

ENTERPRISE RESOURCE PLANNING IN ORGANIZATIONS

ENTERPRISE RESOURCE PLANNING IN BEDRIJF: DE VERLEIDING VAN GECENTRALISEERDE CONTROLE

Researchers

Dr. R.S. Batenburg, Faculteit Wiskunde & Informatica; Universiteit Utrecht.
Dr. J. Benders, Nijmegen School of Management; KU Nijmegen.
Dr. H.C. Van der Blonk, Faculteit Bedrijfskunde; RU Groningen.

Research question

The central question of this research project addresses the structural consequences of the introduction of Enterprise Resource Planning (ERP) in organizations. The aim of this short-term project was to compare the technical demands and the social-organizational consequences of different ERP systems.

We first suggested an exploring case study research design to investigate how ERP software packages (such as SAP) assess the range of organizational designs they leave in theory. The case studies focused on ERP software and its modules, and the accompanied (implicit) organizational design and implementation methodology in particular. Special attention is paid to the role of ERP consultants, who, in many cases, will be connected to (or belong to) the selected supplying companies. In addition, a literature survey was held to collect ERP cases, using library systems and information and management databases. Partly, these cases are derived via the inventory of ERP suppliers and consultants. Another important source is ERP user groups that currently can be found all over the world. All in all, the research provides an overview of the total ERP supply chain of ERP, with a focus on its organizational merits and potential consequences. The research can also be considered as a pre study to organize a larger project. For the near future, the plan is to perform in-depth and longitudinal case studies on how the design room promised by ERP providers is actually used and to what organizational changes this leads.

Results

Based on a two case studies of Dutch utility companies during their ERP-implementation between 2000 and 2003 (Batenburg, Benders & Scheper, 2002; van der Blonk, Benders, Batenburg & Scheper, 2002; Benders, Batenburg, Van der Blonk & Scheper, 2003), we found that ERP-software i.c. SAP) can be configured to accommodate a large variety of different work processes. At the same time however, ERP-systems are accompanied by 'blueprints' and industry-based standards which are promoted as the 'best practice' for a particular work process. Using these standards not only economizes the configuration process (and hence consulting fees), but, arguable more important, is held to improve the efficiency of the average existing work process. Consequently, there are strong pressures to conform to the 'best practice' standards that are embedded in ERP-software. These

results confirm the existing and working of what we have labeled as 'technical isomorphism'.

The effects of technical isomorphism on ERP implementation were studied by on the basis of documentation analysis, oral interviews and participatory research. Cooperation with the utility companies was achieved through personal and professional contacts, promoting the mutual benefits from objective and in-depth evaluation. Within one of the utility companies the opportunity was created to compare two different implementations of SAP. First, the implementation of the Financial and Control module of SAP ('FICO') was elaborated. This project was at the core of nearly all the transaction process within the firm. Very clearly, blueprints, best practices, and time pressure determined the success of the trajectory to reach integration and process-orientation through integral automation. Second, the project of implementing the Human Resources (HR) module of SAP was under research. Here, the technical isomorphistic forces were present but weaker; partly because it concerned the automation of a supportive activity, partly because meanwhile the company developed its own standards with regard to the implementation process.

Next and after the utility case studies, we conceptualized the complete trajectory of organizational choices in order to explore the different ERP-management considerations and its mutual relationships (Benders, Batenburg & Van der Blonk, 2003/2004). The conceptual framework captures how the initial choice to invest in ERP-systems is influenced by isomorphistic pressures, how these pressure coincide with practical restrictions such as time and budgets, and how strategic considerations are related to the tendency to imitate competitors' IT/ERP-strategies. When does pressure from the value chain or system come about? How do companies handle the paradoxical effect that the potential competitive advantage of ERP-investments disappears if they decide likewise their competitors? Partly, answers to these questions were found within the context of the case studies mentioned. However, there is still much work to do to disentangle the mechanisms behind the freedom that companies have *and* take in their decisions to adopt and manage ERP-projects successfully. Further data collection and case exploration is needed to test the propositions on the management and social consequences of ERP-systems. Most likely this can be done by collecting new experiences and management data on ERP projects, within different companies, branches, countries and the like.

