

PRACTICE-AS-RESEARCH: AN EXAMPLE OF THE USE OF ACTION RESEARCH TO LINK PRACTICE AND THEORY IN A CASE OF INFORMATION SYSTEMS STRATEGY DEVELOPMENT

M.J. du Toit¹, Hugo Lotriet²

Department of Informatics, University of Pretoria.

¹ matie@sispa.co.za

² hugo.lotriet@up.ac.za

Abstract

The ability to link IS practice to a sound theoretical and scientific basis has been an ongoing endeavour for both IS practitioners and researchers. This stems from the need of both practitioners and theorists to be able to ensure that the relationship between practical knowledge and experience gained in the workplace can be grounded in theory with due consideration of the converse requirement for theory to be based on practice. This paper provides an example of how Action Research (AR) was successfully applied by a practitioner as method in a South African strategic IS management environment. The paper describes the specifics of the process that was used and highlights various issues that had to be considered in this specific instance of use of AR as method.

KEYWORDS

Action research, Research method, Framework, Practice, Theory

1. INTRODUCTION

A realisation of the importance of linking theory and practice has resulted in numerous efforts towards achieving this goal over a period of decades [16]. In the Information Systems (IS) field, Hirschheim and Klein [9] highlight amongst other things the differences in views of IS from inside and outside of academia and the disconnects that exist between communities of business people and communities of academics as part of a crisis within the field. They stress the importance to the discipline of IS to find ways of bridging existing divides and disconnects and emphasise the importance of ‘understanding’ in bridging the gap between academic and practitioner worlds. They also stress the importance of research that is both rigorous to meet academic needs and of practical value in order to be meaningful to practitioners. It is clear from their arguments that closing the gap between the communities could lead to improved practice-based theorizing in the academic community while enabling the business community to achieve scientifically grounded continuous improvement in their business practices.

The ability to combine theory and practice and the use of an appropriate research method that can mediate this intention are advocated by proponents such as Baskerville and Myers [1], Lindgren, Henfridsson and Schultze [14], Mårtensson and Lee [15], Baskerville and Wood-Harper [2] as well as Korpela, Mursu and Soriyan [11]. All of these authors refer to the fact that the ability to apply research successfully in practice is related to the ability to cope with

the complexity of the environment and the ability to ensure collaboration and participation between the role players in the theoretical and practical environments.

Action Research (AR) as a method allows for research that contributes practically, yet its scientific validity is acceptable to researchers active in various fields of research [1]. AR thus offers a methodological tool for bridging the theory-practice divide, which has resulted in AR finding growing acceptance in the academic IS community. Various examples of significant research projects using action research having been published during recent years. These include inter alia the studies undertaken by Lindgren et al. [14] and Mårtensson and Lee [15]. The idea of using AR is therefore not novel anymore within the IS research community.

From a business perspective the imperatives that drive the requirement for constant improvement have by implication been advocated for millenia (starting as far back as Sun Tzu (1971)), to latter day proponents such as Porter (1985) and Mintzberg (Mintzberg et al., 1998).

The problem that is often faced by practitioners such as strategic IS managers, relates to the organizational requirement that their work practices have to be ‘scientific’ and ‘scientifically founded’. We believe that, as in the case of scientists, practitioners can benefit from the use of AR as method, thus enabling ‘practice-as-research’. The method provides a means of linking practice to current scientific theories. From a practitioner perspective the problem is often ‘how’ to use a framework or method, as time and other constraints often prevent them from obtaining the theoretical

background that accomplished scientists and researchers have.

The intended contribution of this paper is therefore a specific demonstration of an instance of 'how' AR was used as methodological link by a South African IS practitioner. The context was a strategic IS management environment in a complex organization - the South African Department of Defence (SA DOD). At the time of the project, the lead author was a practitioner involved in the institutionalisation of an ICT strategy for the SA DOD. The organisational imperative was that practical requirements for learning and delivery of output should be aligned with IS strategy theory and that any required venture beyond existing knowledge would happen in a scientific sound manner. The AR framework used to achieve this is presented in a practical way and issues related to its use are discussed.

The rest of the paper is structured as follows: (1) We provide a brief synopsis of the case study undertaken in the SA DOD; (2) We discuss various aspects related to our use of AR in this instance. These discussions include the basic underlying principles, the relationship between theory and practice, the importance of rules governing the AR and issues of context; (4) We present the AR framework that we used with some comments on issues of use; (5) Finally we draw some conclusions on the use of AR in this specific instance and discuss limitations of this study.

2. A BRIEF SYNOPSIS OF THE CASE STUDY UNDERTAKEN IN THE SOUTH AFRICAN DEPARTMENT OF DEFENCE

The research was undertaken with a declaration of intention by the top management of the SA DOD that an appropriate ICT management function should be established and institutionalised in the SA DOD. The primary focus was to move away from decentralised management approaches that lead to the disparate and inefficient utilisation of ICT that was aligned to support the specific requirements of the respective Services and Divisions. The Services refer to the SA Army, the SA Navy, the SA Air Force and the SA Military Health Services and others whilst the Divisions refer to organisations such as the Logistics Division, the Finance Division, the Human Resource Management Division and others.

