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Action Research in Practice: Issues and Challenges in a Financial Services Case Study

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Abstract

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Keywords

Action Research, Information Systems Strategy Formulation, Business Processes, Organisational Problem-solving, and Action Research Projects

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Action Research in Practice: Issues and Challenges in a Financial Services Case Study

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In this paper we give a direct and personal account of the issues and challenges that occurred in an action research study. The research team consisted of five researchers from two Australian universities. The action research case was carried out in a small financial services company and concerned the development of an information systems strategy. However, the focus of the paper is not on information systems, but on the general methodological issues and problems of action research. The authors hope that readers will benefit from the direct and transparent account of the practical methodological problems encountered in the study. Key Words: Action Research, Information Systems Strategy Formulation, Business Processes, Organisational Problem-solving, and Action Research Projects

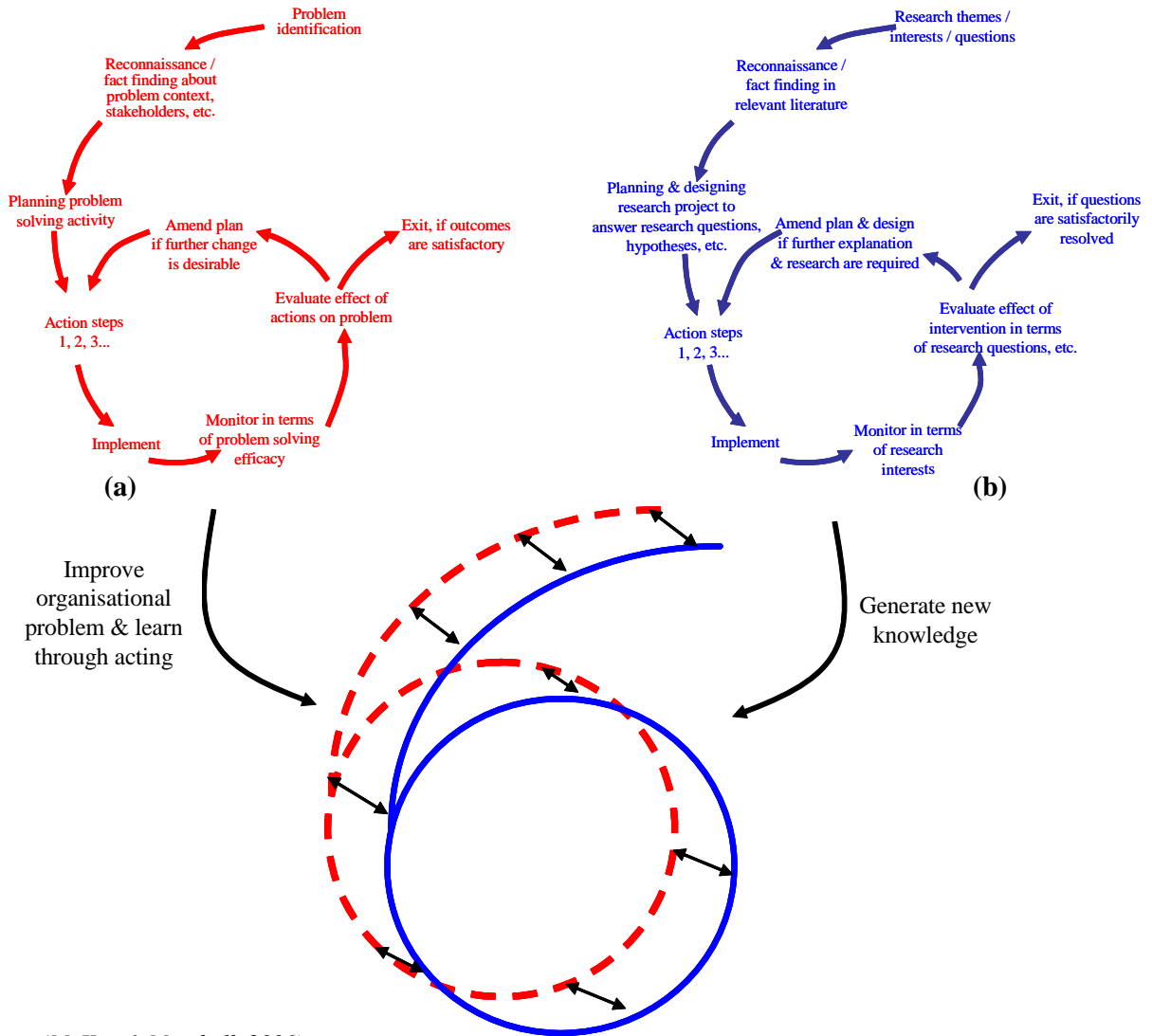
Introduction

In action research (AR), researchers and practitioners collaborate to improve a problem situation of concern. The practitioners' objective in this collaboration is to learn about the situation of concern, and to achieve a resolution, or at least an improvement in that situation, whereas the researchers are interested in utilising the context to learn and to develop new knowledge. AR methods, as Baskerville and Myers (2004) argue, "provide one avenue to improve the practical relevance of IS [information systems] research" (p. 329). This is because, in contrast to research that employs experiments and simulation, action researchers, in seeking to improve actual problem situations, tend to avoid the problems associated with the separation of research and practice (Avison & Wood-Harper, 1991; Baskerville & Wood-Harper, 1996; Susman & Evered, 1978). Thus, in a sense the *laboratory* of an AR study is the real world (McKay & Marshall, 2001b; Susman & Evered). In the case of AR projects pertaining to business IS problems or tasks such as information requirements determination, IS strategy formulation, and the like, the laboratory is the organisation. The organisational actors in these cases, again in contrast to the participants in experiments or simulated activities, face actual situations with real consequences flowing from their actions or decisions. They tend to be committed to finding a solution or resolution as they must live with that solution on a daily basis.

