

# BRINGING E-BUSINESS TO RURAL REGIONS THROUGH TELECENTRE NETWORKS

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## Abstract:

*In the present paper, I am trying to emphasize that telecentres – despite the difficulties they are facing due to last years' technological changes – could still be helpful in promoting the principles of the Lisbon Agenda. They could provide access to ICT in rural regions with underdeveloped and remote infrastructure, thus integrating relatively isolated communities into national and international information networks. They could be means of regional and / or rural economic development by transferring expertise in a number of areas, such as agriculture or rural tourism to and from the community. They could also improve the degree of local employment by offering teleworking opportunities. Last, but not least they could support the training of local people by using eLearning techniques, pointing out new regional trajectories to the knowledge economy. Telecentres could play an important role in establishing knowledge society and in reducing the „digital divide” that still exists between different EU-regions. My paper starts by presenting some basic ideas, such as telecentres and their role in rural development, it goes on with a brief overview of the role which telecenter networks could play in the new European informational landscape and it ends with a presentation of the case of Romania.*

**Keywords:** *Telecentre, Community Informatics, Regional Economics, Rural Development, Knowledge Society*

## 1. Introduction

The advancements in technology and the symbiosis of information and telecommunications technologies have facilitated the emergence of radical changes in society, which lead to the appearance of the so-called “Information Age”. Many specialists agree that this is the beginning of a new era, in which information has supplanted capital as the key resource. The phenomenon is spreading rapidly and globalizing society – that means that historical barriers previously imposed by location time and social difference have been eliminated, allowing the access and transmission of information worldwide on a real time basis. The benefits generated by this “New Industrial Revolution” may not be advantageous for the whole society; some areas of the world’s population are unable yet to share its benefits. Developing countries and isolated and rural regions of more developed nations as well may find it difficult to join the information age. The problem is that of the “Digital Divide”, a term that has evolved to describe the gap in access to information available to those described as the “information poor” and the “information rich”. Some individuals or organizations in small, remote and/or rural communities may not be able to afford the costs involved by purchasing equipment or by maintaining access to the Internet. In such places could play telecentres a capital role, by providing free or, at least, cheap Internet access, by transferring information in specific areas (agriculture, rural tourism), and by providing training and working opportunities through e-learning and e-working facilities.

## 2. Telecentres

A *telecentre* is a public place where people can access computers, the Internet, and other digital technologies that enable them to gather information, create, learn, and communicate with others while they develop essential 21st-century digital skills. While each telecentre is different, their common focus is on the use of digital technologies to support community, economic, educational, and social development – reducing isolation, bridging the digital divide, promoting health issues, creating economic opportunities, and reaching out to youth. [1].

We have to make the difference between universal service (e.g. one Internet-connection to one household) and universal access (e.g. one Internet-connection at a reasonable distance). The second one, which implies the idea of sharing a connection, is a main characteristic of a telecentre. Telecentres have to be strategically located, providing public access to ICT-based services and applications, being typically equipped with some combination of: telecommunication services, office equipment, multimedia hardware and software, meeting spaces for local business or community use, training, and so on.

To classify telecentres, we can proceed by using some variables, such as: flexibility of services, relevance of information materials, starting-up of centers, degree of networking, financing possibilities, evaluation methods. By using these parameters, we can establish some dichotomic categorization of telecenters [3]: narrow focus – multipurpose, community based – establishment based, thematic – universal, independent – networked, profit oriented / commercial / fee-based – service oriented / free, publicly funded – privately funded, urban – rural.

Telecentres exist in many places around the World, serving different communities, implementing diverse organizational models. These models are not exclusive, since some telecentres are in fact hybrid versions of two or even more different types. A quasi-classical typology distinguishes between [4]:

- Basic Telecentre – generally located in rural or marginalized areas, where the population has limited access to communication and other services;
- Telecentre Franchise – a series of inter-connected telecentres, which are centrally coordinated but independently owned and operated, with the local private sector or the government funding the first stage of implementation and providing some technical support;
- Civic Telecentre – located in civic institutions which has started to offer public access to their computers and Internet connections, limited services by the priority given to the primary activities of the host organizations;
- Cybercafé – which can be a commercial Internet café, usually located in tourist areas and affluent neighborhoods in many cities, or so-called democratic cybercafés including those that offer preferential rates or services to community or local organizations;
- Multipurpose Community Telecentre (MCT) – offers more than basic ICT services, focusing on specialized applications such as tele-medicine and tele-education, postal and banking services, tele-trading, rental of virtual offices, vocational training courses and support to SMEs often having, in addition, specialized equipment for applications such as videoconferencing or telemedicine.
- Phone shop – generally limits its services to public telephone access.