It was expected that in line with theory and practice there would be some functions that require common ICT solutions to be managed in a corporately orchestrated manner and with full cognisance of unique requirements for ICT solutions and services. The nature of the organisation in its complexity had to be reflected in the way in which the ICT function was managed and also in the very nature of the solutions to ensure that scarce resources could be optimally utilised to deliver maximum returns.

A business transformation team was established that had to ensure that through a process of business reengineering an appropriate function of ICT management was established with commensurate capacity and management arrangements to ensure its institutionalisation. From this transformation team the centralised corporate ICT management organisation was established that had its foundation firmly based on both practice and theory.

The challenge in terms of the establishment of the process itself related not only to the relevant management and planning activities, but also to the structural (organisational) requirements for institutionalisation. As the transformation and the research progressed there was a gradual shift from a position where the initial emphasis was placed on the process itself to a position where the emphasis was placed on the process within the context of the organisation and related issues. These organisational issues eventually became the primary focus for successful development and institutionalisation of an appropriate strategic ICT planning process for the SA Department of Defence. This situation required an ever increasing understanding of the strategic ICT planning process and the organisational issues that surrounded the process.

This relationship between the process and the organisation necessitated a clarification and formalisation of roles and responsibilities within the ICT management function that had a direct correlation to the clarification of roles and responsibilities as required for an action research approach and method. Given that constant change was the essence of everyday life during the transformation process the requirement for firm baselines of reference became more and more important given the longitudinal nature of the transformation and the research undertaken. This requirement for structure was further expanded by the high turn over of participants in the project, but was counteracted by the establishment of a centre of excellence that served as a core competency group for the project. The roles of researcher and practitioners were clearly differentiated within this group. Fortunately due to the change in role of the researcher and the commitment of top management the distinction between researcher and practitioners was clearly drawn and enforced within top management and managed at corporate level.

The research done as part of this case had the following characteristics: (1) It was longitudinal in that it was conducted over a period of approximately 8 years; (2) There were issues that involved the separation of roles and responsibilities related to the practitioner environment and the scientific research environment; (3) The development of the practical and the scientific learning experience followed a structural approach that constituted a continuous learning improvement; (4) Continuity in both the practical and the research environment became a major consideration; (5) Structural issues had to be addressed in conjunction with the process issues for both the strategic ICT planning process in the DOD and the process of action research; (6) Inconsistent and disjunctive maturity levels were experienced in both the practical and the research environment that were progressively stabilised and improved as the transformation and research progressed.

3. CONSIDERATIONS INFORMING THE USE OF AR IN THIS INSTANCE

It is not our intention to provide an extensive discussion of AR in this paper – the method has been extensively covered elsewhere, notably in the 2004 MISQ special edition on action research [1]. In this section we discuss some considerations considered directly relevant to our use of AR. These include: (1) A brief discussion of fundamental considerations; (2) AR as science and practice; (3) The

importance of values underlying the AR process itself; (4) Methodological considerations related to the organisational context.

3.1 A brief discussion of some fundamental considerations

In terms of the description of action research by Baskerville and Wood-Harper [2] we characterise our form of action research as being iterative, reflective non-linear and based in pragmatism. As such there are four primary tenets that provide the premises that shape pragmatism and thus also inform our AR framework. Baskerville and Myers [1] list these as (1) “consequences define human concepts” (Pierce’s Tenet), (2) “practical outcomes embodies truth” (James’ tenet), (3) the “logic of controlled enquiry (Dewey’s Tenet) and (4) the “social context of action” (Mead’s tenet).

According to Klein and Myers [10] the ability to perform qualitative research with interpretation as an essential element requires a clear understanding of the nature of both the research method and the actual research to be undertaken. In the case of the action research process, Baskerville and Myers [1] indicate that there are primarily two stages involved in action research being the *diagnostic stage* and the *therapeutic stage*. The enabling activities for these two stages place the focus firmly on analysis, fact finding, conceptualisation, planning, implementation of action and evaluation. The underlying focus of such research is the issue of problem solving where it is necessary to be able to understand the problem encountered given the overall objective, and then finding solutions whilst at the same time being able to define the improvement and its related learning.

Our AR method reflects the basic pragmatics tenets of AR ([1], [15]) and the basic cyclical pattern of diagnosis and treatment (refer to Figure 3).

3.2 AR as science and practice

Mårtensson and Lee [15] in their paper on Dialogical AR show that AR instantiates two of Schutz’s (1962) concepts - “the scientific attitude” and “the natural attitude of everyday life”. The relevance of this comes to the fore when considering the research of Scarborough and Corbett [17] that indicates that “the relationship of (between) technology and organisation is neither one of “impacts” (of IT) nor of “choice” (made by Managers) per se. Rather that technology and organisations are closely intertwined through the flows of knowledge and ideas which transcend the individual organisation, but which find expression in, and are reinforced by, political interests and agendas at the organisational level.”.

