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## Reflective System Development: A Significant Step Towards Building a Cumulative Tradition in IS Research on Systems Development?

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## **Reflective System Development: A Significant Step Towards Building a Cumulative Tradition in IS Research on Systems Development?**

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I am very thankful for this invitation to comment on a manuscript that challenges its readers to reflect upon some significant unsettled and unsettling questions about the current state of IS research. I interpret the paper—with its associated book—as an attempt to provide a common conceptual roof for the results of a major research strategy that was pursued over a period of more than 20 years. One obvious benefit such a synthesizing report is that many ideas, often published in outlets that are not easily accessible, are now united in a single source and, even more importantly, interpreted in their proper context. This kind of effort is sorely needed in a discipline that has bemoaned its lack of a cumulative tradition almost since its inception (Keen 1980, 1991). In later writings, IS has been char-

acterized as a “fragmented adhocracy” (Banville and Landry 1989) more than once by other authors who tried to paint a larger picture (e.g. Hirschheim *et al.* 1996). One could only wish that other researchers for their own research would take the example to heart, which Lars Mathiassen has provided here. Of course, some have already risen to this challenge and the attempts that have come to my attention were reviewed earlier (cf. Hirschheim, Klein, Lyytinen 1995). If this publication genre were to become more widespread, the IS community would soon have larger parts of the proverbial “unknown elephant” for discussion at its disposal than can be presented in the usual space constraints of a 25 pp. paper.

In the following I will pursue two possible lines of thought to approach my responsibilities as a commentator. One is

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to take up some of the specific details of the particular framework for systems development that is presented in L. Mathiasen's paper (with its associated book), and which he calls "Reflective Systems Development" (RSD). The second is to reflect on the potential benefits of a senior author digesting and redocumenting a quarter century of research on RSD for the IS research community and to evaluate to what extent the potential benefits of such an enterprise have been realized. In this part I will have to take issue with the goals that the author has set for himself by finding them unnecessarily narrow.

### **Specific Comments on the Approach of Reflective Systems Development (RSD)**

Most of the critical comments on the details of the RSD framework have already been anticipated in section 8.2 of the Mathiasen paper. They are based on a collegial discussion with Lars Mathiasen about an earlier draft for the current paper. I think it is important for me to confirm here for the readers that section 8.2 faithfully reflects my earlier comments and that I still do stand by them. In rereading them, two more issues came to mind. One concerns the meaning of the phrase "systems development theory" and its role for the approach of "reflective systems development". The other revolves around the missing reflection of the RSD position in relation to some of the other major schools of thought that can be found in the vast literature on systems development.

In Table 1 and elsewhere the phrase "systems development theory" is used as

an undefined term as if it were a well-defined concept. Unfortunately this is not so, even though this phrase often appears undefined in other literature. It would have helped to clarify matters if a brief discussion of the nature of "systems development theory" were included in the same context where the author introduces the notions of "Systems development practice" and "Systems development research".

I tried to infer from the paper's subsequent sections (especially section 3 on "History"), what the author might have had in mind with the concept of "systems development theory". I gleaned the impression that it differs substantially from what readers trained within the mainstream literature in the English speaking world typically might associate with it. It is a pity that the opportunity was lost to engage a broader audience on this point, i.e. what "systems development theory" should encompass from the perspective of RSD practice. As will become clear in the following, this criticism points to a shortcoming of the paper's rhetorical strategy, which is of much broader scope. In general, the paper fails to position its research among some of the major schools of thought that can be found in the vast literature on systems development.

### **On the Papers Potential Benefits**

In reading the paper, two types of benefits came to my mind. The first is to unify the evolution of the various lines of thought that represent the defining elements of RSD, into a single and easily accessible source. Clearly the author achieves this benefit very well. It is a

very worthwhile achievement in itself and nothing in the following should be construed as diminishing this achievement. However, I do think that this modesty in objective is inappropriate, because with a little more effort a second objective could have been reached that is of critical significance in the current state of our discipline. This second objective is to contribute to a dialogue across some of the many fences that severely limit the scope and impact of current IS research. The paper does not even attempt to do this. Why this limitation given the author's privileged position and international exposure to IS research?

