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Using ANT Ideas in the Managing of Systemic Action Research

ANT ideas in Action Research

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ABSTRACT

Little guidance has been given to the management of action research and this paper suggests that ideas from the Actor-Network Theory (ANT) may be helpful. Although ANT has been widely used as a tool for interpretation and description of the interplay of the social and technical aspects of organisations, this paper presents a different use of the ideas. It advocates a proactive use, to bring about changes in a situation rather than merely observing and describing that situation disinterestedly from the outside

The case is described of a long-term action research study carried out within a corporate bank, where the ideas of ANT were employed in this way, as a device for understanding the turbulent social and political context of the research, to plan and manage the intervention process, and where ideas such as networks of interest, translation of interests and black boxes were used to practical effect.

Keywords: Action Research, Actor Network Theory, Information Systems, Research Methodology

INTRODUCTION

Collaborative forms of research, particularly action research, are well established ways of advancing the theory and practice of systems thinking but their use can be problematical. In such research the researcher becomes necessarily involved in managing relationships and change in the real-world problem situation, for which they may be ill-prepared. For example, setting up any collaboration can be a protracted and difficult process, requiring social and persuasive skills different from those normally expected of an academic researcher. Researchers may be uncomfortable in performing the negotiation rituals and manoeuvres required to initiate the research and the general conduct of the research may require the type of organisational and persuasive skills more normally required of the management consultant (Clark, 1995, Clark, 2001, Wickham, 1999). Further, on occasions an active role in organisational politics may be called for, to enable the research to happen and to ensure that it continues.

It is surprising then that the neither the systems literature nor that concerning action research gives much attention to the management of the collaboration and the researcher's role vis-a-vis the real-world situation. It is with this that this paper is concerned, together with the contribution that can be made by ideas taken from a particular sociological stream.

The interdisciplinary roots of management research mean that there is continuing interest in the potential for applying sociological theories. However, the marrying of the two is not always without problems. Where the management topic is fairly recent and has not had time to develop a strong theoretical base of its own then discrepancies in

scope may be obvious. Oft-used theories such as the actor-network theory (Callon, 1986, Latour, 1987) or structuration theory (Giddens, 1984) are noticeably different in kind to, for example, perspectives used in information systems research such as object orientation, or the simple stand-alone business models suggested for, say, understanding e-business. They represent ‘grand theory’ and all-embracing lenses through which to understand phenomena, usually on a large scale. And, importantly, they are intended as frameworks for sense-making rather than a basis for analysis-for-action. This is to say that they are a devices for interpretation and description of a situation rather than managerial tools or techniques for intentionally guiding their user towards or away from any particular future actions. The consequent lack of prescriptive advice or specific techniques for any form of operational use has necessarily meant that the impact, visibility or knowledge of, say, ANT or structuration theory in the world of management practice is negligible.

In this paper we shall suggest that there is however very practical utility in the ideas of ANT for those management researchers who work through action research. We shall exemplify this through a case study within a major UK corporate banking institution. In this three-year study the ideas of ANT were found to be of great value in the researchers’ attempted management of the social and political context of the action research.

Following a description of the problem situation, we show how ideas of networks, enrolment, translation and black boxes were employed and how the ‘lens’ of actor-network theory guided the intervention, sensitising the would-be problem solvers towards political actions.

BACKGROUND TO THE USE OF ANT IDEAS

The intervention described here took place within a major UK financial institution, hereafter called Corporate Banking. Corporate Banking was a major competitor within its industry, being always within the largest three organisations in terms of turnover in the UK. It was also a long term and sophisticated user of IT.

The researchers were engaged on a three-year action research project that focussed upon the organisation of business change projects and how information systems should be developed. Corporate Banking wished to engineer a change in the way that information systems were developed, including a re-orientation away from the conventional view of 'IS projects' meeting the needs of 'users'. Instead, a more integrated view of business change projects that might necessarily involve changes to IT support was to be engendered. This would be accompanied by adoption of a new standardised way of developing all information systems. The researchers were to facilitate the introduction of this change and help the client to understand why an earlier, pilot roll out of a new development approach had met with no success.

