415-16969

Paperback pp. 266

The new realm of cyberspace has been described as the 'ether that lies inside and occupies the in-betweens of all the computers' (Sardar and Ravetz 1995). It is the 'in-between' that represents a new space full of new possibilities and seemingly unconstrained by the old boundaries of the material world. For cyber optimists this boundless post-modern space disperses inequalities as identities and bodies become blurred and subject to change. It offers those bound by disability, locality or stigma to the social margins new identities and roles within the electronic community. The contributions to this volume provide a timely analytical critique of such optimistic interpretations by reminding the reader that material inequalities shape use and access to the new Information Communication Technologies (ITCs). In 1997 Routledge published *The Governance of Cyberspace* that was also edited by Brian Loader. *The Cyberspace Divide* picks up some of the themes begun in this earlier collection and places an additional emphasis on inequalities within and without cyberspace. It is organised into three broad sections. The first challenges cyber optimists who foresee meritocracy and empowerment being fostered by ITCs. The second section examines the relationship of material inequalities and ITCs. The final section consists of chapters that consider technological and organisation policy.

Capitalism and the inequities resulting from the workings of the global market forms a theme running through the book. The editor's useful introduction highlights the non-utopian stance of the contributions as one of the virtues of the volume. This is born out in chapters that look analytically at, for example teleworking. Remember those British Telecom advertisements about the idyllic possibilities of living in a remote rural cottage while engaged in working in the global economy? Alison Adams and Eileen Green consider gender in relation to location and the Internet in a way that questions such idyllic expectations. They point out that ITCs promote what has been called the 'temporalisation' (Greenbaum 1994) of work by opening up a global and largely female labour market. Relatively cheap labour in non-western countries is being used to provide services for west. As Castells (1997) has pointed out this widens inequalities and reduces the potential of local interventions to address social problems that are rooted in economic and educational disadvantage. Mike Holderness' chapter unravels the rhetoric of the 'global' to reveal that many developing countries lack any information technology infrastructure. Broadening the debate to include western media he also draws attention to the tensions in the local/global dichotomy when 'global' is predominately Western American English and dominates the Internet. As various chapters confirm it is the United States that has taken the lead in exploiting the Internet. However, in a chapter about the Internet in Wales, Hugh Mackay and Tony Powell argue that the Welsh language becomes more visible and a sense of place and cultural identity are enhanced.

The development of virtual communities and cities is examined in a chapter on the 'urban crisis'. Alessandro Aurigi and Stephen Graham draw attention to how representations of material cities in cyberspace consistently fail to include people and locations situated on the social and economic margins. There appears to be little need for social workers in these portrayals of civic life. Virtual communities that may have no material base have formed a significant theme for those writing about ITC. Empowerment and the possibilities for social inclusion through citizenship of virtual communities have been highlighted as one of the ways inequalities disappear in cyberspace.

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Foucault argues that power/knowledge is a central dimension of inequalities so public access to knowledge on the Internet may challenge the power relationships between governments and the public and the professions and their clients. This has led some to foresee new possibilities for self-care and for the delivery of health and social care services. The disembodied members of virtual communities occupy a space that blurs reality and fiction. For some this may be therapeutic as it allows then to explore possibilities not open to them in the material world. Joe Ravetz's chapter on this examines the darker side of the Internet where the lack of constraints can lead to users living out violent fantasies and provides a new space for pornography and other exploitative material. However, it should be remembered that the Internet is in the end subject to national and international laws and that organisations that provide Internet services and individuals who use the Internet have been subjected to successful prosecutions.

The final section of the book provides a number of interesting chapters that examine different aspects of policy. The tensions between the liberal market based approaches of the West and the state directed interventionist model favoured by many emerging capitalist economies are brought to the fore in Nick Moore's contribution. At a more local level the story of UK technology policy is told by Puay Tang. Despite previous administrations, rhetoric about the citizens charter and New Labour's discourse about more open government the potential of ITCs remain under-exploited. The provision of government information on-line is important and provides a potential resource for both practitioners and the general public.

The last chapter focuses on healthcare and indicates some of the problems associated with the increasing use of ICTs. The recently announced UK Information for Health Strategy promises to deliver lifelong electronic health records,

telemedicine, and online appointment booking in the next seven years. It remains uncertain how the strategy will be implemented and the implications this has for social workers. The convergence of interest and clients between health and social work professions suggests that ICTs may be significant in the further blurring of professional boundaries.

