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PRAGMATIC APPROACH IN IS PROJECTS GROUNDED ON RECOGNISED FRAMEWORKS

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Abstract

This paper stands for IS projects that are carried out practically, using action-oriented approach and by grounding on recognised frameworks to serve as a foundation for better IS research. We introduce two different IS projects that were implemented to serve both practice and science. The projects differed in several aspects but despite that, both of them were carried out with the help of deep involvement and action-oriented approach that enabled the researcher to gain a full concept of the encounters and details in the IS projects. Thus, the research results are not dependent on interpretation and assumptions that should be made to fulfil apertures or blanks between observations. As one IS project was implemented keeping in mind a framework recognised in prior research, the other IS project was put into practice without any prior model or beforehand planning. With these two different cases we demonstrate the power of pragmatic approach when doing IS research.

Keywords: Action-oriented approach, IS implementation, pragmatic theory, recognised framework

Introduction

This paper emphasises the gains of pragmatic and action-oriented approach in doing IS research. In so doing, the paper answers to the call of Chen and Hirschheim (2004) when they asked for interpretivist researchers to continue opposite to positivist domination. Pragmatism approaches encounters from a dynamic, constructivist approach that focuses on understanding human action as a social and functional phenomenon (Elkjaer & Simpson, 2006) and thus it allows researchers to comprehend the varying side of incidences. Information systems are implemented or modified to meet the change that organisations from time to time undergo. Some of these IS projects take place continuously while sometimes there may be near twenty years intermission (Borum & Christiansen, 2006). This state builds the ground for IS research that is supposed to promote more sensible IS implementations.

We introduce two information system projects where action-related approach was used. Despite the cases were carried out in deviant ways, both of them added to the IS research due to their approach. In our paper, we conditionally accepted the definition introduced by Hirschheim et al. (1995, 22) "*An information systems development methodology is an organised collection of concepts, methods, beliefs, values and normative principles supported by material resources*". We wanted to emphasise the role of people and collaboration and we did not deny a possibility of a loose organised collection that tended to realise in a reflective way in the other project. Furthermore, in widely accepted positivistic and interpretive IS research there is a problem of theory-practice inconsistencies that are found between researchers' assumptions and the actual research with gained results (Smith, 2006). We believe that an approach that grounds on strong action-based research with realistic functional grasp leaves no space for dubious assumptions.

Basing on his literature review, Smith (2006) notes a problem of causality as a constant conjunction of events. Because empirical relationships are phenomenological instead of being theoretical, they lack the unobservable issues and causal processes that influence them. Therefore there is a gap between the entities. While quantitative research methods call for statistical tools, they necessitate questions such as "how many" instead of "how" and "why". That leads to breaks in empirical conjunction. Therefore, we emphasise the power of pragmatic and action-related research that reduces the gap.

Despite passed decades with IS research, many IS projects still fail to deliver the desired outputs. Luna-Reyes et al. (2005) claim that a significant set of these failures stem from social and organisational factors that are difficult to observe without continuous observing. In case of active doing, the researcher makes it possible to allow knowing in practice and thus, to find out how things are done in complex organisational work (Orlikowski, 2002). Orlikowski also notes how product development work is accomplished through the everyday practices of the organisation's members. She continues that the practices should be understood as independent, overlapping and intersecting through the activities of the participating individuals. Therefore, we propose that active observing is needed to get all available information gathered.

IS practitioners mostly understand the value and need of planned approach in IS projects but often the planning is humble or non-existent due to the amount of required scientific data or lack of time or skills to identify essential data. This situation widens the gap between research and practice (Chiasson & Green, 2007). In their study on ready-made software packages Chiasson and Green emphasise the significance of doubting when heading to IS implementations. In so doing, they tend to support both practitioners and customers to make conscious actions and informed choices that will be experienced positive even later. Their approach endorses our thoughts of being aware of what is being decided in IS projects.

As stated above, being near the research objective enables the researcher to get a broader picture of the encounters and events. Peirce (2000) explains this with an importance of reasoning that leads us to determine one inference instead of another and to act according the way we do. Peirce calls this action a guiding principle of inference. This guiding is supposed to lead us to correct conclusions from true premises.

