Let's talk about news

Supporting the editorial process at a radio station

Kerstin Forsberg & Henrik Fagrell

kerstin@astrakan.se and fagrell@informatics.gu.se

Viktoria Institute

Box 620

SE-405 30 Göteborg, Sweden

Abstract

The paper reports from a study at a local Swedish radio station informing the design of new IT support. We suggest a prototype application – the NewsMate – with the aim of supporting knowledge sharing and expertise location among the journalists in both office and field situations. The guiding design principles for the NewsMate are evaluated against existing systems and approaches.

Keywords: CSCW, news services.

BRT Keywords: A10108, GA03

Introduction

The news industry has changed dramatically over the last couple of years. New news mediums have emerged and the conventional ones have moved from the kitchen tables and living room corners to our desktops and mobile devices. Inside the newsrooms, the use of new technologies to exploit these news channels have increased dramatically. Other matters have not changed in the same way: journalists are still confronted with deadlines and conventional media formats. The organising of work, and the sharing of resources, ideas, and knowledge have not been issues for IT-support. Instead the focus has been on building IT for standardised production processes[1]. This approach is common in factories to optimise the production, but key question to ask is: will it work in the newsrooms? There are major differences between the production of goods in a factory and the "production" of news. The need to understand the practical, situated and contingent work practices and needs of journalists have not been widely covered. How do journalists decide which events to report and how to carry it through to publication?

An introductory textbook on the topic suggests that events may be *categorised*, in a top-down fashion, as news. News is, for instance (Mencher 1997):

- events that are likely to affect many people, e.g. a hurricane
- events that are immediate, e.g. election results and traffic jams
- events involving well-known people or institutions
- events in the circulation or broadcast area

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[1] Workflow has been identified as one of ten key technologies important for the publishing industry for the next years according to Andrew Tribute, Beyond the Printed Word, The World Electronic Publishing Conference, 1997 and 1998, arranged by IFRA (INCA FIEJ Research Association) and WAN (World Association of Newspapers)

- events that reflect clashes between people or institutions
- events that deviate sharply from the expected and the experiences of daily life
- and situations that are being talked about

There are, however, a number of other issues that this listing does not consider. For example, a news organisation would have to limit the things that qualify as news due to constraints in personnel resources or because it does not part their mission. In Computer Supported Co-operative Work (CSCW) the need to understand work as it unfolds in everyday settings is very much recognised in the literature (see e.g., Randall et al 1995). This is also the perspective adopted in the project reported here. We report from study of a Swedish local radio station. An observation is that there are a lot of discussions about how news stories may be reported and who might contribute. When a journalist gets a story to investigate it is a necessity to find out background information. From a journalistic point of view this is very important, because the story has to have originality, i.e. if the story has been under coverage before it need to be approached from a new angle and if the story is new it needs to be put in an appropriate context. The problem is that the journalist does not always know if other colleagues or other news channels have worked on the story or related stories before. The main activity in deciding what to do is "to talk about news."

The journalists often need to be wherever news happens, which will in many cases make them mobile. There has, however, been very little attention in supporting these concerns in non-desktop situations. This has, however, been the case in most CSCW research (Luff and Heath 1998). Moreover, Bellotti and Bly (1996) gives some empirical account for that new problems and possibilities occur when "Walking away from the desktop."

The purpose of the paper is to design new IT support for sharing of knowledge and expertise location in the context of mobile editorial work. We add to the exiting body of research by dealing with a novel class of work, namely journalism, and by offering principles and a practical suggestion for how IT for this kind of work should be designed.

The structure of this paper is as follows: the next section outlines the related work and is followed by the research background and setting. The following section is an analysis of the fieldwork. After this we introduce a prototype system. Finally, a discussion and future direction concludes the paper.

Related Work

Belotti and Rogers (1997) have in a study identified a lack of literature and studies focusing on current work practices and how technology is used for co-operation in settings such as a newsroom. In their study they report an extensive field study of a traditional daily newspaper, a high-tech monthly magazine and a number of web sites, filling that gap.