Access to information on the Internet highlights an underlying tension evident in many of the chapters in this book. On the one hand it may empower clients and encourage user led pressure groups but on the other it may mislead and leave vulnerable clients open to exploitation. *The Cyberspace Divide* makes a useful contribution to unravelling the confusion of medium with message and will be enjoyed by social work professionals interested in the new medium of the Internet.

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Social Trends CD-Rom

Software review by *Boby Sapey*

Social Trends CD-Rom, Office for National Statistics, 1 Drummond Gate, London. SW1V 2QQ

Presentation:

Social Trends CD-Rom has been produced by the Office for National Statistics and contains 25 years of the paper publication from 1970-1995. It requires a PC using Windows 3.1 or later, 4Mb of RAM and a colour screen capable of displaying 16 colours, but preferably 256. It can be run directly from the CD though it is more efficient to install some software onto the hard drive.

Comments:

I tested the software on a 586-133MHz PC co-processor fitted to a Risc PC with a StrongArm 200MHz CPU. This was assigned 32Mb of RAM and was running Windows 95.

When I began to install the software, it immediately came up with an error message saying that it could not install DDEML.DLL as the destination

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file as already in use. As I had nothing running there was little I could do about this so I continued with the Setup routine and it didn't seem to matter. Once installed the software ran very smoothly. The only technical problem was that it seemed to take rather a long time to change years and there was no short-cut to this.

The CD-Rom comes with a small booklet that fits into the front of the case. Once you have prised this out it contains quite clear guidance on the different ways in which the data can be accessed and after 10 minutes of reading I found the program quite intuitive. I did look at the Help files and these were clear. They would be particularly useful to anyone with poor vision as the booklet is in a very small font.

There are four main ways of accessing the data - Contents; Tables and Charts; Index; Master Index (Main Index would be a more appropriate term). The first was the most useful as it allows you to go through a range of levels to a particular topic. This is then displayed as text with hypertext links to charts and tables. Tables and Charts works similarly except your contents lead to a list of tables and charts. If you know what you want then this is fine but I found the text useful in that it explained what the tables and charts were about. The Index gives a long alphabetical list and sub-lists for each topic. It was an interesting way of browsing the data. The Master Index is the only one of the four means of access that uses more than one year. However, it does not create new charts or tables across the years, rather it provides access to the full range of information. It is slower though.

I was a bit disappointed by the appearance of the software on screen. Although my monitor exceeded the required specifications, the lettering on various buttons was visually irritating. They had used black and white on a brown background to create a 3D effect. However, such effects are far better if one uses shades of grey and the result was that the words seemed to glare. On one button this was exasperated by having the sentence 'Click on the chart to the right, or on this button to expand the chart,' alongside a picture of a pair of binoculars. What is the point of using symbols that are perfectly clear if you then write such long instructions?

The other problems with the appearance were the size

of the window and the quality of the tables and charts. The software appears to be designed only to run in VGA mode so in SVGA it only occupies a portion of the screen and cannot be resized. As a result, when you are looking at text, tables or graphs which are larger than the space within the window, you have to use scroll bars rather than being able to make full use of the screen size.

I found the text screens fine but the tables and charts were all scanned rather than created from raw data. The quality of this left a lot to be desired with some charts that used various shades within the bars very difficult to read. Also the small text which gave the source of the charts was often difficult to read because the resolution of the scanner was low. It reminded me of some of the poor quality PDF files on government web sites.

In terms of its usefulness, it is clearly much more accessible than having to go to the library and search through back copies of the paper publications. Everything that is in Social Trends is on the CD. If you use Social Trends in teaching or research then it is clearly an asset. However, it is already out of date in many respects. I tried looking at the social services data and in this I found some statistics I was interested in, namely the numbers of people in residential homes. The problem was that the latest statistics were for 1993 and they put the total for all groups in residential care in Great Britain at 264,000. From another source, the Department of Health Statistical Bulletin 96/25, I knew that the figure for England alone, in 1996, was 428,120. A difference as big as this makes me wonder about the value of something that is already out of date.

I think the greatest disappointment with this CD-Rom is that it is a missed opportunity to use the raw data. I've used the census data on CD-Rom and that was extremely powerful, as you can create tables of your own design and export in formats that let you make your own charts or use the data in spreadsheets. Social Trends CD-Rom however, offers no more than the paper versions and in terms of its visual quality it offers less. I'm sure it will appeal to librarians wishing to save space on the shelves, but I am not sure that it will be universally well received by all those who need to read it.