The ‘scientific attitude’ was important in this instance, both in terms of the academic focus of the lead author and the required scientific basis for the entire process required by the SA DOD as organisation.

The relationship between the ‘scientific attitude’ and Mårtensson and Lee’s [15] ‘practitioner’ view (the ‘natural attitude of everyday life’) indicates a dynamic interaction between the hard scientific theory and the ability to manage organisational implications. Our AR framework had to clearly express these ‘flows of information’ between the two worlds. We designed our AR framework to show this flow of information between theory and practice clearly and explicitly (see Tables 1 and 2). This enhanced the internal validity of findings and conclusions and strengthened the basis on which subsequent action was motivated. From Dialogical AR we found the concepts of ‘theoria’ and ‘praxis’ useful in explicitly describing the worlds of the scientist and the practitioner.

A diagrammatic representation of the progression of interactions between ‘scientist’ and ‘practitioner’ on this project is shown in Figure 1.

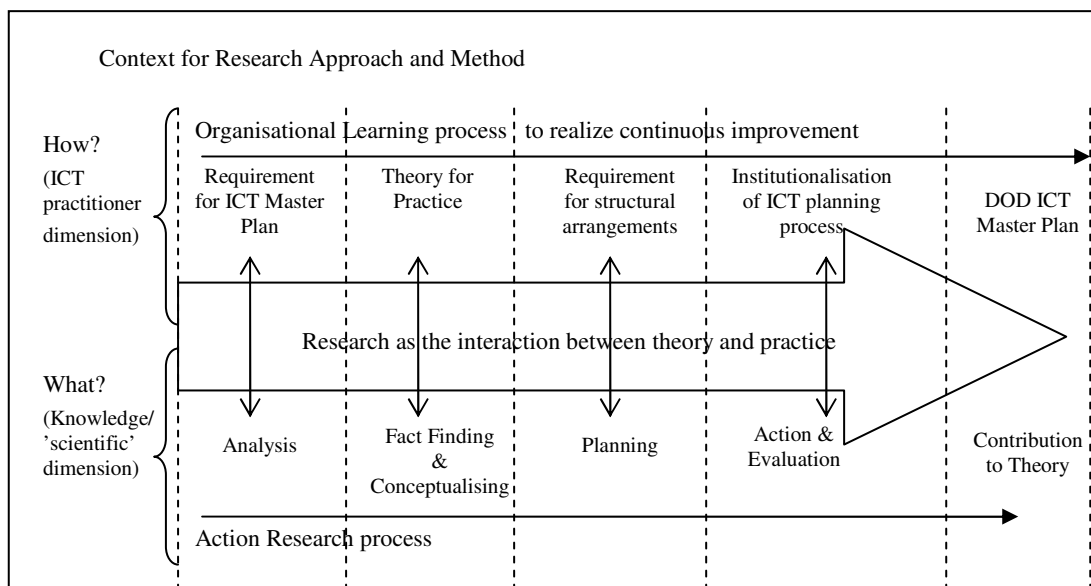


Figure 1: Context for Research Approach and Method

3.3 The importance of AR-focused values explicitly related to the AR process

We believe that the application of AR as research approach is improved when subjected to a ‘set of values’ (value-based rules) that governs the method itself. The ‘practitioner-as-researcher’ and other participants have to abide to these in spite of the fact that the potential for a conflict of interests might be high.

The importance of these relate strongly to the three dilemmas presented by Baskerville and Wood-Harper [2]. These are (1) the potential conflict between scientific and practical goals; (2) The embodiment of researcher and practitioner (‘consultant’) in a single person and (3) scientific and practitioner value conflicts.

Schein [18], [19] elucidates aspects of this dilemma when indicating the increasing association between action research and organisational consulting. The difference between these roles becomes blurred when the implications of authority and power or being beholden to role players and stakeholders as

described by Clark [4] start to influence the research method. The imperative for participation without negating the ability to maintain objectivity throughout the research project has the implication that there should be a clear and distinct definition, understanding and exercising of roles and functions within the research project. This was also found to be the case in the specific research undertaken.

Addressing this issue involved explicit application of the five methodological principles for research presented by Davison, Martinsons and Kock [6]. These include the researcher-client agreement, the cyclical process model, the principle of theory, as well as change through action and learning through reflection. (See Tables 1 and 2 for examples.) These principles allowed the establishment of appropriate AR process values.