Two projects to be managed

This intervention in the affairs of Corporate Banking was organised and financed under the name of the ABC project; this is what was understood as 'the project' by anyone within Corporate Banking. The intervention was, however, simultaneously the vehicle for academic research concerned with the social construction and enshrinement of norms in IS methodologies. This continued a long-standing tradition of employing action research to better understand the use of systems ideas and organisational use of information systems (Checkland, 1999)

A first distinction to be made is therefore that here, as in all action research, there were two projects and two sets of processes to be planned, managed, and delivered.

The first project is the work done for the client. This was in our case the ABC project, institutionalised through the project approvals process of Corporate Banking and accompanied by the conventional commercial project paraphernalia of PIDs (project initiation documents) and project reviews.

The second and meta-level project was the academic piece of action research that included the work done for the client. This was less formally defined but naturally thought to be of primary importance by the researchers themselves.

Both of these projects were conceptualised using the Soft Systems Methodology (Checkland, 1981, Checkland and Scholes, 1990, Checkland, 1989) and therefore understood to require appropriate forms of monitor and control activity. Both were also situated within the particular context created by two factors.

A turbulent setting

The first major contextual factor was that Corporate Banking had approximately two hundred change projects included within the individual 'programmes' that together constituted their Five Year Change Plan. The business importance of the individual information systems was large, with several million pounds of trade handled daily. The organisation was also facing an unusually high level of mandatory projects, projects that had to be done in order to comply with legislation or market requirements rather than for any promised increase in bottom line figures. This meant that, there was intense pressure to deliver projects, in the words of one senior manager, "All On Spec, On Time and On Budget – or better". The researchers' action research was viewed within the company as a change project and subject to exactly the same pressures. Moreover, it

would be reviewed and judged against the same criteria as all other projects and would be summarily cancelled should performance be judged appropriate. It was very clear from the beginning therefore that the researchers' efforts were always to be divided between the 'action' (the work within Corporate Banking), the 'research' (the learning gained from that work in terms of theory and methodology) and the managing of the two. The latter would not consist of merely managing the project activities but also ensuring that the project 'stayed alive' through political action if required (Dunning-Lewis and Townson, 1998, Dunning-Lewis, 1998).

The second important contextual factor was the atmosphere of insecurity and unease found in Corporate Banking. This was a historically paternalistic organisation, valuing its staff, providing generous working conditions and where staff, until recently, might be employed for much of their careers. There was now, however, common opinion that the parent corporation was performing poorly and accepted norms were no longer valid. . Media articles had publicly identified the poor performance, share prices had dropped dramatically and there was shareholder dissatisfaction with recent results. Staff were aware that the cost-per-transaction figures for the parent bank were several times higher than those of its competitors and the organisation was now exposed. This meant that, even within the profitable area of Corporate Banking, there were staff concerns over future job prospects and an increasing managerial emphasis upon cost cutting. Over the period of the research the poor morale and fears of staff were further by the cutting of budgets and several projects being cancelled or 'frozen' partway through despite meeting all their required performance targets.

Our early analysis of the situation, captured in a rich picture diagram (Lewis, 1992) had identified both of the above factors as significant threats to the intended research. We were forewarned therefore that attention would therefore need to be given to the four different forms of politics faced in interventions (Dunning-Lewis, 1998), namely the politics of the situation, politics regarding the intervention, politics of the consequences of the intervention and the politics of the intervention itself. What was not foreseen was the extent to which the last of these, the politics of the intervention, would occupy us in our research meetings. Changes in personnel, the worsening financial position and ever more stringent financial requirements all meant that we had to continually adapt if both the intervention in the company, and the action research that relied upon that intervention, were to continue. It was in giving structure and clarity to these political assessments and our planning of what to do next that the concepts of ANT were to prove most useful.

