

iDBE for SMEs: Towards a European Approach of regional Development in Romania and Portugal

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The Digital Business Ecosystem (DBE) is a part of the next ICT generation, and a gateway of SMEs to global markets, and to increased competitiveness. Romania and Portugal SMEs are interested in adopting this tool, to become real and efficient players of the European Knowledge Economy. The main objective of the FP7 Marie Curie project “Analyzing the potential of Digital Business Ecosystems (DBEs) to enhance regional development of Bucuresti - Ilfov and Galicia & North Portugal (BI&GNP) Regions” (acronym DBEforSMEs) is to develop a strategic and sustainable partnership on DBE implementation BI&GNP Euro-Regions. A long-term cooperation program between seven Academia/Industry partners from five EU Member States exploiting the participants’ complementary competences is envisaged.

1. Introduction

The Lisbon European Council of March 2000 set the main goal of making Europe the world’s most dynamic and competitive knowledge-based economy by 2010 with the need to promote an “Information Society for All”.

1.1 EU strategy on knowledge economy

The main goal of the Lisbon strategy <ec.europa.eu/archives/growthandjobs_2009>, an instrument for the transition from the post-industrial economy to the knowledge economy, is to implement all around Europe a knowledge-based society, which considers knowledge as the key resource of nations, companies, and people for

sustaining the European social model, where new competitive factors should be build based on knowledge.

1.2 SMEs development in the light of Knowledge Economy

“Small enterprises are the backbone of the European economy. They are a key source of jobs and a breeding ground for business idea (European Charter for Small Enterprises, <ec.europa.eu/enterprise/policies/sme/files/charter/docs/charter_en.pdf>.

On their way to the knowledge economy, technology driven SMEs have to become knowledge driven companies, who are using knowledge management practices, and their own intellectual capital to become more competitive and sustainable. In the next period, SMEs should be focused on digital tech absorption, on implementation of Information and communication technologies (ICT) as a gateway of SMEs to the e-business.

2. Digital tech adoption by SME

Digital tech absorption is often described as the „gateway” of small organisations to global business and markets, and the success of the adoption of digital technologies in Europe is critically dependent on whether the small organisations are fully engaged in the strategic adoption process (Nachira et al., 2002).

The adoption of Internet-based technologies for e-business is a continuous process, with sequential steps of evolution (Figure 1). The first three phases of ICT adoption (*e-Mail*, *web-presence*, and *e-commerce*) took about 25 years, and did not imply cultural changes.

The Fourth phase: *e-business* (from 1999) Internet technology allows the enterprises to connect effectively and directly with clients, suppliers, and business partners.

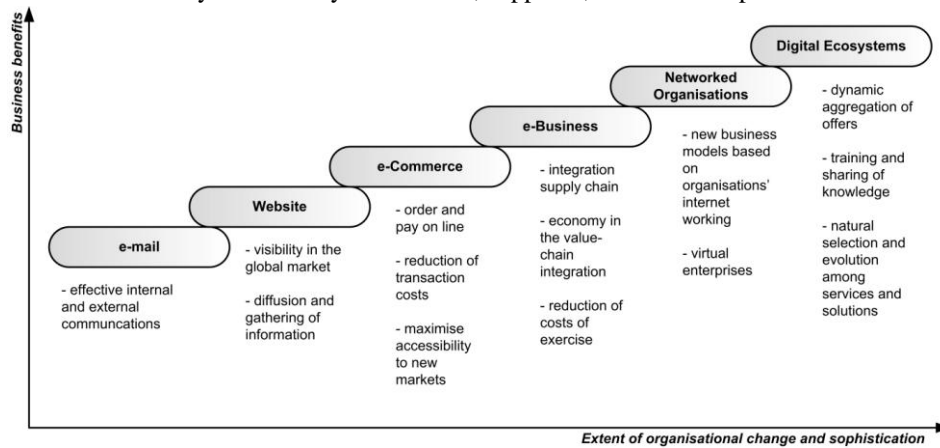


Figure 1 ICT adoption Process

Networked organizations are a response to restructure and respond to the new digital market, where there has been a growing recognition of the need for new types of organizational structure (Nicolai, 2007). Groups of organizations adopt networked methods of cooperative work, make associations for exploiting the market opportunities, combine their products and services, could jointly produce, and offer new

services and products. The boundaries among the organizations start to fade, forming networked organisations illustrated in Figure 2.