3.4 Organisational context and the structuring of collaboration

We represent the interaction between AR and the organisational environment schematically in Figure 2:

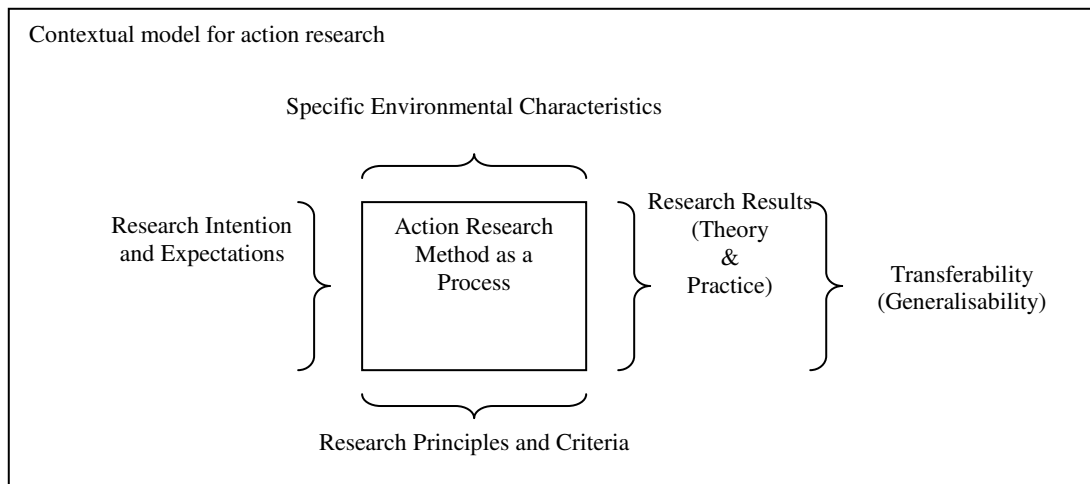


Figure 2: Context for Action Research.

An important difference in our work to the Dialogical AR case reported by Mårtensson and Lee [15] is that the structures for dialogue were created within the SA DOD, thus not being ‘removed’ from it and the discourse did not take place in a ‘one-on-one’ removed setting, but within a created structure amongst all relevant role players. This added to their emphasis of ‘understanding of the social context’ the additional dimension of ‘creation of the required collaborative (social) context’ through the establishment of the structures which would constitute a context for dialogue and collaboration.

4. THE ACTION RESEARCH FRAMEWORK USED

4.1 Process and timeline

Through interpretation of the requirements or characteristics for the definition of a framework for AR it became apparent that the following should be addressed in such a framework: (1) The ability to define the context, time line and specific

focus of the research to comply with the hermeneutic principle presented by Klein and Myers [10] *op. cit.* and applied by Lindgren *et al* [14]; (2) A clear definition of the main activities that will take place in accordance with suggestions by Lee and Baskerville [12]; (3) Identification of the respective participants in the research to be undertaken; (4) Unambiguous definition of the mandates and roles of the participants, role players and stake holders that will be involved in the research; (5) Presentation of relevant theory appropriate to the respective research activities and functions; (6) An indication of the contextual interpretation of the findings of the research; (7) An objective definition of learning conclusions as relevant to both theory and practice.

The following sections show the specific way in which this was done as part of the described project, i.e. that which guided the “how” as opposed to the “what” of action research in the instance of the ICT strategy for the SA DOD.

Garfinkel [7] as quoted by Giddens [8] indicates that “*settings are used chronologically to explicitly state those generic characteristics to ensure a common framework*”. This has the implication of process as opposed to merely

procedures. Given the fact that a specific timeline can be established that represents the research undertaken the following presentation can be made as to this component of the action research framework used for the research undertaken at the DOD. This is similar to the research

undertaken by Lindgren *et al* [14] *op. cit.* as interpreted by the authors. It also reflects the requirement for the definition of the main research activities as from Lee and Baskerville [12] *op. cit.*