ACTOR-NETWORK THEORY

The actor-network theory pioneered by (Callon, 1986) and (Latour, 1987) concerns itself with the sociology of science. It attempts to explain and interpret social and technological developments, privileging neither a technically focussed view nor one of social change. ANT's analytical focus is upon

“... the creation and maintenance of coextensive networks of human and non-human elements which in the case of information technology, include people, organisations, software, computer and communications hardware, and infrastructure standards.” (Walsham, 1997) pp.466-467.

Parts of these networks might be relatively fixed, have properties of 'irreversibility' and be difficult to change; but the networks are essentially mutable with ever shifting alliances between the contributing parts.

Networks are constituted by actors, with the label being used in its most basic sense of any entity that acts or causes action, and can thus be applied to humans and non-humans (machines, documents, procedural arrangements) alike. In fact, ANT insists that human and non-human actors are neither hierarchised nor considered separately (Callon and Latour, 1992), should be analysed no differently and must be talked of using the same language. This 'principle of generalized symmetry' underlies the ANT refusal of any 'change in register' when moving from the technical to the social aspects of the problem situation (Callon, 1986).

The central concern of ANT is in the relationships and processes whereby these human and non-human actors come together to form alliances and networks of common interest and, notes (Law, 1999), to:

“How is it that things get performed (and perform themselves) into relations that are relatively stable and stay in place” p.4

This resonates strongly with the concerns of many management researchers and it is not surprising that there has been an interest in using the ANT in sub-disciplines such as IS research. Walsham (1997) reviewed a number of papers in the information systems research literature that made use of actor-network theory and there has been interest in using the concepts in a variety of ways. There have been attempts to use ANT as an interrogative device to examine events in IS development (Underwood, 1998), understand implementation and innovation (Tatnall and Gilding, 1999), re-assess IS

histories (Introna, 1997) and underpin new IS methodologies (Atkinson, 2000). There have though so far been few attempts to use the ideas pro-actively, whether in IS work of more general management, as the basis for planning future actions. This was attempted in the Corporate Banking case.

How the ideas were used

In the Corporate Banking case the ideas of ANT were first introduced into the framework of ideas ((Checkland and Scholes, 1990, Hindle et al., 1995) used in the ABC intervention itself. It was thought that an interpretation of why past IS rollouts within Corporate Banking had 'failed' might suggest what to do better in future. The ability of ANT to unpack complexity and provide rich descriptive accounts, in diverse areas such as the development issues surrounding the TSR2 fighter airplane (Law, 1988) or information systems in hospitals ((Bloomfield et al., 1997), commended it to us as the basis for such an interpretation.

The surprise finding was that the concepts and language of ANT were most useful in interpreting the current problem setting and suggesting political actions. Use of ANT therefore spread upwards, to the management of the action research and it is this more active use of ANT concepts that will be discussed further here.

The need for some way of discussing the management of the project in more than just terms of timetables and deadlines was accentuated by the arrangements for the action research. We were well aware of the tensions between distance and engagement in the conduct of any form of collaborative research (Nandhakumar and Jones, 1997) and had organised the work accordingly. To gain the in-depth understanding of events one researcher was to be permanently located within the City of London offices of

Corporate Banking. Together with their previous employment by another branch of the parent organisation, this gave them ready acceptance and permitted both participant observation and a deep understanding of the social milieu and interactions.

The second researcher would remain more detached, with only intermittent and more formal interactions with Corporate Banking. Visits were made to enable interviews or workshops but the 'outsiderness' of this researcher was always apparent, proclaimed for example by the visitor's security badge that had to be worn at all times.

The resulting periods of disassociation between the researchers meant that despite frequent email contacts every face-to-face meeting was lengthy and entailed a review not merely of the progress of the research project but also of events in the wider system and how the research project should adapt to these. As the project progressed and external events grew ever more turbulent then discussions the latter began to dominate the meetings. The future of the research was uncertain. It became clear that the meta-level, academic research project would not survive unless careful attention was given (in the language of ANT) to nurturing and creating a stable network of actors, all of whom thought it in line with their own interests that the ABC project (and thus the action research project depending upon it) should continue.

