Innovation, Information Systems Strategic Alignment and Business Value

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ABSTRACT

For more than two decades the strategic alignment of information systems (IS) is one of the most important issues that IS and business managers face and at the same time a major research topic in the IS domain. In this paper the authors present an empirical study of the business value of IS strategic alignment, which examines IS strategic alignment both at the strategy formulation and implementation level. Also, investigated in this paper are the effects of adopting an innovation strategy on IS strategic alignment. The study is based on firm-level data from Greek companies, which are used for estimating econometric models of firm output based on the Cobb-Douglas production function. It is concluded that IS strategic alignment, both at the strategy formulation and implementation level, generates significant business value, increasing considerably the contribution of ICT investment to firm output. Finally, the adoption of innovation strategy has a positive effect on the strategic alignment of IS both at the strategy formulation and implementation level, as it puts pressure on firms to direct their IS investment towards the support of their new innovative products/services, and increases the involvement of organizational units.

Keywords: Cobb-Douglas Production Function, Information Systems Business Value, Information Systems Investment, Information Systems Strategic Alignment, Innovation

INTRODUCTION

As information systems (IS) strategic alignment is defined the extent to which business strategies are enabled, supported and stimulated by information strategies (Broadbent & Weil, 1993). Luftman (2000) provides a more balanced ‘bilateral’ definition stating that ‘Business-IT alignment refers to applying Information Technology in an appropriate and timely way, in harmony with business strategies, goals and needs. This definition of alignment addresses: 1. how IT is aligned with the business and 2. How the business should or could be aligned with IT’. The essence of strategic alignment of IS consists in the establishment of a bilateral relationship between the IS planning process and the business/strategy planning processes, which allows a) the mission, goals, competitive strategy, future directions and action plan of the firm, and also the analysis of both its external environment (e.g., competition, opportunities,
threats) and its internal environment (e.g., resources, capabilities, strengths, weaknesses), which are basic elements of its business/strategy plan, to be taken into account for the formulation of its IS plan, and b) the capabilities, strengths and weaknesses of both the existing IS and the planned ones, the forms and the extent of information and communication technologies (ICT) usage in the industry and the capabilities offered by existing and emerging ICT that may interest and influence the enterprise, which are basic elements of the IS plan, to be taken into account for the formulation of the business/strategy plan.

For more than two decades IS strategic alignment has been one of the most important issues that IS and business managers face and at the same time a major research topic in the IS domain. It has been ranked as the most important issue that IS managers face in the two most recent formal surveys of the key IS management issues that have been conducted by the Society for Information Management (SIM) of USA (www.simnet.org) (Luftman & McLean, 2004; Luftman, 2005). Also, extensive research has been conducted about IS strategic alignment, investigating various aspects of it; critical review of this research are provided by Loukis et al. (2008) and Chan and Reich (2007). One of its main topics has been the investigation of the ‘business value’ that IS strategic alignment generates, with this term denoting its impact on various aspects of business activity and performance. However, as explained in more detail in the following ‘Background’ section, this research has been focused mainly on IS strategic alignment at the strategy formulation level, but has ignored the strategy implementation level, though the strategic management literature (e.g., Wheelen & Hunger, 2004; Johnson & Scholes, 2005) has repeatedly stressed that good strategies sometimes are not implemented properly, so the outcomes are finally much lower than the expectations; for this reason it recommends that more attention should be paid to strategy implementation. Also, recent literature has underlined that IS strategic alignment should be

applied and researched not only at the highest hierarchical levels, in which strategy is formulated, but also in the middle and lower ones, in which strategy is implemented (Chan & Reich, 2007; Bartenschlager & Goeken, 2009). Another weakness of this research has been the lack of a sound theoretical background (e.g., from management science or economics) in most studies, and also the use of subjective measures of business performance and ICT contribution to it (usually firms’ management perceptions). Finally, the effect of strategy on IS strategic alignment has not been investigated; however, it would be interesting for IS and business managers and researchers to examine whether and to what extent various strategies put pressure on firms to direct their IS investment towards the support of the strategy.

This paper contributes to addressing these research gaps by presenting an empirical study of the business value of IS strategic alignment, which examines IS strategic alignment both at the strategy formulation and implementation level; also, it investigates the effect of adopting an innovation strategy on IS strategic alignment. Our study is theoretically founded on the well-established and validated Cobb-Douglas production function and is based on objective measures of business performance and ICT contribution to it; using firm-level data from 231 Greek firms from the 27 most important sectors of the Greek economy, which have been collected in a survey conducted in cooperation with ICAP, one of the largest business information and consulting companies of Greece, econometric models of firm output (value added) are estimated, having as independent variables the employed non-ICT capital, ICT capital and labor, and also the extent of ICT strategic alignment in the firm. These models allow the estimation of the contribution of ICT strategic alignment at various levels to firm output, and compare it to the contribution of the basic inputs (non-ICT capital, ICT capital and labor); in this way we can examine whether and to what extent ICT strategic alignment at various levels increases the contribution of ICT capital to firm output.
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