Methodology Issues in Enterprise System Implementations

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INTRODUCTION
Enterprise Systems (ES), also known as Enterprise Resources Planning (ERP), are still challenged by managerial problems in European implementation practice to reduce the enormous complexity. Literature after Y2K doesn’t support solutions for this practical statement directly. Second, methodology plays a dominant role and is closely related with managerial aspects of implementation projects. It’s remarkable that management and methodology are mostly outsourced disciplines in ES implementations. There is no new insight knowledge about the methodology gained with research in depth. The main issue here is that we have no complete picture of all activities. Focus of this study is research in depth for a suitable methodology for ES implementations. The chosen research strategy is based on the “structured case” approach by Carroll and Swatman (2000), using the interpretative paradigm as a possible option in building a new theory. This paper represents the first findings as “methodology issues”.

ENTERPRISE SYSTEMS AS A DIFFERENT KIND OF SOFTWARE
ES is widely cited as a new phenomenon in information systems. Nevertheless, it is not clearly qualified as a different type of software. In contrast, ISD has a rich tradition and it is accepted that ISD is an applied field in the academic world. A good academic distinction between ES and ISD is necessary to underline the different approach of ES. We will now discuss four differences between ISD and ES to motivate further research.

The nature for ISD development is based on functional requirements and in contrast, ES is design of system functionalities with pre-written software from a package vendor based on commercial requirements. Figure 1 illustrates the different actors involved in an ES implementation between ES and ISD software with a focus on the design phase. People knowledge (with proper skills) is not similar for ISD implementations, especially for the scope of knowledge. This because team members cross borders of several disciplines (Boudreau et al. 1999). Normally, users join implementation teams because they have excellent business knowledge. This so-called “user participation” is widely cited as a success factor in ISD and ES implementations. The user has, in this case, different meanings. In ISD, we have the “primary user” who use the system output. In ES, “power users” takes over this role as internal consultants among the users (Baskerville et al. 2000). The user stands, academically and practically, in another position, dimension and coherence.

Outsourcing in ES is a necessary strategy because there is not enough knowledge available in the organization (“Resource-based Theory”). Hired knowledge for design and project management support in this strategy is the acceptance of a project management approach and methodology from the hired company. That means not only the acceptance of knowledge but also the power of knowledge.

Lastly, there is a difference in meaning of the term “complexity”. This is hard to define in an explicit way. In simple terms, complexity deals with quantity of elements, the relationship between these elements and the possible uncertainty of these relationships. There are motivations that ES implementation projects are more complex then other comparable ISD projects because ERP packages cross organizational boundaries (Boudreau et al. 1999), increasing external actors and increasing package functionalities (Hillegersberg et al. 2000).

LITERATURE REVIEW REGARDING ENTERPRISE SYSTEMS RESEARCH
Esteves and Pastor (2001a) cite in their bibliography that articles about ES appear in journals and conference papers from 1996 onwards. This research was done in that period to solve Y2K problems. A review of journals and conference papers dating up to 2005 regarding topics about ES research gives the following points of concern as relevant for the study:

a.) No new material is found after Y2K about implementation failures as research topic. But there are indications for managerial problems (Nandhakumar et al. 2003). This indication is in line with European implementation problems in practice to reduce the enormous complexity. Publications to solve ES failures lean towards a more soft approach. Soft approaches are solutions with a focus on organizational transition, organizational change (Boudreau et al. 1999) and social enablers. This means there is discussion about “hard” and “soft” approaches. The trend towards a more soft approach is in contrast with implementation problems about legacy systems, or, in other words, ignoring the hard problems (Holland et al. 1999b).

b.) There is also a gap with studies in the area of Business Processes Design with a quality chosen research methodology (in depth case studies) about “why and who”. Studies resulting in “Critical Success Factors” are solutions for solving the implantation problems but are answers in about “what”. The definition of success (in short) is the best outcome that could possibly be achieved (Markus et al. 2000).
Figure 2. “Structured Case” research approach (Carroll et al. 2000)

**SUMMARY OF FINDINGS**

In the first section, we identified four major differences between ES and ISD. Together with the review in the second section, it was the start for the “Initial Conceptual Framework” as mentioned in research strategy. The “Initial Research Cycle” supplies the following findings:

a.) The different nature of ES creates another methodology scope. IS methodology addresses major development problems. In ES, we have more, and include five implementation phases that must be supported by the methodology: Selection & Acquisition, Preparation, Design & Configuration, Transition and Go-live.

b.) Outsourcing of implementation activities start in the Selection & Acquisition phase. Acquiring the necessary knowledge is the driving factor for outsourcing. However, if there is more “Organizational ignorance” in the organization about the implementation of how to recognize project outcomes, then this will lead to more outsourcing. Methodology is, in that situation, an unknown issue. There is some relation for more implementation success with SAP and a hard contractual choice (no organizational ignorance) with the contractor for the ASAP method. Other software vendors are under investigation.

c.) As a consequence of “Organizational ignorance”, the implementation starts without any methodology or commercial methodology. The implementation project must have changes made to the methodology during the design & configuration phase. A scenario approach of the methodology can be a solution to solve this problem. Second, Organizational ignorance is closely related with managerial implementation problems in all phases.

d.) Business Process Redesign (BPR) means fundamentally rethinking and radically redesigning business processes to achieve major improvements or benefits. This statement is widely cited in the literature as enabler in ERP implementations. In practice, we have standard software with standard package functionalities gained from internal and external consultants instead of radically redesigning processes. Communication with the organization (outside the project) during the design phase leads to a further redesigning of existing functionalities. The methodology must support several rules on which way we want to design (hard and soft aspects).

**CONCLUSIONS**

Summarizing the literature review and the findings, we have the first requirements for a proposed methodology: An overall approach with the five phases in time is the basic scope for the methodology with hard (IT problems with technical aspects) and soft approaches addressed in all phases. Secondly, a handsome solution must be available to solve “Organizational Ignorance”. Thirdly, flexibility is necessary to use the methodology, not only at the start of the implementation project but also offer the possibility to “jump in” at a later moment. Other challenges to be addressed during this research in depth are: finding tools and techniques to reduce the complex problem situations and practical usefulness of the methodology.

**ACKNOWLEDGEMENT**

This research is funded by The Royal Netherlands Air Force.

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