As the author possesses a unique command of the overall landscape of the systems development literature at his proposal, it is disappointing that he did not engage other key schools of thought, both those that stand in opposition and lend support to RSD. It would have been very valuable to introduce an additional section, which is broader in scope than section 7 and explicitly points out the ideas with which RSD is consistent and to which it stands in contradiction. Section 7 does this only with regard to the "Scandinavian School" and hence is too limited (note its brevity!). This section is in need of "internationalization". This means that it should have engaged opposing schools of thought on specific principles in sections 4, 5 and 6. For example, RSD draws on both the prototyping and the life cycle school of ISD, but it does not really follow either one. Moreover, it takes issue with some of the core beliefs of structured systems development, object oriented design and other "representational approaches" (cf. Winograd and Flores 1986). RSD is also critical of some of the phenomenologi-

cally influenced contributions to ISD such as Checkland's Soft Systems Methodology and "Emancipatory System Development" (Hirschheim and Klein 1994). As the paper stands, the burden to figure this out in more detail is put on the reader. I feel that it is too much of a burden to carry for each reader. It also wastes valuable time for the research community if each reader has to repeat this type of analysis on her own. Of course, the suggestions I make here can still be taken up in a separate paper. However, if they had been incorporated in the present draft, they would open up a much broader, international audience for the current paper. It is impossible to read this paper without a fair background of European thinking on ISD in general and the Scandinavian school in particular. Studying RSD could achieve a much better impact on the international research community if the paper became accessible without such a background. The field would gain a discussion across some of the many invisible fences that now separate various research communities and which will not be overcome by the new forms of electronic communication per se. With his paper, Lars Mathiasen could have made a substantial contribution to initiating a debate that is needed for overcoming some of the less desirable consequences of the fragmented adhocracy situation in IS research.

A second issue that is related to the paper's lack of "internationalization", but not entirely identical with it, has to do with the generalizability or transferability of RSD. Is RSD transferable to other projects and places, and if so at which perils? Not much is said about this except for the claim "The methodology is adaptable" (p. 23). It is reasonable to

assume that the author would not have invested a major part of his professional life in researching RSD without believing that others can learn from his experiences and discoveries. There are two more obstacles in the way of realizing the benefits that could come from wider experimentation with the principles that make up RSD. One is that the paper is written as if the research behind RSD followed some logical design almost without errors and avoiding all dead end avenues. We all know that trial and error is an inescapable hazard of good research. Because of this, sometimes the reader can learn much from knowing some of the errors. Therefore some of the wrong-headed projects or mistaken assumptions should have been reported along with the ways how the mistakes or misconceptions were discovered and overcome. I like to refer to this a discussing the "context of discovery" for RSD. Such a discussion would help and encourage others to experiment with RSD.

Reporting some key points from the context of discovery for the RSD research project in turn would have paved the way to deal with the historical contingencies and unique conditions on which practicing RSD depends. Section 3 on "history" gives a good feel for some of these and deserves careful study. Some key ideas are the emphasis on industry cooperation ("partnering") and the combination of practical insights into professional practices (or lack thereof) with respect for scholarly tradition and the search for ways of integrating the two. However, the way this is reported easily (mis)leads the reader to believe that such partnering and scholarly integration is easy to achieve and likely to succeed. All who have had experience with this kind

of research know that unfortunately this is far from true. Hence I find it disappointing that the unique conditions in Aalborg and the personality resources required to make RSD a success (for example the author's apprenticeship with K. Nygaard) are not critically reflected to set pointers for others to consider. As a result, the reader is left in the dark to what extent the approach advocated (RSD) is transferable from Aalborg to other situations in Denmark, from Denmark to other European countries and from Europe to other continents. The author has spent time with close research associates in various European countries and in parts of the US. Therefore he is in a privileged position to speak on the issues of transferability of RSD (and other approaches to ISD) across cultural and other boundaries. Hopefully his voice will not remain silent on this issue in the future.

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