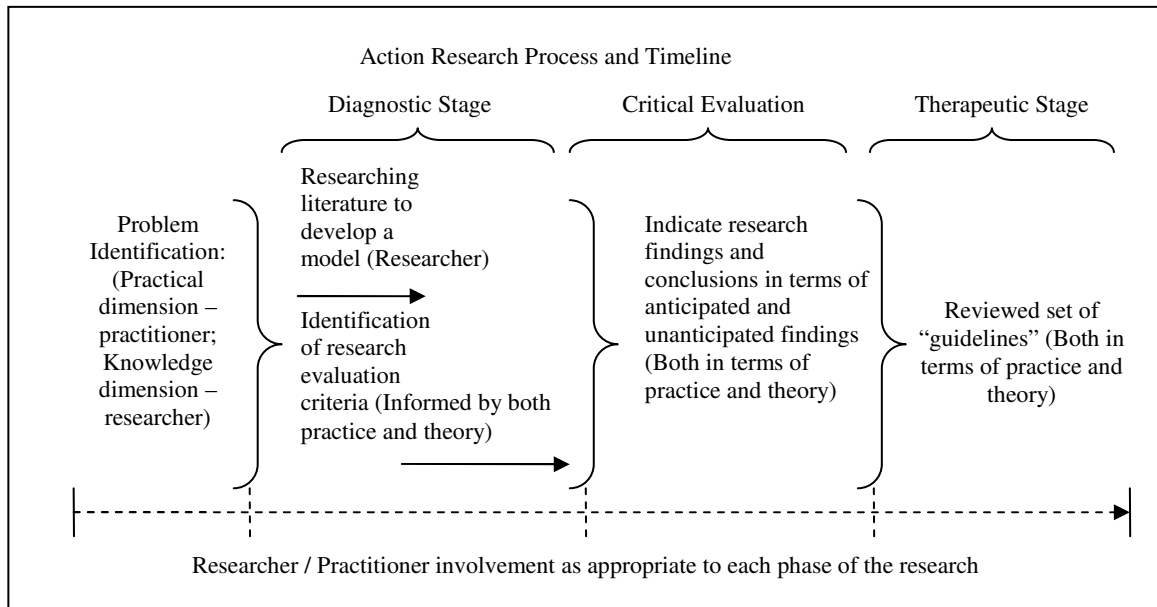


Figure 3: Action Research Process as interpreted from [13], [14] and [12].

4.2 Roles and interactions between role players

From the theory and also as experienced during the specific research undertaken it was confirmed that there is a constant and dynamically iterative and interactive relationship

between the researcher and the subjects as influenced by their environment.

With due consideration of the “hermeneutic principle” and its implication for recognising context as presented by Klein and Myers [10], the relationship between the scientific researcher and the practitioner can be presented as follows:

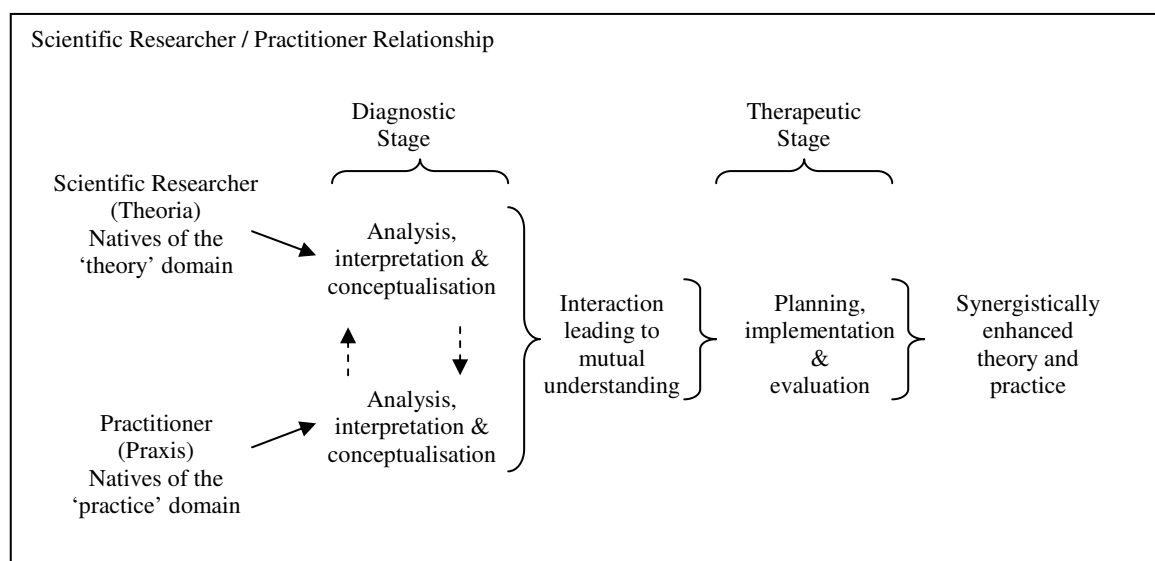


Figure 4: Scientific Researcher/Practitioner Relationship interpreted on the basis of [10].

The very nature of action research and its requirement for collaboration between the researchers (actors) and the practitioners who are participants require the establishment of specific management arrangements and mechanisms when it occurs in a diversified organisation such as the SA DOD. The end result thus becomes a coordinated effort of checks and balances between the researcher-as-practitioner and the other practitioner participants and the researcher-as-academic and academic peer reviewers.

4.3 Framework for summarizing the project findings

We developed a framework to enable a clear presentation of the juxtaposition of the actual research process, appropriate theory, research findings and conclusions.

The following considerations informed our framework: (1) We explicitly showed diagnosis and treatment as separate; (2) We found making aspects of the project explicit in terms of the principles of canonical action research useful. These are the principles of researcher-client agreement; cyclical process model, theory, change through action, learning through reflection; (3) We explicitly stated issues related to ‘theoria’ and ‘praxis’ in reporting on each cycle.

The *Summary of the Action Research Project* can therefore be presented as follows with consideration of the model of Lindgren *et al* [14].

