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A new applicable model of Iran rural e-commerce development

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Abstract

The significant impact of e-commerce (EC) on the livelihood or rural populations in developing countries like Iran has made this topic of popular interest to many researchers in the past decade.
To take advantage of e-commerce, employing suitable models which are adaptive to the circumstances of villages in rural areas is indispensable. Iran is on track for achieving this goal, development of EC in Rural areas.
Considering the importance of sharing rural ICT experiences, the trend and experiences of the Rural EC infrastructure in Iran are demonstrated in this paper. According to our research, Iran's rural ICT network development started in 2000 with the far northern village of Shahkooh which is known as the first multi-media center of Iran. In 2004, Iran national strategic plan of Rural ICT built two well-equipped telecentres near the villages of East Livan and Gharnabad. Taking availability of data and the duration of operational time to account, these two telecenters were selected for this paper. In 2005, UNESCO Tehran Cluster Office was empowered to carry out a study on the economic and social effect of rural ICTs to share with others, acting in this field at regional and social levels. In fact, in order to find applicable and durable solutions for economic, social and environmental problems, these projects were carried out in the rural areas of Iran.
In this paper, a practical model of e-commerce for rural areas of Iran is proposed. Our research is based on quantitative and qualitative methodologies. The qualitative methods comprised of open-ended interviews with officials and telecentre operators. The proposed model is related to the national project known as "10000 Rural ICT Center" which was started in the year 2004. In this project, Rural EC services are part of the IT application services at the Rural ICT Centers which supply four services; Communication Services, IT services, Postal Services and E-Banking services.

Keywords: Telecentre; Rural ICT; E-commerce; Electronic Services; ICT Center; Information society;

1. Introduction

   Sharing rural ICT experiences is a very important issue. Limited access to Information and Communication Technology, ICT, means that rural communities lack basic information that could assist them in improving their livelihoods. ICT services can support development in rural areas [1].

   In many countries various centers of information and communication services like Telecentres, IT Centers, Information Kiosks, Information Access points (IAP), Coffee-nets, and Telemedicine Centers have been created to provide communicative services to villagers. These centers are usually created by the private sector with some type of government support. In these centers, in addition to offering internet, e-mail, and phone services, computer

training sessions are also held [2]. Establishment of rural ICT centers is a strategic key to reducing the digital gap of rural and deprived areas. These centers have the ability to support the government as a front desk for ecommerce services to villagers.

In Iran A third of all peoples (33.65 percent) live in 68,000 villages across the country. Most of these villages have yet to use ICTs as a development tool. With the cooperation of local communities and the government, two Iranian Rural Telecentres were built in June 2004 to provide communities with access to the internet and applications such as e-government, e-commerce, e-learning, e-banking and other types of electronic services. Another goal of establishing the telecentres was to create an enabling environment for research and tele-working to increase employment opportunities. So in Iran, a project was started by the Ministry of Communications and Information Technology in 2004 with the aim of promoting the status of information and communication infrastructures and development of rural services in villages with more than 150 households. During the preparation of this report, more than 10,000 Rural ICT Centers in different parts of the country were inaugurated. These offices have suitable hardware equipment and will provide four services: Communication, IT, Postal and E-Banking services [1].

In this paper, required infrastructure to provide these centers as a rural development model in e-commerce is described.

2. Background

There does not appear to be a universally-accepted definition of a telecentre beyond the general concept of a physical place providing public access to communication and information services. This report is based on qualitative and quantitative research methodologies. The qualitative methods consisted of open-ended interviews with officials and telecentre operators. The quantitative methods consisted of detailed interviews with telecentre users, a questionnaire, and data from other sources.

Iran's rural ICT network began its development in 2000, when the remote northern village of Shahkooh opened the country's first multi-media center. In 2004 two well-equipped telecentres opened in the nearby villages of Gharnabad and East Livan and Iran developed its National Rural ICT Strategic Plan [3]. This plan is the main study of a national project known as "10000 Rural ICT Center", which was started in 2004. Telecentres can be publicly or privately owned, be part of a public or private partnership, or be provided by international donors. They range from phone shops to cyber-cafés, cottage telecentres for tele-working to custom multi-purpose community telecentres (MCTs). Some even provide advanced services such as medical diagnosis and tele-medicine.

