Scandinavian Journal of Information Systems

1998

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Reflections on Reflective Systems Development

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Lars Mathiassen's article on Reflective Systems Development (RSD) is an informative personal account of his and his colleagues work on this specific systems development approach during the last twenty years. Lars' paper together with his two-volume dissertation (Mathiassen 1997) makes a great contribution in putting together some central publications of the RSD approach. I interpret Lars' paper as a self-reflection in which he nicely reconstructs, explains and rationalizes the evolution of RSD. Even though Lars describes some turns in his research direction, I expected more information about his personal learning during these years, e.g. what have been the major incidents and insight which have reshaped his views of systems development invalidating some of his previous assumptions, what dead ends he has met during his research career, etc. I think that a historical account of this sort would have been interesting and even therapeutic to read for those of us who have not been lucky (or unlucky) to be right all the time.

Lars' article and dissertation work also indicates his and his colleagues good capability to respond to a diversity of "hot" topics encountered in the area of information systems and software engineering such as prototyping, the spiral model, risk management, SSM, CMM, CASE, etc. I would guess that Lars would characterize the relationship between RSD and these responses as dialectical: while the underlying core of RSD has guided these responses making them a united whole (totality?), they have also shaped RSD. However, it is not easy to distill from Lars' article what is

this core of RSD and whether it has evolved or remained unchanged during the years. Despite of its contributions, the opportunistic research strategy applied in the development of RSD has led to a quite eclectic theoretical basis where Barry Boehm, Peter Checkland, Mao Ze Dung, Donald Schön, Herbert Simon, and many others live their peaceful coexistence.

I interpret RSD to comprise three major strengths:

1. RSD is based on the close connection between research and practice

2. RSD supports insight-guided systems development as a contrast to detailed notational and procedural view of systems development.

3. RSD is a systems development approach rather than a systems development method.

The irony of the situation is that based on his article I'm not totally confident that Lars himself agrees with me or fully appreciates these strengths. This may sound odd in the case of the first point because to my knowledge the MARS project, forming the major empirical basis of RSD, was one of the first attempts to study systems development practice to be supported by methods and tools without concurrent goal of developing or testing a particular method (e.g. action research in the context of ISAC). Lars also discusses the relationship between research and practice in several contexts in his article. However, his article and in fact his two-volume dissertation does not report very systematically systems development practice and what was learned about it. To some extent disappointingly, the first account of systems development practice in his article is a synthesis of three researchers' views of the evolution of the field, modelled as three eras, rather than a first-hand account of the practice (section 2.1). The second account of practice (section 5) includes two theoretical reflections of practice: reflection-in-action (Schön 1983) and communities of practice (Brown and Duguid 1991). This does not aim at denying the value of these theoretical frameworks but again they do not report practice itself. In fact, Lars discusses most directly practice in section 3.2 where he reports a few insights about systems development based on the MARS project. Even though significant, I'm afraid that the four insights give quite a pale view of the richness of systems development practice. I'm not sure whether this reflects the results of the MARS project or whether Lars does not fully appreciate its results.

Most academic and industrial attempts to support systems development have attempted to develop fairly detailed notational and procedural support with associated tools. RSD is relatively weak in this respect. On the other hand, it has attempted to glean out a number of insights derived from theory and practice to guide systems development. Andersen *et al.* (1990) is a practical summary of many of these insights, and Dahlbom and Mathiassen (1993) discuss some of them in a more convoluted form. In my view this insight-focus of RSD is one of its major strengths also in the academic sense. Therefore it is surprising that Lars does not attempt to summarize the major insights of RSD in his article. In my view the eight lessons discussed in section 8.1 are much more general and not necessarily very useful guidelines for systems development practice.

The above discussion implies that RSD is not strong as a systems development method if a method is interpreted as an organized collection of techniques procedures, tools and documentation aids (Avison and Fitzgerald 1995, Hirschheim *et al.* 1996). Iivari *et al.* (1998) suggests that RSD is a general systems development approach rather than a specific method. In my view this is also one of the major strengths of RSD. Having co-developed one systems development method during the 1980's, I have become more and more sceptical about the usefulness of systems development methods as such. It seems to me that they are often too complex conceptual artifacts to be useful in practice. Without abstracting their essences it is impossible to make sense of them. A concept of systems development approach characterized by goals, guiding principles, major concepts and principles of the systems development process (Iivari *et al.* 1998) attempts to provide this kind of abstraction. There is also some indirect evidence that systems development takes place at the level of systems development approaches rather than methods (Smolander *et al.* 1990). The considerable effort of Lars and his colleagues in the development of their own variant of an OO method (Mathiassen *et al.* 1993, 1995) suggests that Lars does not necessarily share my view. So, I'm disappointed and pleased to observe that we are moving to opposite directions; Lars from systems development approaches towards methods and I from methods towards systems development approaches.

To summarize, despite its current merits I would be pleased to see continued development of RSD as a systems development approach, as an approach that supports insight-guided systems development. More concretely, I would suggest that the RSD research group would reflect upon their experience of systems developed practice and report it systematically. I'm also sure that there is space for continued work on systems development practice, possibly in a more ethnographic spirit than the MARS project. Because it is more than 15 years since the MARS project, it would also be interesting to know whether anything fundamental has changed in systems development practice despite the generations of implementation platforms, methods, techniques and tools, and all the efforts to make systems development more mature. I would also like to see a systematic presentation of RSD. Even Lars' dissertation makes a significant contribution in this regard, it as a collection of the articles in which Lars has been at least one of the co-authors, implies that it is not optimal. In particular, I'm looking forward to seeing a good summary of the major insights of RSD. And as a friendly advice, forget OO as a method.

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