30 FROM CRITICAL THEORY INTO INFORMATION SYSTEMS PRACTICE: A Case Study of a Payroll-Personnel System

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Abstract Modern organizations both in the private and public sector are seen to be increasingly reliant, in terms of achieving improvements and service targets, on the efficient provision of information to enable administrative and managerial decision making. A key barrier to effective ICT introduction and integration of information systems has been identified as the complex social, organizational, and political issues endemic within organizations, preventing true discourse. This paper describes how an approach based upon some of the emancipatory principles of Jurgen Habermas may be used to develop an innovative approach to participative process and information flow modeling. This approach was used within a UK Hospital Trust in the North East of England to facilitate the integration of two departments and the procurement of a computerized payroll-personnel system. The results of the action research project are described and conclusions drawn as to the success of the approach and the role of the systems analyst within this type of project.

Keywords: Information systems, participatory action research, emancipation, critical social theory

1 INTRODUCTION

The main aim of this paper is to explore what it means to conduct critical research in the area of integrated information systems (IS) implementation. The work that is described here was initially inspired by Hirschheim and Klein (1989), Kendall and Avison (1993), and Alvesson and Willmott (1992) where the concept of *emancipation* features highly. According to Alvesson and Willmott (1992, pp. 432-435),

> emancipation describes the process through which individuals and groups become freed from repressive social and ideological conditions, in particular those that place socially unnecessary restrictions upon the development and articulation of the human consciousness. The intent of Critical Social Theory (CST) is to facilitate clarification of the meaning of human need and expansion of autonomy in personal and social life....Emancipation necessarily involves an active process (or struggle) for individual and collective self-determination.... Any substantial and lasting form of emancipatory change must involve a process of critical self-reflection and associated self-transformation.

The work described in this paper has been to critically investigate potential emancipatory principles for systems analysis, design, and development, synthesized from the wider literature, and then to translate these principles into practice within the context of IS implementations. Fundamentally, this has been through an exploration of the changing role of the systems analyst to enhance participant communication and discourse during the implementation process. The research took place over a five year period and included four major integrated systems implementations within three hospitals in the North East of England.

The paper focuses on one of these implementations where the hospital (Hospital Z) was having difficulties with its payroll service as well as its personnel department. The suggested way forward was an integrated payroll-personnel system. The study was further complicated by the merger of Hospital Z with another large local community healthcare provider (Community Trust) and the on-going difficulties that ensued. The research approach taken for this particular study was based on Habermas's (1974) three-stage methodology, with insight derived from other authors writing in the area of CST.

The first section of the paper provides an overview of the theory that has informed the study. The second section comprises the research methodology and fieldwork undertaken within the hospital. The third section takes a reflexive approach to the discussion of the empirical material. The fourth section draws some conclusions on carrying out critical research for the participants and researcher.

2 CRITICAL SOCIAL THEORY AND ITS RELATION TO INFORMATION SYSTEMS IMPLEMENTATION RESEARCH

Critical social theory (CST) is the name given to a school of thought which originated in the 1930s from certain scholars associated with the Institute of Social Research at the University of Frankfurt—Horkheimer, Adorno, Fromm, and Marcuse—and more recently Habermas (Lyytinen and Klein 1985). Lyytinen and Klein state that "CST has as a fundamental concept the belief that any dynamic social theory must view society and its parts as highly dynamic— it can be changed by its members"(p. 220).

CST is relatively well established within management studies and increasingly is becoming known in the Operational Research and Information Systems fields (Alvesson and Willmott 1996; Flood and Jackson 1991; Flood and Romm 1996; Hirschheim and

Klein 1989, 1994; Lyytinen 1992; Lyytinen and Klein 1985 Mingers 1992; Warren and Adman 1999). In the IS field, the critical social theory of Habermas has been developed from two perspectives, both of which express a common connection between critical social theory and IS research (Brooke 2002; Lyytinen 1992).

1. A critique of scientism and relationships between theory and practice (Habermas 1972)
2. The nature of social action and the type of knowledge it is based upon (Habermas 1984, 1987)

2.1 The Theory of Communicative Action

In the area of IS development and implementation, it is this second perspective that has been the focus of a number of researchers. Habermas (1972) has expressed concern about how technical knowledge interest (where a desire to control outcomes is preferred to more discursive communication leading to an ideal situation where people are freed from domination and control) has come to dominate society through technocracy (Alvesson and Skoldberg 2000, p. 115). Habermas (1972) argues that there is a need to restore man's ability to engage in critical reasoning and not be steered by ideas and values that have not been subjected to scrutiny. To do this within the context of an information systems implementation, there is a need to develop communicative competence or action (Habermas 1984).

Habermas (1984) challenges us to examine critically all forms of communication and in particular where agreements are made. Very often there is a political and a power dimension that is overlooked. He encourages a move toward more informed approaches to discursive action. Discursive action is oriented toward the cooperative search for truth, the clarification of unclear message content, the analysis of the intended use of the messages, and so forth toward the attainment of more *ideal speech situations.* The four criteria below define the validity of communications in a complex, social, and political environment (Habermas 1984).

1. *Clarity* (can what is being said be understood by the receiver?)
2. *Truthfulness* (is what is being said truthful?)
2. *Sincerity* (is what is being communicated done with good intent?)
4. *Social acceptability* (is the communication in keeping with the values and norms of the receiver?)