Some definitions are provided below:

A number of qualitative and quantitative parameters together describe a Telecentre. Here these parameters are classified as telecentre general indicators. Telecentre location, origin, ownership, and management, facilities and equipment, services, and staff are some of these indicators [4]. In our research we consider these indicators for cognition of community parameters:

- Geographic location of the society
- Population size, age, gender, marital status, children
- Settlement type, geography, environmental setting
- Income distribution, savings, credit
- Main economic activities (sectors), products
- Commercial activity, businesses, trade patterns
- Occupation, employment status
- Main institutions, organizations
- Physical infrastructure, services Level of education
- Distance to other services (medical, government, communications, libraries, education, markets, etc.)
- Schools, other educational facilities
- School enrollment, drop-out rates, completion rates
- Adult literacy rate
- Population growth rate, life expectancy
- Water, sanitation services
- Healthcare programs, facilities, vaccination rates

All governments are preoccupied with employment for their people. Employment is making a big contribution to development in any society. Modern technologies, notably Information Technology, play a major role to that effect

by offering virtual job opportunities. The respondents in Gharnabad have been asked to say how the telecentre has managed to offer them job opportunities [3].

3. Similar experiences in the world

Today, information and communication technology offices which are named **Telecentres** in other countries are working in many developing countries of the world. Many these centers especially exist in rural and disadvantaged areas which are used in economic and social development. For example, the government of Latin America and islands in the Caribbean Sea established more than ten thousand Telecentres in remote areas [5,6,7,12].

4. Design model of rural E-Commerce

To determine the kinds of electronic services which can be given through rural e-commerce, information services and universal experiences can be used. According to the studies on the given services via websites of public and private agencies, these services are grouped into several categories. This categorization helps to better analyze the services and lead improvements in performance and execution levels.

The main rural electronic services are usually considered in the four fields: e-government, e-education, e-commerce and electronic agriculture. Figure 1 displays the services which can be given in the rural information and communication technology (ICT) offices [1]. These services are categorized in three sections of basic services, information and private services of the offices. The basic services are available in all rural ICT offices. In fact these services are the main work of the rural offices and directly associated with Iran's Ministry of Communications and Information Technology.

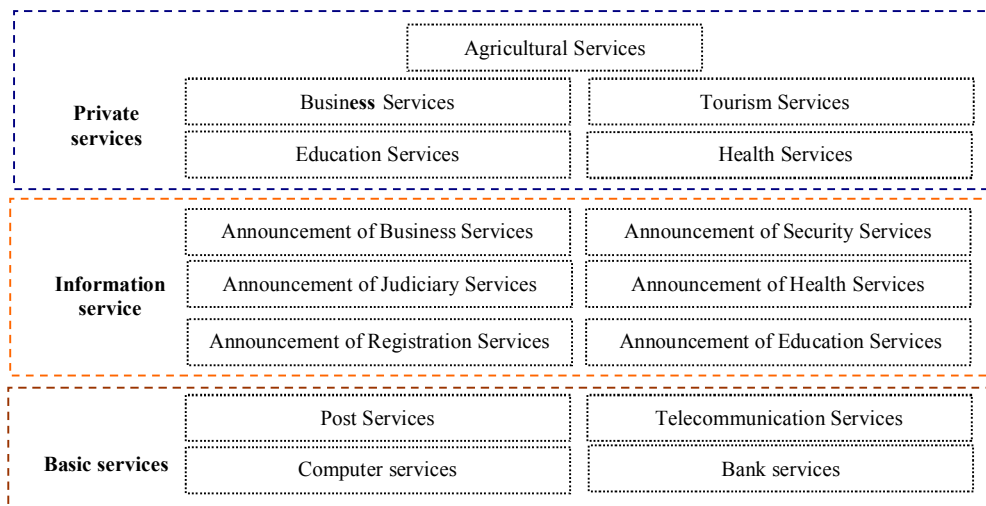| Private services | Agricultural Services | |
	Business Services	Tourism Services
	Education Services	Health Services
Information service	Announcement of Business Services	Announcement of Security Services
	Announcement of Judiciary Services	Announcement of Health Services
	Announcement of Registration Services	Announcement of Education Services
Basic services	Post Services	Telecommunication Services
	Computer services	Bank services

Fig. 1. The given services in rural ICT offices

The third category of services is the services which are given privately in rural ICT offices. These services are provided in the form of physical, electronic or a hybrid of physical and electronic (and bring the most economic values). Considering the capability of these services in providing many of the daily requirements of rural inhabitants, the offices are very important. As the style of presenting services is new, to publicize these services to citizens, public education should be provided. Otherwise these services are not widely taken in to account and both public and private sectors will not have the expected economic benefits.

