ERP SaaS value chain: a proposed SaaS model for manufacturing SCM networked activities

Richard Addo-Tenkorang* and Petri T. Helo

Department of Production, Industrial Management Unit, The University of Vaasa, PL 700, 65101 Vaasa, Finland
E-mail: ratenko@uwasa.fi
E-mail: phelo@uwasa.fi
*Corresponding author

Abstract: This paper aims at proposing an ERP-SaaS model systems solution for manufacturing SCM networked value systems to enable the end-customer organisation to decrease the cost of implementation, maintenance and the overall administration of the application. This applied research employed an industrial pilot case study with an OEM industrial partner. The proposed ERP-SaaS model in this paper attempts to propose industrial systems solution value-adding benefits including: low preliminary-and-anticipated ongoing costs, faster implementations and value-adding, affordable ownership cost, greater reliability, improved support, reduced IT complexity and improved business motivation. Salesforce.com is one example of such successful ERP-SaaS systems solution vendors. However, ERP systems delivered as software-as-a-service; is not yet a systems solution that has had a commercial breakthrough, specifically for supply-chain management (SCM) network. Thus, this paper will be very relevant to industries keen on achieving competitive advantage of their SCM network as well as R&D both in the industry and academia.

Keywords: enterprise resource planning; ERP; ERP-SaaS system; SCM value chain.


Biographical notes: Richard Addo-Tenkorang is currently on a visiting research programme with Cranfield University, School of Applied Sciences (SAS), UK, as a support researcher on their ongoing Configuration of Next Generation Aircraft (CONGA) Project and also a Researcher and a third year doctoral student in Industrial Management – University of Vaasa, Finland. He holds an MSc in Digital Enterprise Management and a BEng (Hons) degree in Mechanical Engineering – Universities of Westminster, UK and Wolverhampton, UK respectively. His research interests are in the area of ERP systems (L&SCM) and concurrent engineering for new product introduction/development (NPI/D). He has over seven years working experience in the areas of systems engineering, project management and quality management.
1 Introduction

An enterprise resource planning (ERP) system enables an organisation to integrate all the primary business processes in order to enhance efficiency and maintain a competitive position. Hence, according to Rouhani and Ravasa (2012), the ERP system has been pointed out as a new information systems paradigm. However, without successful implementation of the system, the projected benefits of improved productivity and competitive advantage would not be forthcoming. In its basic definition, ERP is an enterprise-wide information system that integrates and controls all the business processes in the entire organisation. According to Elragal and Haddara (2012), ERP system is an enterprise industrial systems solution that attempts to integrate data and processes in organisations. Thus, data is centrally stored in a single database and this database function as a hub that stores, shares, and circulates data from within the different departments and business functions. Therefore, ERP system is an enterprise information system designed to integrate and optimise the business processes and transactions in a corporation. The ERP is an industry-driven concept and systems, and is universally accepted by businesses and organisational industries as a practical solution to achieve integrated enterprise information systems solution. ERP systems have become vital strategic tools in today’s competitive business environment. The ERP system facilitates the smooth flow of common functional information and practices across the entire organisation. In addition, it improves the performance of the supply chain and reduces the cycle times. However, without top management support, having appropriate business plan and vision, reengineering business process, effective project management, user involvement and education and/or training, organisations cannot embrace the full benefits of such complex system and the risk of failure might be at a high level. The academic research community has been contributing to the field of ERP in various ways. A typical way of contributing to the field is by publishing archival journal papers for public benefits.

The ERP-software-as-a-service (SaaS) model is therefore, of much interest when researching in the future of ERP systems in the supply-chain management (SCM) perspective; however, there seem to be not much academic research published within this area yet. Hence, to enhance and improve connectivity and visibility in industrial enterprise organisations, the option of ‘ERP as a service’ using the SaaS model is now proving to be viable (Danaiaita and Hurbean, 2010). Therefore, when considering the SaaS-ERP model, it seems to challenge the distributors’ business in the ERP system value chain, since the vendor can deliver solutions directly to the end-customer and thereby bypass the distributor. This might not completely undermine the business for distributors, as the future ERP-system value-chain very well could include hybrid SaaS system solutions, where the distributors offer the customised (e.g., SCM network) SaaS system solutions to the end customer.