Peirce's thoughts of the guiding principle were later refined into the concept of action research by Lewin (1946) who studied workers' intergroup relations and thinking. Lewin was surprised because the workers' knowledge of their own work was so humble. They did not know what should be done and they were not able to evaluate whether an action had led forward or backwards. Later, Rapoport (1970) defined the cornerstones of action research with four statements:

1. The need to get collaboration from members of an organisation to help them solve their own problems.
2. The operational research stream of mathematics, engineering and physical sciences concentrating on logistical problems of various kinds.
3. The group dynamics stream researching leadership, power, group dynamics, stress and identity.
4. The applied anthropology stream studying psychological warfare, intelligence and administration of occupied territories.

Action research targets to solve practical, real-world problems and at the same time, to expand scientific knowledge. Action research is strongly collaborative and it necessitates participation from both researchers and users or actors in the target environment. As action research is tightly connected with contemporary research settings and environment, its grounds are found in pragmatism with four essential premises: consequences defined by human concepts, truth embodied by practical outcome, logic of controlled inquiry and social context of action (Baskerville & Myers, 2004.) Of these four premises, we highlight the role of social context of action that can be revealed in action-oriented and pragmatic research but that easily is left out of questionnaires and surveys.

Rapoport (1970) sums action research as research that aims to contribute both to the practical concerns of people and to the goals of social science by joint collaboration within a mutually acceptable ethical framework. While Hirschheim et al. (1995) list abstract concepts and material resources as components of IS development methodology, Mathiassen (2002) emphasises the role of collaboration between actors. Mathiassen studied practice in close collaboration between groups of practitioners and researchers and he notes that a collaborative approach causes many practical problems and conflicts. He discerns the difficulty to find a suitable research method that enables practical ways to combine qualitatively different research approaches that support the joint goal. Mathiassen names his approach collaborative practice research and it combines action research, experiments, and practice studies. The research method constantly meets dilemmas between practice-driven and research-driven goals and general and specific knowledge interests. Due to that, we find it a fruitful method that necessitates constant reasoning and pondering.

Onwuegbuzie and Leech (2005) introduce a pragmatic researcher who utilises and appreciates both quantitative and qualitative research instead of supporting one and underrating the other. Onwuegbuzie and Leech highlight that pragmatic researchers are able to dig into a dataset to understand its meaning and to use one method to verify findings from the other method because they may utilise several methodologies within an inquiry.

In all, action-related and practice-driven research methods are recognised in prior literature, but despite that, they seem to get minor attention compared to positivistic research. Therefore, we wanted to add to the discussion with our two cases of IS projects.

The Cases

As said, the empirical material originated from two very different IS projects. The first case was an IS project that was built on the framework introduced by Hevner et al. (2004). In other words, a thorough literature review was carried out in order to find a suitable framework for the IS development project. The second research project aimed to find out how an information system is implemented in inter-organisational settings with several stakeholders and backgrounds. The two cases differed in several aspects, not to limit into issues with theoretical backgrounds. Consequently, the second case was an IS project that had no literature background but it was strongly action-oriented in its implementation. With these two cases we aimed to describe the research output that was related with real-life functionality in the projects.

Next, we describe the first case. The IS project was implemented to support user rights and their management in an organisation (called Ironmade) that was a global manufacturer of stainless steel. Even if Ironmade was present in several countries and cities, the current IS project was defined to take place only in one location with two thousand people and tens of information systems. In Ironmade, the user rights were to be restricted because the organisation wanted to control and shelter its business information and knowledge. Organisations have several tools to manage user rights but often the user rights are not properly controlled. That was the case in our target organisation, too, and the employees described the prevailing situation: "The biggest problem is that the superiors do not make any requests to remove access rights." The IS designer was one of the users and there were no problems to get access into the several information systems and to get contact with the other users. The approach was decided to be

collaborative and prior research was needed to find out how to start the IS project that was to serve both practice in the organisation and IS research.

Before we turn to the framework, we briefly describe the second case (called eMove). The IS project was an inter-organisational effort with several stakeholders participating with differing activities. While Ironmade was a private enterprise that was one of the world leaders in its business, eMove was an IS project that was carried out in the public sector and it was funded with public money. The need for eMove came from the public organisations as the organisations had to collaborate with each other ever more and they could not manage their collaboration with their contemporary information systems. In eMove there were two active groups, namely a project group consisting of future key users representing the participating organisations and a steering group consisting mainly of superiors.