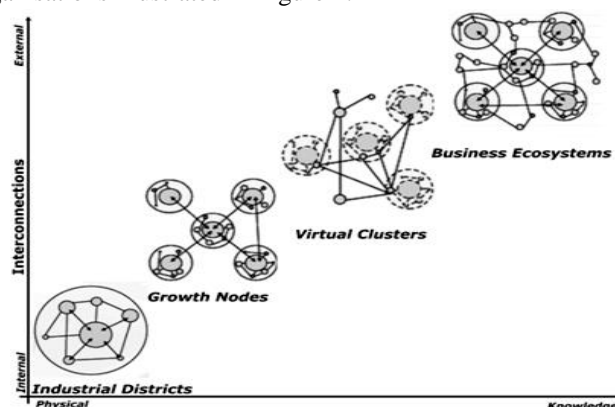


Figure 2 Networked organization (Nicolai 2007)

The latest step in the adoption of Internet-based technologies for business is called **digital business ecosystem**, characterized by intelligent software components and services, knowledge transfer, interactive training frameworks, integration of business processes.

3. DBE - a driving tool for European economy transformation

The Digital Business Ecosystem (DBE) is part of the next generation of information and communication technology (ICT), and the gateway of SMEs to global markets.

Even though DBE are still emerging, their characteristics are already clear: DBE transform the “Internet” into an environment where services can be developed/delivered; DBE uses a open source principles (open knowledge), so that no single organization dominates or controls the “ecosystem”; DBE’s open software applications and services will evolve, and re-organize themselves, adapting to the needs of DBE’s end users, especially SMEs.

3.1 European perspective on DBE

The EU vision on digital ecosystems (DE), (2002), is able to evolve into distributed cognitive systems, to embed mechanisms of evolution and adaption to local needs and cultures. It has a democratically, and socially built content, and enables the economic participation of small producers of knowledge and services. Specific research and development efforts (The eEurope Action Plan 2002, The Opportunities Ahead, and The Digital Business Environment (DBE) Initiative) have been directed by EC to foster ICT adoption by small enterprises, and to increase their use of ICT-based services, leading to improved businesses networking and greater competitiveness.

A new “science” of Digital Ecosystems (DE emerges in EU, and a long-term vision and research agenda has been defined. A significant number of SMEs from pilot regions are exploiting the ecosystem, based on the FP6 PEARDROP project. The main achievement of the DBE Early community is the agreement of Regional Catalysts to launch a European Network supporting the Digital Ecosystems deployment, starting with 30

Regions (REDEN project). Romania and Portugal are interested in joining the European Network supporting the Digital Ecosystems deployment.

3.2 SMEs perspective on DBE

Based on the level of technical competence, and the extent of the needs to work in a collaborative way of a SME, the following key roles/user scenarios have been defined in a DBE (Shelton, 2006): *Driver* (initiates the development of a DBE), *Discoverer* (identifies the potential for implementation of a DBE), *Implementer* (develops services for a DBE), *End User* (uses the services of a DBE), *Regional Catalyst* (is responsible for engaging companies in a DBE as implementers and users), and *Influencer* (develops policies to stimulate the development of a DBE in its region). The benefits to be gained from participation in a DBE depend on the role undertaken.

Through the open access nature of the DBE, more easily implemented solutions can be accessed, that can work with the own legacy systems of a company (Nakira et al., 2007).

4. Towards a European approach of regional development in Romania and Portugal

The DBEforSMEs project is built up to support the regional development in Romania and Portugal, with the view to start the implementation process of DBE in BI&GNP regions. It aims at supporting the EU pipeline project PEARDROP by the formation of researchers/human resources with a view to DBE deployment in the above mentioned EU interested regions.

4.1 Romania's and Portugal's approach on DBE implementation

The goal of the DBEforSMEs project is the prevention of marginalization of countries as Romania and Portugal through their non-involvement in the emergence of a world-scale information society and a new "science" of Digital Ecosystems (DE).

The main objective of the DBEforSMEs project is to develop a strategic and sustainable partnership on DBE implementation in BI&GNP Regions, based on a long-term cooperation programme between the seven partners, aimed at inter-sectoral knowledge sharing and mobility, based on targeted human resources interaction.

The specific objectives of the DBEforSMEs project are to assign the main elements of BI&GNP regional development policies in supporting DBE implementation, to establish of BI&GNP regional catalysts, to define BI&GNP regional approach on DBE legal issues, to analyze implementation possibilities of the DBE Technology Platform under specific conditions of BI&GNP Regions, to raise the SMEs awareness on ICT take-up and Enterprise Networking in BI&GNP Regions, to promote the best practices for breaking barriers in inter-sectoral communication, to create the critical mass in terms of scientific knowledge, managerial skills, and competencies to achieve a strategic Industry-Academia Partnership and Pathways (IAPP).