With this project, we also revitalized the Dutch research field on ICT and labor. We brought scholars from various disciplines together, through meetings (Batenburg, Benders, Van den Heuvel, Leising & Onstenk, 2002) and through journals (Batenburg, Benders, Steijn, 2002). Doing so, we also suggested an agenda for future research. In particular, we promoted to focus on specific types of ICT, thereby opening the 'black box' that ICT is addressed by many researchers. In this project, the focus on ERP-systems has illustrated this claim clearly (cf. Batenburg, 2003). In addition, it appears to be highly relevant from a societal perspective since an increasing number of employees deal with the advantages and restrictions of ERP systems on a day-to-day basis. As stated before, little is known about the social consequences of this 'silent IT-

revolution' on the shop floor. We conclude from our theoretical and empirical studies that explication of critical success factors of ERP-projects is desirable from both a strategic and operational point of view. This not only holds for ERP-systems within the energy industry but in general. By continuous case comparison, and analysis of both quantitative and qualitative data, we can contribute to the growing need of 'evidence based management' with regard to the successful adaptation and deployment of ERP systems in organizations.

Scientific meetings:

- October 12, 2001: NWO/MES- en SISWO-congres 'ICT en Arbeid', Amsterdam
- March 4, 2002: SOM colloquium Mike Newman (University of Manchester) 'The Implications of Enterprise Resource Planning Systems for Management Accountants', Groningen University

Publications:

Benders, Jos, Ronald Batenburg & Heico van der Blonk (2004). ERP-Systems and Isomorphism. Paper for 22nd Labour Process Conference Amsterdam, 5-7 April 2004

Benders, Jos, Ronald Batenburg & Heico van der Blonk (2003). Sticking to Standards. Technical and other Isomorphic Pressures in Deploying ERP-systems. Paper for the Division/Interest Group 'Organizational Communication & Information Systems' of the Academy of Management "Creating Actionable Knowledge", New Orleans 2004, August 6-11

Batenburg, R. (2003). ICT en Arbeidsorganisaties: een zoektocht naar afstemming en evenwicht. In: P. Ester, D. Fourage, M. Kerkhofs en A. Romàn (Red.), ICT, arbeid en organisatie. Den Haag, Reed Business Information, ISBN 90-5901-231-3, Pp. 107-128.

(Dit artikel kunt u downloaden via de website van NWO-MES; zie bij resultaten)

Benders, J.G.J.M., R. Batenburg, H. van der Blonk & W.J. Scheper (2002) 'Technisch Isomorfisme en ERP-systemen'. Bedrijfskundig Vakblad, 14(6), Pp. 17-22

Batenburg, Ronald, Jos Benders & Bram Steijn (2002) 'ICT en arbeid: nieuwe techniek, andere arbeidsvraagstukken?'. Tijdschrift voor Arbeidsvraagstukken, 18(3), Pp. 212-225

(Dit artikel kunt u downloaden via de website van NWO-MES; zie bij resultaten)

Blonk, H. Van der, Jos Benders, Ronald Batenburg & Wim Scheper (2002), Conforming to standards; ERP-systems and technical isomorphism. Paper accepted at the EASST 2002 Conference, July 1 - August 3 2002, York (UK)

Batenburg, Ronald, Jos Benders & Wim Scheper (2002), 'Over 'groene weides' en 'blauwdrukken'; Enterprise Resource Planning in de praktijk'. In: Ronald Batenburg, Jos Benders, Nick van den Heuvel, Peter Leisink & Jeroen Onstenk (red.), Arbeid en ICT in onderzoek, Utrecht: Lemma (pp. 109-122) [ISBN 90-5931-031-4]

(Dit artikel kunt u downloaden via de website van NWO-MES; zie bij resultaten).

Batenburg, Ronald, Jos Benders & Nick van den Heuvel, Peter Leisink & Jeroen Onstenk (2002), 'Arbeid en ICT in onderzoek. Ontwikkelingen op de Nederlandse onderzoeksagenda'. In: Ronald Batenburg, Jos Benders, Nick van den Heuvel, Peter Leisink & Jeroen Onstenk (red.), Arbeid en ICT in onderzoek, Utrecht: Lemma (pp. 17-34) [ISBN 90-5931-031-4]

(Dit artikel kunt u downloaden via de website van NWO-MES; zie bij resultaten).

Batenburg, R., J. Benders, N. van den Heuvel, P. Leisink en J. Onstenk (Red.) (2002), Arbeid en ICT in onderzoek. (224 pp.) Utrecht: Lemma (ISBN 90-5931-031-4)