Although one can achieve high validity and relevance in AR, the management challenges in AR projects are considerable (Avison, Baskerville, & Myers, 2001). Successful AR projects require the management of two independent sets of activities – a problem-solving activity (a in Figure 1) and a research activity (b in Figure 1).

Figure 1

The Dual Imperatives of Action Research



(McKay & Marshall, 2006)

AR in IS involves, on the part of the researcher, a commitment to social or organisational problem-solving, and, simultaneously, a commitment to generating new knowledge through the engagement in the problem-solving activity (Baskerville & Wood-Harper, 1996; Eden & Huxham, 1996; McKay & Marshall, 2006). Achieving an appropriate balance between the problem-solving interest and the research interest is a major challenge for action researchers (McKay & Marshall, 2006). Too strong and exclusive a focus on the problem-solving activity can marginalize and weaken the research considerations and activities, causing the action research project to resemble a consulting activity which is reflected upon after the solution to the problem to produce research results that lack adequate grounding and depth. Thus the AR project comes to represent reflective practice rather than rigorous research. On the other hand, an overly strong and exclusive focus on the research can

neglect a real and lasting solution to the practical problem at hand. Such a solution is an ethical obligation of the researchers, and so ethical concerns arise from such neglect. Furthermore, a shallow and temporary solution to the problem can mean shallow and possibly misleading research conclusions. Thus there needs to be a balance between the dual imperatives of solving a problem of real social and organizational interest and importance, and generating new and valid knowledge via acceptably rigorous research activities.

In this paper we will reflectively consider the challenges and issues in an AR project in the financial services sector as the research team struggled to deal with the dual imperatives of successful organisation problem-solving and positive research outcomes. We contribute to the AR literature by giving a personal and direct account of the issues and challenges in an AR study. First-hand and personal accounts of the difficulties, problems, and issues experienced in AR practice are rarely given, although there are some examples such as Cunha and de Figueiredo (2006). This is despite the fact that such accounts can be highly useful to neophyte action researchers such as doctoral students and calls for such exemplars to be published (Avison, Lau, Myers, & Axel Nielsen, 1999). In this paper the authors will help to redress this gap in the literature through discussing the practical challenges that arose from conducting an AR project designed to formulate an IS strategy development process for small and medium enterprises (SMEs). In doing so we will raise the awareness of those planning AR projects to a number of practical problems and issues, and further, will make recommendations to improve future practice.

In the sections that follow, we will consider the approach to AR adopted, the researchers' interests in this project, and provide a brief outline of the organisational context in which the study was conducted. The authors will then identify, discuss, and analyse a number of issues that arose throughout the AR study, and based on this analysis, will then make a number of suggestions and recommendations for future action researchers.

A Research-Led Approach

There are two broad ways (and obviously many more possible variants) of approaching AR. These are a research-led approach to AR, and a problem-led approach to AR (Avison et al., 2001; McKay & Marshall, 2000; McKay & Marshall, 2001a). In the case described in this paper, the AR was initiated in a research-led or research-driven way rather than in a problem-driven way. In genuinely research-led AR projects like the one described in this paper, the research interests influence the search for and location of a suitable problem situation (McKay & Marshall, 2001a, 2001b, 2006). Once a suitable problem has been identified, and hence a site selected, the researchers and participants collaborate, defining and/or clarifying roles, responsibilities, objectives, expectations, and the scope of the intervention wherever practicable. Through informed action (action guided by a suitable conceptual framework) and reflection, satisfactory problem-solving and research outcomes are achieved (McKay & Marshall, 2006). The AR cycle is completed by lodging the research outcomes and new insights into the public domain for criticism (McNiff, Lomax, & Whitehead, 1996). The issues and challenges that will be discussed in the following sections arose in the context of this research-led AR project, although the lessons or findings may well be more broadly applicable to AR projects in general.

As the case study described in this paper involves a research-led AR project, the first activities were establishing the research themes, interests and questions, and

establishing an interested and capable research team. This was followed by the reconnaissance and fact finding stage of the research (see Figure 1b). In this stage of the research, considerable resources were devoted to reviewing the literature and discussing ideas with local practitioners. Concepts related to the research were discussed and developed over several months before the actual research project was undertaken.

