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Importance of Legitimation Systems Development

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ABSTRACT

This research investigated social issues that influence information systems development in organisations through applying Structuration Theory (ST) (Giddens, 1984). This involved using interpretive case study approach to three information systems projects at three National Health Service organisations. An appropriate 'fit' between the research methodology and use of ST has been achieved due to: (i) the interpretivist and subjectivist orientation of both. (ii) Interpretivist research methodology helps to pay a detailed attention to stakeholder behaviour and ST serves as a sensitising device to investigate the assumptions and behaviour of stakeholders involved; and, (iii) interpretivist methodology offering more flexible means of applying social behaviour approaches, such as ST.The use of ST revealed different types of legitimation structures and different degrees of time and effort required in achieving legitimation. It revealed many different types of activities performed and the norms conformed to in order to achieve legitimation. This allowed us to create Legitimation Process Model(LPM) that could be used to achieve more successful legitimation when developing information systems. Due to word limitation LPM will only be applied to one research organisation in this paper.

INTRODUCTION – SCOPE AND NATURE OF THE RESEARCH

Social aspects in ISD are important and a lack of appropriate attention to these can result in information systems(IS) failure (Flowers, 1996; Holmes, 1996,1997; Liebowitz, 1999). In order to pay sufficient attention to social aspects, we chose to use Structuration Theory(ST) (Giddens, 1984). ST provides a framework for understanding social situations in terms of social structure and human interaction. It is concerned with (1) the influence on human interaction of institutional (structural) aspects of social life such as rules, procedures and power structures; and, (2) the production and reproduction of these structural aspects through human interaction. ST is a useful tool for focusing on social aspects during the process of ISD, as it enables one to focus on action and mental structures of stakeholders. More specifically it is expected that ST would assist in discovering new insights into how systems are developed.

The research was conducted on three projects based in three different National Health Service (NHS) organisations. Due to word limitation only one NHS organisation (community health organisation referred to as Organisation-1) will be focused upon in this paper for highlighting the usefulness of LPM. The Project at Organisation-1 concerned the development of organisation wide Intranet technology across its 99 sites for 3,500 employees. Each site consisted of different clinical practice from cardiac rehabilitation to chiropody. The aim of the project was to save costs, increase collaboration and information sharing, leading to more time for other tasks, improved communication, decision making and customer service.

STRUCTURATION THEORY (ST)

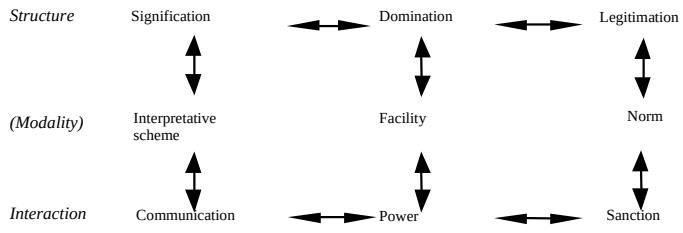
ST provides a framework for understanding social situations by establishing a relationship between social structure and human interaction. It is concerned with (1) the influence on human interaction of institutional (structural) aspects of social life such as rules, procedures and power structures, and, (2) the production and reproduction of these structural aspects through human interaction. The term 'duality of structure' represents the central element of the theory, expressing the notion that structure not only influences interaction, through the medium of modality, but is also produced and reproduced by interaction and can not be conceived without interaction.

Some of the core elements of ST (Giddens, 1984:p29) are shown in figure-1, that shows social structure and human interaction subdivided into three dimensions that are interlinked. In their communication humans draw on interpretative schemes such as stocks of knowledge to make sense of their own and others' actions; in so doing they produce and reproduce structures of signification.

Human agents use their personal power in interaction and draw upon facilities, such as their ability to allocate resources, to produce and reproduce structures of domination such as management hierarchies and procedures for mobilising resources. Humans also sanction (justify) their behaviour by drawing upon norms such as standards of personal morality to produce and reproduce legitimation structures that, for example, result in approval of certain needs. These three dimensions of ST are only analytical, as it is very difficult to separate different elements of these three dimensions in reality. It is expected that readership has some knowledge of ST or has access to ST materials, hence ST dimensions will not be explained.