SUMMARY OF ACTION RESEARCH PROJECT		
Research Activities	Practice (Praxis)	Theory (Theoria)
<p>Research Sites and Competency Management System: Provides contextual information to elucidate the activities and the nature of research and its findings. As such it sets the scene for the determination of the specific characteristics that are considered appropriate to the research problem and its expected results. The definition also sets the parameters for the research to ensure that research focus as collaboration between the practitioners and the researcher can be sustained.</p> <p>Example from the actual project:</p> <p>Activity 1: E.g. “<i>Initiating the Strategic ICT Planning Process for the DOD</i>”. These activities will be strongly influenced by the research time-line as defined for the research as undertaken. The fact that this should not only follow the activities of the research method, but should do so in combination of the practical implications further enhances the ability to strike the balance between practice and theory.</p>		
<p>The ability to pre-emptively plan and execute any activity provides the opportunity for review of the activity to serve as a basis for corrective actions. These are in accordance with any control function that needs to be performed where continuous improvement is the objective. This should however be done with due consideration of the fact that the changes required should be expressed as learning that can be substantiated in terms of its practical and theoretical implications. The actions relate to the following activities as described by Lindgren <i>et al</i> [14] <i>op. cit</i>:</p> <ul style="list-style-type: none"> ➤ Diagnosing: ➤ Action Planning: ➤ Action Taking: ➤ Evaluating: <p>Note: In the case of the SA DOD the research activities were driven by specific objectives related to the function of strategic ICT Planning as an appropriate process for the DOD. To this end the following objectives drove the research:</p> <ul style="list-style-type: none"> ➤ The development of a plan to perform the function. ➤ The establishment of an appropriate ICT. method for the DOD ➤ Appropriate participation by 	<p>The ability to apply research method and ensure that its practical implications can be utilised to enhance practice has the characteristic that it guides practice. This is however a two-way interaction between practice and theory that is dynamically iterative in nature. As such this interaction has to be formalised to ensure that the interaction is structured and focused on issues that are mutually agreed to. These should be relevant to practice, scientific theory and research method. From the application of Action Research Theory by Lindgren <i>et al</i> [14] <i>op. cit</i> this can be described as follows</p> <ul style="list-style-type: none"> ➤ Researcher – Client Agreement: ➤ Cyclical process: ➤ Guiding Theory: ➤ Change through Action: <p>Note: In the case of the SA DOD these issues were addressed as part of the transformation process of the ICT function, whilst the implications from a research perspective was actively and consciously integrated and aligned with the process. Specific care had however to be taken to ensure that the focus and conditions of research and the maintenance of its objectivity was</p>	<p>The requirement for a continuous evaluation of both the theoretical or scientific implications of the research and the practical implications can be simplified by utilising the respective classifications for “competency” as defined by Lindgren <i>et al</i> [14] <i>op. cit</i>. It provides a clear and distinct framework to indicate the improvement in ‘competency’ as the research progresses for both the scientific interests and the practical interests.</p> <ul style="list-style-type: none"> ➤ Transparency of Competence-in-Stock: ➤ Real-time Capture of Competence-in-Use: ➤ Interest Integration as Competence-in-Making: ➤ Flexible Reporting as Contribution to Competence-in-Making: ➤

SUMMARY OF ACTION RESEARCH PROJECT		
Research Activities	Practice (Praxis)	Theory (Theoria)
<p>all role players.</p> <p>➤ The establishment and sustainment of appropriate skills and staff capacity to perform the ICT function.</p> <p>Implementing appropriate tools to support the strategic ICT planning function of the DOD.</p>	<p>sustained. This sometimes placed the researcher and the organisation in situations of conflict, but this was decreased as the organisational and process maturity of both the researcher and the organisation improved.</p>	
<p><u>Activity n: Summary of Learning / Contribution</u></p> <p>The presentation of the learning / contribution was be focused by the systems model or framework as established for the SA DOD. This included inter alia (1) policy and plans; (2) skills; and capacity (3) process; (4) tools; (5) participation and collaboration.</p> <p>The learning experiences as derived from the research are presented as that which is relevant to practice and that which is relevant to scientific theory. The interaction between the two environments and the fact that there is a direct correlation between the two environments results in a situation where the theory becomes “theory in practice” and not merely “competence in practice” or “competence in theory”.</p>		

Table 1: Framework for Presentation and Summary of Research as adapted from [14].

An example of how this might look is presented from the actual project (selective examples from Project Cycle 7) in Table 2.

The framework in Table 1 enabled us to indicate sequentially (for each phase) the respective activities as undertaken during the research. It also provided us with a means to indicate the contextual issues that relate to the research in terms of the hermeneutic requirements. This becomes important as it the cycle of diagnosing and

implementing therapeutic action was largely dependant upon the environment or context. Corrective actions taken could then be based on guided research undertaken based on the diagnosis.

The ability to present the findings of the research in a structured manner provides the reader and/or assessor with the opportunity to be able to directly relate theory and practice.

