# Chapter 9
# Cloud Computing and Information Systems Strategy in Multi-National Companies

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## ABSTRACT

*This chapter explores how information systems (IS) strategy is developed and implemented in multi-subsidiary international groups, and how this has been influenced by the advent of cloud computing and the solutions offered by the major cloud providers. Using an inductive, qualitative research approach, the chapter assesses learnings to date from cloud adoption, reports on individual expert interviews, and discusses future challenges for those companies embarking upon cloud projects. Key issues distilled from the literature and the in-depth interviews with practitioners are identified and discussed. The chapter concludes that cloud has significantly impacted IS strategy within multi-national organizations, allowing flexibility in various scenarios like, for example, moving from monolithic enterprise resource planning applications to a micro-service based architecture. There are nevertheless a range of strategic and operational issues that must be carefully managed and planned for, including multiple aspects of compliance and security.*

## INTRODUCTION

According to Whitten (2004), an information system (IS) is an integrated web of people, processes, data, software, hardware and procedures that interact with each other in order to analyze and distribute collected and processed information, to create value and support the systems inside and outside an organization. This definition also concurs with Beynon-Davies (2009a) who sees IS as the source of information distribution in an organization. Furthermore, IS is holistically defined by Ward and Peppard (2002) as a means of purposeful use of information technology (IT) through interrelated components, interacting with each other in an organized structure. On the premise constructed by the above three definitions, IS is further elaborated with variations in its dimensions and scope in different industries.

In multi-national organizations, the scope of IS is much wider than in smaller enterprises, and hence it encapsulates a greater range of system components. Kraemer and Dedrick (2001) and Jalava and Pohjola (2002) viewed IS as the enabler of integrated marketing infrastructure and enhanced product development, as well as supporting corporate expansion to geographically diverse locations, and facilitating decentralized decision making in subsidiaries, resulting in better returns on IT investments. However, Agarwal and Dhar (2014) noted that IS had transitioned rapidly over the previous years, mainly due to a decrease in the cost of technology, with improved processing capabilities such as those available in cloud solutions, which has enabled IS to be a major source of value creation in an organization.

This chapter consists of six sections. After this introduction, the following two sections examine the background to IS strategy and the research methodology for the study. Based on semi-structured interviews with IT managers and industry experts, the findings are then set out and key issues discussed. Finally, the concluding section draws together the main themes discussed in the chapter and assesses some of the key future issues for using a cloud approach in IS strategy development and implementation.

## RELEVANT LITERATURE

### IS Strategy

The definition of IS strategy has evolved over recent decades and researchers have taken different approaches to its interpretation; hence, a clearly defined and universally agreed IS strategy concept is not available (Chen et al., 2010; Karpovsky et al., 2014). Such inconsistencies are mainly a product of the radically transient business environment of recent years, where the scope of operations of organizations has extended across borders, and manufacturing is outsourced to different countries and the technology landscape has been transformed (Martin, 2014). The terminology used to represent IS strategy has been inconsistent: IS strategy, Strategic IS Planning (SISP), IT planning, IS planning, etc. (Karpovsky et al., 2014; Peppard & Campbell, 2014).

IT, IS and information management (IM) strategies are important enablers of the transitioning of an industrial society towards a knowledge society (Anderson & Vendelø, 2004). This transformation influences most aspects of our lives. Many studies (Bartlett et al., 2013; Beer et al., 2005; Beynon-Davies, 2009b; Denford & Chan, 2009) have shown that misalignment, or lack of alignment, between IT, IS and IM strategies and overall business strategy is one of the main reasons why enterprises fail to exploit the full potential of their investment in information technology and systems. The problem is particularly complex when a company is operating in an international context and has a multi-subsidiary business model (Chi-Hung et al., 2012; Mohdzain & Ward, 2007). Organizations that have accomplished a high degree of alignment are often associated with better business efficiency and effective performance (Porter & Millar, 1985; Khosrowpour, 2005).

The alignment of overall business strategy and IS strategy has consistently been one of the top concerns of the company IT Director or Chief Information Officer (CIO) (Anderson & Vendelø, 2004; Kuruppu, 2012). In the late 80s, Henderson and Venkatraman (1989) proposed a strategic alignment model (SAM), which is considered one of the most widespread and accepted models among the alignment community. Today, many academic papers, journals, books and business cases exist on this topic, but individual studies on how IS strategy is developed and implemented in a multi- subsidiary international Group are rare indeed; and there is no specific conceptual model or framework of how this can be achieved in an

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