Two other studies are also directly related to the organising of editorial work. The first one is a study at a Danish radio station that describes a design project for the planning, production, broadcasting, and administrative follow up of radio programs, discussing the co-ordination within and among the editorial units and the editorial boards (Kensing 1997). The other study is done at a Swedish evening newspaper and the focusing is on the relationship between co-ordination and culture (Kärreman 1996). He argues that co-ordination is achieved through cultural means, and he labels this form of co-ordination; Scenic co-ordination, operating through shared sets of ideas, assumptions,

interpretations and value. Inspired by Kärreman, Forsberg and Ljungberg (1998) have studied the organising of editorial work at a Swedish newspaper with a purpose of IT-design.

Nordqvist (1996) has established a model and an IT-system using a production control and workflow perspective to map, analysis and simulate a global production management system in the newspaper pre-press process. However, our interest has been to investigate the organising of editorial work, sharing of resources, ideas, and knowledge to inform the design of IT. Situations similar to editorial work, in which "knowledge workers" whilst dispersed need to communicate with peers due to their expertise, has mainly been dealt with under the themes knowledge management and organisational memory. Within the area of CSCW, several systems of this sort have been described. These are often based on hypermedia that links different sources of information. For the most part they have aimed at supporting software development projects or the introspective activities of researchers. An early system of this kind is gIBIS (Conklin and Begeman 1988; Yakemovic and Conklin 1990). Its aim was to make the design rational for a decision explicit by capturing the argumentation. A similar approach was offered by Terveen et al. (1993), reporting from a project of creating a "living design memory" for software developers. This was accomplished by introducing links to associate information units with the pertaining parts of the products.

Answer Garden aimed to help organisations capture and retrieve experiences made by their employees (Ackerman 1994). The system was well evaluated with researchers and developers, but not really used outside that context. In Answer Garden 2, features for finding and interacting with experts directly were introduced (Ackerman and McDonald 1996). Similarly, the "TeamBuilder" system aimed to support team members in identifying expertise and co-operate more effectively (Karduck 1994).

The work of systems developers, which is at the core of all these projects, is qualitatively different from journalistic work. Thus the "knowledge" that needs to be "managed" is different. Where journalists want questions, these systems offer answers.

Additional investigations of organisational memory can be found in Bannon and Kuutti (1996) and Randall et al (1996), who criticise the notion of a passive "repository," arguing that the metaphor of a "memory" does not agree with the process of remembering as it actually takes place in organisations.

Research Background

Our empirical research was done at a public service radio station in Gothenburg, Sweden. The research was conducted according to what Dahlbom (1996) describes as "the new informatics," and we have included the sort of participatory design approach described in a previous paper (Ljungberg et al 1998). In the study, we used observation (Hammersley and Atkinson 1993) which consisted of approximately 200 hours. Three groups of journalist were selected and shadowed both at the station and in the field. The empirical material was transcribed and analysed to "attach significance to what was found..." (Patton 1990, pp. 423).

The station employ about 100 people where 75% are journalists and the rest is technical and administrative personnel. It does national broadcasts, but our investigation was concentrated at the local channel. A resent survey of the radio audience report that 63.6% of the population in the region (ages 9-79, 642,623 people) listens to the channel

at least five minutes per week (Monday-Sunday)[2]. In this aspect and in the number of local reports the channel is the biggest in the region.

Most of our work at the station took place in an open plan office surrounded by several studios. Only some of the journalists use the same work desks all the time. Instead, the area of where to work is determined by which program they are currently on. Our focus has mainly been on three programs. There is the News update – a program that runs repeatedly during the day – and the program Gothenburg direct that gives longer reports, e.g. on the air interviews from the field. There was also a program especially dedicated to monitor the Swedish election named Election Extra. All of these programs are run separately, but material collected by journalists from one program may be used by others'.

Every morning at 8.30 there is a scheduled meeting that is lead by the editor of the News update in the middle of the office. Journalists from all of the local program participate. The meeting usually attracts 10-15 people and they come and go as it progresses. This is the time for discussions of events that may be qualify as news and an overview of the available resources (What is happening? Who is working with what?). On the other hand, this discussion is carried throughout the day and everywhere. There are a number of different sources to information. The major ones are:

- News agencies (e.g. Router)
- Other media (e.g. local newspapers)
- Tip-offs from the public
- Press releases
- By experiences of the journalists themselves

Technology

The studios and the work desks have personal computers that share disks and printers over a local area network. All of the personal computer has internet access and every desk have a stationary telephone. The personnel have also got beepers that are connected to the phone system and are used to locate people that are away from their phone. This makes it possible for a person who receives a call to redirect it to a phone nearby.