Discursive action is aimed at justifying any or all of the four claims should one become the subject of doubt. This requires that all actors respect certain ground rules when claims are made for and against raised claims in the pursuit of rational justification (Habermas 1979). This would require organizations to be transformed towards a structure where all actors have a chance to express opinions, to enter or leave the discourse, and to honor what Habermas (1979) calls the "force of better argument." Habermas recognizes that the conditions of the ideal speech situation represents an ideal but this does not of itself undermine its significance. He argues that each time a theoretical or

practical argument is pursued with the intention of reaching a rational agreement, an ideal speech situation is presupposed (Held 1980). From a Habermasian perspective, the analysis of the ideal speech situation shows it to involve assumptions about the institutional context of interaction and the end point of this argument is that the structure of speech is held to involve *the anticipation of a form of life in which truth, freedom and justice are possible.*

Habermas' theory of communicative action has appealed to IS researchers in the area of development and implementation. Hirschheim and Klein (1989) identify the systems analyst as being integral to the implementation of information systems. These individuals could be involved in many phases of systems acquisition from carrying out feasibility studies to training users on the new system. They are at the interface between both the old and the new system as well as being the main information/communication conduit for the project. Successful communication between stakeholders within the context of an integrated systems implementation is perhaps the major critical factor leading to the eventual outcome of the project.

Much of the work of a critical nature that has emerged in relation to IS implementation has been largely hypothetical and in most cases untried (Lyytinen 1992). This includes the work of Hirschheim and Klein (1989) and of Ngwenyama (1991).

2.2 Toward a Theory of Emancipatory Practice for the Systems Analyst

The emancipatory philosophy of Habermas and its attack on positivism (scientific and technical domination of society) has been attractive to a number of academics. Yet this work is highly theoretical and has been criticized because of its lack of engagement with the practical (Held 1980). Habermas has provided little guidance for those wanting to advance emancipatory action and change or indeed on how to conduct critical research (Forester 1993; Johnson 1999). Nevertheless, Mingers (1992) constructively suggests that the way forward is to be guided by Habermas's (1974) key principles. These principles involve three stages.

Stage 1: The development of critical theories about the nature of the social situation in terms of the position and true interests of the actors within a social structure.

Stage 2: Use these theories to enlighten concerned actors as to their position. This may lead to authentic insights and changed attitudes. Mingers argues that it is only success at this stage that provides the validation of the theories.

Stage 3: The enlightened social group chooses tactics and strategy to be adopted in the actual political struggle.

Laughlin (1987) used these stages to guide the approach he adopted in exploring accounting systems. First of all, the researchers examined in detail how the systems arose, their historical context, technical and other pertinent issues. They discussed this with the "researched" and then explored with the group how changes could be made.

The three stage methodology (Habermas 1974) and the principles of CST have the potential to be translated into a more socially informed approach to systems analysis within the context of highly political and socially complex integrated systems projects with pluralistic goals. Nevertheless, Alvesson and Willmott (1996) believe that it is important to consider other areas of management and organizational theory to support the move from theory into practice. They commend the work of Forester (1992) in the field of organizational studies as being appropriate and also suggest that the work of Payne (1991, 1992) and Ulrich (1987) in relation to Habermas's theory of communicative competence have much to recommend them.

2.2.1 Change Agents and Emancipatory Practice

Systems analysts have also been referred to as agents of change (Walsham 1993b) as they assist in bringing new information systems into organizations. Bradshaw-Camball (1990) as cited by Payne (1992) sees the role of the CST change agent as an individual who tries to help articulate alternative possibilities that may lead to opposing or reconstructing the dominant organizational ideology. An alternative reality is generated through a dialectic between the consultant and the organization members that

> traditional power bases that come from being the "expert" quickly disappear.... Being open to public debate and criticism is an essential skill for the change agent committed to the radical humanist paradigm. This is threatening at times but if modeled for all organizational participants will set a norm of self reflection which will strengthen and enable the change process to continue (Bradshaw-Camball 1990, p. 255, as cited by Payne 1992, p. 246).

Carrying out this approach informed by CST does have its difficulties. Gray (1989) describes encounters which may arise where strong conflicts surface "over race, gender, organizational mission and ideology, distribution of power and concepts of leadership" (Gray 1989, p. 394).

Payne (1992) argues that change agents working toward emancipatory practice need to develop or have other skills besides systems-related knowledge. He believes that without a high level of creativity and a high level of communications skills they will not be able to operate in a "variety of situations where they will be faced with many difficult personal challenges" (p. 247).

Taking this further, McKay and Romm (1992) and Romm (1995) see the critical change agent as someone who

- Critically educates staff
- Develops skills within an organization to level the playing field
- Widens participation to include all stakeholders

Payne (1996) does have some misgivings about such prescriptive forms of action and believes that the micro-emancipation ideals of Alvesson and Willmott (1996) that advocate incremental change could be a way forward. He offers to the critical change agent the opportunity to reflect on their use of language. For example, do they use language that alienates the organizational leaders? Alternatives are suggested in Table 1.

Table 1. Alternative Phrases (Payne 1996)

Emancipatory Language	Alternative Phrases
Oppression	Ethics development
Emancipation	Fairness, integrity
Empowerment	Social responsibility

2.2.2 Operational Research and Emancipatory Practice

In terms of developing the practical intent of CST, there are two main areas of research in Operational Research which have bearing on the practice of the systems analyst. The first is total systems intervention (Flood and Jackson 1991) and the second is critical systems heuristics (CSH) (Ulrich 1987). It is this second areathat is examined here.