Some of the challenges that caused private sector have low interest to invest in the villages and push the investment in the field of agriculture and forming brokers are: sparse population of villages, outlaying of villages, lack of appropriate roads, unsuitable geographical conditions, low demands to get services and lack of enough information about the benefits of the services. Nevertheless, considering the executed samples of such activities in

some parts of Iran demonstrate that rural area development is in the need of government support [8]. The Table 1 shows these samples.

Table 1. Sample business of offices in private section

GroupCod:G04	Service group: Business Services	
Current services		
Kind of service	Title of service	Code
	Employing of rural inhabitants in industrial sectors	G0401
	Investing in the villages	G0402
	Registration and payment of portfolios	G0403
	Registration of homes project	G0404
Future services		
Kind of service	Title of service	Code
	Remote working in villages	G0450
	Guide about investing in rural areas	G0451
	Online financial guidance	G0452
	Announcement system for indoor and outdoor organization employment of province	G0453

5. The New Conceptual Model for E-business in Iran

In this section, a proposed model for E-business is presented and e-commerce through offices with the role of each nominee is described. Developing of services in rural ICT offices is a cooperative process in which various organizations work in the form of a unique process for giving services to rural inhabitants. Public and private organizations which give services are associated with this process to offer their services via offices, and the ICT Committee is on the other side of this process which is composed of ministry of ICT, post and related banks. Coordination, supervising and controlling of the process of giving services is done by rural ICT Committee in province. The operators of offices, by employing and managing required personnel in the offices provide the services to villagers. The generation and patronage of electronic services in the offices can be activated from the private sector, but with the supply of the Committee of offices. Figure 2 shows the relation between beneficiaries of developing e-services in rural offices of provinces, from specification level to the level of giving service. After specification of the services with the beneficiaries, evaluations of the service should be performed. In the new executive structure, transferring the ownership of equipments to the correspondents of offices which is according to the policy of government is carried out by the Committee of ICT. This Committee considers the parameters and by using decision tools, determines the suggested services and finally decides which services could be given through offices. However, all of the e-services are defined in the form of agreement between the organization which gives the service and the Committee of ICT or correspondent of offices and or correspondent of giving services. After agreement, the service should be defined partially and the procedures of service presenting are determined. After defining and software comparison, the service can be given and each of the beneficiaries is responsible to this service. The correspondents of e-service system are responsible about updating the software which is used for giving services and they are playing the intermediate role between correspondent of offices and the public and private agencies which are given services. The correspondents of this section work according to the tariff which is approved by the Committee. This tariff includes the amount which charged to customers for a given service, and the amount which should be paid to the correspondent of offices and the agencies which are presented the services. For each given service, a distinct bill should be given which is presented according to the tariff. The Committee of ICT are controlled the given services as the regulatory organization of services [4]. In addition, public and private agencies should coordinate with the offices and perform their responsibilities in giving services through the offices.