Research Themes and Interests

The research described in this paper began when a small team of University researchers decided to investigate the problem of determining an effective method for IS strategy formulation for SMEs. A comprehensive review of the relevant research literature revealed a lack of empirical research into how one should go about determining an appropriate IS strategy for an SME. While there were approaches articulated for larger enterprises (see Ward & Peppard, 2002 for example), none were found specifically tailored for SMEs, and our collective experience with SMEs suggested that such detailed and cumbersome approaches would not receive much traction with the pragmatic SME Owner/Manager. Thus it was decided to evolve an effective IS strategy formulation method for SMEs through interacting and actually *doing* an IS strategy with a number of SMEs. The logic here was that a pragmatic, usable, SME-appropriate IS strategy formulation approach would be more likely to emerge through a trial and error approach conducted in a real world setting, than it would through the application of other research methods. Given the concerns voiced in the literature about the lack of attention to business strategy in the context of SMEs (Aram & Gowan, 1990; Beaver & Prince, 2004; Beaver & Ross, 2000; Berman, Gordon, & Sussman, 1997; Perry, 2001) it was regarded as desirable that the IS strategy formulation method also incorporate a way of revising, or indeed generating, a simple business strategy or a set of strategic goals that could guide the formulation of an IS strategy.

Reconnaissance, Fact Finding, and Conceptualisation

The reconnaissance activities of the research team began with reading widely on the topics of business and IS planning, focussing in particular on the problems and issues of SMEs. The team also engaged in conversations with local SME Owners/Managers as well as with key personnel in these firms. Research team members gave several presentations on business and IS planning to the managements of local SMEs. In this way, the knowledge of the research team expanded, as did the interest in local business on this issue.

Through the above interaction with SME management teams, the University research team became aware that, in line with the findings in the research literature (Beheshti, 2004; Kyobe, 2004; Levy & Powell, 2005), IS strategy formulation seemed to be either completely neglected or very poorly done in local SMEs. The research team was also concerned and aware that business planning seemed to be neglected, or at least done very informally, even casually, in local SMEs. Again this confirmed findings in the literature (Beaver & Prince, 2004; Perry, 2001). It was reasoned by the research team that the availability of a suitable easy-to-use method for IS strategy formulation might improve this situation.

The reconnaissance activities led the research team to focus on what they felt would be the central activity of the IS strategy formulation task – the determination of

a future IS portfolio (Ward & Peppard, 2002). This set of planned systems should be such that it was aligned with and supported the achievement of the firm's future strategic goals, but also enabled the firm's core business processes to be efficient, effective and competitive. The deliberations and arguments that led to these conclusions are discussed in another paper (de Salas, Marshall, & Young, 2007).

Planning and Designing the Research

The reconnaissance activities had shown that both business strategy and business process competitiveness were significant considerations in formulating an IS strategy. Thus the research team determined that the IS strategy formulation method must consist of two approaches; each with a different but complementary perspective on the problem of determining an appropriate future IS portfolio. One approach would be top-down, ensuring that there was adequate IS support for the attainment of the strategic goals of the company. An essential component of this top-down approach would be ensuring alignment between business goals and objectives and IS strategies and investments, with mechanisms required to ensure alignment was achieved on an on-going basis. An additional approach would be bottom-up, looking at the efficiency and effectiveness of business processes and identify systems for supporting the operation of these processes. Essentially, this approach would be to determine that there was adequate IS support to ensure the company had an efficient, effective, and competitive set of business processes. The bottom-up approach would also ensure that business processes regarded as core to the implementation of business strategy and to the achievement of business goals were both efficient and appropriately implemented via information systems and appropriately skilled human resources.

Thus, the two complementary approaches were as follows:

- Top-down: determine the set of strategic goals for the company, and then determine the portfolio of IS that support and enable these goals;
- Bottom-up: analyse and model the existing core business processes of the company and determine the IS required to transform these into an efficient, effective, and competitive set of business processes, suited to implementing the firm's strategic goals.

The key outcome of an IS strategy formulation process, the future IS portfolio, would be obtained by an aggregation or combining of the results from the two complementary sub-processes with a gap analysis to determine the difference between what is already in place and what is required. Because this method was essentially composed of two complementary perspectives (one top-down, one bottom-up) on the problem of determining the future IS portfolio, the research team named the method the Dual Lens approach (de Salas et al., 2007).

The Dual Lens approach thus became the underpinning theoretical perspective that the researchers adopted in approaching the IS strategy formulation activities in SMEs. Further considerations were required regarding how the Dual Lens approach would be operationalised and thus implemented in a specific SME context.

The Cognitive Mapping approach was selected by the research team, because of its long track record of success in practical problem situations regarding strategy considerations, as an effective way of determining the set of strategic goals for the organisation. The Cognitive Mapping approach is a process which involved creating a

visual representation or "mind map" of the strategic discourse and using this map to surface the main arguments and the strategic goals (Ackerman & Eden 2005; Bryson, Ackerman, Eden, & Finn 2004). The Cognitive Mapping approach was also considered appropriate for facilitating the deliberations concerning an IS strategy, that is, what IS were needed to support and enable the achievement of the strategic goals. The IS strategy process builds on the business strategy process and involves a similar analytic approach in that it is concerned with managing a strategic conversation among the top management team in an organization. Thus one would expect that these IS-focussed strategy considerations would be managed effectively within the Cognitive Mapping method or approach (Eden & Ackermann, 2001).

The research team established that the business process analysis and modelling exercise need only result in broad and high-level analysis; this was because the exercise was required simply to guide management concerning the question of what broad IS capabilities were needed. At the strategic level, highly detailed information systems specifications are not required. Thus it was reasoned, the business process analysis and modelling exercise could be done by a standard systems analysis approach augmented by appropriate business process modelling software. Given a successful track record in business process modelling, the ARIS modelling approach (Scheer, Abolhassan, Jost, & Kirchmer, 2003; Scheer, Jost, Heb, & Kronz, 2006) and software (Davis, 2001) was chosen as a specific tool for supporting the analysis and modelling in this part of the IS strategy formulation method.