In CSH, there is an attempt at a form of practical discourse which provides the necessary mediation between reason as an *intellectual ideal* and practice as an *experiential reality.* Underpinning Ulrich's practice is Habermas's concept of the ideal speech situation and his theory of communicative competence. Ulrich explores the role of the expert and their use of justification break-offs that tend to occur when people claim expertise in decision making and do not provide any rationale or defense of their claims. Ulrich argues that by applying polemic, the non-experts can impose the burden of proof or justification on those who try to dominate and control the situation.

2.2.3 Information Systems Research and Emancipatory Practice

The application of radical humanist principles in information systems development and implementation has been developed further by Klein and Hirschheim (1993) by considering various theoretical approaches which might lead to better understanding although not necessarily emancipation. They analyze four projects which they believe exhibit emancipatory potential.

- Kerola's reconceptualized SDLC (Kerola 1985)
- MARS project (Lanzara and Mathiassen 1984)
- UTOPIA project (Ehn 1988)
- SAMPO project (Lehtinen and Lyytinen 1983)

Klein and Hirschheim (1993) conclude that even though there are no emancipatory IS methodologies and possibly with the weight of evidence mitigating against ISD methodologies, then the quest should be for guiding radical humanist principles: "Just as democracy thrives through living traditions and wise practices, so Radical Humanist principles could flourish through emergent traditions and enlightened practices of ISD" (Klein and Hirschheim 1993, p. 275).

Some of these principles have also emerged in the work of other authors.

The systems analyst as a moral agent: Walsham (1993a) offers a modification to the *analyst as emancipator* role and uses the term *moral agent,* which places an emphasis on the analyst's own actions rather than the emancipation of others.

Walsham (1993a, p. 283) argues that "a focus on self-reflection and understanding will normally be related to changed action involving others." This could involve questioning the approaches to systems development or implementation or the specific goals of the system. By reflection, the systems analyst could begin to take action on issues immediately. The introduction of an ethical dimension to the role of the systems analyst would be a departure from the traditional *systems expert* role where ethical issues have yet to become pertinent.

Emancipatory systems development: Although they discount the use of systems development methodologies, Hirschheim and Klein (1994) choose to pursue the belief that some actually have some emancipatory principles and can be *reformulated* to achieve these emancipatory ideals more comprehensively. They see the ETHICS (Effective Technical and Human Implementation of Computer Systems) as developed by Mumford (1983) as having the potential to be reformulated.

Hirschheim and Klein (1994) believe that the main issue in ISD is the nature of participation. Recognizing the chief concerns of the critical schools of management and the nature of participation, they suggest that the principal weakness of participation in ISD is the failure to acknowledge a political dimension. They argue that organizations are historically constituted and may not have a tradition or a structure that facilitates participation in the radical humanist form.

Wilson (1997) is concerned about advocating the adoption of a variant of ETHICS as some of the suggestions in the Hirschheim and Klein (1994) work appear to be anti-emancipation. For example, they describe the use of facilitators to ensure "that everyone contributes and is listened to" (p. 93) and the "emancipatory methodology" will be used to overcome "wilful unresponsiveness by an individual." These menacing overtones are at odds with Habermas's ideals of a future unalienated and uncorrupted society and betray the authors historicity, which all IS researchers face when trying "to place their own project on a footing that is different" (Wilson 1997, p. 202).

The ethical systems analyst: In terms of emancipatory practice and the increasing use of IT to deliver systems which have the potential to impact heavily on the societal organization of work, Wood-Harper et al. (1996) urge the systems analyst to have a greater awareness of ethical theory. They argue for an explicit analysis of the implications of design decisions using a basic understanding of this theory.

Wood-Harper et al. believe that this approach could be very successful in the National Health Service (NHS) to assist systems analysts to define requirements where there may be conflicting ethics between groups such as government, hospitals, business managers, nurses, doctors, and patients.

The theory linked to practice which has been examined in this section can be interpreted in a manner that could provide a framework for action on the part of the systems analyst/researcher to explore further and is represented in Figure 1.

Alternatively, the framework may be used as a heuristic in order to inform practice and be improved upon in response to new and better understanding.

The journey into emancipatory praxis from the perspective of the researcher/researched systems analyst is done against a background of functionalist theory and practice and the critical social theory of Habermas that has not engaged practice. The framework in Figure 1 has as its starting point Habermas's critical methodology that guides all action. However, Habermas did not move his theory into practice and, there-