SUMMARY OF ACTION RESEARCH PROJECT		
Research Activities	Practice (Praxis)	Theory (Theoria)
<p><u>Activity 7: Formalisation of Structural Arrangements and Strategic ICT Planning Process and Methodology.</u></p>		
<p><u>Diagnostic Stage:</u> The review and realignment of the management arrangements that are now commensurate to the DEIS management function and corporate strategic management of the DEIS is now being reflected in the functioning of higher order defence management and arrangements.</p> <p><u>Therapeutic Stage:</u> As part of the continued formalisation the relationships between DEIS related processes and structural arrangements are being aligned through the standardisation of corporate management functions as opposed to business unit management for the services and divisions.</p>	<p><u>Researcher – Client Agreement:</u> Process and integration requirements related to corporate management established a clear and distinct mandate for the management of the function.</p> <p><u>Cyclical process:</u> The process of continuous improvement in accordance with for instance the processes for problem solving and change management will be followed.</p> <p><u>Guiding Theory:</u> Continuous improvement methodologies or frameworks such as inter alia appropriate maturity models can augment execution of the strategic ICT plan.</p> <p><u>Change through Action:</u> Changes can be initiated by users or managers if ICT solutions, executive managers at either corporate level or at business unit level or other stake holders or role players.</p>	<p><u>Transparency of Competence-in-Stock:</u> This is largely focused on improvement and management of structural arrangements and the strategic ICT planning process.</p> <p><u>Real-time Capture of Competence-in-Use:</u> With the extended involvement of the DEIS management in DOD issues and vice versa double loop learning will be realised and sustained.</p> <p><u>Interest Integration as Competence-in-Making:</u> The dynamic two-way learning and therefore the potential improvement of function related to the total defence function will add to the continued optimisation of the organisation.</p> <p><u>Flexible Reporting as Contribution to Competence-in-Making:</u> Achieved through mechanisms and structures available via the DOD total chain of command.</p>
<p><u>Activity 7: Summary of Learning through Reflection.</u> One of the implications of having established a standardised</p>		

SUMMARY OF ACTION RESEARCH PROJECT		
Research Activities	Practice (Praxis)	Theory (Theoria)
<p>approach towards strategic ICT management within the DOD is that it can now form the basis for the expanded implementation via statutory mechanisms into the rest of government.</p> <p><u>Value to Organisation.</u></p> <p><i>Policy and Plans:</i> The relationships between the DEIS management function and the corporate management arrangements and mechanisms had to be clearly defined and explicitly stated.</p> <p><i>Process:</i> The processes as appropriate to strategic Direction for the DEIS, the management of DEIS related policy, ensuring structure and capacity commensurate to the functions to be performed by all role players and stake holders had to be formalised and institutionalised within the DOD.</p> <p><u>Value to Scientific Theory.</u></p> <p><i>Policy and Plans:</i> The GITO established as the functional authority for ICT in the DOD and the C CMIS as the System integrator, whilst the users focused on functional ICT requirements management and utilisation.</p> <p><i>Participation and Collaboration:</i> Full participation in the corporate processes under the chairmanship of the GITO had to be formalised and institutionalised to ensure participation of all role players.</p>		

Table 2: Sample of actual framework for Project Cycle 7 [5].

In the case of the DOD the organisation had previously established and accepted a structure to guide the systemic approach towards systems management. These components of the systemic framework focused on ensuring that the dynamic relationships between the respective components could be managed to improve the functioning of the organisation as a whole. This concept is in line with the interpretation of a systemic approach as defined by Checkland and Scholes [2]. The systemic model as appropriate to a specific organisation can be utilised to guide the focus and findings of action research. This can ensure that theoretical contributions can be influenced and driven by practice with a clear indication of the findings. In the case of the SA DOD these systemic focus areas that were explicitly covered in terms of specifying both practical and theoretical findings were: (1) strategy and governance; (2) corporate culture; (3) Organisation; (4) Competency; (5) Facilities and equipment; (6) Process; (7) IS/ICT ; (8) Finances; (9) Performance.

5. CONCLUSIONS

This paper demonstrates the way in which a framework for the application of AR in this instance, was applied in an actual IS environment in the SA DOD where social and organizational complexity was an essential feature. As such the ability to ensure collaboration between the environments and perspectives of the researcher and the practitioners whilst still being able to ensure that objectivity of both the research method and the actual research undertaken was sustained was of utmost importance. It is our belief that the application of the processes and structures of Action Research as described in this paper has enabled a good interrelationship between theory and practice in the case of the SA DOD.

We believe that in our instance the success of the project, i.e. the establishment of an ICT strategy in a complex environment relates to the use of AR in the following ways: (1) The cyclical nature of the action-reflection process is similar to 'normal' strategic processes in practice; (2) The social and organisational complexity of the environment meant that a functionalist approach to achieve the required outcome of a sustainable strategy was not feasible; instead adoption of an AR approach allowed the design of the

structures and processes of interaction that constituted a context within which the desired outcomes could be achieved; (3) Both the organisation (the SA DOD) and the practitioner-as-researcher strived for continuous improvement (or 'learning') in the context of this project. The AR framework enabled the structuring of a continuous double-hermeneutic approach to strategizing.