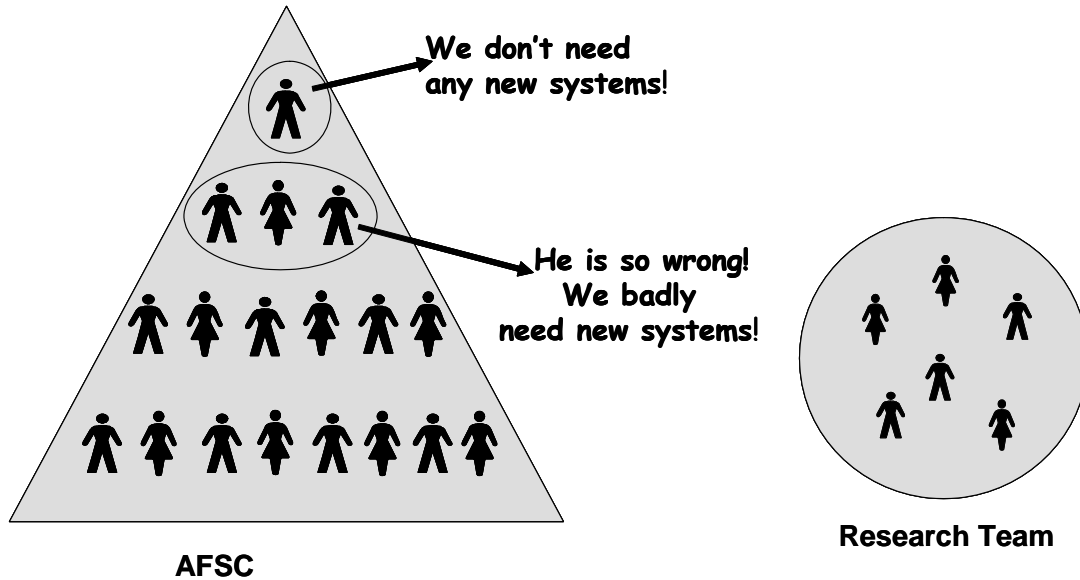
The research team decided to facilitate the implementation of such a process in an SME and to learn from this implementation. Thus they sought an industry partner with a perceived problem associated with determining an IS strategy. The lessons learnt from the approach would yield information regarding the efficacy of the method or approach and facilitate refinement of the details of the method.

The organisation

The Information Technology (IT) Manager for an Australian financial services company (AFSC) approached the research team with a view to obtaining guidance in determining an IS strategy for AFSC. [AFSC is a pseudonym for the company in which the study was conducted. AFSC's real identity has been disguised to protect the confidentiality of the company and its office bearers. Ethics clearance was obtained from the University of Tasmania to conduct the study.] As of 2005, AFSC has approximately 80 staff in seven branches and offices across Australia. The company had over \$1.2 billion in investment funds under management as well as \$750 million in trust assets under management. There was a view among some members of the senior management team in AFSC that the current IS portfolio was significantly holding back business performance and threatening the future successful strategic positioning of the company. However, this view was not the unanimous view of the senior management team. Indeed it emerged that there was serious and bitter disagreement over this matter. These differences within the senior management team are depicted in Figure 2 below. Given this situation, the Managing Director, on behalf of the senior management team, invited the research team to help resolve this disagreement and determine an IS strategy that would support and enable AFSC's business strategy. The Managing Director explained that he wished that the University team, through its lead researcher, would work with him and his senior management team, using the company Chief Financial Officer (CFO) as a point of contact.

Figure 2

Differences among the Client Organisation's Top Management Team Regarding Information System Investments



The AR engagement began with a set of interviews with the senior management team regarding the current business situation for AFSC, the business strategy and the current situation regarding information systems and technology. Over a time period of several months, the research team worked with senior management to determine the required IS strategy. Finally, the research team attended a senior management meeting at AFSC and presented the recommended IS strategy.

The research team and the organisational clients

As mentioned earlier, in AR there is a research interest or imperative and a problem-solving interest. The custodian of the research interest is the researcher, or, in this case, the research team. The research team in this AR project consisted of five researchers from two Australian universities.

The custodians of the problem-solving interest are the organisational clients of the research, although to an extent, the research team is also responsible for ensuring a satisfactory improvement or resolution to the problem situation. The senior management team of AFSC constituted the organisational clients in this AR project. The central characters in this team were the Managing Director, the CFO and the General Manager Marketing. There were two other members of the senior management team in AFSC, one concerned with Asset Management and the other concerned with Investment Management; however, these two managers were marginal to the AR project. The senior management team of AFSC generally left the problem-solving diagnosis and the planning of remedial actions to the research team, although they required a convincing explanation of both before committing resources to improving the problem situation.