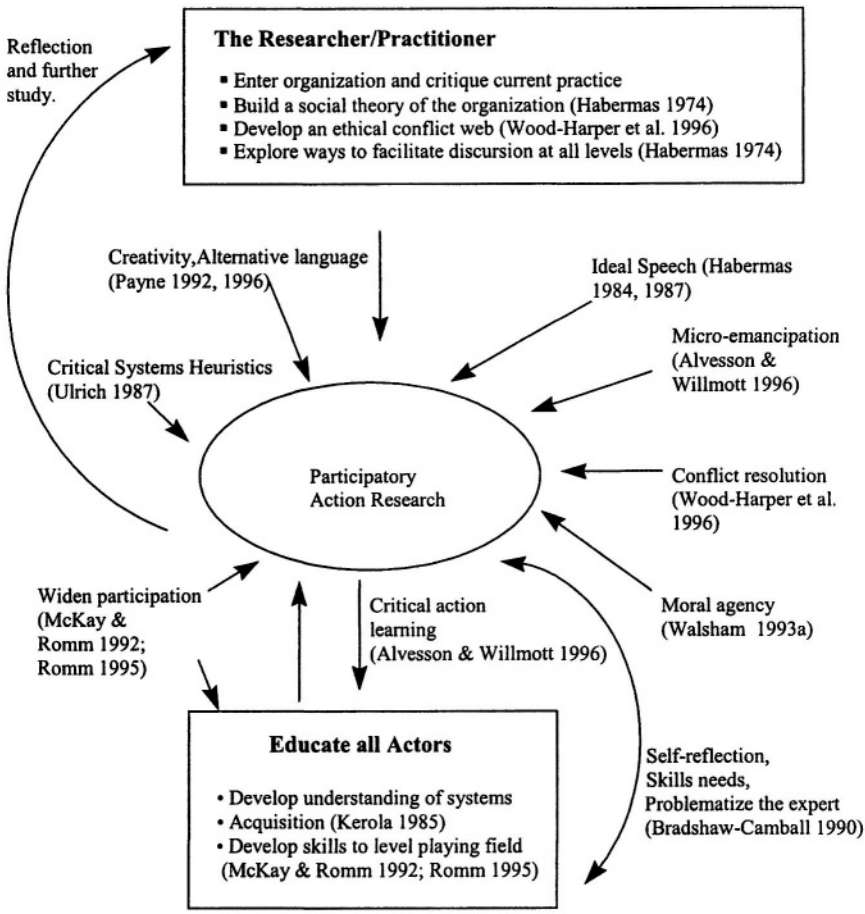

Figure 1. A Framework for Emancipatory Practice

fore, the theories of other authors considered appropriate are integrated into the framework. At no point is the framework intended to be prescriptive and, in reality, the various contributions may depend upon the actors (including the researcher) involved and whether they want to move the project into action. The intention of the researcher would be to develop practice that would incrementally move toward *micro-emancipation* (Alvesson and Willmott 1996) for all concerned.

The literature has indicated that emancipation begins by developing reflexive skills within an organization from which a social theory about that particular organization will emerge through analysis of the collected data and personal experience. From this, it should be possible to establish where there is conflict and there needs to be an exploration of the nature of the conflict and why it has occurred. Opportunities for discursion must also be investigated prior to any intervention. This approach formed the basis of research conducted at a hospital in the North East of the UK, **Hospital Z.**

3 RESEARCH METHODOLOGY

The research described in this paper was part of a larger critical study into the changing role of the systems analyst acting in a more overt emancipatory role within IS projects (Waring 2000; Waring and Wainwright 2002). The methodology used in the project was participatory action research (PAR) informed by principles derived from critical social theory (Stringer 1999; Udas 1998). Stringer suggests that an authentic, socially responsive methodology must enable participation, acknowledge people's equality of worth, provide freedom from oppressive debilitating conditions and enable the expression of people's full potential.

Udas proposes that participatory action research (PAR) must be underpinned by some fundamentals. The first is that PAR questions the nature of knowledge, research, and methods. Second, the nature of knowledge in PAR is for improvement of practice, not for the construction of an abstract theory-base. The PAR assumption of the nature of knowledge is that it is created by local practitioners, environments, and historical factors. Third, the findings and value of research are retained locally. Fourth, the researcher must be prepared to be flexible and creative.

Udas continues by outlining certain methodological principles that apply to PAR.

- It is participant centered and non-alienating.
- Researchers/facilitators enter a project clear about their own theory of social change and can share this with participants in a democratic way.
- The research methods are based on mutual respect and trust and facilitate collaborative inquiry, potential benefits, and acceptance of each party's responsibilities.

Stringer (p. 35) states that participation is most effective when it enables significant levels of active involvement and people to perform substantial tasks. It must provide support for people as they learn to act for themselves and encourages plans and activities that people are able to accomplish themselves. Finally, it deals personally with people rather than with their representatives or agents.

PAR is inherently political. Udas writes that "PAR is predicated on the democratic notion that oppressed and marginalized people can transform their social realities through education, research and action while forwarding their own value system" (p. 606).

PAR must be aimed toward social justice, involve critical reflection on practice, question assumptions on which practice is based, and promote collaborative collective action (Udas 1998). It is a continuing cycle of research activities involving active participation of practitioners. It is anti-positivist. It is not problem solving although it may help to do so. It is a process having value itself. It is a means of self-examination, improvement, and emancipation, not an instrument to recreate a status quo.

Within the overall framework of the PAR approach, five primary methods of data collection were utilized.

Research Diary: This diary recorded project team meetings, meetings with vendors of the potential integrated systems, training sessions for staff on the modeling tool, and my own reflections on the experience and the research.

Document analysis: NHS policy documents, departmental plans, procedure manuals, historical data, tender documents, PRINCE project management documents, finance and personnel data and statistics, departmental structures, and job descriptions.

Participant and non-participant observation: As a member of the project team for the duration of the procurement, I was actively involved in all discussions and developments. These meetings were duly recorded. I was also allowed access to departments during normal working periods to observe how each department operated.

Participant workflow/information flow modeling: As part of the emancipatory methodology, all project team members and some of the departmental staff were trained in the use of a graphical process modeling tool and went on to produce models of work processes and information flows as they were and then how they would want them to be. These models were collected and analyzed.

Semi-structured interviews with key staff: The project manager, personnel officer, the assistant director of finance, and a member of the vendor's team were interviewed. These interviews lasted between one and two hours, were audio-taped, transcribed, and fed back to the respondents for comments and amendments.

The analysis of the data collected was then related to each of the three stages of Habermas's (1974) methodology as shown in Table 2.

3.1 Findings of the Research

The findings from the fieldwork can be structured using the three-stage methodology of Habermas (1974). However, the data collected was vast and it is difficult to communicate its richness within the confines of the paper.