Once this was recognised and the ideas and language of ANT were adopted as the device for discourse about the intervention then the periodic meetings between the researchers became re-structured and far more effective. The first part of each meeting was concerned the conscious building and maintenance of a network of aligned interests, such as would better ensure continuation of the ABC project. Separate

discussions and systems modelling could then address the content of the ABC project itself.

EMPLOYING THE IDEAS

The conduct of this piece of action research was therefore distinctive in two ways. The first was in the clear distinction made between the ‘two projects’ involved in the action research, this distinction being formalised by the structure of the project meetings. The second was in the continual attention to the formation and maintenance of networks of aligned interests. Three examples of what this meant in practice are as follows.

New alliances through translation

At one point in the project the researchers perceived growing threats to the ABC project. The pressures on cost cutting were increasing and a major IT infrastructure project had just been cancelled halfway through, despite meeting all of its milestones and targets. More cancellations were to follow a review of all current projects.

The ABC project reported to the head of IS Development but this person was not acting as any form of ‘project champion’ (Beath, 1996). They had already required that the ABC project focus on the system testing area, work that was less crucial but could be completed independently of any continuation of the main project. This suggested to the researchers that no future defence of the project should be expected from that quarter. In terms of the ANT, it seemed that the network of aligned interests was becoming too weak to withstand the pressures that were accumulating. It was now a conscious strategic decision of the researchers that that network needed strengthening; the opportunity for this was afforded by another group within Corporate Banking that was powerfully positioned and had until now not been part of the network. This was the

Quality and Standards Group that existed independently of the IS Group and reported to a higher level. Contact with this group had so far been limited to providing the required assurances that the proposed new ABC framework would not contravene any of their quality standards.

The researchers now recognised the value of enrolling this group and this led to a re-presentation of the ABC approach, with a new emphasis upon ABC as an insurer of quality product delivery.

In the language of ANT a translation was being attempted and Latour's fifth translation strategy (Latour, 1987) was being proffered. New documents were produced, meetings were arranged, and the ABC project was consciously re-invented; over a period of weeks there was a positive effort to persuade Quality and Standards that adoption of ABC was a logical necessity if quality was to be ensured. These efforts were partly facilitated by earlier moves (see below) to link ABC to the organisation's project management standards and use of the Prince 2 project management framework.

The attempts were successful and the translation was achieved, leading to a senior manager from Quality and Standards becoming a co-sponsor of the ABC project. This meant that cancellation of the project no longer lay entirely within the remit of the IS Development group. The researchers felt their actions had been justified soon afterwards when several projects (arguably more useful than the ABC project) were cancelled; the ABC project was reduced in scope but continued.

Enrolling a new network node

A further example of translation came with the appointment of a new project leader. When the ABC project was initiated there was a formal requirement for a project leader, appointed from the senior staff of Corporate Banking. The individual given the task had

experience of the earlier attempts to introduce changes to business systems development and had been involved in the pre-project planning for ABC. Thus, in the language of the ANT, they were already well integrated into the network of interests. However, when that individual chose to leave the organisation a replacement was appointed by the IS Development_manager. An important actor in the network of aligned interests had therefore changed. The new project leader was professional but, it became apparent, was less interested and committed to the aims of the ABC project than his predecessor. ANT proposes that aligned interests are created by enrolling allies and the translation of their interests must be such that participation will lead to the network's maintenance. A form of translation was therefore required, to align this individual's perception of the ABC project with their own ambitions and interests.

Latour suggests it is necessary

“... to pass through the contenders' position and to help them further their interests.

In the linguistic sense of the word translation, it means that one version translates every other, acquiring a sort of hegemony: whatever your want, you want this as well” p. 121 (Latour, 1987)

The researchers knew that the new project leader would be judged on the running of the ABC project along with their other duties, with substantial annual bonuses depending upon satisfactory performance. They also judged him an ambitious individual. A set of deliberate decisions were therefore made to ensure that his involvement with the ABC project became as public and high profile as possible. Getting reports of the ABC work into the company magazine, which circulated inside both Corporate Banking and the parent organisation, was one way in which this was done. Another was to ensure that ABC was specifically named in Corporate Banking's Annual Review document.