The Issues and Challenges of Conducting Action Research

In this section, the focus of the paper will be on the important decisions regarding the AR project, as well as the issues and challenges that arose during the project. The objective of this section of the paper is to provide a set of reflections that can form the basis for discussion and learning regarding AR. The issues which are considered include the following:

- Differences in the Research Team regarding inquiry paradigms: understanding and managing the differences in the research team regarding allegiance to different inquiry paradigms
- Defining the organisational clients: the importance of being very clear regarding who are the organisational clients, that is, the clients of the problem-solving activity of the AR project
- Geographical locations: the implications of the differing geographical locations of members of the research team
- Different disciplinary skill sets and capabilities: the issue of building disciplinary skill sets and capabilities while carrying out the AR project
- Planning and communicating the research and the engagement: the issues associated with planning and communicating the research and the problem-solving engagement

Differences in the research team regarding inquiry paradigms

The AR project was initiated and led by a researcher, R1, from a university in south-eastern Australia. R1 was joined by two other researchers, R2 and R3, from the same university. The discussion regarding IS strategy in SMEs led to this initial group deciding that they needed to draw on some skills and experience in business process analysis, so discussions were held with researchers at a university in north-eastern Australia which was known for such skills. This led to researchers R4 and R5 joining the research team.

Most of the early discussions in the research team were focused on the content of the research. Topics such as IS and SMEs, IS strategy in SMEs, business process and modelling and the like consumed the energy and time of the team. However, later in the research, there were a continuing series of profound disagreements regarding the practical issues of decision-making and action taking in the project. These proved difficult to resolve, but it eventually became clear that the differences were emanating from differences in the basic theoretical orientations or philosophic positions of the researchers. These issues had been put aside or ignored in the original content-focused discussions.

The inquiry paradigms affiliations of the researchers were as summarised in Table 1 below.

Table 1

Inquiry Paradigm Affiliations of the Research Team Members

Researcher	Inquiry Paradigm Affiliation
R1 (Lead Researcher), R2	Interpretivist Paradigm, Social Constructivism, Pragmatism
R3	Critical Theory Paradigm, strong position regarding participation, emancipation and social democracy in the workplace, strong position on quality of working life issues
R4, R5	Positivist, tacit or covert position rather than explicit support of a positivist position

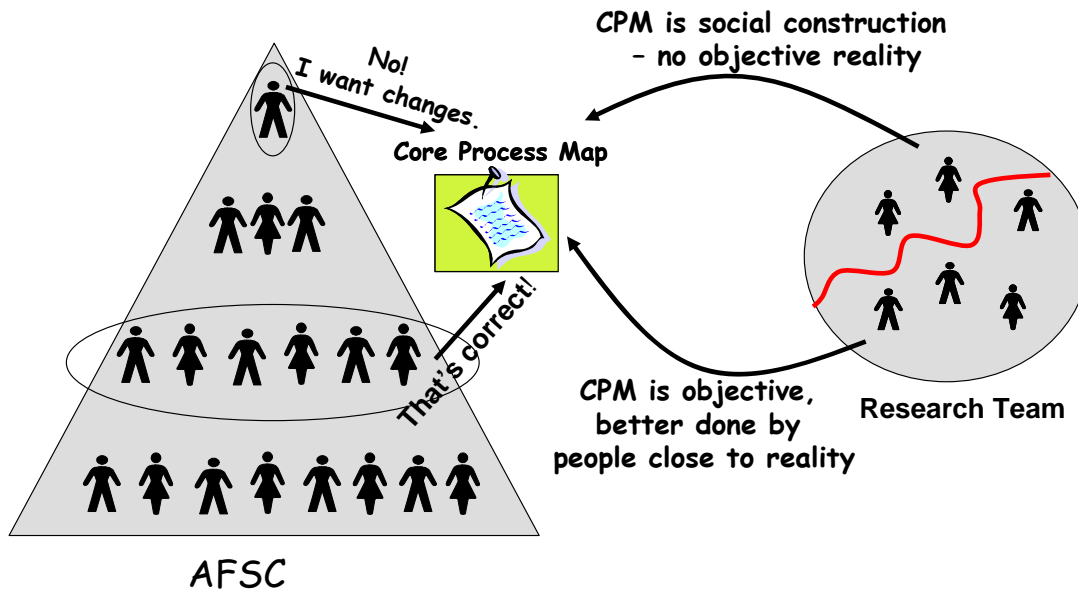
Re-examining and reflecting upon the AR project in hindsight, based on an analysis of the problems faced, it seems that these philosophic differences led, somewhat unwittingly, to more serious misunderstandings and differences regarding practical actions than the authors would have predicted. An example concerned the Managing Director's view of a core process map of AFSC. The core process map had been derived with the help of a group of middle managers who had a good operational knowledge of the company. When this map was presented to the Managing Director, he wished to make the one particular process more explicit in the map. The members of the research team viewed this action by the managing director in very different terms, leading to different ways of evaluating the managing director's contribution, and hence, in turn, leading to very different recommended actions for progressing the AR project. R4 and R5 were aware that a special interest of the Managing Director was building a specific capability in the company. This, given their positivist philosophical inclinations, led them to view his suggested alteration as a subjective and highly political idea which, if accepted, would lead to an undesirable distortion of the core process map. R3 agreed with R4 and R5, but argued that the middle managers were much more informed about the "reality" of the business operations of the company, and hence the core process map elicited from the deliberations of the middle managers should be privileged over the Managing Director's viewpoint. However, she also agreed with R4 and R5 that what was suggested by the Managing Director was a political distortion of the real situation. She thus portrayed his suggestion as an uninformed power play that did not take account of the fact that the Managing Director's concerns were already taken care of in the other core activities, and did not need to be privileged with a separate core process. R1 and R2 felt that the research team needed to take full cognisance of the practical realities of power in the company, regarding the managing director's view as an important factor in defining the problem. They viewed the core process map as a social construction not a given and revealed objective reality or truth, and so altering this construction to fit with the views of an important member of the management team seemed a helpful and positive adjustment and not a distortion of the real situation. The differences among the research team regarding the core process map (CPM) are depicted in Figure 3 below. The issue was clarified through open discussion which traced the disagreements back to research team members' philosophical or theoretical orientations. Surfacing each team member's guiding research philosophy enabled the research team to appreciate the sources of the differences regarding practical research decisions. The philosophical differences remained, of course, but were now explicitly understood.

