

Collaborative Working in an ISP Environment

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INTRODUCTION

The way of life has changed with the introduction of information and communication technologies (ICT) in every one's day to day activities and the business. As ICT technologies are constantly evolving, many people attribute the success of enterprises to the ways they deploy and take advantage of new technologies, not only to make their operations more efficient but most importantly to refine and adopt new effective and adaptive business models. Since the advent of the Internet and the very first Internet service providers (ISP) in operation, the traditional ISP market has been in constant evolution due to the gradual globalisation and commoditisation of ISP services. Deregulation and ICT policies have fostered competition (e.g., unbundling of the local loop and so forth) as well. The Internet is as an important channel of interaction inside and/or outside enterprises. The essence of the Internet is conducting business and running of business processes over data communication networks based on non-proprietary standards (Porter, 2001). The World Wide Web as a portal represents a major electronic business (e-business) platform accessed through communication channels provisioned by network and service providers (such as ISDN, DSL, WLAN, UMTS, etc.). There are many challenging aspects of the e-Business that must be considered for a sustainable business of an ISP (Petrie et al., 2004). Among such significant aspects the following have to be taken into consideration:

1. The impact of business globalisation: most organisations are coping with the globalisation of the economy and the importance to be visible at global markets.
2. User of ICT and partnerships represent the digitalisation of the entire economy.
3. The introduction of new communication technologies and channels forces organisations to revise the way they conduct business.
4. Use of skills independent of the location to deliver cost-effective solutions.
5. The increased end user or customer mobility obliges organisations to propose tailored service offers adapted to new conditions.
6. Small and medium-size enterprises are taking a leading role in delivering tailored services, by making use of the ICT and skills available with partners.

Small and medium-size enterprises (SME) being backbone of the national economy and creative business development, it is important to develop the flexible platform so that skills and expertise of SMEs can be used in the global business model, for competitive solutions development. This paper identifies the business models and business scenarios with such a cluster of SMEs acting as a virtual Internet service provider (VISP) but it has to be mentioned in this place that the goal of this paper is to present the concept, the initiative, business models and market context of VISP rather than for example architectural details which are quite complicated and have been (Pollet et al., 2006) and will be precisely described in other papers. The Virtual enterprises can operate at community level (without having a registered trademark) or as a registered single company (enterprise mode). The business model addressed in this paper addresses both these modes of virtual enterprise targeting the VISP business.

This article is organised as follows: In the *Background* section, why such an initiative as VISP has been taken up is explained. The concept of VISP is introduced both from traditional and the one adopted in this paper points of view. The new approach to VISP

business and understanding of VISP concept in terms of organisational-, market-, and business-related aspects is briefly discussed. In the section *Main Focus* of the article, the most important differences between SMEs (especially from the small and medium size internet service providers point of view) and large entities are given. Next the most important threats and chances related to ISP business are discussed. Finally the new possible understanding of ISP business model as well as its possible realization using service-oriented architecture is shortly discussed for further consideration. In the next section, the VISP initiative with combination of three different strategies: volume, value, and content strategy is presented. Also these three strategies are quite precisely presented in the course of this section. In the next two sections the future trends related to virtual enterprises and short conclusions are given.

BACKGROUND

The concept of virtual organization or virtual enterprises is not new. It can be perceived from very different points of view which is the subject of intensive research (Camarinha-Matos, 2002, 2004; Camarinha-Matos et al., 2003, 2005; Cunha & Putnik, 2006; Putnik & Cunha, 2005; Zirpins et al., 2005;) and can be perceived as a starting point for considerations about virtual Internet service provider (VISP). The concept of virtual ISP may have very different meanings since the virtualization can be perceived from very different points of views. In the context of this paper virtual ISPs can be considered as monolithic business entities that sell wholesale services—for example, they sell hosting, access and applications services (e.g., DNS, e-mail, etc.)—to customers that want themselves to become ISPs and just have to re-brand these services to sell them to their customers.

VISP by concept is not new. A traditional VISP represents a Web portal that can be reached through any access networks to reach variety of services and products available at the portal. Typical examples are Amazon.com, ebay.com, and so forth, which provide the platform to trade across a portal. Such portals manage business processes involved with a standard ERP (enterprise resource planning) and hence well controlled. These portals thus provide the brokerage platform to do business, and allow any third party to become supplier of services and goods. Such VISP models are not

interesting for SMEs to enter into business when the profit margins are quite thin.

SMEs are facing the problem of providing tailored services to their customers in the context of increased complexity of information and communication technologies that require highly skilled and flexible human resources that are difficult to acquire. Moreover, there is a very significant initial cost associated with back-office and front-office deployment for Internet services providers and especially for SMEs. In the competitive business scenario, the SMEs with suitable skills and know-how, can form the virtual organisation in the form of the cluster representing the virtual organisation, and provide tailored Internet services to suit to the market requirements. For developing tailored services, individual service blocks should be modular to facilitate creation of new services using such service building blocks. The challenge of virtual ISP business presented in this paper is to specify, produce, and validate an integrated platform able to accommodate these building blocks from their specification up to their deployment in a production network. Of course, one of the most important functional requirements is that there should be the possibility for dynamic adding, modifying or removing building blocks from the VISP platform.

To address such a challenging objective, a research project named VISP has been launched in the European Research Area (ERA) framework. The platform(s), idea(s), tool(s) and solution(s) created and developed as artefacts of virtual ISP project that is being realized within European 6th framework research programme, will enable a cluster of SMEs to collaborate and operate as a single business entity for producing tailored Internet Services adapted to local business needs. In other words, the VISP concept described in this document consists primarily in virtualizing an ISP using a cluster of partners that behave as a single business entity and will allow selling tailored (individual) services to business customers.

The project Web site (www.visp-project.org) will provide detailed description and early results of the project.

MAIN FOCUS OF THE ARTICLE

Identifying internal organization and business model appropriate to a “virtual ISP” acting as a “cluster” of SMEs operating as a single business entity for the

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