Organising lunchtime discussion groups about ABC, hosted by the project leader, was another tactic. The researchers were also able to offer professional expertise in reviewing a report prepared by the manager, spotting some potentially embarrassing errors, and identifying areas for improvement.

None of these things were logically necessary activities (in terms of SSM modelling) or progressed in any way the ABC project. They did though draw the new manager into the network. They made association with the project public and undeniable, meaning it would be hard for them to disassociate themselves from any perception that the project was not successful. The called-for translation of interests was thus achieved.

Exploiting possible black boxes

Within ANT, when enough cohesion is obtained that an organised whole is formed from an assembly of disorderly and unreliable allies, when "many elements are made to act as one" ((Latour, 1987), p. 131) then a 'black box' can be said to have been created. A black box has properties of irreversibility, for it cannot be easily disassociated, dismantled, renegotiated, or re-appropriated. Networks anchored to black boxes will therefore tend to be more stable and resilient than those that are not.

This led the researchers to ask whether there were in the problem situation anything that might be considered as a black box and be employed to advantage.

A strong possibility was soon identified, namely the PRINCE 2 project management procedures together with their institutionalisation in Corporate Banking. PRINCE 2 (CCTA, 1996) was a set of nationally recognised project management procedures that Corporate Banking had formally adopted. There was never heard, from any source, any

suggestion, of any kind that PRINCE 2 should not be followed in both business and IS projects. The Quality and Standards Group were the apostles and policemen of its use.

A number of documents were then produced that located use of the ABC approach in relation to PRINCE 2 and attempted to forge a conscious and definite linking of the two. The linking was formal and procedural in that definitive guidance was given as to how the documentation and timing of the two were related. Nevertheless, the linking was less formally engineered also; discussions of the two were always made together and the same person became responsible for the training of staff in both ABC and PRINCE2.

In practice, the attempted linking of ABC to PRINCE 2 proved only partially successful. Their complementarities could to be a two-edged sword. Both, for example, required the definition of a business case for any change project (promoting the association) but required slightly different information in a slightly different form (confusing and annoying staff and suggesting redundancy). No degree of 'spin' could overcome the fact that ABC had really been designed with no consideration to it being used in conjunction with PRINCE 2 but association of the ABC project with the 'black box' of PRINCE 2 was emphasised throughout the research.

DISCUSSION

We have described how the researchers began by using the ideas of ANT to think about how to organise a change in Corporate Banking's working practices. It subsequently emerged there was greater value in using those ideas as a language for discussing and planning the social and political interactions and machinations that necessarily surround research done within organisations. Ideas of 'networks', 'enrolment', 'translation' and

‘black boxes’ were used to reflect on how to make the intervention happen and plan actions to ensure the continuation of the research project.

And there are no clear obstacles to using those ideas for collaborative forms of research in general. In action research they can provide a lens through which to review the research setting and a language for discussing the turbulent events in which the research is located, complementing the management of budgets and time-scheduling that is conventionally labelled as project management. This is important given the desirability of greater use of action research (Mansell, 1991, Stowell et al., 1997, Checkland and Holwell, 1997, Baskerville and Wood-Harper, 1998, Avison et al., 1999).

In this, we do not claim to have used ‘the Actor Network Theory’ (even if there existed any single immutable definition of what that might be) and recognise that much that we did could offend an ANT purist. We must acknowledge our selectivity and instrumentalism, which privileges those parts of ANT that we believed to be useful for our given purposes. Perhaps more importantly, we used the ideas of ANT outside of the beliefs about the nature of social life from which they originated. We can thus be challenged over paradigm incommensurability and whether it is valid to combine in a single intervention models and methods that originate in differing epistemological and ontological assumptions.