In spite of their very differences, one can find some common characteristics of telecentres and trace some key trends in this regard [5]:

- services provided by telecentres vary according to the degree of development of the country;
- limited content on the Internet relevant to the needs of rural users in developing countries;
- examples of e-commerce applications in telecentres, especially in rural regions, are limited to date, but the development of Internet-based transactional services is coming more into focus;
- telecentres are mostly set up by: international, national and educational organizations;
- experience on sustainability of telecentres in developing countries is very limited, as most of the projects are recent;
- ownership: while telecentres vary in many aspects, one common characteristic is that they are virtually all initiated by development agencies and run by local NGOs.

### **3. E-Business**

Electronic Business may be defined broadly as any business process that relies on an automated information system, done nowadays mostly with Web-based technologies. The term “e-business” was coined by Lou Gerstner, CEO of IBM [1]. E-business methods enable companies to link their internal and external data processing systems more efficiently and flexibly, to work more closely with suppliers and partners, and to better satisfy the needs and expectations of their customers. E-business means much more than just e-commerce: while e-business refers to more strategic focus with an emphasis on the functions that occur using electronic capabilities, e-commerce is a subset of an overall e-business strategy. E-commerce seeks to add revenue streams using the Internet, especially the World Wide Web, to build and enhance relationships with clients and partners, often involving the application of knowledge management systems. E-business involves business processes spanning the entire value chain: electronic purchasing and supply chain management, processing orders electronically, handling customer service, and cooperating with business partners. Special technical standards for e-business facilitate the exchange of data between companies and specific software solutions allow the integration of intra and inter firm business processes. Consequently, the technical background has to be based on some network techniques, such as: the World Wide Web, the Internet, intranets, extranets, or some combination of these.

E-Business applications are usually divided into three main categories, each containing several branches:

1. Internal Business Systems:
  - Customer Relationship Management: concepts used by companies to manage their relationships with customers, including the capture, storage and analysis of customer information;
  - Enterprise Resource Planning: systems which integrate all data and processes of an organization into a unified system, often by using a unified database to store data for the various system modules;
  - Document Management Systems: a computer system (or set of computer programs) used to track and store electronic documents and/or images of paper documents;
  - Human Resources Management: a strategic and coherent approach to the management of the people working in the organization, who individually and collectively contribute to the achievement of the objectives of the business.
2. Enterprise communication and collaboration:
  - VoIP (Voice over Internet Protocol): routing of voice conversations over the Internet or through any other IP-based network;
  - Content Management System: a software system including computer files, image media, audio files, electronic documents, web content and making them available inter-office, as well as over the web, including also archival facilities;
  - e-Mail: a store and forward method of composing, sending, storing, and receiving messages over electronic communication systems;
  - Voice Mail: a centralized system of managing telephone messages for a large group of people;
  - Web Conferencing: live meetings or presentations over the Internet.
3. Electronic Commerce – business-to-business (B2B) or business-to-consumer (B2C):
  - Internet Shopping: the process consumers go through to purchase products or services over the Internet;
  - Supply Chain Management: the process of planning, implementing, and controlling the operations of the supply chain with the purpose to satisfy customer requirements as efficiently as possible;
  - Online Marketing: the practice of using all facets of Internet advertising to generate a response from your audience by tying together both the creative and technical aspects of the Internet, including design, development, advertising and marketing.

An e-business model is defined as the organization of product, service and information flows, and the source of revenues and benefits for suppliers and customers by using the online presence. The most frequently adopted e-business models are:

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|------------------------|----------------------------------|
| ▪ E-shops,             | ▪ Collaboration Platforms,       |
| ▪ E-procurement,       | ▪ Third-party Marketplaces,      |
| ▪ E-malls              | ▪ Value-chain Integrators,       |
| ▪ E-auctions,          | ▪ Value-chain Service Providers, |
| ▪ Virtual Communities, | ▪ Information Brokerage.         |

From the point of view of the parties involved in the e-business relation, one can classify them into the following categories:

- business-to-business (B2B),
- business-to-consumer (B2C),
- business-to-employee (B2E),
- business-to-government (B2G),
- government-to-business (G2B),
- government-to-government (G2G),
- government-to-citizen (G2C),
- consumer-to-consumer (C2C),
- consumer-to-business (C2B).

