PERFORMANCE MANAGEMENT AND CONTROL
A Case Study in Mercedes Benz Cyprus

A. I. Kokkinaki

Department of Management and MIS, University of Nicosia, 46 Makedonitissas Ave., 1700 Nicosia, Cyprus

A. Vouldis

Sales and Marketing Department, Cyprus Import Corporation Ltd, 49 Kampou Str, 2030 Strovolos, Cyprus

Keywords: Performance Management, Information Systems, Extended Products.

Abstract: This paper is a case study that outlines design and implementation issues related to an application that facilitates process management and controls business performance issues in a retailer of extended products. The notion of an extended product is that of a product bundled with services. Towards this aim, the case study described in this paper focuses on three objectives: to review on existing theory on the subject of designing and developing applications and interfaces for enterprise information systems, to solicit end-users' requirements based on which an information system is designed and developed.

1 INTRODUCTION

This paper is a case study that outlines design and implementation issues related to an application that facilitates process management and controls business performance issues in an enterprise that sells extended products. The notion of an extended product is that of a product bundled with services. Towards this aim, the case study described in this paper focuses on three objectives: to review existing theory on the subject of designing and developing applications and interfaces in enterprises; to identify the target users' requirements for the design and development of such applications; and to design and develop a system for quality management. The value of the research relates primarily to its knowledge contribution to the wider field of designing and developing applications and interfaces for enterprises retailing extended products.

The research is based on both secondary and primary data. Secondary data has been collected through a literature review to create a solid theoretical basis used for the design and the development of interfaces for service-oriented enterprises. Primary data have also been employed from a focus group studying the information system in the sales and marketing department of the Mercedes – Benz Cyprus. A draft version of the focus group framework was pilot-tested by 8 business representatives; minor problems were identified and addressed in the final version. Each framework appraises desired interface, relevance, form and other technical elements related to the described system. Findings from this case study were used for the initial design and development of the various subsystems of this application.

The remaining of this paper is structured as follows. Section 2 presents a brief literature review on information systems that monitor and control performance issues in enterprises. Based on the literature review, users' requirements solicitation was conducted and questions relevant to the design and the development of the specific system were formulated. Section 3 outlines the research findings of the focus group discussion and presents the design and development of the interface and the quality management application, while section 4 concludes this paper.

2 IS FOR PERFORMANCE MONITORING AND CONTROL

Enterprises offering extended products are enforced to operate in a dynamic environment, more so today than ever before. Therefore, agility in the support of business processes and decision making is a major requirement. At large, research examining the adaptive and agile enterprise (Campbell 1998; Davenport 1998; Goranson 1999; Haeckel 1999) outlines the need for an architectural revolution that impedes agility, so that business processes are integrated, integrated outputs are composed and better and faster management is facilitated. Currently, two paradigms of Information Systems support operational agility, namely dashboard applications and systems that rely on Service Oriented Architecture (SOA).
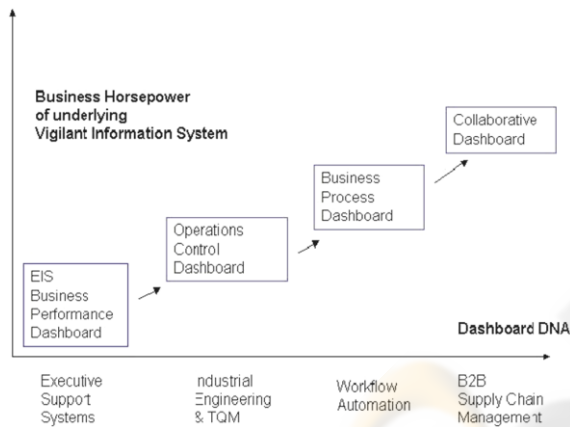

Figure 1: Dashboard Types (Adapted from Houghton et al. (2004)).