Legitimation has been given some attention by various researchers using ST (Macintosh and Scapens, 1990; Brooks, 1997; Nadan, 1997; Barley, 1986; Nandhakumar, 1993; Huang, 1997). Various non-ST researchers also see the importance of legitimation (Brown, 1995; Chakravarthy and Gargiulo, 1998; Neilson and Rao, 1987; Suchman, 1995). These researchers believe in the importance of achieving legitimation for success.

Figure 1: Dimensions of the relationship between action and structure in ST



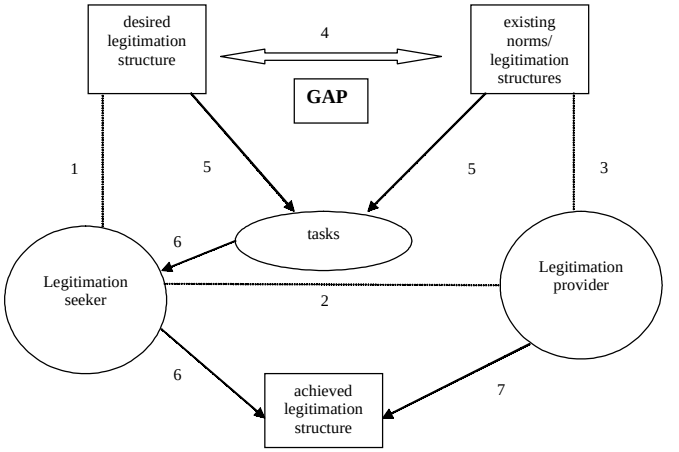
RESEARCH METHODOLOGY

We chose a qualitative, interpretive research strategy, using a longitudinal case study design, to obtain knowledge of the reality of the organizational participants, regarding that knowledge as a social construction by human actors (Walsham, 1993,1995). Our aim is theory exploration (Yin, 1994), a mainly inductive approach, typical of qualitative studies, where we use ST as a sensitising device to generate theory. This adherence meant that the data had to be qualitative in orientation and aimed at learning about the organisational context, cultural and functional issues involved in ISD. It also aimed to look at personal interests of different stakeholders and focused on their personalities, characters and aspirations that influenced ISD. We chose the qualitative interview as an appropriate forum for setting up a dialogue between researcher and participant, to create meanings and understandings that assist in the reconstruction of the ISD knowledge in which we were interested (Kvale, 1996).

We used semi-structured interviews, with an outline topic guide, for the areas we wished to discuss, allowing for coverage of topics which we thought important, while at the same time allowing the interview to be tailored to issues raised by individuals (Iverson, et al., 1999). Interviews were conducted in the workplace in privacy early in the requirements stage and at the end of the implementation phase to detect any changes in responses. Questions were contextualised within participants' experience of the project we were studying, and fell into three main areas, concerning: aspects of structure such as standards, policies and norms; aspects of technology-related change; key project activities with which they were involved, with an emphasis on power, values and legitimation. We thus had a 'light' approach to operationalization of the concepts of ST within these interviews.

Several forms were used to generate the necessary data:(a) simple participant record form;(b) participant profile, for information about each participant. The former was completed by the researcher and the latter was completed by the participant during an interview. Both served as initial guides, thereafter the researchers learnt much more about the participants as the research progressed;(c) an IS evaluation questionnaire was used at the end of the each project to evaluate the usefulness of the system for the participants;(d) a semi-structured questionnaire based on ST was used to ask participant to describe certain ISD action(s) or situation(s) associated with the Project. Hence our conclusions are qualitative in nature.

Figure 2: Legitimation Process Model



Activities
1. Legitimation seeker formulates the desired legitimation structure (the target)
2. Legitimation seeker identifies legitimation provider
3. Legitimation seeker learns norms/legitimation structures of legitimation provider.
4. Legitimation seeker compares desired legitimation structure against the norms/legitimation structures of legitimation provider and assesses the gap
5. Legitimation seeker plans tasks to close the gap
6. Legitimation seeker carries out and monitor task
7. Legitimation provider grants approval - desired legitimation structure becomes actual legitimation structure

EXPLANATION OF LPM

The focus on legitimation during our research in three NHS organisations led us to observe certain similarities in their approaches to seeking and gaining legitimation for their information systems. ST use revealed different types of legitimation structures and different degrees of effort and time required and expended in achieving legitimation. It also revealed many different types of activities performed in the workplace, and norms conformed to in order to achieve legitimation. Data analysis revealed organisational similarities between issues and activities concerned with establishing legitimation. The similarities were regarded as categories which were used as basis for further data analysis and resulted in our developing LPM, shown in figure-2.