The journalists that do reports in the field have cellular phones. If they are broadcasting from the field the equipment can also be used for communication with the studio. Today, no mobile computer equipment is in use.

The record keeping systems used by most of the journalists is in an old, but widely used, text-based document management system named MANUS. It is used for several different purpose:

- "Diaries," a paper-based shared calendar, documenting scheduled events that are to come up in the future, for example, be the date of a press conference or the court verdict in a trail.
- Broadcast reports
- Program manuscripts
- "Issues-to-watch," questions that may become news given the right circumstances

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[2] Source: RUAB (http://www.ruab.se/Engltxt.htm) a company that continuously carry out radio audience measurements.

Making News

We have investigated how an event qualifies as worth reporting and show that this is a very collaborative and dynamic process. The work is very action-oriented and keeps a lot of possibilities open as long as the situation allows. This is a creative process that goes from a complex and diverse opportunities into a manageable set of possibilities. Most activities of journalists' work comprise some aspects of "making news" from events that are already known.

At the morning meeting the journalists can collectively determine what is interesting enough to merit further investigation. Recommendations of how something could be reported are exchanged and the overall repertoire is considered. The basis for the discussions come from diaries, other media and issues-to-watch. The result of the discussion is that every participant ought to know what to do next, what others will do, and even some new issues-to-watch. The most important aspects are that a proper angle, problem and context is ascribed to the story. If something is determined as interesting enough for further investigation it is (almost) always reported. It does not always necessarily fit exactly with what was discussed at the morning meeting, but this is treated "matter-of-factly" as part of the editing process.

Throughout the day events happen that cannot be discussed, since journalistic work is, by definition, intractably mobile, potentially disconnected and often individual. This may come up that may qualify as news, thus, available personnel need to decide if it is worth pursuing. It is also important that changes to a program are propagated throughout the organisation during the day. The editor-in-chief is responsible, but it is, practically, accomplished through ongoing conversation among the journalists.

Since many events are unrepeatable and unpredictable it is important to quickly be able to find "a new angle," or "re-qualify" the event as news. When this needs to be done in the field it is more difficult than at the station because the field journalist is detached from the social work context. In a similar way the studio is detached from the field journalist's local conditions. If someone at the station has got expertise on a topic they can help the journalist in the field in getting as newsworthy material as possible. The expert does, however, rely on the field journalist to report local conditions. Sometimes there is no expert accessible, but a report must be made anyhow. In these cases a lot of creative assistance in finding a focus and increase the quality as much as possible is exchanged between the studio and the field journalist. At the station and especially at the morning meeting this is more easily accomplished since there are more people there to serve as a "collective" expert.

Summing up, we found the following features of the work of the journalists to be of importance to get the job done, i.e., produce newsworthy material:

- **Collective**: A large part of the work is collective, involving discussions and joint explorations among staff.
- **Exploring questions**: The work is very much about exploring how to frame the events taking place. In a sense, it is not about finding answers to questions, but rather to frame the problem and giving an appropriate background.
- **Time-dependent**. The work is very time dependent, e.g., the time for a program cannot be postponed.
- **Unrepeatable**. Many activities cannot be done more than once, e.g., a live interview.

The NewsMate: Our Suggesting

We have started to develop a prototype – the NewsMate – based on our findings. In this section we will give a technical description of the user interface and functionality of the system.

