

Chapter 3.17

Mobile Technologies Extending ERP Systems

Dirk Werth

Institute for Information Systems at German Research Centre for Artificial Intelligence, Germany

Paul Makuch

Institute for Information Systems at German Research Centre for Artificial Intelligence, Germany

ABSTRACT

Nowadays the majority of enterprises use Enterprise Resource Planning (ERP) software to improve their business processes. Simultaneously, mobile technologies which can be used within ERP have gained further importance. This is because ERP, together with mobile technologies, offers a wide spectrum of synergies and both have a significant impact on enterprise efficiency. The improvement possibilities in ERP due to mobility range from sales activities, over logistic processes, up to effects on the human resource management.

DOI: 10.4018/978-1-60566-156-8.ch041

INTRODUCTION

Enterprise Resource Planning (ERP) systems have become the IT backbone of most enterprises. Several publications, articles and surveys mention that almost 70-80% of Fortune-1000 enterprises use ERP systems to improve their business processes. ERP systems have changed the way enterprises conduct their business as many functionalities, which only a few years ago had to be done manually, now are automatically provided by the system.

Similar to the Internet, technologies have largely grown in the last years. E.g. mobile phones have become a standard communication device in most countries. In the near future mobility and flex-

ibility will be a key issue that will enable organizations to withstand competition in an environment characterized by increasing cost pressures. Using mobile technologies for commercial purposes is one option that can certainly make business processes more efficient. This chapter discusses mobile business has opened new opportunities in ERP systems. Furthermore, we also discuss various other business processes that are influenced by mobile technologies (e.g. buying train tickets via the mobile phone). However, it should be noted that the influence of mobile technologies is not limited to consumer interactions. Also, established applications can be enriched by mobile technology resulting in new or improved functionalities. This chapter explores the impact of mobile technology on ERP systems and demonstrate some use cases where such technology can significantly improve ERP functionality.

ERP SYSTEMS

Enterprise Resource Planning Software offers a spectrum of activities which support enterprises to organize important business processes by providing multimodular software applications. ERP systems have evolved in the middle of the 1990s from manufacturing resource planning (MRPII) systems. Such systems aim to plan and steer the output generation within an enterprise. They comprise of all logistic activities, from the purchase planning and execution through the manufacturing planning, steering and supervision to the sales and after-sales activities. MRPII systems mainly cover the logistical view of the enterprise. Extending MRPII systems by human resource management and by financial management has resulted in ERP systems, that aim to cover all activities and business processes within an enterprise. Nowadays every business transaction can be monitored, analyzed and evaluated.

The performance properties of ERP systems are:

- **Branch neutrality:** ERP software is normally not aligned to a specific branch
- **Operating efficiency:** the special emphasis is placed on efficiency, not on technology
- **Modularity:** There are enclosed areas of activity within the software, called modules
- **Integration:** All business activities as an aggregate are continuously supported
- **Standard software:** ERP systems are not designed for individual purpose. In fact they are sold on an anonymous market, but of course they can be customized, i.e. adapted to fit customer needs.

ERP systems differ from each other in their complexity, range of functions and procurement costs. First it depends on the branch the enterprise operates using ERP technology. With an ascending number of suppliers or products, more modern warehouse systems or new distributions channels, the complexity of such a system increases. Second, the size of the enterprise including their whole network matters. Small and medium sized businesses don't need the same range of functions like a worldwide operating multinational company. This certainly has an influence on the price of the software solutions, e.g. small sized businesses can install standard versions, whereas concerns need specially developed additional modules. Third, the number of users working with the ERP system plays an important role. The more accounts work simultaneously, the more powerful hardware is needed to guarantee an unproblematic process. Last, the technological base used to realize an ERP system, especially the database and the programming language, is a key factor determining the complexity and the range of functions.

In the future, ERP systems will be increasingly standardized. Therefore the flexibility and mobility of user interfaces will play a more and more important role in order to generate additional advantages.

4 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/mobile-technologies-extending-erp-systems/48582

Related Content

User Acceptance of Enterprise Resource Planning (ERP) Systems in Higher Education Institutions: A Conceptual Model

Dalal Bamufleh, Maram Abdulrahman Almalki, Randa Almohammadiand Esraa Alharbi (2021). *International Journal of Enterprise Information Systems* (pp. 144-163).

www.irma-international.org/article/user-acceptance-of-enterprise-resource-planning-erp-systems-in-higher-education-institutions/268367

Enterprise Information Systems: Two Case Studies

Hui-Lien Tung, Tina Marshall-Bradley, Joseph Wood, Donald A. Sofge, James Grayson, Margo Bergmanand W.F. Lawless (2010). *Social, Managerial, and Organizational Dimensions of Enterprise Information Systems* (pp. 434-458).

www.irma-international.org/chapter/enterprise-information-systems/37926

Revisiting the Holt-Winters' Additive Method for Better Forecasting

Seng Hansun, Vincent Charles, Christiana Rini Indratiand Subanar (2019). *International Journal of Enterprise Information Systems* (pp. 43-57).

www.irma-international.org/article/revisiting-the-holt-winters-additive-method-for-better-forecasting/227001

Entrepreneurial Values, Environmental Marketing and Customer Satisfaction: Conceptualization and Propositions

Sumesh R. Nairand Nelson Oly Ndubisi (2013). *Enterprise Development in SMEs and Entrepreneurial Firms: Dynamic Processes* (pp. 257-269).

www.irma-international.org/chapter/entrepreneurial-values-environmental-marketing-customer/74470

Predictors of Perceived Learning Outcomes, Satisfaction, and Continued Use Intention in SAP ERP-Enabled Courses

Yu Zhao, Kakoli Bandyopadhyayand Cynthia Barnes (2020). *International Journal of Enterprise Information Systems* (pp. 54-72).

www.irma-international.org/article/predictors-of-perceived-learning-outcomes-satisfaction-and-continued-use-intention-in-sap-erp-enabled-courses/249719