The research team then discussed a way forward and agreed to accept the philosophic stance of R1 and R2 as the initiators of the research. The research team was enabled to plan the research going forward from this point coherently and confidently.

The other issue raised by the Managing Director's wish to alter the core process map of his middle managers was the question of who, exactly, were the clients of the research. This issue will be addressed later in the paper.

Figure 3

Differences amongst the Research Team Regarding the CPM

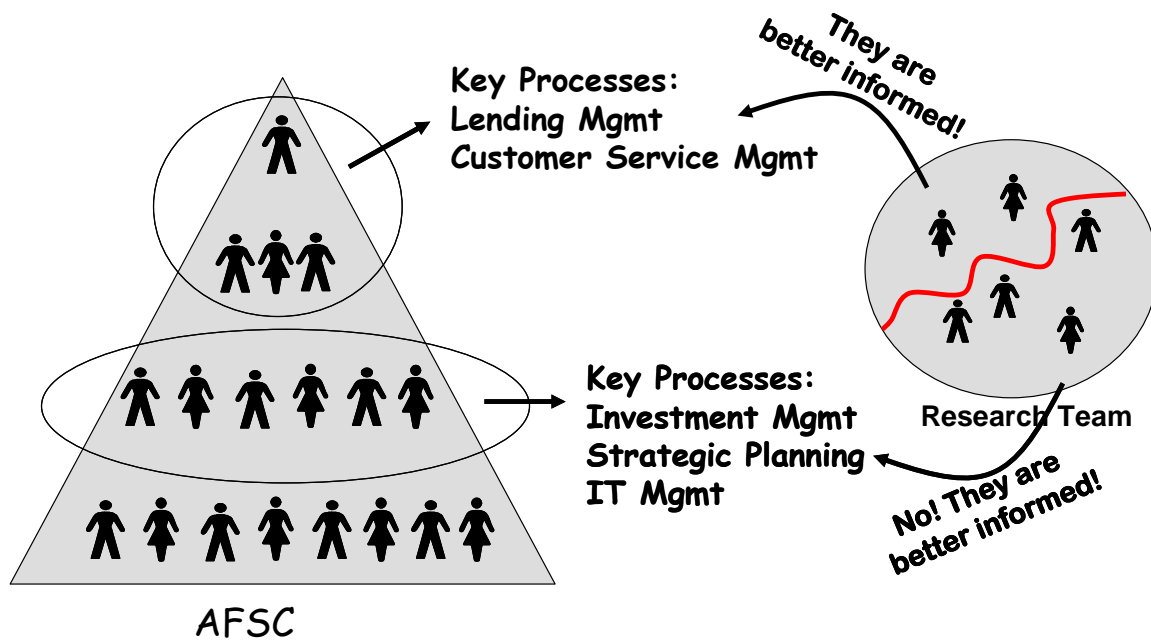


A further example of the differences emerging out of the differing paradigmatic assumptions of the research team arose concerning the recommendation of R4 and R5 to use a quantitatively-based critical targeting method to identify AFSC's critically important business processes. The plan was that after the use of the critical targeting method, the team would then focus the business process analysis and modelling activities on the critically important processes, rather than trying to analyse and model all of the enterprise's processes. However, the top management team of AFSC wished the research team to analyse and model a set of processes of particular interest to them. In other words, the client team felt they knew the critical processes of interest. However, the senior management team of AFSC generally deferred to the research team in the diagnostic steps of the AR project. Further, R4 and R5 were brought into the team for their expertise in business process analysis and modelling, so the research team leader (R1) decided to go ahead with their suggestion to employ the critical process targeting method, using a workshop approach with a group of middle managers who had close and direct knowledge of AFSC's business processes. However, unsurprisingly given their strong views on the important processes, on completion of the analysis, the senior management team of AFSC was not convinced that the analysis had highlighted the critically important processes. They wished the analysis to be put aside in favour of their subjective assessment of the processes that required examination in terms of the need for new systems. The research team

differences were again similar to the situation described above concerning the Managing Director and the CPM. R4 and R5 were in favour of putting pressure on the senior management team to accept the "objective" analysis of the critical process targeting method. R3 was in favour of this also, since she felt that the middle managers were more informed regarding the realities of the firm's business processes than the senior managers who were more remote from business operations. R1 and R2 favoured working with the set of processes that were judged by the senior management team to be critical, on the grounds that the personal judgments of the senior management team were likely to be more informed, but also more relevant to a politically feasible solution of this situation (Checkland & Scholes, 1990). The differences in the research team over whose view of the key or critical processes should be accepted are depicted in Figure 4.

