

Complementary controls and ERP implementation success

Severin V. Grabski^{a,*}, Stewart A. Leech^{b,1}

^a *Department of Accounting and Information Systems, Eli Broad Graduate School of Management,
Michigan State University, East Lansing, MI 48824-1121, United States*

^b *Department of Accounting and Business Information Systems, Faculty of Economics and Commerce,
The University of Melbourne, Victoria 3010 Australia*

Received 15 March 2006; received in revised form 18 December 2006; accepted 30 December 2006

Abstract

Many organisations have sought to improve their competitiveness by investing in advanced information technology, such as Enterprise Resource Planning (ERP) systems. They have implemented ERP systems for a variety of reasons, including solving year 2000 issues, reengineering business processes, and facilitating e-business. The implementation of an ERP system and associated changes in business processes, however, is not straightforward. ERP implementation projects are but another example of an information systems development project that needs to be controlled, yet the implementation of an ERP system is significantly different than a traditional system implementation. Control can be exerted by both formal and informal means [Kirsch, L.J., V. Sambamurthy, D-G. Ko, and R.L. Purvis. 2002. Controlling information systems development projects: The view from the client. *Management Science*. 48(4): 484–498]. Research has demonstrated that single modes of control are not sufficient, rather that a portfolio of control modes should be utilized. We expand upon this concept and suggest that this need for a mix of overlapping and redundant control mechanisms identified in the literature is explained through the use of the theory of complementarity [Milgrom, P. and J. Roberts. 1990. The economics of modern manufacturing: Technology, strategy and organization. *American Economic Review* 80: 511–528; Milgrom, P. and J. Roberts. 1994. Comparing equilibria. *American Economic Review* 84: 441–459; Milgrom, P. and J. Roberts. 1995. Complementarities and fit: Strategy, structure, and organizational change in manufacturing. *Journal of Accounting and Economics*. 19: 179–208; Topkis, D.M. 1998. *Supermodularity and Complementarity*. Princeton University Press]. Surveys of chief information officers and internal auditors were conducted to obtain data on the controls used in ERP implementations. We find that

* Corresponding author. Tel.: +1 517 432 2922; fax: +1 517 432 1101.

E-mail addresses: grabski@msu.edu (S.V. Grabski), saleech@unimelb.edu.au (S.A. Leech).

¹ Tel.: +61 3 8344 5314; fax: +61 3 9349 2397.