The research project is broken down into a number of six work packages, dealing with specific objectives. Figure 3 shows their interdependence, illustrating the systemic approach of the DBE implementation process in BI&GNP Euro-

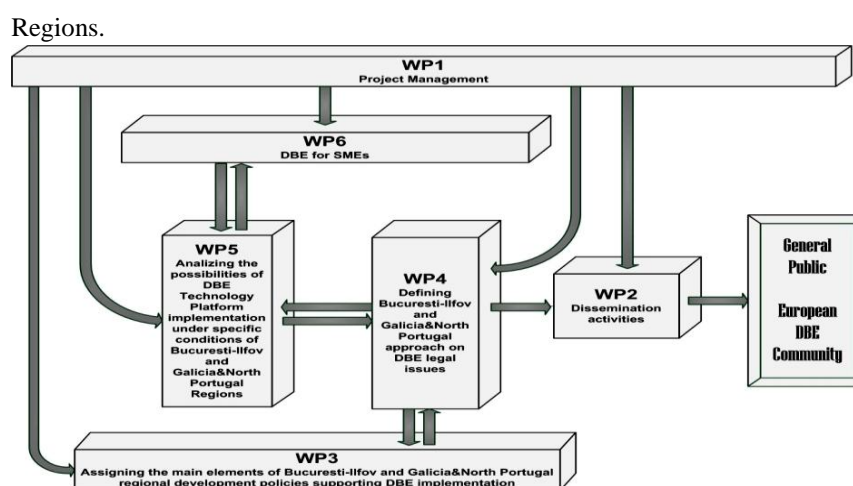


Figure 3: The interdependence of DBEforSMEs project work packages

4.2 DBE from Bucuresti-Ifov and Galicia&North Portugal regional perspective

Digital Business Ecosystem (DBE) can be a *model for regional development* (Husmann, 2006).

The implementation and spread of the DBE technological platform in a regional context helps at: reducing the Digital Divide; increasing the development of "the knowledge economy"; the sharing of Knowledge; the creation of collaboration processes; the increasing in entrepreneurship.

DBE implementation needs a clear systemic approach (Shelton, 2006a), involving the regional industrial sector, the R&D system, as well as the local government.

5. DBE implementation in Bucuresti-Ifov and Galicia & North Portugal Regions

The steps realized by the project's work packages go beyond the technical support, localization and the development of small local solutions, and compete in a global market, offering innovative DBE components or services, or offering adaptation and integration of DBE components.

An intensive bi-directional transfer of knowledge occurs within each WP. This transfer of knowledge is based mainly on inter-sectoral transfer of knowledge from academic/public sector to industrial (I/SMEs) sector, but also on essential feed-back reflecting the connection to practical issues encountered by SMEs, contributing to knowledge enhancement. The needs of knowledge transfer of each partner are determined by their targeted role into the emerging BI&GNP regional DBE system.

6. Conclusions

The targeted regions BI&GNP are interested in catching up the best practices for: improving the regional strategies to put a special stress on supporting SMEs for digital technologies adoption as strategic instruments for increasing the economic

competitiveness of Romanian and Portuguese SMEs; implementing successful e-business models, and creation of national and international SMEs networks, using EU instruments for supporting regional development.

Some specific measures for BI&GNP Regional strategies improvement are: to encourage SMEs to 'go digital' since ICT were identified as drivers of innovation, as tools for transforming government and business models and for transforming EU society in the way to knowledge economy; to accelerate ICT uptake, and thus to reduce the digital divide between advanced and less developed regions with different development speeds; Romanian and Portuguese targeted Regions should involve ICT strategies into their Regional development strategies, because the challenge is clear: productivity growth has been driven in recent years mainly by the ICT-using services sector, and it is precisely here that the difference will increase.

The main claims of the DBEforSMEs project regarding the originality and innovative aspects of the research program are: establishing DBE catalysts in two interested European regions - BI&GNP, which will help to better understanding of the DBE implementation potential and increasing SMEs awareness on ICT take-up, and Enterprise Networking in BI&GNP Regions; insuring a more co-ordinated research strategy on DBE, for removing the digital divide between BI&GNP Regions and most developed EU regions, based on the DBE catalysts efforts; making the DBE tool more accessible and more practicable for regional policy makers, and key local actors from the BI&GNP Regions; creating the DBE legal and technical infrastructure in BI&GNP Region; creating the DBE Platform for SMEs Training to help SMEs from BI&GNP Regions to take-up ICT and Enterprise Networking.

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