We believe that essentially there should be a dynamic and iterative relationship between the 'what' and the 'how' of theory and the 'what' and 'how' of practice as distinct yet interacting domains. Adhering to the processes and structures of AR thus enabled the required alignment and balance between "practice-in-theory" and "theory-in-practice".

The framework presented represents a single instance of 'how' AR was applied in a practical situation. Undoubtedly the unique context of the study influenced the structure and processes adopted. The underlying reflective philosophy of AR implies that in every new study that uses AR, structure and process could be uniquely tailored in a reflective way (i.e. applying the double hermeneutic concept of Giddens [8] to the actual method used) taking into account the body of knowledge on AR as method. This would imply that the format presented in this paper should not be applied in a formulaic way.

Even though the lead author was mainly a practitioner at the time of doing the research he had to engage quite deeply with AR literature (as part of further studies) in order to use AR meaningfully as a method. The implication of this may be that the many potential strengths of AR as method become accessible only to practitioners who are willing to engage in some depth with the existing literature on AR. This paper does not attempt to contribute in more depth to the discourse on the need for an embodied link between methods and the theories that inform them.

Although qualitative research does not require claims of generalizability we believe that the contribution of the paper lies in the description of 'how' an AR project was completed by a practitioner, thus providing some insight into AR process and structure through the lessons that we learnt and thus informing practitioners and scientists involved in similar patterns of work.

REFERENCES

- [1] Baskerville, R and Myers, M. D., 2004, Special Issue on Action Research in Information Systems: making IS Relevant to Practice – Foreword. *MIS Quarterly* 28(3), pp. 329-335.
- [2] Baskerville, R and Wood-Harper, A. T., 1998, Diversity in information systems action research methods. *European Journal of Information Systems* (1998)7, pp.90 – 107.
- [3] Checkland, P. and Scholes, J., 1990, *Soft Systems Methodology in Action*. John Wiley & Sons, Chichester, England.
- [4] Clark, P., 1972, *Action research and Organizational Change*. Harper & Row, London.
- [5] Du Toit, M. 2008, *The establishment, through Action Research, of an appropriate strategic ICT planning process for the South African Department of Defence as a diversified organisation*. University of Pretoria: PhD Thesis.
- [6] Davison, R. M., Martinsons, M.G. and Kock, N., 2004, Principles of Canonical Action Research. *Information Systems Journal* (14), 2004, pp. 65-86.
- [7] Garfinkel, H., 1963, 'A conception of and experiments with, "trust" as a condition of stable concerted actions', in O. J. Harvey (ed.), *Motivation and Social Interaction*. New York: Ronald Press.
- [8] Giddens, A., 1984, *The Constitution of Society*. Cambridge, Policy Press.
- [9] Hirschheim, R. and Klein, H.K. 2003, Crisis in the IS field? A critical reflection on the state of the discipline. *Journal of the Association for Information Systems*, 4(5), pp. 237-293.
- [10] Klein, H K, and Myers, M. D., 1999, A set of principles for conducting and evaluating interpretive field studies in information systems. *MIS Quarterly* 23(1), pp. 67 – 94
- [11] Korpela, M, Mursu, A. and Soriyan, H. A., 2002, Information Systems Development as an Activity. *Computer Supported Cooperative Work* 11: 111-128
- [12] Lee, A. S. and Baskerville, R. L., 2003, Generalizing Generalizability in Information Systems Research, *Information Systems Research*, 14(3).
- [13] Lewin, K., 1947, Frontiers in group dynamics II. *Human Relations* 1(2), 143-153.
- [14] Lindgren, R, Henfridsson, O. and Schultze, U., 2004, Design Principles for Competence Management Systems: A Synthesis of an Action Research Study. *MIS Quarterly* 28(3), 435-472.
- [15] Mårtensson, P. and Lee, A. S. "Dialogical Research at Omega Corporation." *MIS Quarterly (Special Edition)* 28(3), pp. 507-536.
- [16] Mohrman, A.M., Mohrman, S.A., Lawler, E.E. and Ledford, G.E., 1985, Introduction to the new Edition. In Lawler, E.E., Mohrman, A.M., Mohrman, S.A., Ledford, G.E., Cummings, T.G. and Associates (Eds.) *Doing Research that is useful for Theory and Practice*. (pp. ix). San-Francisco: Jossey-Bass.
- [17] Scarborough, H. and Corbett, J., 1992, *Technology and Organisation*. Routledge, London.
- [18] Schein, E., 1987, *The Clinical Perspective of Fieldwork*. Sage, Newbury Park.
- [19] Schein, E., 1969, *Process Consultation: It Role in Organizational Development*. Addison-Wesley, Reading.
- [20] Schutz, A., 1962, Concept and Theory Formation in the Social Sciences. In Nijhoff, M (ed.) *Collected Papers, Volume 1*, pp. 3-41.