We then present the framework introduced by Hevner et al. (2004) as described in Figure 1. With their framework, Hevner et al. aimed to inform IS researchers of how to do design-science research and how to evaluate and present it. The framework offers a rigorous model that reminds the practitioners to note essential factors in the development work.

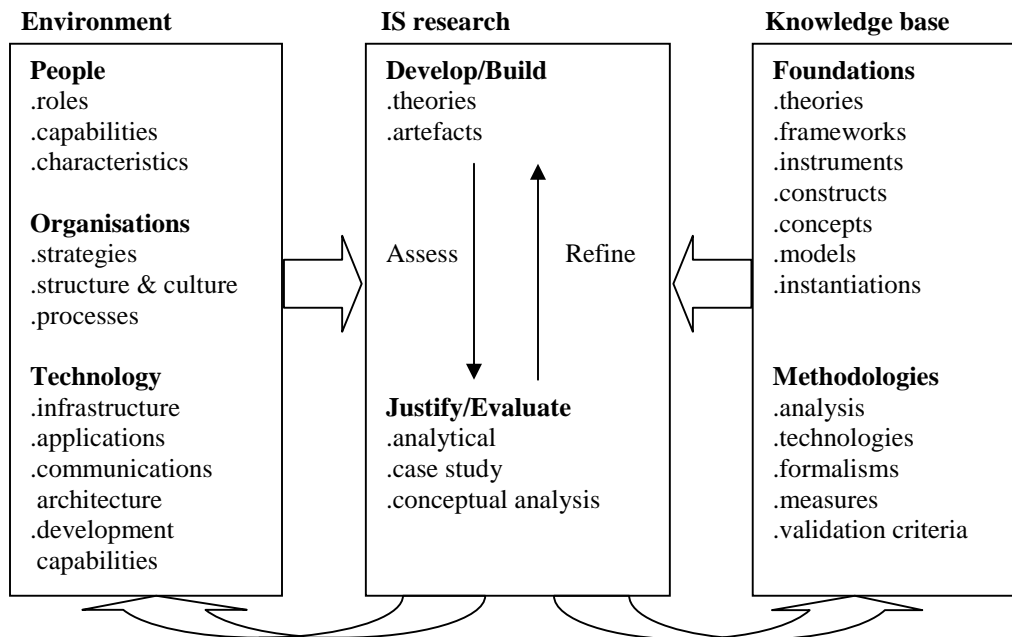


Figure 1. IS research framework (adapted from Hevner et al. 2004, 80).

While the framework promotes the output of the IS project, it also ties the project with the context organisation. In Figure 1, the central location of “IS research” is essential between “Environment” and “Knowledge base” that are context based concepts. Furthermore, Hevner et al. (2004) note that design-science should be aligned with real-world production experience. Therefore we present the empirical case (Ironmade) where we interpret the IS development with the help of the framework introduced by Hevner et al.

In Ironmade, the existing knowledge base was searched using resources both in and outside the enterprise. Then, the environment was explored with the help of the knowledge base. In so doing, knowledge base influenced the IS development already in the beginning. The project manager was an experienced employee in the target organisation.

Respectively, eMove was not planned with the help of any theoretical framework; rather, the development work was started “on the move”. In other words, it was carried out with a process that carried the project as driftwood. However, the development project was observed all the time as the project manager started to collect research material from the very beginning. The IS project eMove was active for four years while the IS project in Ironmade was completed in a few months. While the project manager in Ironmade was familiar with the knowledge base, the project manager in eMove had to start from nothing because the knowledge base was not researched.