Technical Devices and Platforms

The system has a client server architecture and is accessible from a number of clients (see figure 1).
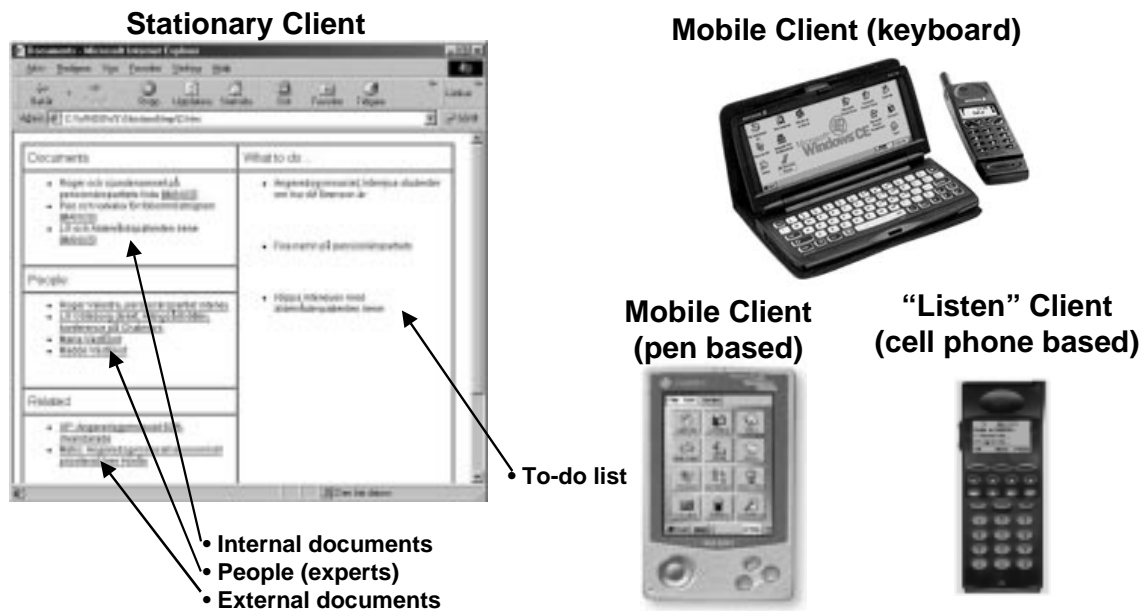
Stationary Client

Mobile Client (keyboard)

Mobile Client (pen based)

"Listen" Client (cell phone based)

- To-do list
- Internal documents
- People (experts)
- External documents

Figure 1: An overview of the client devices.

The stationary client is preferable written in Java and be accessible for the users when they are sitting and working with their PC at their desks a the office. The other clients are all mobile. There are two clients that are based on personal digital assistants where one has a keyboard and the other a pen. The user interface works in a similar way on all the devices. The reason for the differences is the mainly that some things are just not preferable to do in the mobile situation, but also technical limits with having dial-up network connection over GSM[3]. Another way of interacting with the system is by calling a special number on a telephone, enter a code, and thereby get the state of the workspace read out load. This interface may be useful when, e.g., the user is driving. Table 1 gives an overview of the devices that we use to interact with the server.

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[3] More information about Global System for Mobile communication (GSM) can be found at the GSM association (http://www.gsm.org/).

Platform	Casio Cassiopeia, Microsoft Windows CE	Ericsson MC16, Microsoft Windows CE	Any Java virtual machine	Any phone
I/O	Pen-based, screen	Keyboard, screen	Keyboard, screen	Mainly for audio output
Development environment	Waba[4]	Waba	Java	Speech synthesis
Network connection	GSM phone (Ericsson GF 768)	GSM phone (Ericsson GF 768)	Local Area Network	Phone line

Table 1: An overview of the technical details for the client devices.

The server side of the application is mainly written in perl is running on a UNIX system. The functionally based on the assembling of information from a variety of sources in the organisation.

The User Interface

Figure 2: A sketch of the principles for the user interface (the information is based on real examples).

At the right side of the interface the user can update a personal to-do list (see figure 2). When a to-do list is updated the left side of the interface will react. First the internal archives are queried to find out which old documents are related to the to-do item.

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[4] Waba is a programming platform that lets developers write one program that can run on PalmPilot and Windows CE devices and on any machine that supports Java. For more information see WabaSoft (http://www.wabasoft.com/).

The next thing that changes is the people section. Here, journalists are listed that have been working on the topic previously. The ones that are listed first are the ones the currently are working and are at the office. The once that are in the field is listed in the typeface italic. Finally the external section is updated, i.e., queries are sent to competing news providers and agencies making an ordered list. In this case the local newspapers Metro[5] and Göteborgs-Posten[6] are listed. The active item is indicated with an arrow. The user can switch between item just by clicking the box in front on the item text. If there is a mach between two personal to-do lists a bell will appear at the side of the affected item. By clicking on the bell the user will get a text saying who the matching user's name and to-do item.

When a user is affected by a change in someone else's to do list it will update the stationary client in the same way as mentioned above. This also applies to if a user is in the field and is connected. However, if the user is disconnected the server will send the key part of the message using SMS[7]. The only event that will trigger this is when there is a match in to-do lists. If the field user wants a full update a dial-up connection must be established.