Research on dashboard applications (Gray and El Sawy, 2004; Houghton et al., 2004; Pankaj et al., 2006; Nichols et al., 2009) examines how operational requirements are aligned with the design and development of such system. Depending on the underlying technological infrastructure and the specific organisational requirements four types of dashboard applications may be distinguished, that is, EIS Business Performance Dashboard, Operations Control Dashboard, Business Process Dashboard and Collaborative Dashboard. EIS business performance dashboards are derived from conventional executive support systems. Operations control dashboards focus on the operational performance of a specific group of users within an organisation. Business process dashboards monitor the performance of enterprise-wide transactions. Collaborative dashboards are taking under consideration the workflow requirements of transactions and enable participatory actions in an attempt to facilitate its execution. In (Nichols et al., 2009), a theoretical foundation for dashboard creation and implementation has been proposed to formalize the role of dashboards in service oriented organisations.
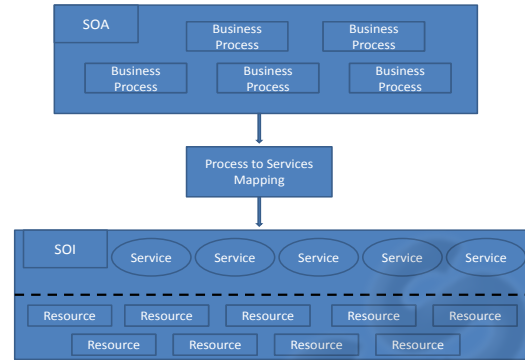

Figure 2: SOA Architecture.

Research on SOA has examined how cross-organisational and inter-organisational business processes may be twined to result into a Service Oriented Enterprise (Brown and Carpenter 2004; Goul Demirkan Nichols). In the SOA paradigm, standardized invocation interfaces for components are mapped to a spectrum of organisational resources including human resources, ICT services, infrastructure etc. Furthermore, the mapping of resources to a specific service in itself is not considered static anymore, because there may be multiple resources capable of performing the required service. Under this conceptualisation, resources are no longer constrained to operate within the boundaries of a static organisational structure but are dynamically orchestrated to support the process that invokes them (Demirkan Kauffman Vayghan Fill Karagiannis and Maglio 2009).

In our paper, we contribute towards the formation of a methodology for the design and implementation of a quality management application for retailers of extended products. The approach followed is outlined in section 3.

3 CASE STUDY: MERCEDES BENZ CYPRUS

Cyprus Import Corporation is the sole distributor of Mercedes-Benz cars in the Republic of Cyprus. Cyprus is a Eurasian island in the eastern

Mediterranean Sea. The Republic of Cyprus is a member of the European Union since May 1st 2004 and has adopted the Euro as its national currency since January 2008. The population residing within the geographical boundaries controlled by the Republic of Cyprus amounts is estimated at 796,9 thousands at the end of 2008 according to the latest official population census of 2008 (Cyprus Statistics Department, 2009). According to the latest IMF estimates, its per capita GDP (adjusted for purchasing power) is, at $46,865, the third highest in the European Union. The researchers come from the School of Business at a private University and the company under study and have experience in designing and implementing enterprise information systems. The main motivation for this research is the alignment of academic interests with a concern voiced by the business community over colloquial fora; this need has also been formally verified through the conducted focus group.

To identify users' requirements for the proposed search system, a group-focus discussion among potential users from the sales & marketing of the Mercedes – Benz Cyprus has been conducted in the first trimester of 2009. First, a draft version of the framework was pilot-tested among 8 representatives of the hosted organization. Minor problems were identified and addressed in the finalized version of the framework. This study has focused on the design aspects that facilitate and support monitoring and control of performance issues in organizations. Through the focus - group, four major clusters of activities have been identified as major contributing factors to improved performance in the service sector. These include activities related to management of personnel (often geographically dispersed and working in different time intervals), managing customers (help desk, services, maintenance etc) perspective customers (consistent and concise communication) and managing the financial flows.

