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Expert and Hierarchical Authority in a Systems Development Project

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While systems development can be usefully conceived as a process of negotiation, there are many occasions when actions are legitimised not because they reflect the outcome of a bargaining process, but because those with authority utilise power derived from their hierarchical position or their perceived expertise. Here these issues are examined.

Systems development has usefully been portrayed as a process of negotiation or learning, or the negotiation of meaning and interest (Kling 1992, Hocking 1995, Crowe, Deeby et al. 1996). These concepts help to counteract the often rationalistic and top-down focus of much of the systems development literature (Kouzmin and Korac-Boisvert 1993) but tend to imply a continual two-way flow of information and power. An ethnographic study of systems development analysed in part below illustrates that at times there was a one-way flow as authority was exercised. The concept of negotiation effectively illustrates the interactional nature of information systems development, but tends to downplay issues of domination, power and control. That is, it does not explain why some actors were able to dominate others and legitimise certain actions through the use of power and resources.

The application of authority and legitimation can also be discussed in terms of power and control of others. These terms have been avoided here due to the loaded meanings of the terms, but are commonly used elsewhere. For example, Orlikowski (1988, 1991) focused on control mechanisms in a large accounting/consultancy firm and changes in them when production processes became more mediated by CASE tools. She noted that IT can be both a medium and outcome of social actions, and so can both be influenced by people's actions, and also influence them.

Authority in organisations today tends to be derived from either or both expertise and hierarchical authority. Orlikowski (1988) termed these technical and managerial authority respectively. She noted that, with the growing complexity of production processes and the corresponding greater influence of technical experts and professionals, the tension between the power of knowledge and the power of hierarchical authority has become a major issue. The power of knowledge, "claimed by technical experts and professionals, and accruing to them independent of the organization" can overlap with the power of hierarchical authority, "claimed by organizational managers by virtue of their status in the bureaucratic hierarchy, and not associated with them independently of their office" (p 92). Here these two types of authority are described in action and the relationship between the two analysed.

The application of expertise refers to a one-way flow of information as one party provides information and the other party learns. As Berger and Luckman (1966) noted, knowledge "...is at the heart of the fundamental dialectic of society. It programmes the channels in which the externalization produces an objective world" (p 84). Pentland (1995) argued that the status of a piece of knowledge depends on the outcomes of debate. As debate converges, issues become settled and take on the character of a "black box". Pichault (1995) cites a number of authors looking at expert power resulting from the possession of specialist skills. He comments that such power distinctions are relatively stable and tend to be an integral part of the formal organisational hierarchy. Therefore, they are difficult to change by simple managerial intervention.

Reflecting the close relationship between negotiation and the use of authority, Feldman (1989 in Walsham 1993) suggests most management literature is mistaken in viewing control and autonomy as alternatives as they are conceptually and practically inseparable. Autonomy implies autonomy from control and control is an important aspect of managerial actions in organisations. Giddens (1989) termed the relationship between control and autonomy the "dialectic of control" and pointed out that pure control of a situation is an impossibility. Even if people did try and follow the rules and directives of those in control, these rules and regulations are always open to interpretation (Strauss 1987). Negotiation and the use of authority are closely intertwined and crucial elements of change in organisations.

Orlikowski (1988, 1991) pointed out that power derived from technical expertise can overlap that derived from hierarchical authority and conflict can occur. She predicted that the confusion and confrontation resulting from the overlap of these two types of authority would gradually become resolved as organisations increasingly become dependent on experts and they become embedded in the technical/process infrastructure. This would occur in two possible ways. Firstly, experts could work in multi-person teams and their authority becomes merged with that of functional and line managers and any discrepancies in values, goals and perspectives is resolved within the team. Secondly, experts could become managers themselves, or by managers becoming technical experts. She suggested this synthesis is being promoted by: the ongoing push for sophisticated innovation, which requires experts and professionals with the authority to be effective; a perceived need by management for co-opting the authority of experts in lieu of being able to control them and; the willingness of professional and technical experts to take on hierarchical authority.

These two types of authority can also become integrated through embedded organisational processes, many of which are becoming an integral part of computerised information systems. These moves reflect the rise of technocratic rationality. Expert authority will increasingly become embedded in standard organisational processes, which are governed and policed by those with hierarchical authority.

A Case Study

These themes have been investigated in practice through an ethnographic study of an information systems development project in a professional organisation responsible for drafting legislation. All the drafters, and the support staff to a degree, had power due to their professional or technical expertise.

It could be a very challenging office to manage, as this power derived from expertise at times confronted the authority derived from hierarchical positioning. However, although others in the office would have had the technical expertise to make many decisions, they generally did not have the authority to enforce them. Thus, management's "stamp of approval" was crucial if the decisions were to be implemented. The other members of the office generally appreciated that, if he had responsibility for the decisions, the manager should be comfortable with those decisions. Thus, despite their own personal competency and often different opinions, they generally followed his directives.

At the same time, the expertise of others in the office was also acknowledged by delegating decision-making to them. Individual staff members would work through the details required to make a specific decision. They would make recommendations to management which were, generally, accepted. Hence, expertise and hierarchical authority were combined through having experienced drafters as managers and by delegating decision making to specific individuals.