Women's rights.. the story so far

Software review by Dr Anne Scott

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Women's Rights.. The Story So Far CD Rom The Times Perspective, Julia Strong and Susan Walton, News Multimedia 1996, ISBN 1 897992 42 4

The advent of multimedia resources has been heralded as facilitating an increase in both accessibility and rigour in the teaching of the social sciences. News Corporation has jumped into this developing niche with an ambitious product. *Women's Rights: The Story So Far* is part of a series of curriculum support materials drawing on archive material from *The Times* newspaper. The publishers claim it will be particularly useful in supporting history and sociology work at Key Stage Three, and also claim that it will be useful for students doing project work at GSCE, A Level, and Standard Grade levels. Undoubtedly, it will be useful for both of these purposes; having archive material from *The Times* immediately available to students will add a new dimension to the study of women's history at all levels. As the tutor of a first year University module in British women's history, I noted

several photos and articles from this CD-ROM which could have added depth and interest to specific sessions I have recently taught or to projects that my students have recently prepared.

However, this product also has some major problems which limit its direct usefulness to students. It offers a very partial perspective on women's history, while it represents this perspective as both authoritative and comprehensive. It lacks a coherent style and level. Navigation through the CD also presents some problems. Because of these limitations, I would be reluctant to use this CD-ROM with my own history students. Moreover, I am somewhat concerned by the potential implications of this product being marketed to secondary school teachers as 'the' Women's Rights CD. I will elaborate on three central areas of concern:

First, Women's Rights presents a partial and biased view of history as the objective and comprehensive 'story so far'; its material is overwhelmingly drawn from middle-class, English-based (even London-based), and white sources. Its coverage of the women's suffrage movement, for example, is overwhelmingly biased towards the WSPU (the suffragettes). The WSPU was almost exclusively middle-class, it was based in London, and it engaged in the kind of public stunts which generated newspaper attention. As a result, this organisation did receive a great deal of contemporary newspaper coverage. However, it was not the only - or even the most important - of the women's suffrage organisations. The far larger and more influential National Union of Women's Suffrage Societies (NUWSS), which was led by Millicent Fawcett, gets much less disk space than the WSPU on this CD-ROM, while the Lancashire based radical suffragists, who were organising mill workers and trades unionists, are not mentioned at all. The Times was by no means a neutral observer of the campaign for women's suffrage, and its bias towards the WSPU has not been corrected - or even noted - by the makers of Women's Rights. The resulting account is thus so misleading as to be, in my opinion, worse than useless for students of women's suffrage.

Secondly, *Women's Rights* is overwhelmingly ethnocentric. This fault also seems to originate in the fact that the CD draws on material from *The Times* - a British broadsheet. This limitation would not be a problem if the makers of the CD prominently noted its British focus for users. However, they do not do so; *Women's Rights* is presented as being of world-wide relevance. The short sections relating to continental European and non-western feminist movements are presented without adequate social or historical context. The CD strongly implies - and even states directly at one point - that feminism filtered out from the United States and Britain to the rest of the world. This is highly misleading, and may undermine tutors' attempts to raise student awareness regarding the autonomous women's histories existing in many European and non-western nations. As it is a core aim of most introductory courses in women's studies to develop this awareness in students, *Women's Rights* would seem to be working at cross purposes with the aims of those teachers most likely to be using it.

Thirdly, there are some problems with the design of *Women's Rights* in relation to style and usability. Stylistically, the product lacks coherence. More importantly, *Women's Rights* lacks coherence in relation to academic level. Some sections - such as the 'dress a doll' timeline - are creatively designed, and are highly appropriate to Key Stage Three pupils. Other sections are rather inaccessible to students of this level; My Key Stage Three daughter - who is quite interested

in women's history - was quickly bored by the sections on 'women's rights and human rights' and 'equality'. This diversity does not need to be a problem. *Women's Rights*, however, does not seem to be deliberately designed to take users through material of increasing complexity; the level of presentation changes between sections in a seemingly random manner. I also noted some problems with navigation. For example, it seems to be impossible to move directly through a section such as that on 'equality'; I had to continually return to the main menu and then click on the next topic.

Unfortunately, *Women's Rights* falls some way short of achieving its ends. While it offers some very useful resources, its quality is extremely patchy. Insufficient attention has been paid to layout, usability, and ease of navigation. Quality, style and level of presentation is extremely variable, giving the CD a rather 'cobbled together' feel. Most importantly, *Women's Rights: The Story So Far* is not comprehensive in any way. Women's 'story so far', as this CD presents it, is overwhelmingly biased towards the experiences of white, middle-class, British and American women. During the past two decades, feminist historians have struggled to break out of the conceptual straitjacket imposed by such a middle class and ethnocentric orientation; the vision of women's history presented in this CD-ROM thus represents a substantial step backwards.