Application Service Providers

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INTRODUCTION

Until recently, the development of information systems has been ruled by the traditional "make or buy" paradigm (Williamson, 1975). In other words, firms could choose whether to develop particular applications within their organizational structure or to acquire infrastructures and competences from specialized operators. Nevertheless, the Internet's thorough diffusion has extended the opportunities that firms can rely upon, making it possible to develop a "make, buy, or rent" paradigm. Application service providers represent the agents enabling this radical change in the IS scenario, providing clients with the possibility to rent specifically-tailored applications (Morabito, 2001; Pasini, 2002).

Our research aims at analyzing ASPs in terms of organizational characteristics, value chain, and services offered. Moreover, we analyze the set of advantages that ASPs can offer with respect to cost reductions, technical efficiency, implementation requirements, and scalability. Finally, we describe the major challenges these operators are currently facing and how they manage to overcome them.

BACKGROUND

ASPs are specialized operators that offer a bundle of customized software applications from a remote position through the Internet, in exchange for a periodic fee. ASPs provide for the maintenance of the system network and for upgrading its offer on a continuous basis. The historical development of ASPs follows the diffusion of the Internet. Early actors began to operate around 1998 in the U.S., while a clear definition of their business model has only recently come to shape. As opposed to traditional outsourcing, the ASP offer is based on a one-to-many relationship that allows different clients to gain access to a defined set of applications through a browser interface (Factor, 2001).

MAIN FOCUS

Information and Communication Technology (ICT) is widely believed to represent a crucial determinant of an organization's competitive positioning and development (Brown & Hagel, 2003; Varian, 2003). On the other hand, companies often face the problem of aligning corporate strategies with ICT resources and capabilities (Carr, 2003), in order to rely on the necessary applications at the right time and place, allowing for the effective implementation of business strategies. The inability to match corporate strategy and ICT capabilities might lead to efficiency and efficacy losses. In particular, Information Systems are among the organizational functions most affected by the organizational and strategic changes induced by the Internet. Historically, firms could rely on two possibilities for designing and implementing Information Systems. The first option is to develop applications internally with proprietary resources and competences. The second possibility is to acquire such solutions from specialized market operators. Despite the conceptual relevance of this distinction, the range of applications currently available on the market is ample and encompasses a series of hybrid solutions that lie on a continuum between the make and the buy option (Afuah, 2003; Bradach & Eccles, 1989; Hennart, 1993; Poppo & Zenger, 1998). In that sense, standard outsourcing relations hardly ever take the shape of pure spot solutions. On the contrary, outsourcing contracts often develop into long-run partnerships (Willcocks & Lacity, 1999). Therefore, the ASP model can be conceived as a hybrid solution located on the continuum between market and hierarchy (Williamson, 1975). Nevertheless, as shown in the following paragraphs, the ASP option presents

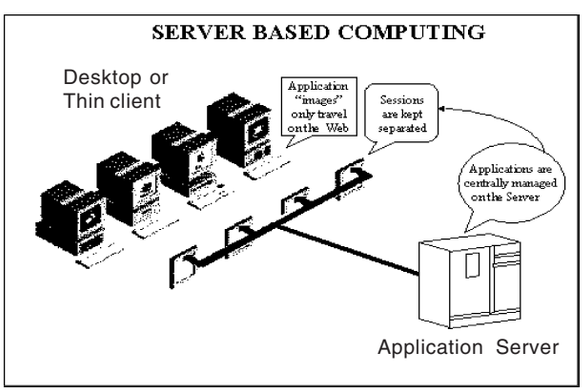
particular, stand-alone peculiarities and features such as to make it different from traditional make or buy models and to acquire a level of conceptual legitimacy in itself.

The ASP model is based on two key technologies: Internet and server-based computing. The first technology represents the building network of the system, while server-based computing allows many remote clients to obtain access to applications running on a single server. The functioning mechanism is quite simple: the server manages as many protected and separate sessions as the number of logged-in users. Only the images of the interface, client-inserted data and software upgrades "travel" on the Internet, while all applications reside on the server, where all computations also take place. Figure 1 provides a visual representation of the functioning of a server based computing system.

Client firms can rent all kinds of business applications, ranging from very simple to highly complex ones, as described below:

- Personal applications, allowing individual analysis of basic, everyday activities and tasks (e.g., Microsoft Office).
- Collaborative applications, supporting the creation of virtual communities (e.g., groupware, e-mail, and video-conference systems).
- Commercial applications, aimed at creating and maintaining e-commerce solutions.
- Customer Relationship Management systems (e.g., customer service, sales force automation, and marketing applications).

Figure 1. Server-based computing technology (Source: our elaboration)



- Enterprise Resource Planning, applications aimed at the automation of all business processes, at any organizational level (e.g., infrastructure management, accounting, human resources management, and materials planning).
- Analytical applications that allow for the analysis of business issues (risk analysis, financial analysis, and customer analysis).

Along with these applications, ASPs offer a wide array of services, as reported below:

- Implementations services that are required in order to align applications and business processes. These services include, for example, data migration from previous systems to the ASP server and employees' training.
- Data centre management services, aimed at assuring the reliability and security of hardware and software infrastructure, as well as transferred data.
- Support services, delivered on a non-stop basis, in order to solve technical and utilization problems.
- Upgrading services, aimed at aligning applications with evolving business needs and environmental change.

ASPs can hardly be fit into a single, monolithic categorization (Seltsikas & Currie, 2002). In fact, operators can be grouped into different classes, according to their offer system and market origins (Chamberlin, 2003). The first category includes enterprise application outsourcers, which are traditional operators in the field of IT outsourcing that deliver ASP services. They can rely on profound process knowledge, sound financial resources and wide geographic coverage. On the other hand, their great size can have negative impacts on deployment time, overall flexibility, and client management.

The second category of actors refers to pure-play ASPs, that usually demonstrate the highest degree of technical efficiency and competency in application infrastructure design and implementation. As opposed to enterprise application outsourcers, they are flexible, fast at deploying solutions and extremely attentive towards technology evolution, although they might be hampered by financial constraints and limited visibility.