Our view is that whether represented as part of a multi-methodological approach (Mingers and Brocklesby, 1996, Mingers and Gill, 1997), pluralism ((Jackson, 1997) or pragmatic practice (Ormerod, 2006) the use of the ideas of ANT can be coherent and useful within a softer form of systems thinking such as SSM. Further, we can see no reason why those ideas should not be used in most forms of collaborative research. In

action research, they can provide a lens through which to review the research setting and a language for discussing the turbulent events in which the research is located. We can then go beyond the management of budgets and time-scheduling that is conventionally labelled as project management; choosing to not ignore, but find ways to deal with the awkward realities and politics of real-world settings, would facilitate the desired greater use of action research (Mansell, 1991, Stowell et al., 1997, Checkland and Holwell, 1997, Baskerville and Wood-Harper, 1998, Avison et al., 1999).

The Corporate Banking case demonstrates how valuable sociological ideas, drawn here from the actor-network theory, can be in practically enabling management research. For example, consider what was done to bring in Quality and Standards as a co-sponsor. The management literature tells us, based on empirical evidence, that a project champion is often necessary to bring about effective change; but it is ANT that provides a coherent set of ideas suggesting why this should be so and, importantly, what processes may be involved in bringing about that championing.

There are though implications for the researcher who, as done in the Corporate Banking case, goes to the next step of engineering such processes. This necessarily leads to an abandonment of the view of collaborative research with organisations as being no different to other research, as being a pure act carried out by detached, uninvolved individuals. Instead, we are moved towards the richer and more interesting alternative of collaborative research being the result of a complex nexus between various actors (human and non-human) that includes the researcher, sometimes coloured by the promotion of personal interests, and in a flux of changing circumstances and context.

Making sense of what occurs and what might be done in such interventions is therefore difficult and here, once again, researchers may certainly learn from how sociologists attempt to give shape to stories of

“... political and bureaucratic struggle, of technical and financial controversy and management disagreement” (Law, 1988).

A possible criticism of the work done in Corporate Banking is that whilst a great deal of time and effort were given to the analysis-action-reflection loop, making use of ANT concepts, the eventual decisions and actions taken were not dissimilar from those that might have been reached by any experienced consultant or researcher. The response must be that the things done in the ABC project could have indeed been chosen, by chance or experience, by anyone wanting to keep the project alive. The likelihood of doing so would though be increased if those persons recognised the need for ‘reflection in practice’ advocated by discussants of intervention (Schon, 1983, Schein, 1995, Schein, 1999). It would, we contend, be further increased by use of a social theory, a consistent body of ideas and a formal language for discourse, so that the researchers are less reliant on past professional experience, craft knowledge or chance in their decisions about what to do. It is the provision of these that may be the greatest contribution of ANT to the action researcher and to the user of SSM. Checkland, reviewing the development of SSM identifies the desire to act rather than describe as central to both SSM and action research:

“The fact that the research which produced SSM started out from a base in systems engineering indicates it was part of the strand of research which concentrates on situations in which people are trying to take action. From

the start the researchers tried not simply to observe the action as external watchers but to take part in the change process which the action entailed.; this made change, and how to achieve it, the object upon which research attention fastened.” p. A39 (Checkland, 1999)

Using the ideas of ANT, as described above, provides the SSM user with valuable tools for better ensuring that wished-for changes occur and undesired or unexpected changes do not divert the research. In doing so it complements the undeveloped advice concerning ‘clients’, ‘commodities of power’ etc previously given on how to manage SSM interventions.

Finally, some might consider the reflections and actions taken in Corporate Banking as ‘Machiavellian’ or inappropriate for academic research. It is regrettable that so little attention has been given to the ethical issues of collaborative research but a defence must be that no-one undertaking collaborative research can avoid management actions. Despite how we eventually report the research, no research simply happens; access must be engineered, clients must be worked with and whether we decide to empower the disenfranchised or support the status quo, we necessarily react to events. Using the ideas of ANT as part of giving conscious attention to managing research will at least contribute to a more explicit process, and thus a more defensible basis for using and reporting action research. It, simultaneously, raises controversial issues concerning research validity, incommensurability when mixing methods or paradigms and the researched-researcher relationship. We have not been able to explore these within the confines of this paper but all are deserving of future discussion and debate, which we anticipate and welcome.

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