Stage 1: This section describes the highly stressful and intensely political climate that surrounded the proposed implementation of an integrated payroll-personnel system.

Table 2. The Analytical Framework

Description	Research Approach
Stage 1: The development of critical theories about the nature of the social situation in terms of the position and true interests of the actors within a social structure.	Diary, observation, semi-structured interviews, document analysis, workflow/information modeling exploring history, politics, power, relationships, and information flows.
Stage 2: Use these theories to enlighten concerned actors as to their position. This may lead to authentic insights and changed attitudes.	Feedback of the analysis of Stage 1 by all participants to the project team. CST-informed discussion.
Stage3: The enlightened social group chooses tactics and strategy to be adopted in the actual political struggle.	Discussion of strategy to move project forward to procurement of new integrated system. Further modeling of "to be" system and incorporation of models into contract with vendor. Interview with vendor team member.

Hospital Z serves a mainly inner-city population. Similar to other UK hospitals, it has experienced problems meeting successive government demands of ever-increasing information. A particularly problematic area was that of payroll and personnel. Hospital Z was unable to provide regular and reliable statistics on sickness, absence and staff turnover—essential under the new UK Labour government. There were also internal management and control problems and difficulties relating to the facilities management company that managed the payroll. A decision was taken by the executive board to purchase and implement an integrated payroll and personnel system. To complicate matters further, in April 1997 it was understood that a merger was being planned between Hospital Z and Community Trust, based about three miles away. Community Trust had its own separate human resource management (HRM) department, but their payroll was managed by Hospital Z.

No expertise in systems procurement: Following the decision to procure a new integrated payroll/personnel system, a project team was set up. This consisted of staff from HRM and from finance within Hospital Z and was headed by a project manager who previously had been employed by NHS supplies and had some experience of the NHS procurement process but had never led such a project. None of the project team members had ever been involved in a procurement. There was a real concern about how the procurement decision might be made as Hospital Z had a history of failed systems and poor relations with vendors.

Culture clashes and dominant personalities: In terms of departmental cultures and approaches to work in Hospital Z, the finance department (who ran the payroll) had a closed gate-keeping culture: digital locks on all doors, staff needing to account for their movements. They were lead by Pat, a strong-willed finance director. The HRM department had open access, where doors were ajar and staff were very laid back. Their manager was Vicki, who had a more consultative approach to management. Although staff from both departments vaguely knew each other, they did not work closely together. In the early stages of the project the team met once a week to build up a rapport. However, throughout these early meetings, proceedings were dominated by the director of finance who insisted that whatever system was procured, it had to meet all of her requirements.

Jobs on the line: Before Hospital Z had started to progress the system procurement further there was a merger and the staff from Community Trust joined Hospital Z. A new project team had to be established. However, the logistics of this were not easy. The Community Trust management block was located three miles away. Their HRM department was organized on a more formal basis than in Hospital Z. Community Trust staff normally had very little contact with Hospital Z during the course of their day-to-day business.

The first meeting of the newly constituted project team was described as *"tense.... Staff were eyeing one another suspiciously. Two HRM departments in one Trust. Were there going to be job losses? Who would be doing what when the new system arrived?"* (Senior HRM Officer, Hospital Z). There was a great deal of frustration and suspicion as staff began to worry about job losses and role changes.

Total breakdown of communications: As relationships deteriorated within the project team, various political agendas began to emerge and threatened the success of the project. The project manager wrote the specification document for the procurement

without apparent consultation and in a technical language that the project team did not folly understand. The team were unhappy: Who had he consulted? How did he know what was required? From the hospital's perspective, it was vital to get the project underway so that staff would get paid when the arrangement with the facilities management company ran out. A robust personnel system was also required that addressed many of the needs of Hospital Z and newly merged Community Trust. This impasse needed to be addressed if the procurement of the integrated system was to continue. It was essential that staff started communicating with one another and that important organizational issues were addressed.

It was at this point that the author began her intervention when she was invited into the Trust in order to try and facilitate the discussions that needed to take place regarding the implementation. The social situation as described above was recognized by staff and emerged through interviews with individuals. However, it needed to be explored in more depth to determine fact from fiction and bring clarity to what was rapidly becoming a very complex political situation. It required staff to be civil and establish some degree of sincerity in the discussions (Habermas 1984).

The approach that was to be explored involved participation by all staff within the project and it could not take place without their agreement. I did not want to be seen as an expert entering the situation and becoming a dominant force but as someone working with staff in this challenging situation (Payne 1992).

The finance staff were the most antagonistic and thought that they should decide on the outcome of the procurement process. However, after lengthy debate where expressions such as *"giving staff a fair chance"* and the *"need to be responsible"* (Payne 1996) were heard, eventually, with the agreement of all of the project team, the research was allowed to progress.

It was apparent that project team members had little understanding of the business processes in other departments and this understanding was necessary if everyone was to have full participation in the system procurement discourse. We needed to critically educate staff and develop skills to level the playing field (Romm 1995). Establishing a common language to facilitate project communications was required and discussed with staff. They recognized that jargon used by IT professionals was not appropriate and intimidated them. Yet it was important to them that they knew and understood what was about to happen.