Discussion

In this paper we provide a suggestion for how new IT use could be designed based on a field study of journalists at a local radio station in Sweden. We have investigated how an event qualifies as worth reporting and show that this is a very collaborative and dynamic process. The work is very action-oriented and keeps a lot of possibilities open as long as the situation allows. This is a creative process that goes from a complex and diverse opportunities into a manageable set of possibilities. Notable there is never a distinct decision taken on how to report an event. Instead, it is an open-ended process with possibilities that require constant interpretation and repair. Our suggestion is based on three guiding principles.

- **Support the expertise location based on what is offered**

Working together and relying on each others' expertise is an important characteristics of the work, but there is not always an expert that is available. It is rather a matter of finding out who can contribute based on the ones that are available both physically (e.g., at the office) and virtually (e.g., on the phone from the field). Empirical studies that aim to gain an understanding of how knowledge management is done is practice have been conducted, e.g., by analysing the work of a telephone hotline group (Ackerman and Halvarson 1998) and expertise location in a software development company (McDonald and Ackerman 1998). However, the expertise location in this case is quite different, i.e., often the "expert" is proactive in providing help in combination with open requests. The expert's task here, again, is to help in framing the problem, giving an appropriate background, to be able to ask good questions. However, the timely and dynamic nature of the information sources here requires that people continuously re-evaluate events to create newsworthy material.

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[5] http://www.metro.se/

[6] http://www.gp.se/

[7] The Short Message Service is a part of Global System for Mobile communication (GSM).

- **Support the users with access to each other in as many situations as possible**

A lot of the work is done in a combination of mobile and stationary situations. They are both important, i.e., the hard disk editing will be stationary for an immense period of time and it is required to be mobile to do some reports. When, for example, a reporter is in the field it is more problematic to manage unpredicted events and re-frame the reporting. Traditional approaches in managing sharing of knowledge have focused on stationary office situations (see Fagrell et al (1999) for an exception).

- **Provide unobtrusive overview of current and previous activities**

What other people do is very important. There should not be any overlaps that are unknown. And when allocation of resources need to done fast the proper people should be identified both externally and internally. Here, again the timely management of knowledge is essential. Kovalainen et al (1998) reports from a study of the use of an electronic dairy (much like a bulletin board) at a paper mill. The authors conclude that organisational memory is more like a process than an artefact, or rather "artefact mediated process." Kristoffersen and Ljungberg (1998) describe a system that is based on a study of dispersed and mobile IT support staff. The system supported co-ordination and sharing of experiences. These cases are fairly similar to ours because the information thus contained needs to evolve over time.

Future Direction

The system that is suggested in this paper is currently under development. A field evaluation is planed for the autumn of 1999. This will be followed by integration with a commercial product and an evaluation at a newspaper.

References

Ackerman M.S. and C. Halverson (1998) "Considering an organization's memory," In *Proceedings of ACM 1998 Conference on Computer Supported Cooperative Work*. pp. 39-48. Seattle, WA: ACM Press.

Ackerman, M.S. (1994) "Augmenting the organizational memory: a field study of answer garden," In *Proceedings of ACM 1994 Conference on Computer Supported Cooperative Work*. pp. 243-252. Chapel Hill, NC: ACM Press.

Ackerman, M.S. and D.W. McDonald (1996) "Answer Garden 2: Merging organizational memory with collaborative help," In *Proceedings of ACM 1996 Conference on Computer Supported Cooperative Work*. pp. 97-105, Cambridge, MA. ACM Press.

Bannon, L.J. and K. Kuutti (1996) "Shifting Perspectives on Organizational Memory: From Storage to Active Remembering," In *Proceedings of the 29th Hawaii Conference on System Sciences. Vol. IV*. pp. 156-167. Los Alamitos. IEEE Computer Society Press.

Bellotti, V. and S. Bly (1996), "Walking away from the desktop computer distributed collaboration and mobility in a product design team," In Proceedings of ACM 1996 Conference on Computer Supported Cooperative Work. pp. 209-218, Cambridge, MA: ACM Press.

Bellotti, V. and Y. Rogers (1997) "From Web Press to Web Pressure: Multimedia Representations and Multimedia Publishing," In *Proceedings of ACM 1997 Conference on Human Factors in Computing Systems*, pp. 279-286. Atlanta, GA: ACM Press.