#### 4. Community Informatics

The Okinawa Charter on Global Information Society [6] stipulates that: “The essence of the IT-driven economic and social transformation is its power to help individuals and societies to use knowledge and ideas... [It] better enables people to fulfil their potential and realise their aspirations... [It] serves the mutually supportive goals of creating sustainable economic growth, enhancing the public welfare, and fostering social cohesion... everyone, everywhere should be enabled to participate in and no one should be excluded from the benefits of the global information society.” One way to achieve these goals is by using the benefits of *community informatics*, which refers to an emerging set of principles and practices concerned with the use of information and communication technology (ICT), in conjunction with community development and other social academic and practice areas, for the personal, social, cultural or economic development of and within communities [1].

Telecentres are being introduced as tools to support development efforts that may help to bridge knowledge, social and economic gaps, frequently characterized as a widening chasm between the ‘information rich’ and ‘information poor’. In order to delineate the role of telecentres in sustaining local / rural communities, one can distinguish numerous ways to address their economic and social development purpose [7]:

- develop rural and remote infrastructure and provide access to infrastructure, technology support and advice for the development of businesses;
- promote diffusion of usage and knowledge of ICT, provide and expand access to ICT-based services, with special regards to ICT-related business services;
- provide rural regions with better public services and improved local administration, provide information of general interest to the local community, including government information;
- transfer expertise in a number of areas, such as agriculture, to and from the community by providing information of special interest to specific groups such as farmers, local businesses and non-governmental organizations (NGOs);
- generate employment and foster socio-economic development by training local people, by offering teleworking opportunities and by giving local producers access to market information, thus reducing the need for middlemen and increasing rural incomes;
- extend the reach of public services such as education, health and social services;
- create regional cohesion by integrating relatively isolated communities into the national and international information network and thus accelerate exchange of private goods and services.

To date, there is a growing body of knowledge on how to plan and implement telecentres, as well as documented case studies, but we are only now beginning to consider the difficulty of evaluating their impact. There is a quasi-unanimous consensus, that ICTs have a positive effect on sustainable development, but in reality it is pretty hard to evaluate their real impact on it. The United Nations Commission on Science and Technology for Development (UNCSTD) which spent years to investigate the benefits and risks of ICTs found that “... there are many instances where the use of ICTs is bringing widespread social and economic benefits. However, there are as many instances where ICTs are making no difference to the lives of people in developing countries or are even having harmful effects.” [8] It is also difficult to quantify efficiency, or even success of a telecentre. The four main issues constantly arising are: policy, partners, participation and planning – the so called 4P that can be translated into sustainability for the development circles. Some parameters to measure the success of telecentres in a given region could include:

- financial sustainability;
- telecentre performance monitoring;
- user satisfaction monitoring;
- benchmarking based on best models.

#### 5. Information Society and the European Union

“The transition to a digital knowledge-based economy is set to be a powerful factor for growth, competitiveness and job creation. It will also help improve people's quality of life and protect the environment. In order to create this ‘information society for all’, in 1999 the Commission launched the eEurope initiative, an ambitious programme aimed at making information technologies as widespread as possible.” This stays written in the preamble of the paper called: *eEurope - An information society for all* [9], document which precedes a whole series of related ones: *eEurope 2002 Action Plan* [10], *eEurope 2003+ A Co-operative effort by the Candidate Countries to implement the Information Society in Europe* [11], *eEurope 2005 Action Plan* [12], *i2010: Information Society and the media working towards growth and jobs* [13]. These documents constitute the fundamentals of the so-called Lisbon Strategy, that points out the directions to be followed by the member states in establishing the 21<sup>st</sup> century knowledge society. Let us see some of them, as they are stipulated in the European Commission's new strategic framework: *i2010*:

- to establish a Single European Information Space by offering affordable and secure high-bandwidth communications, rich and diverse content and digital services;
- to boost innovation and investment in ICT research, by encouraging world-class performance in research and innovation in ICT and close the gap with Europe's leading competitors;
- to boost social, economic and territorial cohesion by establishing an inclusive European information society, to promote growth and jobs in a manner that is consistent with sustainable development and that prioritises better public services and quality of life, establish an inclusive information society, offering high-quality public services and improving quality of life;
- to develop proposals and update the regulatory frameworks for electronic communications, and information society and media services, to use the Community's financial instruments to stimulate investment in strategic research and to overcome bottlenecks obstructing widespread ICT innovation, to support policies to address inclusion and quality of life.