Acting as a moral agent(Walsham 1993a), I trained project team staff in a systems modeling technique that allowed them to go back to their departments and graphically model their information flows and business processes. Over a period of two weeks, HRM and the finance staff developed models of their systems and explored a better understanding of their information needs regarding a new system. The modeling tool used was a PC-based software package that allowed simple process modeling techniques representing activities, information flow inputs, outputs, controls, and mechanisms. This software had been selected from a previous iteration of the action research project (Waring 2002). This software was flexible, easy to use, and could professionally produce diagrams that were understandable by all levels of employee. The aim was to create a simple communicative, shared and common language to enable equal participation and discourse to take place among key stakeholders. Information flows, work tasks, and processes could be quickly and easily represented, stored, and disseminated

in a graphical and understandable format that would serve as the focus for discussion and debate.

Stage 2: The main objective in Stage 2 was an attempt at a form of practical discourse to enlighten all project team members and through them staff in their departments as to the findings in Stage 1. This focus on exploring the social situation represented a departure from traditional systems analysis. It was recognized that goals were contestable and that managerial preconceptions of problems and their solutions should not be accepted before conditions for effective discourse (ideal speech situation) had been created (Ulrich 1987).

It was agreed that each project team member (non-experts) would do a short presentation of the business processes and information flows and requirements in their particular area. Many of the models, as shown in Figure 2, were not very sophisticated but they provided staff with a better understanding of what was going on in areas of HRM and finance of which they knew very little.

Figure 3 illustrates how, by decomposing the "Process request" in Figure 2, a further level of detail is revealed that may expose inappropriate or inefficient practices.

The models made overt what staff did in their departments and their information needs. The director of finance found it difficult to use justification break-offs and dominate discussions. Other staff could question her assertions and had confidence when asking for explanations. Everyone in the project team began to develop a better understanding of how their systems worked.

There were many issues relating to the new system that had yet to be discussed. How would the system be administered? How would the data get into the new system. Who would be in charge overall? Finally, over a period of four weeks, the author assisted the team (primarily facilitating discussions through the use of process modeling tools) in outlining in detail how staff from all of the participating departments would be reorganized and how the processing would take place. Discussions became very heated as staff began to realize the implications of integration. Many ethical issues emerged and needed to be addressed (Wood-Harper et al. 1996). Further meetings had to be arranged to discuss other political issues that had arisen from the modeling exercise including the requirement for new sickness and absence reporting from within the hospital and the need for time sheets. One issue then became apparent as the project proceeded. Should the departments of payroll and personnel be merged?

Stage 3: Although Stage 2 was traumatic, it did bring to the surface many issues that would have been buried until after the new system had been installed. Eventually, over the course of a month of lengthy discussion, the project team agreed as to how they would progress and were then ready to meet the potential vendors. They had decided that if a vendor could not provide their requirements as they had discussed, they would not purchase an integrated system. The senior management of Hospital Z, who had followed the progress of the project, approved their decision.

At that time, there were limited choices for hospital payroll-personnel systems and only one supplier came through the NHS's tender process. Through discussions with other sites, the project team had learned about the tactics used by vendors to sell their systems and to minimize their involvement in the actual implementation. The project team spent some time rehearsing how discussions with the vendor might go and how all of their needs might be taken into consideration (McKay and Romm 1992; Romm 1995).

