

Extended Abstract

Attributed roles of ERP-systems – Accounting, Operations Management and Management perspectives

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During the last 15 years there has been an extensive and growing interest in the managerial implications of ERP-systems in practice and research. By its nature ERP-systems are pluralist. In one sense ERP-systems function by solving each of the organisations functional areas individual needs for functionality. In another sense ERP-systems are attributed to role as integration device, merging and coordinating activities across functions in the organisation, and in addition, across organisations in the supply chain (Tarn & Razi, 2002; Tarn et al., 2002). However, this notion that integration and a common view and understanding of the role of the ERP-system will emerge across functional disciplines simply by merging functionality in a unified database seems naive. In this study we propose to explore differences in attributed roles of ERP-systems across different streams of research situated in the different functional domains of these systems. We argue that such research might prove helpful in pinpointing opportunities related to the difficulties of achieving integration inside ERP-systems. In an attempt to carve out the different perceptions related to the attributed role of ERP-systems, we explore ERP-systems as boundary objects, that is, as objects that are relevant to the practice of multiple communities, but used or viewed differently by each of them. More specifically we explore ERP-systems as boundary objects across three different streams of research: Accounting, Operations Management and General Management. The term *boundary object* was first introduced by Star and Griesemer (1989) and it refers to artefacts that “*are plastic enough to adapt to local needs and constraints of the several parties employing them, yet robust enough to maintain a common identity across sites*” (Star 1989, p. 393). A crucial quality of a

boundary object is thus that although it facilitate sharing and coordination among sites or communities (a common identity across sites) it stays open and flexible for interpretations (plasticity). A boundary object therefore allows for multiple interpretations and uses by the multiple parties employing them (Henderson 1991; Star 1989; Star and Griesemer 1989). The characteristics that enable ERP-systems to serve as boundary objects are their modularity, their abstraction, their accommodation, and their standardization (Star 1989; Wenger 1998).

Our research question is “*Which roles are attributed to ERP-systems in the accounting, the operations management and in the general management research community*”. We conduct an extensive and structured cross disciplinary literature review and illustrate how the three research communities mobilise the role of ERP-systems vastly differently. First, our preliminary results indicate that research in the main stream accounting community tend to mobilise ERP-systems as performance measurement and management devices (i.e. Nicolaou & Bhattacharya, 2006). Second, our preliminary research indicates that research in the main stream operations management community tend to mobilise ERP-systems as process integration and coordination devices (i.e. Koh et al., 2006; Gattiker, 2007). Finally we find evidence that support that literature published in the main stream general management community predominantly discussed ERP-systems as devises either hindering or supporting current organizational strategy and strategy implementation (i.e. Davenport, 1998).

Our paper is structured as follows. We first briefly introduce the conceptual foundation of this research by discussing what we mean with *attributed roles of ERP-systems*. In order to do so, we introduce the concept of boundary object, and mobilise ERP-systems as boundary objects working on the boundary between the functional domains or system modules entailed in these systems. This is followed by a description of the research context and the methods employed in this conceptual

study – predominantly a description of the way we have conducted our literature review. We go on to discuss each of the three streams of research – accounting and ERP-systems, operations management and ERP-systems and general management and ERP-systems, in succession, concluding on each of them as to the predominant role and sup-roles ERP-systems are attributed in each of these streams. Finally we synthesise our findings across disciplines, discussing the implications of our findings for research and practice and point toward the need for more research exploring the boundaries between organisational functions that interact through ERP-devices.

Reference

- Davenport, T. H. (1998), Putting the Enterprise into the Enterprise system, *Harvard Business Review*, 121-131.
- Gattiker, T. F. (2007). Enterprise resource planning (ERP) systems and the manufacturing-marketing interface: an information-processing theory view, *International Journal of Production Research*, (45:13), 2895-2917.
- Henderson, K. (1991) Flexible Sketches and Inflexible Data Bases: Visual Communication, Conscriptioin Devices, and Boundary Objects in Design Engineering, *Science, Technology, & Human Values* (16:4), 448-473.
- Koh, S. C. L., Saad, S., & Arunachalam, S. (2006). Competing in the 21st century supply chain through supply chain management and enterprise resource planning integration, *International Journal of Physical Distribution & Logistics Management*, (36:6), 455-465.
- Star, S. L. (1998). The Structure of Ill-structured Solutions: Heterogeneous Problem-solving, Boundary Objects and Distributed Artificial Intelligence, in *Distributed Artificial Intelligence, Vol. 2*, M. Huhns and L. Gasser (Eds.), Morgan Kaufman, San Mateo, CA, 37-54.
- Star, S. L., and Griesemer, J. R. (1989). Institutional Ecology, 'Translations' and Boundary Objects: Amateurs and Professionals in Berkeley's Museum of Vertebrate Zoology, 1907-1930, *Social Studies of Science* (19), 387-420.
- Tarn, J.M. and Razi, M.A. (2002), Linking ERP and SCM systems, *International Journal of Manufacturing Technology and Management*, (4:5), 420-439.
- Tarn, J.M., Yen, D.C. and Beumont, M. (2002), Exploring the rationales for ERP and SCM integration, *Industrial Management & Data Systems*, (102:1), 26-34.
- Wenger, E. (1998). *Communities of Practice: Learning, Meaning and Identity*, Cambridge University Press, Cambridge, UK.