Based on feedback received, the Quality Management System, a model for product and service development support was proposed. Figure 4 outlines the model that includes performance indicators that identify, measure, control, and improve several core business processes throughout the entire organization. It consists of several integrated modules that address the identified aspects of quality management. These modules are interconnected and share a single data repository to enable users have efficient and consistent data access as well as data visibility across business functional units.
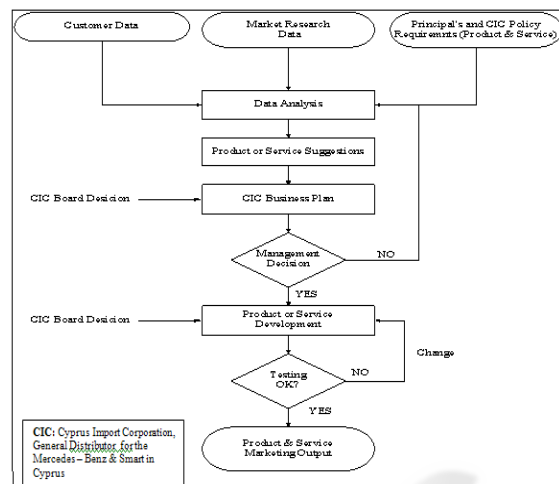

Figure 3: Print screen of the Quality Management system for the sales & marketing department in Mercedes-Benz Cyprus.
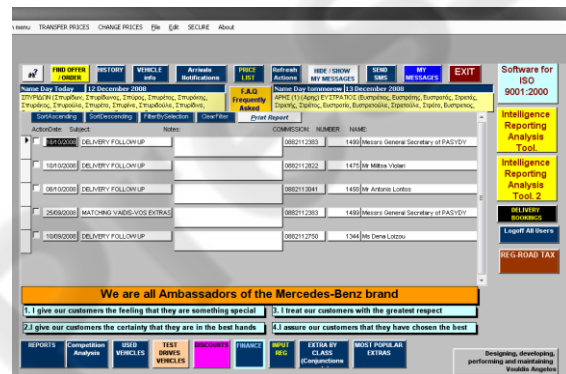

Figure 4: A System for Performance Monitoring and Control for Extended Products.

The system includes integrated modules that include the following:

1. Home, where the user manages the administrative tasks of the systems, including changing Passwords, Login accounts, information about the location of colleagues, pending tasks, setting an appointment with a customer, setting a reminder, making a call to a customer.

2. Calls Management, where the user keeps track of different means of communication with customers and their outcomes.

3. Personnel, where data that is relevant to employees are kept, including personal data, salary details, leaves, reference files, employee training, bonuses etc.

5. Prospected Customers: this module manages and keeps track of information related to the prospected (future) customers of the organisation.

6. Requests/Pending handles customer pending requests and employee tasks within the organisation.

7. Maintenance manages and keeps track of all processes supporting maintenance activities requested by customers.

9. Services: the various types of services offered to the customers; details are kept for the services offered and the charges made.

10. The reporting tool concentrates data from different resources within the company and with a data mining procedure prepares a final new database cube which gives the opportunity to show reports in different dimensions. Before this tool was available, about two working days were needed to prepare the monthly reports but now after the implementation of the Intelligence Reporting Analysis Tool it is possible to complete all the reports in 30 seconds!

11. Debtor Collecting System manages the pending financial issues monitoring information on partial payments, arrangements set and progress reports.

12. Communications monitors all different types of communications initiated or ongoing with customers and partners of the organisation.

13. Back Office, where configuration of processes and interactions are described and

14. General Settings that include other useful administrative details

The home module of the system is shown in Figure 4 and a full demonstration of the system will be provided during presentation.

4 CONCLUSIONS

This paper outlines design and implementation issues of a system that supports performance issues and controlling extended products, namely luxurious cars a set of services that aim to improve customer satisfaction. Towards this aim, three objectives were fulfilled: to review existing theory on the subject of designing and developing applications and interfaces in enterprises; to identify the target users' requirements for the design and development of such applications; and to combine primary and secondary research results towards design and development of a quality management system. This research contributes towards designing and developing applications for performance management in enterprises retailing extended products.