Figure 4

Differences in the Research Team over whose View of the Key Processes should be Accepted



The two problems above took much deliberation to resolve. An element in their resolution, facilitated and underpinned by effective communication between members of the AR team, turned out to be another issue concerning the clear and careful definition of the organisational clients in AR projects. We will now turn to this issue.

Defining the organisational clients

R1 and R2 argued that there is a sense in which organisations do not have problems; the people in them do (Eden, Jones, & Sims, 1983). Situations are viewed as problematic by people: problems do not *exist* in the real world to be found and solved, other than through the perceptions of people (Bryant, 1989). Furthermore, R1 and R2 continued to argue, different people in organisations have different

perspectives and constructions of problems, and hence have different viewpoints on what constitute ways of ameliorating and improving problem situations (Eden & Ackermann, 2001). Given this, it is important to understand clearly who are the clients of the problem-solving activities of the AR project, since the framing of the problem will be, indeed needs to be, influenced heavily by the beliefs, attitudes, prejudices, and values of the clients (Eden et al., 1983; Rosenhead & Mingers, 2001). R1 and R2 then put the case that their viewpoint on the problems such as the structure of the core process map and the critical process targeting method was correct, or at least useful, in that it squarely took account of the viewpoint of the organisational clients, a factor that was essential to a politically feasible solution (Checkland & Scholes, 1990).

R3, generally speaking, accepted the above viewpoint, but argued that solutions that did not examine the issues of quality of working life, including the issues of anticipation and democracy in the workplace, were flawed. R4 and R5 argued that although R1 and R2 were essentially correct, they were oversimplifying the situation and were in danger of accepting anything that the senior management put to them, without doing the rigorous analysis required to determine the actual causes of the problems. Nonetheless, even given the philosophic differences, through a process of open communication and careful discussion and deliberation within the research team, it was accepted that more time needed to be given to a careful assessment determining who were the organisational clients and what were their perspectives on the nature of the problem and their framing of what constituted a solution.

Geographical location

The research team members were drawn from two independent universities located in different states of Australia. The client organisation was in the same town as one of the universities. Hence, part of the group was in physical proximity to the research site: others were not, unless they travelled by air for some hours. Previous research suggests that in such circumstances, those researchers located close by tend to have a greater personal and intellectual commitment to and interest in the project, whereas those working remotely much of the time tend to have only an intellectual interest in proceedings, and not the emotional commitment to the resolution of the organisational problem (Younglove-Webb, Gray, Abdullah, & Purvis Thurow, 1999). This proved to be the case in this study. For example, detailed planning of the next steps in the research invariably tended to be done by those working locally. This planning work also involved revising some of the proposed steps of the research such as the discarding of the critical process targeting recommendations, so this work tended to be more than routine adjustments. Presentation of the findings to date also tended to be prepared and carried out by the team members working locally. Nonetheless, there were important theoretical and methodological contributions to the AR project made by the members from the remote university. However, given the requirement in AR of a commitment to ameliorating an organisational situation regarded as problematic by its members, finding ways to ensure appropriate levels of commitment amongst the research team is vital. This can be aided by encouraging open communication between members of the research team and encouraging and supporting frequent meetings, discussions, contact, and other opportunities for research team members to establish and maintain positive relationships with each other. These activities ultimately facilitate better resolution of issues and differences

and contribute to research team members feeling better connected to the research team effort.

Different disciplinary skill sets and capabilities

One of the benefits of teams of researchers is that different members can bring with them and contribute different skills, knowledge, capabilities, and theoretical and philosophical orientations. Such diversity, arguably, produces better, more creative outcomes (Bryant, 1989). However, this diversity also poses issues and challenges. For example, members of the research team were skilled in different areas. Some possessed knowledge and skills in the cognitive mapping approach and method, while others were deliberately selected for their expertise in business process management and modelling. However, what emerged was a clear need, not just to communicate, but also to share and train others in all areas of expertise. This proved frustrating at times, and took substantial resources and time to get team members up to speed in required skills.

In particular, several members of the team needed to build capabilities in both cognitive mapping and business process analysis and modelling. Despite education sessions and reading being carried out regarding both capabilities, the lack of these capabilities slowed the research team's work with AFSC considerably; causing some angst in AFSC about the speed of evolving an initial IS strategy. Part of the reason for the apparent lack of speed of the research team was that cognitive mapping and business process analysis and modelling are not just knowledge-based skills; they are practical skills that need to be practised and experienced. Gaining practical skills, of course, takes time, as the research team learned. However, unless practical skills are of a certain level and quality, there can be problems regarding the effective trial and evaluation of the method or solution being tested. Simply put, if a method is being tested and evaluated and the techniques of the method are not effectively applied, then an authentic assessment of the efficacy of the method cannot proceed. Thus the issue of building practical skills alongside theoretical knowledge is an issue requiring careful attention in AR projects.

Added to the need to build practical capabilities was a requirement to determine how, exactly, those capabilities were to be utilised and adapted to the needs of the research, that is, how should cognitive mapping and business process analysis and modelling be utilised within the IS strategy formulation method. The need to simultaneously build practical capabilities and determine how they should be adapted and integrated within the context of determining a future IS portfolio tested the resourcefulness of the research team. These pressures led to delays in the problem-solving engagement that would not have been experienced if the research team were a polished and highly-resourced consulting team operating a standard and practised approach. Sustained dialogue with the clients of the problem-solving activity (that is, the top management team of AFSC) was necessary to achieve an understanding of the research team's situation and its need to dynamically juggle and balance the dual objectives and imperatives of AR (McKay & Marshall, 2001b).

