Chapter 5.19
From ASP to Web Services:
Identifying Key Performance Areas and Indicators for Healthcare

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ABSTRACT

Value creation from e-business for customers in healthcare is an important topic in academic and practitioner circles. This chapter reports the findings from a two-year research study, which found that disappointing results from the much-hyped application service provider (ASP) business model is currently being replaced by perceived new opportunities from Web services. Yet past failings from ASP do not guarantee future success with Web services models, particularly as evidence shows that accruing value-added benefits from e-business initiatives is often fraught with difficulty. Healthcare is no exception, and is likely to pose more problems given the complexity of the organizational structures, processes, procedures, and activities within this vertical sector. This research study calls for a more rigorous approach in identifying and evaluating key performance areas and indicators from new e-business initiatives involving emerging technologies and platforms such as Web services. Yet the measures and metrics used for healthcare may differ from those adopted in other sectors. Healthcare professionals will therefore need to develop context specific key performance areas (KPAs) and KPIs, and caution against accepting at "face value" the value proposition devised by Web service providers.

INTRODUCTION

The process of healthcare management modernization is maturing in Europe, North America, and in other developed countries. This has resulted to an exponential increase in demand for rapid business process execution, more accurate and timely information, and additional automated

information systems (IS). Interest in Web services is emerging in many different guises. As subset of e-business, Web services offer customers software as a service. The principle of operation is similar to the application service provision (ASP) model, priced on a pay-as-you-go, utility model of business computing (Currie, Desai, & Khan, 2004). Against a background of disappointing results from ASP (Hagel, 2002), Web services are designed to resolve problems of poor integration (interoperability) between software applications and low customer satisfaction. This research study treats the Web services business model as the main unit of analysis and seeks to identify how value is created for customers (Perseid, 2003; Sleeper & Robins, 2001). Despite the promises of vendors, Web services have fared poorly in terms of attracting a large client base (CBDI, 2003). The reasons for this are both technical and commercial (Hagel, 2002). The fallout from the ASP market provides some important lessons for vendors offering software as a service, and for e-business models more generally.

This chapter presents the findings from a two-year research that examines both the supply side and customer side of deploying, hosting, and integrating e-business models, focussing primarily on Web services in the UK health sector. The chapter is structured into three main areas. It begins with a discussion of ASP taxonomies and argues that the various templates for ASP were essentially flawed for a combination of technical or business reasons. Within the healthcare sector, technology vendors failed to develop e-business models that created value for customers. They adopted a technology push strategy where product and services are offered to customers without a clear understanding of their business requirements (Cassidy, 2002). This section is followed by an overview of the research study and methods used for data collection and analysis. Next, we present the results from a questionnaire survey and interviews with healthcare professionals. Using a risk assessment framework, which captures five

key performance areas (KPAs) for evaluating the software-as-a-service business model (which includes both ASP and Web services) (Currie, 2003), this research applies this framework within the healthcare sector. Comparing the results from healthcare with those of five sectors (Currie et al., 2004), we observe that priorities and preferences vary. This suggests that service provider vendors need to identify a more rigorous approach in developing their value propositions from e-business for specific industrial sectors, since a *one-size-fits-all* approach is inappropriate. The chapter concludes by offering future directions for research on emerging technologies within healthcare.

LESSONS FROM THE FIRST PHASE OF THE ASP MODEL

The emergence of the ASP model suggested an answer to prevailing question: "Why should small businesses and non-IT organizations spend substantial resources on continuously upgrading their IT?" Many believed that application outsourcing, using the ASP model could provide the solution to enhancing IT efficiency and reducing the total cost of ownership of IT (IDC, 2000). Within the context of healthcare, ASPs could offer both horizontal (business facing) and vertical (sector specific) software solutions. An example of the latter could be in the form of electronic patient records (EPR) systems (Guah & Currie, 2004). An ASP assumes responsibility for buying, hosting, and maintaining a software application on its own facilities, publishing its user interfaces over the networks, and provides its clients with a shared access to the published interfaces. The customer simply has to subscribe to the service to receive the application over an Internet or dedicated intranet connection, as an alternative to hosting the same application in-house (Guah & Currie, 2004).

The impetus behind ASP was fuelled by the

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