The project would not have progressed without key participants employing the authority their positions offered them. The senior manager responsible for both the drafting office and the systems development unit heavily promoted the project and convinced Cabinet of its benefits. Cabinet's support of the project was used to obtain the commitment of the user organisation while the management of the drafting office made decisions which other members of the office were obliged to follow. Through the use of power and authority, people were able to legitimise the actions of individuals by giving the support of the organisational power hierarchies. With the weight of authority, decisions were made objective facts in the eyes of those who had to follow them, rather than a negotiated reality which could be debated.

Although the development involved a process of mutual learning as systems developers, users and others learnt about the worldviews of the others, there were significant times when a one-way flow of information could be observed. Such one-way flows of information included: training programs; a trip to another government's drafting office to look at their application of computerised technology; documentation; and expert advice through consultants.

The one way flow of information can serve as a tool for the two-way process of negotiating interests. For example:

- one of the aims of a prototype was "to illustrate to the chief drafter how quick and easy it is";
- systems developers say the users need to be "educated" about the benefits of the system;
- administrative assistants say the drafters need to be "educated" about how difficult the administrative assistants found it to keep up with their demands.

Discussion

The process of systems development in such projects is essentially an interaction between people with different areas of expertise. The users knew a great deal about the process of producing legislation but generally knew very little about computerised technology at the beginning of the project. The systems developers had to learn a great deal about the production of legislation to apply their area of expertise. The negotiation of meaning often involved the transferral of information from one group to another. This one-way flow of information was legitimised by the fact that the providers were seen to have expertise in that area.

The authority derived from expertise was enhanced by and sometimes conflicted with authority derived from hierarchical structures. The involvement of the executive manager who initiated and promoted the project and the commitment of the parliamentary leaders were crucial because they helped to authorise and legitimise the actions of the systems developers. Throughout the project, the senior manager stated that it was a requirement of Cabinet that the project was implemented and when consensus could not be achieved in the drafting office, the chief drafter made a decision the others generally followed.

Although often viewed with negative connotations, issues of control and the use of authority are not necessarily negative and are one way of resolving conflicts of interest and meaning and/or speed up the process of negotiation.

As Markus and Bjørn-Andersen (1987) pointed out, systems developers can exercise power in a number of ways, and this was done in the case study examined here. For example, via

- the technical exercise of power. The developers often made technical decisions on behalf of the users, who had limited computing knowledge.
- the structural exercise of power. The formal systems development and project management methodologies used by the developers prescribed the roles and responsibilities of the users. For example, they had to "sign off" the functional requirements document and were then responsible for any future changes identified.
- the conceptual exercise of power. The information system proposed firmly reflected the technocratic assumptions of the developers. As with most information systems, it promoted standardisation of procedures.
- the symbolic exercise of power. This was not specifically examined in this research project and can be difficult to reveal. At least in the initial stages of the project, computerisation seemed to be associated with reducing the artisan and highly creative nature of drafting by some users, while towards the end, it seemed to be seen as a tool in the creative process.

The drafters also used their expertise to emphasise particular points and the specialised and valuable nature of their expertise gave them a particularly good bargaining tool. The developers acknowledged that the acceptance and effective utilisation of the system was crucial and a considerable risk throughout the project.

Conclusions

The analysis introduced above provides a brief introduction into what was a complex social situation and further details can be obtained from the author. In summary, while negotiation is a useful concept for analysing the micro-processes associated with systems development projects, there were many times when only one-way flows of meaning and interests were observed. These can be usefully analysed by considering the application of authority derived from expertise and hierarchical positioning.

References

- Berger, P. and T. Luckman (1966). *The Social Construction of Reality*. Hammondsworth, Penguin.
- Crowe, M., R. Deebey, et al. (1996). *Constructing Systems and Information: A process view*. McGraw Hill.
- Hocking, L.J. (1995) "Systems development and the Negotiation of Meaning and Interest" 5th ACIS Hobart Tasmania pp 344-354.
- Kling, R. (1992). Behind the terminal: The Critical Role of Computing Infrastructure in Effective Information Systems Development and Use. *Challenges and Strategies for Research in Information Systems Development* Ed. W. Cotterman and J. A. Senn. Chichester, UK, John Wiley and Sons. 365-414.
- Korac-Boisvert, N. and A. Kouzmin (1995). "Transcending soft-core IT disasters in Public Sector Organisations." *Information Infrastructure and Policy* 4(1): 131-161.
- Markus, M. L. and N. Bjørn-Andersen (1987). "Power over users: Its exercise by System Professionals." *Communications of the ACM* 30(6): 498-504.
- Orlikowski, W. J. (1988). *Information Technology in the Modern Organisation*. New York University. (PhD dissertation)
- Orlikowski, W. J. and D. Robey (1991). "Information Technology and the Structuring of Organizations." *Information Systems Research* 2(2): 143-169.
- Pentland, B. T. (1995). "Information Systems and Organisational Learning: The social epistemology of organisational knowledge systems." *Accounting Management and Information Technology* 5(1): 1-21.
- Pichault, F. (1995). "The management of politics in technically related organisational change." *Organization Studies* 16(3): 449-476.
- Strauss, A. (1978). *Negotiations: Varieties, Contexts, Processes and Social Order*. San Francisco, Jossey Bass.
- Walsham, G. (1993). *Interpreting Information Systems in Organisations*. Chichester, John Wiley.