Planning and communicating the research and the engagement

The research team, as has been pointed out, consisted of persons with different theoretical and philosophic orientations. This can lead to creative approaches to problem-solving, but diversity within a research group is known to complicate

internal communication (Pfeffer & O'Reilly, 1987). This issue proved to be a concern in this project. In an AR project, not only must internal communication be attended to, but the issue of communicating with multiple levels of organisational members is also important, and became a point of concern within this project.

When the engagement with AFSC began, the focus of the research team was primarily on the research methodology and the theoretical issues pertaining to the IS strategy formulation method. However several members of the research team felt that the research plan, and particularly the plan of engagement with AFSC, needed to be articulated clearly and communicated to them at least once or possibly twice a week, particularly when there were changes in direction and decisions to be taken. As a result of these views, research team meetings began to be held more regularly and research plans were written down and communicated more frequently.

Further, senior managers at AFSC also felt they needed more detailed plans and milestones from the research team. They often felt that the project was drifting, lacked a clear direction, and was not progressing quickly enough (a problem alluded to previously given the need for all members of the research team to learn one another's skills and competencies). However, at times, these feelings were expressed even when the research team had been working intensively with middle management and progressing the research/problem-solving quite effectively, suggesting that a critical issue in AR can be managing internal communications within the host organisation. The response was to prepare electronically-based and detailed plans built using a project planning tool such as Microsoft Project and provide such plans regularly to all members of the research team and the clients of the problem-solving activity in AFSC. This had a very positive effect on the relationship between team and research clients.

It may sound trite to mention the importance of planning carefully and communicating those plans regularly. However, the members of the research team in this project were focussed on the need for creative and innovative ideas in the research and problem-solving activities, rather than the needs of planning and communicating. Nonetheless, in team-based interventions in organisations in which there are multiple clients, there is an obvious need for both careful planning and regular and effective communication of those plans, both within the research team and between the research team and the clients of the problem-solving activity.

Listening to the clients of the problem-solving activity

An AR engagement with organisational clients involves a commitment to ameliorating an organisational problem situation in some way that is viewed positively by those clients. The problem situation for AFSC concerned an unsatisfactory situation with respect to information systems and the need to figuratively step back and, in a holistic and reflective way, determine an appropriate IS strategy. In evolving an IS strategy for AFSC, and thus pointing the way for an IS strategy formulation method for the future, the research team assumed that the theoretical method that they had determined, focussing as it did on strategic support as well as business process support, would be seen as suitable by the senior management team of AFSC. Thus, in approaching the business process analysis and modelling exercise, the research team determined to carry out a broad-based high level business process analysis targeted on determining IS needs. It was decided to keep the analysis broad and high-level since when IS applications were purchased as a result of the IS strategy formulation, business processes would be redesigned and altered to fit the

new systems. Thus a detailed analysis of the business processes did not seem a good investment of time and effort. The research team also decided that, rather than trying to analyse all business processes it should determine those processes most critically in need of analysis and then go on to analyse and model only these highly critical processes.

As mentioned previously, the research team utilised a quantitative scoring methodology for determining those processes that most critically needed analysis, modelling, and improvement, possibly by better information system support. A "league table" of process criticality was thus developed. On seeing this "league table" the CFO indicated to the research team that the table was interesting, but not something upon which he wished to base actions and commit resources. Instead, he wished the research team to investigate those processes that his judgement told him were in need of analysis and improvement. He did not wish to lay aside his experience-based judgement in favour of the results of a quantitative method used with his middle managers. He named the lending management process and the product sales and service process as the ones in need of analysis and modelling. On reflection, it was clear that this had been the CFO's stated view for some time, but the research team had neither "heard" nor seriously reflected on the implications of this view. Given that the CFO was a client of the problem-solving activity, the research team should have been listening more closely to him before commencing the assessment of the criticality of processes. This issue of whether to accept or oppose the CFO's view was debated strongly in the research team, and conflict arose due to philosophical and methodological differences (as described previously). Eventually, however, the team proceeded with the analysis and modelling of the processes the CFO wished to be worked on originally.

Attaining a clear definition of who exactly was the client(s) was an essential first step in a successful AR project. With that step complete, determining the research client's wishes and objectives were most important in AR and they needed to be taken very seriously. Indeed, listening closely to the client's needs is a key skill in AR. There is, further, an interesting challenge in listening and responding to the clients' wishes, while preserving the research objectives of the research team.

Conclusion

In AR studies, approaches and methods in information systems can be investigated within the full rigours of organisational reality. The laboratory, so to speak, is the real world, and actors in the problem-solving activity must bear the full consequences of their plans and decisions. Thus, realistic results and evaluations are possible, as is the holistic study of phenomena in organisations, including, importantly, the psychological, social, and political elements of situations. However, there are many challenges and tensions in AR. Through the implementation of this project, we encountered a number of these issues. We found that many of these were associated with differences in perspective of who the clients were, what the problem was, what constituted an appropriate resolution of the problem. Further, there were a number of communication issues that affected both the organisation and the research team. In presenting these issues and challenges in the paper, the authors hope that the discussions, deliberations, and reflections on the project described in this paper will lead to increased understanding of the intricacies, subtleties and problems of planning and managing AR projects.

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