Conklin, J. and M.L. Begeman (1988) "gIBIS: a hypertext tool for exploratory policy discussion," In *Proceedings of ACM 1988 Conference on Computer Supported Cooperative Work*. pp. 140-152. Portland, OR: ACM Press.

Dahlbom, B. (1996) "The New Informatics," *Scandinavian Journal of Information Systems*, 8 (2), 29–48.

Fagrell, H., S. Kristoffersen and F. Ljungberg (1999) "Exploring Support for Knowledge Management in Mobile Work," In *Proceedings of the Sixth European Conference on Computer-Supported Cooperative Work,* (to appear), Copenhagen, Denmark: Kluwer Academic Publishers.

Forsberg, K. and F. Ljungberg (1998) "The Organising of Editorial Work: Eliciting Implications for New IT use," In Proceedings of IRIS'21, Sæby, Denmark.

Hammersley, M., and P. Atkinson (1993) *Ethnography. Principles and practice*, Second edition, London: Routledge.

Karduck, A. (1994) "TeamBuilder: a CSCW tool for identifying experts and team formation," *Computer Communications*, 1994, 17 (11) pp. 77-87.

Kensing, F., J. Simonsen and K. Bødkar (1997) "Designing for Cooperation at a Radio Station," In *Proceedings of the Fifth European Conference on Computer-Supported Cooperative Work,* pp. 329-344, Lancaster, UK: Kluwer Academic Publishers.

Kovalainen, M., M. Robinson and E. Auramäki (1998) "Diaries at work," In *Proceedings of ACM 1998 Conference on Computer Supported Cooperative Work.* pp. 49-58. Seattle, WA: ACM Press.

Kristoffersen, S. and F. Ljungberg (1998) "MobiCom: Networking dispersed groups," *Interacting with Computers,* 1998, 10 (1) pp. 45-65.

Kärreman, D. (1996) *The administration of the unexpected, culture, co-ordination at a newspaper.* (in Swedish "Det oväntades administration, kultur och koordination i ett tidningsföretag"), Ph.D. thesis, School of Economics and Commercial Law at Göteborg University, Nerenius & Santerus Förslag

Ljungberg, F., B. Dahlbom, H. Fagrell, M. Bergquist and P. Ljungstrand (1998) "Innovation of new IT use: Combining approaches and perspectives in R&D projects," In *Proceedings of the PDC '98 conference*, Seattle, WA.

Luff, P. and C. Heath (1998) "Mobility in Collaboration," In Proceedings of ACM 1998 Conference on Computer Supported Cooperative Work. pp. 305-314. Seattle, WA: ACM Press.

McDonald, D.W. and M.S. Ackerman (1998) "Just talk to me: a field study of expertise location," In *Proceedings of ACM 1998 Conference on Computer Supported Cooperative Work.* pp. 39-48. Seattle, WA: ACM Press.

Mencher, M. (1997) *News Reporting and Writing*. Seventh Edition. McGraw-Hill.

Nordqvist, S. J. (1996) A Model for Global Production Management Systems in Newspaper Production - Real Time Management of Time Critical and Heterogeneous Processes, Ph.D. thesis, GT-Division of Graphic Arts Technology, KTH-Royal Institute of Technology.

Patton, M.Q. (1990) *Qualitative Evaluation and Research Method*s. New York, Sage.

Randall, D., M. Rouncefield and J.A. Hughes (1995) "Chalk and Cheese: BPR and ethnomethodologically informed ethnography in CSCW," In *Proceedings of the Fourth European Conference on Computer-Supported Cooperative Work*. pp. 325-340. Stockholm, Sweden: Kluwer Academic Publishers.

Randall, D., J. O'Brien, M. Rouncefield and J.A. Hughes (1996) "Organisational Memory and CSCW: Supporting the 'Mavis Phenomenon'," In *Proceedings of the 6th Australian Conference on Computer-Human Interaction*. Hamilton, New Zealand: IEEE Computer Society.

Terveen, L.G., P.G. Selfridge and M.D. Long (1993) "From 'folklore' to 'living design memory'," In *ACM 1993 Conference proceedings on Human factors in computing systems.* pp. 15-22. Amsterdam, The Netherlands: ACM Press.

Yakemovic, K.C.B., and E.J. Conklin (1990) "Report on a development project use of an issue-based information system," In *Proceedings of ACM 1990 Conference on Computer Supported Cooperative Work*. pp. 105-118. Los Angeles, CA: ACM Press.