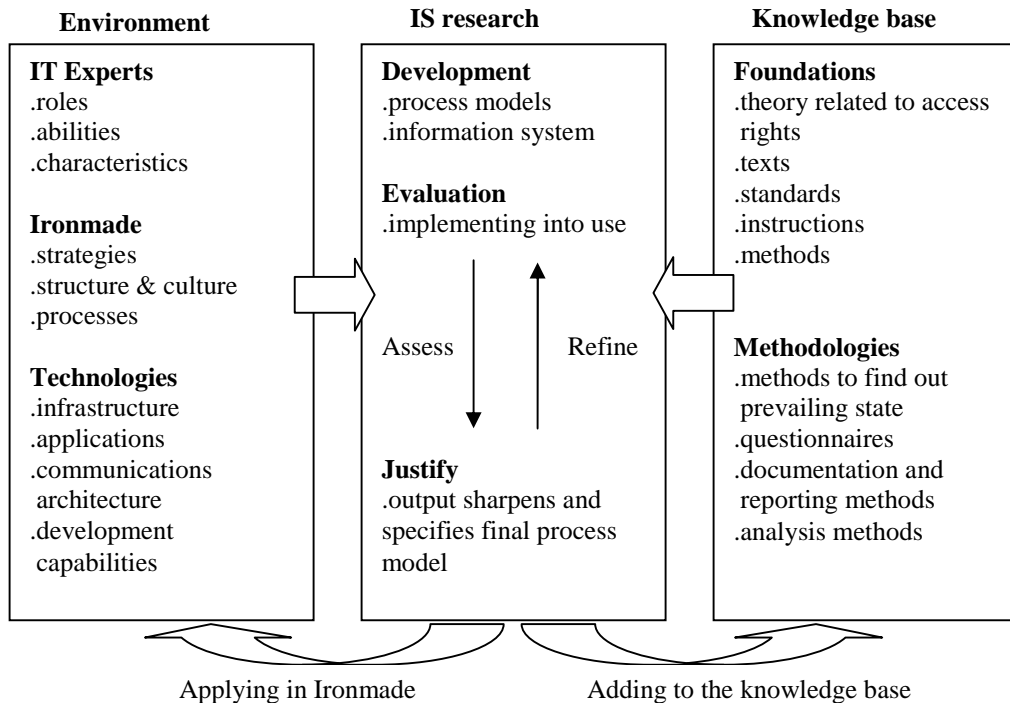


Figure 2. The output of Ironmade in the framework.

In the long run, both IS projects were completed and their outputs were evaluated. The output of the IS project in Ironmade was seen gaining both the knowledge base and the environment it self (Fig. 2). The knowledge base was cumulated with knowledge that was collected in the organisation where it had been scattered and with knowledge that was found in prior research. The environment gained because it was studied systematically. The information system was developed and evaluated.

The eMove project was evaluated, too. The evaluation was done by feedback asked from its users and it was mainly positive such as “Well done and a handy service!” and “It’s very easy to use but would be nice to add some explanation to the terms since sometimes some of them might be quite confuse.” As there was no framework to lean on, there was no knowledge base to be cumulated or environment to be developed.

Conclusion

This paper accentuated the gains of pragmatic and action-oriented approach in doing IS research. In addition, we emphasised the benefits of using a recognised framework in the IS projects that are to serve both practice and research. To achieve the goal, we introduced two IS development projects where action-related research approach was used in a way that Mathiassen (2002) calls collaborative practice research. The first IS project took place in a private enterprise where user rights were not managed properly. Prior to the development, a literature review was carried out and a suitable framework was found to be used in the IS development project. The chosen framework acted as a backbone in the development project that was run rigorously, keeping in mind the goal of the project but acting in the real environment and reflecting according to the current findings. Because the IS developer was present, the empirical material was sufficient in order to achieve the desired output.

The second case appeared to be more challenging compared to the first one. As there was no prior literature review or framework to guide the project, the project was proceeded spontaneously, according to the encounters and situations in the project. In the second case the role of human action in the social context (Elkjaer & Simpson, 2006) was emphasised. Because the researcher was present, the changes were possible to be made and the researcher was able to reflect according to the encounters. Like Onwuegbuzie and Leech (2005) conclude that pragmatic

researchers may utilise several methodologies within an inquiry, several research methods were used in the second case.

These two different cases speak for doing research pragmatically, in close contact with practice. Without the constant attendance the reflection would have been significantly less or even impossible. We also believe that with active participation and action the amount of gaps between encounters (Smith, 2006) is vanished. As the cases differed in many respects (private vs. public, long vs. short timetable, inter-organisational vs. intra-organisational) their outputs were impossible to compare. According to the feedback, both cases produced a positive output. However, it is notable to understand that the first case increased the knowledge base of the organisation at least in two valuable domains: firstly, the research elucidated the knowledge of the organisation because it investigated the environmental issues such as the IT experts' abilities and characteristics, the strategies and processes in the organisation and the technology related issues, and secondly, it disentangled foundations and methodologies that were needed or desired in the current IS development project.

All in all, it would be interesting to find out if IS projects such as the second case would unfold any research material without pragmatic approach.

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