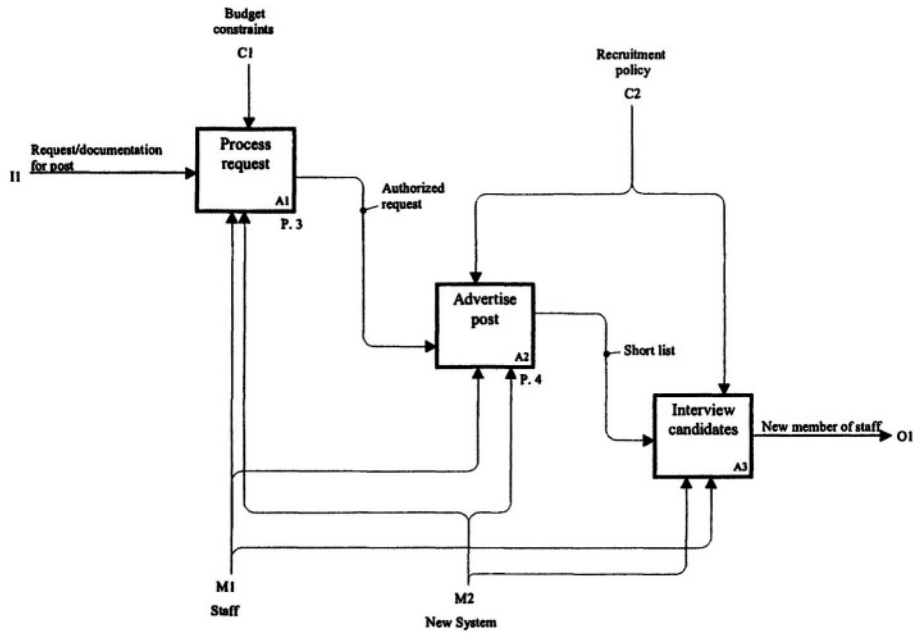

Figure 2. Part of the Modeling Done by HRM Staff

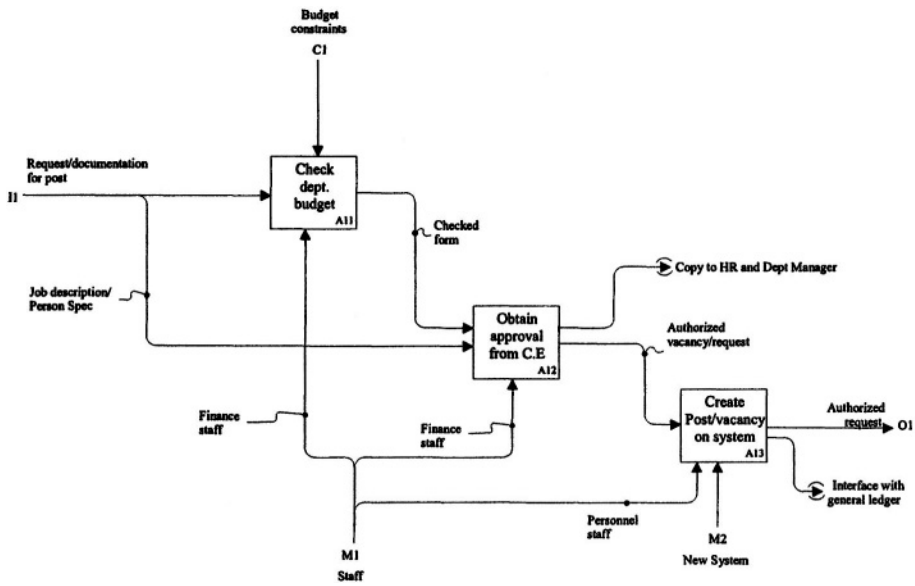

Figure 3. Decomposition of Process Request

When contract negotiation began, the vendor was surprised to meet a full project team and astonished at one so fully appraised of their requirements (interview with the vendor's lead negotiator, 1998). At the final two-day meeting with the vendors of the integrated system, Integrated PP, prior to signing the procurement contract, the process modeling diagrams were presented and the project team talked through with the vendors how they would like the system to operate. A number of the organizational issues, which had been raised during the modeling, had yet to be successfully addressed. However, all were aware of what they were and negotiations continued. In order to take the project team's work into consideration the models of the "to-be" system were incorporated into the procurement contract. This included a new module to be developed by the vendor to facilitate the administration of car leasing. The contract was signed in July 1997 with installation and training commencing in September 1997. Personnel went live in January 1998 and payroll in April 1998. After this, difficulties remained to be ironed out but staff continued to work on it.

4 DISCUSSION

The essential aim of this section is to draw together the variety of primary and secondary source material referred to thus far and synthesize some key issues that have emerged from the research. The emphasis is on evaluation of, and reflection on, the different strands of the research and how they collectively contribute to an understanding of emancipatory practice for the systems analyst within the context of an integrated systems implementation.

The section is intended to be reflexive in that it includes philosophical reflection and the problematization of the researcher's assumptions, interpretations, and interactions with the empirical material (Alvesson and Skoldberg 2000). It is important that the research is scrutinized carefully for evidence of emancipation because, rather than looking for a change in thinking only, a critical approach also looks for changes in actions. These actions could be those of the researcher or of the participants in the research.

Reflexivity and the Framework for Emancipatory Practice: Critical research needs to comprehend the empowerment of the individual. How do the knowledge and critical reflections the participants gained through the research process assist them in freeing themselves from repressive social and ideological conditions (Johnson 1999)? Here, I was the researched subject who wanted to become emancipated in order to develop socially responsible systems analysis theory and practice. I was also the researcher who wanted to investigate how this theory and practice might affect others within an integrated systems implementation and change their behavior and actions. Thus, the framework for emancipatory practice (Figure 1) reflects these dimensions in a fairly simplistic manner and engages them through action research. As has already been stated in section 1, the framework was never intended to be a mechanistic model developed within a functionalist paradigm but a heuristic that allowed the researcher to explore and learn within an action environment. The framework has also developed as further theory has emerged during the course of the project and this reflects the developmental and exploratory nature of the work.

Reflexivity and the Three Stage Model of Habermas: Traditional functionalist texts on systems analysis (e.g., Ashworth and Goodland 1990) have not explicitly encouraged the systems analyst to develop an understanding of the social situation of the users within the organization. However, it must be stated that interpretivist texts do view this as important (Checkland 1981; Walsham 1993b).The systems analyst operating in the functionalist paradigm has had a job to do and this usually began with investigation of the current information system exclusive of its political and social dimension. Yet, by not addressing the political nature of implementation, the systems analyst has ignored the medium through which the new system will be negotiated.

Becoming a critical researcher is developmental and takes time for reflection as well as practice. In **Stage 1,** Johnson (1999) argues that there is no one social theory; each is dependent upon the particular organization. It should show the historical development of social conditions within an organization, the organizational culture, structures, and actions that may shape participants' views and constrain their actions. This can only be done by presenting empirical findings and theories that show "the historicity and constructedness of social conditions" (Johnson 1999, p. 7). From the perspective of an integrated information systems implementation, it must also consider the history of IT within the organization at the micro and macro levels for further insight.

In a similar manner to Laughlin (1987), the approach chosen for this research was to study in depth the history of information management and technology within the NHS as a whole to develop an understanding of how government policies were affecting the local hospitals. This historical pre-understanding of the macro organizational environment is very important to the critical systems analyst before examining the local situation as it gives many insights into how and why actions are taken in a particular manner.

When joining the payroll/personnel project in Hospital Z, I was thrown immediately into the charged atmosphere of the joint Trust project team meeting. Here, staff *appeared* to have agreed what was needed but were in paralysis as to how to move on. The suppressed conflict was being managed by the senior directors of the hospital by their reference to "no loss of jobs" and "you don't need to purchase an integrated system if you cannot agree on one." Through interviews with staff on the project team it was apparent they did not believe this. Open critique of the situation and practice was initially very limited and had to be facilitated. It was at the project team meetings that the participating staff members needed clarity of purpose and truthfulness of intention. Whether the participants were sincere and what they stated within meetings was socially acceptable emerged as the process modeling was undertaken (Habermas 1984). Payne (1992) argues that the researcher needs to be creative in these types of situations and possess good communication skills themselves. I had my interpretation of the social situation, but was it a shared view.

