



Chapter XIV

**Methods for Developing
Flexible Strategic
Information Systems: Is the
Answer Already Out There?**

Alan Eardley, Hanifa Shah, and June Lazander-Reed
Staffordshire University, UK

This chapter begins by looking at the changing nature of business strategy as flexible strategies become more important in a changing business environment. It then reviews the phenomenon of strategic information systems that support such flexible strategies, and discusses the problems of developing such systems using existing systems development techniques. Some methods and techniques are described that have recently been put forward as possible solutions to these problems, but the main contention of the chapter is that long-standing frameworks, methods and techniques may offer a solution when used in combination. A range of candidate techniques from the business and IT domains is evaluated using a panel of domain experts, and a three-stage method is suggested that uses the chosen techniques in combination. These techniques are well established and in most cases have been used and proven in other contexts for more than a decade, but their application to the development of flexible strategic information systems is new.

INTRODUCTION

Information systems (IS) that support a flexible strategy are looked upon as a relatively new phenomenon and a key performance factor in modern business.

However, the IS development methods that are currently used are intended to support more “traditional” strategic IS and may not enable the support and the development of flexible systems. This chapter looks at the changing nature of business strategy and examines a framework and some techniques that may help in defining the role of information systems in supporting strategic flexibility. These techniques are well established in some business and information technology domains, but the suggestion for their use in this application is innovative. It is argued that it is worth revisiting them to examine their potential. The aim of the research on which the chapter is based is to suggest a method for developing flexible strategic IS applications that comprises a basic descriptive framework supported by practical techniques.

This is important if IS applications and IT infrastructures are to be sufficiently adaptable and flexible in supporting business strategies that are becoming more changeable (Avison et al., 1997). In the past two decades there have been a number of “classic” case studies describing strategic IS that were cited as being crucial to the strategic success of the companies that developed them (e.g., Hopper, 1990; Clemons and Row, 1988; Boon, 1988). With the value of hindsight, the strategic benefits conferred by many of these systems seem to have been temporary. In some cases the competitive advantage was not sustained because the systems were not sufficiently flexible to cope with subsequent changes in the business requirements (Avison et al., 1996). It is reasonable to suggest that the escalating rate of change in the business and technology environments creates a requirement for more responsive business strategies and consequently a need for IS development methods that will produce more flexible strategic IS. The main ways of ensuring flexibility in an IS are reviewed, and a number of techniques for developing IS flexibility are analysed to assess their suitability for fitting in with the suggested flexibility framework in a strategic IS development method.

BACKGROUND

It is contended that there is a case for reexamining the nature of strategy and the use of IT to support strategic activities. There is no doubt that the technology available to implement strategic IS/IT applications has changed radically since the 1980s (i.e., the era of the “classic” strategic IS). The business world has also changed and new, more flexible approaches to strategic management are in vogue. In addition, many more organisations are now able to exploit IT in support of their strategic goals. These factors combine to imply that greater flexibility is needed in the strategic process in the early 21st century. An examination of some of the most successful strategic IS applications from the late 20th century shows that they were rooted in the relatively inflexible approaches to business strategies that prevailed at

21 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/methods-developing-flexible-strategic-information/4225

Related Content

Development and Validation of a Universal Measurement System for Measuring the Performance of Mammals

Torbjörn Ödman, Natalia Ödman, Eugeni Rabotchi, Sigvard Åkervall and Maria Lindén (2014). *International Journal of System Dynamics Applications* (pp. 17-33).

www.irma-international.org/article/development-and-validation-of-a-universal-measurement-system-for-measuring-the-performance-of-mammals/114921/

Ateleological Developments of "Design-Decisions-Independent" Information Systems

Dimitrios Stamoulis, Dimitrios Theotokis, Drakoulis Martakos and Georgios Gyftodimos (2003). *Adaptive Evolutionary Information Systems* (pp. 81-104).

www.irma-international.org/chapter/ateleological-developments-design-decisions-independent/4215/

From "Self-Tested" to "Self-Testing": A Review of Self-Assessment Systems for Learning

Mingming Zhou (2012). *Intelligent and Adaptive Learning Systems: Technology Enhanced Support for Learners and Teachers* (pp. 119-132).

www.irma-international.org/chapter/self-tested-self-testing/56076/

Recursive Learning of Genetic Algorithms with Task Decomposition and Varied Rule Set

Lei Fang, Sheng-Uei Guan and Haofan Zhang (2011). *International Journal of Applied Evolutionary Computation* (pp. 1-24).

www.irma-international.org/article/recursive-learning-genetic-algorithms-task/61141/

Recurrence Indicators for the Estimation of Characteristic Size and Frequency of Spatial Patterns

Chiara Mocenni and Angelo Facchini (2013). *Complexity Science, Living Systems, and Reflexing Interfaces: New Models and Perspectives* (pp. 209-217).

www.irma-international.org/chapter/recurrence-indicators-estimation-characteristic-size/69463/