RESEARCH RESULTS

The results showing the importance of legitimation are provided below for one research organisation, using the framework of LPM.

Legitimation Seeker: The IT Management sought legitimating for the new Intranet system to run across its 99 sites to improve organisational communication of workers and to the outside world via the Internet. A few months after the system implementation, the researcher asked a line manager(CP) what the major reasons for system implementation were. She replied: ***"to help us to become more aware of things and to communicate with one another".*** A worker(SC) (to be the Intranet Representative) said the reasons for the Intranet implementation were: ***"To help us to communicate with one another and to access information on the Internet"***. Another Ward Manager(MH) at a different organisational site replied: ***"Being able to communicate and access the world"***.

The IT Management sought approval from Strategic Management, line management and general organisational workers to introduce the technology, which would have a major impact on workers. Such exposure to a new type of technology enabled considerable internal and external access previously not experienced by them in this organisation. Therefore it was not just sufficient to hold a higher-level post with high authority, but the stakeholders also needed to gain approval and acceptance of others – even from those of lower status. Most of those were health and clinical professionals who might have resisted change and made the system unworkable.

Identify legitimation provider: The legitimation providers were identified and approached by the IT Management after looking at whom would be affected by the Project. Later the IT Manager assigned the IM&T Manager, on a full time basis, the job of communicating with line management and workers about new IT initiatives. Legitimation had to be sought from some stakeholders before others, as their approval would trigger approval from others. The legitimation providers were workers, line management and Strategic Management. Workers like the community and ward nurses possessed a lot of power and could reject the use of the system, as being nurses they could argue that they were there to care for patients and not to use the system to do non-work activities, such as the use of the Intranet. Line management possessed a fair degree of formal power and could reject the Intranet. The administrative workers based at various sites possessed the power to reject the Intranet due to lack of time or lack of status. The medical staff based at different sites possessed a lot of expert power and had the necessary professional backing of their professional bodies to reject the Intranet, if they wanted. Therefore every stakeholder, despite working within bureaucratic and obedience driven organisations possessed some sort of power. So achieving legitimation involved building coalitions and networks between different individuals for the domination to be practised. This was mainly led by the IT Department. So appropriate authority was obtained by the IT Department from Strategic Management. The IT Department's use of legitimation along with domination was much higher at the beginning of the Project than towards the end, in order to increase chances of a successful "take-off".

Learn norms/legitimation structures: A more implicit reproduction of legitimation structures was noticed by Nandhakumar (1993) who writes that: ***"We found that formal knowledge of user practices and interpretations guided the developers"*** p165. So developing systems that meet the expectations and norms of users is more likely to receive

acceptance and approval by them. This explains the behaviour of the IM&T Manager in this Project, where she spent a lot of time in learning about the norms of the potential users and line management, which she reported to the IT workers and the IT Manager. The knowledge of user norms was important in achieving success in this Project. Some of the norms and related activities in this organisation were: line management in this organisation communicated major project-related ideas, such as the Intranet, to Strategic Management through appropriate hierarchical channels. A general organisational norm, originating from Strategic Management, was to offer a better patient service. The IT Department's norm was to improve the credibility of the Department by offering better technical service, helpdesk support, and more recently in initiating IT-related projects. A new norm of the IT Management was to increase IT awareness of general workers, by introducing more friendly technologies like the Intranet and through holding IT awareness workshops.

Compare target to norms of LP: The key target of the IT Management was to implement the Intranet to improve worker communication, increase their IS awareness and change their perception and beliefs about IS. Their target was to raise worker interest and ultimately their demand for IS. However, there was a big gap between their target and the norms of workers, which were to:

- To do their own job to the best and not to change the existing ways of working due to their norm of only working best at their professional (health) related work. For example, a line manager(MH) at elderly rehabilitation clinic told the researcher: ***"My job is to look after the long term sick and not to sit in front of the computer. If I need any typing doing I get my new assistant to do it"***. Based on this norm IS was not seen as something that would allow the workers to do their job better.
- Just be concerned with the issues and initiatives that directly influence and help them in their job. Based on this norm IS was not something that would influence their job and the quality of service to patients. They say the personal touch as the most important factor .
- To work in teams and be close to other workers. Based on this norm computers were seen as things used for typing and as devices to isolate workers.
- View IT as an extra and an unnecessary burden on their work. Based on this norm IS was seen as an extra effort that was beyond their job role/formal contract.
- To be seen as loyal to other workers, especially the medical workers. Based on this norm, workers, especially line management, held negative views about IS due to past IS failures. So the workers feared line management for expressing positive views about IS.
- Not to reject or say no up front. For example, the IM&T Manager told the researcher at the beginning of the Project, when seeking legitimation and bridging the gap that: ***"line management would agree to co-operate, but the minute you walked away from them they're as they were – nothing gets done!".*** She said thumping her hands and grinning at the researcher with her eyes wide open. Based on this norm workers could not say no and give reasons but would agree to it and not take any action.

This made it very difficult for the IT Management. So in their initial comparisons they realised that the gap between their target and the norms of legitimation providers was wide.

Plan tasks to close gap: There was a big gap. The legitimation seekers were lower in status than Strategic Management and did not have direct power over the general workers. So, achieving legitimation was hard and they had to perform more activities to achieve it.

Carry out tasks to close gap. A number of activities were performed by the IT Management to close the gap between their target and the norms of legitimation provider who were Strategic Management, line management and general workers. The key activities they performed to the close the gap with workers, including line management and nurses with different specialists were:

- Communicating the results of Information Needs Survey to workers as a justification for having the Intranet.
- Holding Intranet awareness workshops/seminars and discussions, as most workers were IT illiterate.
- IT Management members (e.g. the IM&T Manager) visiting different organisational departments to talk to line management and workers about the Intranet.
- Getting support from the HR Director to set up department discussion groups.
- Appointing Intranet Representatives from each department and training them.

For example, in a stakeholder profile survey held during the middle of the Project an interviewee(CP) commented: ***"The system will enable medical and nursing staff to access and use relevant information for education and updating***[development]***"***. The possibility of workers having access to organisational and external information, having an e-mail address and not requiring much technological training was seen as a positive factor. The Intranet was going to be a new concept for organisational workers and was going to change their way of thinking, including their norms. For example, an interviewee(SB) at the beginning of the Project said: ***"You have to use it to gain expertise and see it as a legitimate part of the job. Managers like myself need to become fully conversant with IT systems as they develop"***.

At the end, after approximately 2 years of trying very hard they did manage to convince both Strategic Management and organisational workers and changed their views and beliefs about the usefulness of IT in organisations. Workers were more convinced that the Intranet would help to achieve more horizontal and vertical communication through (1)use of e-mail to send messages; (2)use of homepages to publish or broadcast information related to the department or speciality; (3)sharing of computer applications to carry out a task, such as inputting patient records, work scheduling and diary and (4)collaboration between different departmental workers when enhancing the Intranet use, in tasks such as creating data entry forms or checking patient profiles. This communication and dialogue would take place between workers in different departments of similar status and between senior and junior staff.

Grant legitimation. Legitimation structures created were: (1)granting of project approval by Strategic Management after the IT Management highlighted the efficiency and cultural based benefits of the Intranet to them. They jointly decided to give the IT Department a chance to make improvements in the Organisation. (2)The recognition and approval of the Project by most line management and general workers after Strategic Management's approval was communicated to them. Strategic Management's approval was communicated using the Organisational Newsletter and the IT workers. (3)Finally, the IM&T Manager and the HR Director's joint initiative of raising IT awareness helped to obtain better user acceptance for the Intranet.

Success of the legitimation process. The use of ST also shows the production of new norms, such as the use of the Intranet by nurses to learn about new clinical techniques and for their specialist academic courses. So the workers internalised the norms of using the Intranet in their daily work. Unlike this research situation, where ordinary organisational workers internalised most IS-related norms, Nadan (1997) found: ***"The case of the FDB has demonstrated that in actual practice, the organisational norms are not easily internalised by the organisational participants due to several reasons"*** p240.

CONCLUSION

The use of ST in this research has highlighted the importance of legitimation for developing ISD and to achieve successful domination. The outcome of this research has yielded LPM that could be generalised and applied to other organisations. It can serve as a useful device for an IS developer to plan, approach and gain support of appropriate legitimation in order to develop an IS.

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