- The NHS has a poor record of IS implementation success.
- Hospital Z with an acknowledged history of failed projects, was proposing to allow three departments with no experience of systems acquisition to undertake this procurement.
- Not only were they undergoing a major merger where staff sensitivities about job losses and redeployment were at the fore but these warring parties were also expected to sit down and act rationally about a new information system that would radically change their working practices.

- Departmental cultures were totally different.
- The project manager found it difficult to move the procurement forward as he readily acknowledged that he lacked the patience and the political skills to deal with the situation.
- The technical specification for the system and the business case had been written by the project manager in collusion with the director of finance without the specific needs of the project team or their respective departments.

However, I felt that all participants in the project needed to clearly understand this situation and articulate it in a way that allowed them to develop their own critical social theories of their situation. Offering the project team the opportunity to be educated in the language of process modeling was my approach to creativity. It gave them a chance to explore their own departments in a way they had never done and to determine how they might like to work in the future. This is not to say that it could not be done in other ways. They adopted the modeling approach because they could not envisage how the implementation could be progressed and they actually liked the professional look of the models. We established a set of ground rules for the models and I acted in a consultant role if they had problems in developing their models. I tried to ensure that the models belonged to them and were their interpretation of what took place. Although the average size of the project team was 12 (depending on agenda issues), the participation in the modeling was extended to staff in the various departments in a cascade manner

There is obvious overlap between stages and moving into **Stage 2** appeared to happen when the initial modeling of the "as-is" situation had been completed. How do they demonstrate that they have been *enlightened* and have changed attitudes? This is not easy and happens over a period of time at different rates for individuals (possibly never for some). The project team was encouraged to explore what happened in all three departments and share that knowledge. They devoted a series of team meetings to present their findings and discuss problems and issues. Hard copies of all process models were distributed prior to the meetings and individuals took it in turn to present theirs. After each presentation, staff had the opportunity to ask questions about departmental activity and why it was undertaken in a particular manner. These sessions provided a controlled and safe environment for staff as they learned about each other's work and the implications of integration. They gained confidence, over this time period, in their ability to probe about issues that were coming to the fore of consciousness—role changes, redundancies, new working practices.

Moving into **Stage 3** and agreeing on a way forward in this implementation is not as simple as deciding on the new system to be purchased. Choosing to do nothing was not an option for reasons explained earlier. The team were united in a goal of procuring a new system but they needed to decide on the tactics and strategy that would allow them an opportunity to get one that would satisfy all of their needs and make the work easier. Before meeting any potential vendor, they needed to be sure that they knew what they wanted in their language and not in the language of the technical specification written by the project manager. They chose to model the "to-be" system and incorporate aspects that they felt would enhance their work. The enemy became the vendors who, in the organizational history of Hospital Z, had not provided appropriate systems and had been instrumental in their failure.

The hospital did procure the system and, before leaving the project, the participating staff appeared relatively happy about the future. Nevertheless one cannot be sure about everyone and their experience of the process.

5 CONCLUSION

The project described here was one of four and provided an opportunity to engage in a critical approach to systems analysis. I deliberately set out with the intention of engaging in and exploring the politics of organizational life through the medium of integrated information systems projects. I invited the reader of this research to engage with and challenge the interpretations presented here. I would now like to draw the following conclusions.

Organizational participants in critical research can be dramatically changed by the process: This has implications for sponsors of this type of critical IS research and for the researchers themselves. Allowing staff to question accepted practice within an organization and challenge the dominant ideology requires a leap of faith that many would not be prepared to allow (Reynolds 1999). In the NHS, there is an adherence to functional methodologies that pervade all information management and technology projects—SSADM, POISE, PRINCE. It can be almost impossible to exclude them from information management and technology projects as funding from central bodies is predicated upon these methodologies being used. Users, too, who take a critical stance on an IS project may reflect on the consequences of this stance and its impact on their working lives outside the project.

As Brookfield (1994) comments,

> critical learners perceive that if they take a critical questioning of conventional assumptions, justifications, structures and actions too far they will risk being excluded from the cultures that have defined and sustained them up to that point in their lives (p. 208).

Users of IS must balance the risks of being marginalized with the need to be emancipated and this is a struggle, not only within themselves, but with their fellow workers and managers. If the culture has been one of control and domination, then those working therein, both management and staff, will have great difficulty accepting a critical approach to IS acquisition and consequently an organization with an appropriate climate is necessary.

There is a personal cost of CST research: Payne (1992) states that emancipatory practice can be difficult from a personal perspective. Staff may become critical and threaten the established norms of the organization, they may become stressed by the process, the outcomes may not be to the liking of the management. Further development of the research may be blocked in that particular organization. Emancipatory intent also has had other consequences that IS researchers and other practitioners might find disquieting. Once a critical perspective is developed, it can spill over into all other activities and can be detrimental to social relationships, work, and career. The need to expose injustice can be overwhelming at times and may lead to the researcher being

labeled as awkward, dysfunctional, or not a team player, and if this is in the work environment it can act as a barrier to promotion. Therefore, it is important that researchers who become involved in critical research develop coping strategies. This could involve seeking out and networking with like-minded people, leaving the organization and joining one sympathetic to critical theory. It could also involve a need for mentoring for researchers who choose to approach research in this way.

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