Chapter 4

Improving the Business Value of IS

Sunghun Chung
McGill University, Canada

ABSTRACT

This review surveys recent study on the business value of Information Systems (IS). The topics covered include theoretical and empirical evidence on the business value of IS, the productivity using Information Technology (IT), the firm value with IT, IT and firm boundaries, IT outsourcing, and supply chain with IT. This work critically reviews the growing literature on improving market performance through IS, discusses various perspectives, raises conceptual and empirical concerns, underscores challenges for further development of this literature, and provides directions for future research.

INTRODUCTION

The rise of the information systems (IS) economy has been accompanied, inter alia, by a large increase in the volume of research devoted to the improvement of firms’ market performance through IS. The growth in research reflects the increased economic importance of the business value of information system, and today, IS researchers using economics as a dominant reference discipline figure very prominently on the editorial boards of most of the major IS journals and are very influential in articulating the business value of IT. In both academic and practical perspective, the business value model was developed to address IT-to-business alignment (Suh, Hillegersberg, Choi, & Chung, 2013), and support IT’s value contribution to the business (Smith, Apfel, & Mitchell, 2006). This chapter attempts to examine the intellectual growth of the field via several different research streams that define the thrust of the theory and what managers have come to know as
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result, in the specific context; improving market performance through IS.

There are several approaches to engaging in research in the field of IS. Behavioral research has been a dominant theme with a strong emphasis on empirical analysis. Analytical models from operations research and computer science have also been a fruitful avenue of research over the past two decades. One area that has gained significant momentum since late 1980’s is the use of the economics paradigm as a way of modeling and testing new models of IS usage and influence. Beginning with the first Workshop on Information Systems and Economics (WISE) held in Boston in 1989 prior to the International Conference on Information Systems (ICIS), the use of economics as a reference discipline for IS research has gained considerable recognition and credibility over the past twenty years. Today, IS researchers using economics as a dominant reference discipline figure very prominently on the editorial boards of most of the major IS journals and are very influential in articulating improving market performance through IS.

On the whole, the basic challenge of management is economics, and the business value of IS: how to choose to employ scarce productive resources to accomplish limited objectives effectively. It is well recognized recently, and increasingly so in post-industrial societies, that information, broadly defined, is a strategic economic resource that must be managed if it is to be productive. A comprehensive literature has developed in the discipline of economics which concerns information, information systems, and information-related phenomena of import to management and the development of management information systems (MIS). Although this literature is vast, this over-view attempts to relate some of this work to MIS and MIS research.

The impact of IS on firms’ market performance has attracted attention from various disciplines of academia. Undoubtedly, the IT industry is providing new opportunities to build on what we already know, to extend it into the future, and to construct new approaches. With its fast innovation and short life cycles, the IT industry serves as a test bed for other industries that help researchers quickly identify relationships, issues, and approaches that will span the entire economy in the future. In addition, business value of IT is emphasized from managerial framework such as the IT Value Wheel (see Figure 1 Ashley & Saadat, 2011 p.3). This framework guides business activities in relation to IT and presents four key aspects (i.e., change agility, cost of operational failure, capability complexity, and cost of ownership) in the management of IT value.

BACKGROUND

By and large, there are the five streams of MIS research until now (R.D. Banker & Kauffman, 2004) as follows:

1. Decision support and design science,
2. Value of Information,
3. Human-computer systems design,
4. IS organization and strategy,
5. Economics of IS and IT.

To focus on topics about improving market performance using IS, this article will limit itself to outlining a few of major streams in MIS research. That is to say, this article highlights results in two general areas: value of information and economics of IS and IT.

First, value of information has following level of analysis: Individual decision markers, technologies in business process context, firm actions in market context. It utilized various theories such as information economics, real options theory, and information sharing theory. Also, various methodologies such as decision trees, analytical models, statistical analysis, mathematical programming,
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