ACKNOWLEDGEMENTS

REFERENCES

Ashby, W., 1969. Self-Regulation and Requisite Variety. *In Systems Thinking*, F. Emery (ed.), Penguin, 1969.

Beshears, F., 2005. *Mintzberg's Taxonomy of Organisational Forms* (http://istsocrates. berkeley.edu/~fmb/articles/mintzberg/).

Brown, G., and Carpenter, R., 2004. Successful Application of Service-Oriented Architecture Across the Enterprise and Beyond. *In Intel Technology Journal* (8:4).

Campbell, A., 1998. The Agile Enterprise: Assessing the Technology Management Issues. *In International Journal of Technology Management* (15:1), p 82.

Davenport, T., 1998. Putting the Enterprise into the Enterprise System, *In Harvard Business Review*.

Demirkan, H., and Goul, M., 2006. Towards the Service Oriented Enterprise Vision: Bridging Industry and Academics. *In The Communications of the Association for Information Systems* (18:26), p 546.

Demirkan, H., Kauffman, R., Vayghan, J., Fill, H., Karagiannis, D., and Maglio, P., 2009. Service-Oriented Technology and Management: Perspectives on Research and Practice for the Coming Decade. *In The Electronic Commerce Research and Applications* Journal (7:4), p 356.

Demirkan, H., and Nichols, J., 2008. IT Services Project Management: Lessons Learned from a Case Study in Implementation. *In International Journal of Project Organisation and Management* (1:2), p 204.

Erl, T., 2004. *Service-Oriented Architecture: A Field Guide to Integrating XML and Web Services.* Prentice Hall, Upper Saddle River, New Jersey.

Gittell, J., 2000, Paradox of Coordination and Control. *In California Management Review* (42:3), p 101.

Goranson, H., 1999. The Agile Virtual Enterprise: Cases, Metrics, Tools, *Quorum Books*.

Haeckel, S., 1999. *Adaptive Enterprise: Creating and Leading Sense-and-Respond Organisation*. Harvard Business School Press.

Houghton, R., El Sawy, O., Gray, P., Donegan, C., and Joshi, A., 2004. Vigilant Information Systems For Managing Enterprises In Dynamic Supply Chains: Real-Time Dashboards At Western Digital. *In MIS Quarterly Executive* (3:1), p 19.

Keen, P., 2004. *Business Process Co-sourcing: Imperative, Historically Inevitable, Ready to Go* (http://www.peterkeen.com/recent/articles/cosourci.htm).

Keith, M., Goul, M., Demirkan, H., Nichols, J., and Mitchell, M., 2006. Contextualizing Knowledge Management Readiness to Support Change Management Strategies. *In Proceedings of the 2006*

Hawaii International Conference on System Sciences, Manoa, Hawaii, 2006.

Koushik, M., 1995. Modeling Coordination in Software Construction: An Analytical Approach. *In Information Systems Research* (6:3), p 220.

Mintzberg, H., 1983. *Structure in Fives: Designing Effective Organisations.* Prentice-Hall, Englewood Cliffs, NY, 1983.

Mookerjee, V., and Chiang, R., 2002. A Dynamic Coordination Policy for Software System Construction. *In IEEE Transactions on Software Engineering* (28:6), p 684.

Nassimbeni, G., 1998. Network Structures and Co-ordination Mechanisms: A Taxonomy. *In International Journal of Operations and Production Management* (18:6), p 538.

Nichols, J., Dermikan, H., Goul, M., and Keith, M., 2009. Towards a Theory of Agile Dashboards for Service Oriented Organisations. *In Proceedings of the Fifteenth Americas Conference on Information Systems*, San Francisco, California. Available at http://aisel.aisnet.org/amcis2009/683

Papazoglou, M., and Georgakopoulos, D., 2003. Service-Oriented Computing. *In Communications of the ACM* (36:10), p 25.

Terwiesch, C., and Loch, C., 1999. Measuring the Effectiveness of Overlapping Development Activities. *In Management Science* (45:4), p 445.