Electronic Business Models Design for Public–Private Partnerships

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INTRODUCTION

Public-private partnerships (PPPs) provide an alternative model for producing and delivering public services, both the traditional public services and the electronic ones (i.e., the ones delivered through electronic channels, such as the Internet or other fixed or mobile network infrastructures; Aichholzer, 2004; Andersen, 2003; Broadbend & Laughlin, 2003; Jamali, 2004; Lutz & Moukabary, 2004; McHenry & Borisov, 2005; Nijkamp, Van der Burch, & Vidigni, 2002; Spackman, 2002; Wettenhall, 2003). The basic concept of the PPP model is that the public and the private sectors have different resources and strengths, so in many cases, by combining them, public services can be produced and delivered more economically and at higher quality. In this direction, a PPP is a medium to a long-term relationship between public organizations and private-sector companies, involving the utilization of resources, skills, expertise, and finance from both the public and the private sectors, and also the sharing of risks and rewards in order to produce some services, infrastructure, or other desired useful outcomes for the citizens and/or the businesses.

Information and communication technologies, and in particular the Internet and WWW (World Wide Web) technologies, have opened a new window of opportunity for a new generation of PPPs for offering new electronic public services in various domains, for example, for developing and operating public information portals (Andersen, 2003), electronic transactions services (Lutz & Moukabary, 2004), electronic payment services (McHenry & Borisov, 2005), value-added services based on public-sector information assets (Aichholzer, 2004), and so forth. However, before such a new service is developed, it is of critical importance to design systematically and rationally its business model, which, according to Magretta (2002), incorporates the underlying economic logic that explains how value is delivered to customers at an appropriate cost and how revenues are generated. Vickers (2000) argues that most of the failures of e-ventures (also referred to as dot-coms) are due to the lack of a sound business model or due to a flawed business model. However, most of the research that has been conducted in the area of e-business models is dealing mainly with the description and abstraction of new emerging e-business models, the development of e-business-models classification schemes, and the clarification of the definition and the components of the business model concept, as described in more detail in the next section. On the contrary, quite limited is the research on e-business-models design methods despite its apparent usefulness and significance; moreover, this limited research is focused on private-sector e-business models. No research has been conducted on the design of PPP business models for offering electronic services.

In the next section of this article, the background concerning PPPs and e-business-models research is briefly reviewed. Then a new framework for the design of e-business models is presented, which has been customized for the design of PPP business models for offering electronic services. Next, the above framework is applied for the design of a PPP business model for the electronic provision of cultural-heritage education for the project E-Learning Resource Management Service for the Interoperability Network in the European Cultural Heritage Domain (ERMIONE) of the eTEN Programme of the European Union (Grant Agreement C517357/2005). Finally, the future trends and the conclusions are outlined.

BACKGROUND

PPP is defined as "an institutionalized form of cooperation of public and private actors, which, on the basis of their own indigenous objectives, work together towards a joint target" through "leveraging joint resources and capitalizing on the respective competences and strengths of the public and private partners" (Jamali, 2004, p. 416). Even though in the past various forms of public-private mixing arrangements had been used (such as mixed enterprises, outsourcing, subsidization, etc.), the concept of PPP appeared in the early '90s when the Private Finance

Initiative (PFI) was introduced in Great Britain; it envisaged that private companies would design, build, operate, and finance hospitals, schools, prisons, and so forth, and the government would agree to purchase their use as a service for a fixed period of time (Spackman, 2002; Wettenhall, 2003). The evolution of the PFI concept resulted later in the PPP concept. In general, PPPs shift government ministries and agencies from financing, owning, and operating assets to contracting the private sector to finance, build, and operate assets, and to deliver public services using these assets. The private sector is paid for these services, or is given a share of the income generated from them or some other rights. The main drivers for PPP have been improving efficiency in the production and delivery of public services, and finding alternative methods of financing the investments required for developing public infrastructure and for offering public services.

A wide spectrum of PPP forms have been used for achieving various public-sector objectives, such as public-infrastructure building (e.g., roads, bridges, hospitals, energy stations, telecommunications, etc.), urban-areas renewal, rural-areas development, the solving of various social problems, environmental protection, education, the provision of community-based services for disadvantaged children, technology research and development, and so forth (Jamali, 2004; Nijkamp et al., 2002; Spackman, 2002; Wettenhall, 2003), and recently for the provision of electronic services (Aichholzer, 2004; Andersen, 2003; Lutz & Moukabary, 2004; McHenry & Borisov, 2005). However, the relevant literature strongly emphasizes that PPP has resulted not only in successes but also in failures (e.g., Jones, 2005). The central critical success factor of a PPP is to reconcile the different values and objectives of the participating public and private actors (Pongsiri, 2002); in this direction, it is of critical importance to develop an appropriate regulatory and contractual framework that accomplishes the following:

- provides assurance to the public sector that the PPP operates efficiently and in line with their policy objectives (e.g., economic development, environmental protection, various social policy objectives, etc.) without opportunistic or inappropriate behaviors from the private actors
- provides assurance to the private actors concerning their protection from expropriation, the arbitration of commercial disputes, respect of contractual agreements, and legitimate recovery of costs and profit proportional to the risks undertaken

In general, the whole business model of a PPP is of critical importance for its success. The business-model concept has been created and used in management study and practice as a unifying unit of analysis that incorporates a number of important decision variables and parameters, which are of critical importance for the success of entrepreneurship and business, and for the development of theory in this area (Morris, Schindehutte, & Allen, 2005). Pateli and Giaglis (2004), based on an extensive literature survey, classify the research that has been conducted on e-business models into eight subdomains: definitions, components, taxonomies, conceptual models, design methods and tools, change methodologies, evaluation models, and adoption factors. They also argue that most of this e-business research lies mainly in the first three subdomains (definitions, components, taxonomies), while limited research has been conducted in the other five subdomains.

Historically, the first research stream in this area focused on the clarification of the definition and the components of the business-model concept. There is no generally accepted definition of a business model; in the relevant literature there are many definitions, which can be grouped into three categories according to their basic focus. The first category of definitions focuses mainly on the economic model, that is, how revenue and profits are generated. For example, Stewart and Zhao (2000) define the business model as "a statement of how a firm will make money and sustain its profit stream over time." The second category of definitions focuses on the value created for the customer and on the value-production architecture. For example, Linder and Cantrell (2001) define a business model as "the organization's core logic for creating value." The third category of definitions focuses mainly on the strategic level. For example, Slywotzky (1996) defines a business model as "the totality of how a company selects its customers, defines and differentiates its offerings, defines the tasks it will perform itself and those it will outsource, configures its resources, goes to market, creates utility for customers and captures profits." Based on a synthesis of existing definitions of business models, Morris et al. (2005) propose the following definition: "A business model is a concise representation of how an interrelated set of decision variables in the areas of venture strategy, architecture and economics are addressed to create sustainable competitive advantage in defined markets."

Other researchers adopt the approach of defining the business-model concept by specifying its primary elements and their interrelations. Characteristic is the approach of Timmers (1998), who defines a business model as "an architecture for the product, service and information flows, including a description of the various business actors and their roles; a description of the potential benefits for the various actors; and a description of the sources of revenues." In the same line, Weill and Vitale (2001) define a business model as a description of the roles and relationships among a firm's consumers, customers,