Through the National Reform Programmes, member states, have committed themselves to adopting information society priorities in line with the Integrated Guidelines for growth and jobs by mid October 2005. They aim to:

- ensure rapid and thorough transposition of the new regulatory frameworks affecting digital convergence with an emphasis on open and competitive markets;
- increase the share of ICT research in national spending to develop modern, interoperable ICT-enabled public services;
- use investment to encourage innovation in the ICT sector;
- adopt ambitious targets for developing the information society at national level.

The Commission will ask other stakeholders to take part in dialogue in support of developing the information society. To ensure that all stakeholders are involved, the Commission proposes using the open method of coordination, which includes an exchange of good practices and annual implementation reports in respect of the Lisbon objectives.

## 6. Telecentres in Romania

According to our typology, the Romanian implementation of the telecentre concept is situated between the Civic and the Multipurpose Community Telecentre types, being characterized by [14]:

- having public utility, offering its services to all members of the community, without any discrimination of any kind;
- being multifunctional, offering services of quality, permanently adapted to the needs of the community;
- being a forum and a catalyst of the community, acting in a responsible way;
- promotes and operates modern ICTs and learning skills.

In the year 2000, the Hygeia Foundation and the CREST Resource Center, both from Satu Mare, initiated the program called: "The Telecenter – Heart of Community", in partnership with the Sequoia Association – France and the Rural Assistance Center, in order to assist the economic, social and cultural development of the beneficiary communities through founding and operating of telecentres. CREST is coordinating / assisting the activity of most telecentres in the North-Western region of Romania. A similar role is played in the South-Western part of the country by the Center for Rural Assistance in Timișoara. An intense network building is done in the South-Eastern part of Transilvania through the efforts of the Harghita Network, co-ordinated by the Youth Council of the Ciuc Region. There also are some few telecentres in the Southern part of Moldova, thanks to the US Agency for International Development which funded the Romania Information Technology Initiative: dot-GOV [15]. These are aimed to serve 12000 people [16].

## 7. The Knowledge Economy Project

Installing telecenters, as part of its strategy of implementing universal service, was a priority of the Romanian Government since 2004 [17], which considered that these represent efficient means of preventing the social exclusion phenomenon. Thus the Ministry of Communications and Information Technology (MCIT) has applied for a loan from the World Bank for financing the **Knowledge Economy Project (KEP)** [18], which will support the establishment of over 200 Local Communities e-Networks (LCeNs), offering them services and technologies, including computers, Internet-access, communication services and specific content provision for different target groups (business, youth) in rural and small urban communities, in remote and disadvantaged areas. LCeNs are built according to each community's needs and assures broadband access to schools, mayoralities, public libraries, companies that develops their activity in the local communities, non-governmental organizations, as well as to the general public. The main LCeN component is the *Point of Public Access to Information (PPAI)*, which combines two essential functions for the community: unlimited

access to knowledge for all citizens and increased economic competition of the local business environment. This will lead to several advantages for the local communities:

- modern communication services (including e-mail, internet, telephone, fax, etc);
- support for business and community development;
- improvement of education (in schools) for children and youths;
- guaranteed access to information for all citizens and business in local communities;
- getting acquainted with computer and new technologies using;
- low costs access to electronic services of the local administration.

The project has the following components and subcomponents, most of them having a more or less direct impact on the development of e-business:

Component 1. Access to ICT in Knowledge Disadvantaged Communities and Improved Digital Literacy

Subcomponent 1.1. Improving Access by Establishing Local Community e-Networks –LCeNs

Subcomponent 1.2. Development of local community human resources

Subcomponent 1.3. Implementation of ICT in schools

Component 2. Development and promotion of government e-services

Subcomponent 2.1. Gateway for on-line registration and authorizations of local businesses

Subcomponent 2.2. Integrated network for civil status information and documents

Component 3. Promotion of e-commerce and innovation support for SMEs

Subcomponent 3.1. Portal for promotion of e-commerce and business networking

Subcomponent 3.2. Grant Facility Program

## 8. Conclusion

After 1989 Romania has made serious attempts to reduce the digital gap from between it and the Western countries. It was the combined effort of government, economic actors and NGOs. One of the means used in achieving this ambitious goal is the establishing of a nationwide network of telecentres. Beneath other (social, educational, etc.) effects they could significantly contribute to the enhancement of the rural business atmosphere and the regional sustainable development. Despite the difficulties they are facing due to last years' technological changes, especially the rise and rapid spread of mobile / wireless technologies, telecentres could still be helpful in promoting the principles of the Lisbon Agenda, by contributing to the building of a Single European Information Space through a knowledge-based society.

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