The described procedure is a new experience in the e-business area. Nevertheless, each of the beneficiaries may have their own cause in the development of giving services via offices. These cause the correspondence of offices and private agencies to usually increase the earnings but the purpose of Committee is often development of offices and making this part as an interesting section which will finally lead to an increase in investment in this area. Public agencies may consider the offices as an appropriate infrastructure for increasing the availability of services for rural
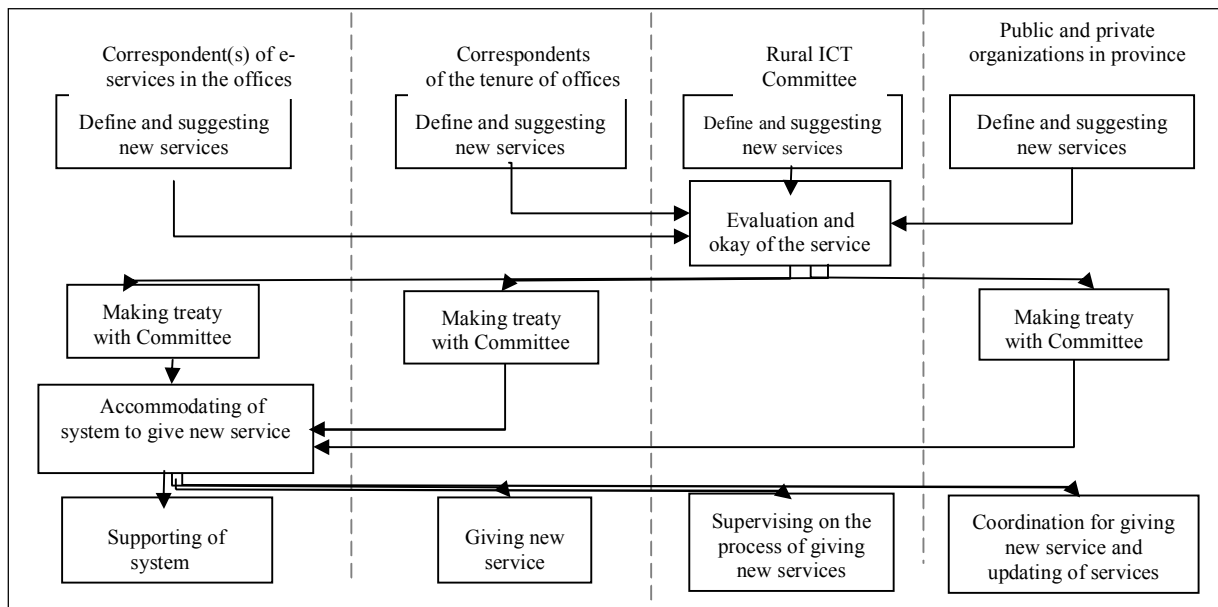
Fig. 2. Process of evaluation, acceptance and giving new services

inhabitants which will help to reduce migration to the cities. However, development in this area is in need of collaboration between both public and private sectors and to achieve this, beneficiaries should have as much as flexibility and cooperation with each other.

6. Experience in project implementation in Iran

Considering the conditions in the development of ICT offices in which the technical and communicational infrastructure is made or can be made by government, three main challenges exist. These challenges are human resources, cultural conditions and required laws. Human resources play an important role in the development of e-commerce but as education is still low in the villages, ICT offices face a shortage of correspondents and expert operators. This topic is known as a fundamental and effective subject in the development of e-commerce. The situations of rural ICT offices in the whole country show that the knowledge of correspondent of offices in the field of e-commerce and information technology is low and they do not have the required knowledge and skills for the development of e-commerce which is one of the main challenges in e-commerce development [9].

Both the government and private sectors can design and implement the programs in order to increase knowledge of correspondents in the field of information technology and development of e-commerce. These educational programs can include gratis education and workshops about e-commerce, security of bargain and making information announcement websites for rural ICT offices. Finally, educational programming in this area should follow and complete the economic strategy for development of e-commerce. Also to present patronage services for e-commerce, e-educations like designing websites can be performed by government. For example, in Kenya, the people who are poor and young are under the education designing websites [10].

Increasing the culture for development of e-commerce is the other effective subject. One of the main issues which have caused the development of information technology and e-commerce to remain weak is the lack of understanding of the importance of e-commerce. It should be taken into consideration that the experiments of most countries which are members of the Organization of Economic Cooperation and Development (OECD) shows that even the best strategies of electronic sales can not turn the table of current commerce alone. However, as giving services through ICT offices are new using introduction programs and providing sufficient education in the rural area is inevitable.

Another challenge of rural ICT offices for development of e-commerce is pertaining to laws. According to the economic experts' idea, security of transferring information, reliability of systems and the integrity of exchanging

process are the three main challenges in e-commerce. These challenges can be solved by making appropriate laws for the rural ICT offices as a part of the Iran e-commerce structure.

7. Conclusion and Recommendations

International policies always call on under developed countries to create simple tools for local development. In Iran, information technology service-providing centers and centers for rural communications were established thanks to popular support and backing from state-run organizations. Ten thousand telecentres are currently active. The role of Telecentres in Gharnabad and East Livan for improving knowledge in general and making a good media for business development and entrepreneurship is proven [11].

Equipping 10,000 rural ICT centers was a major effort of the government of Iran to develop electronic services which can balance cities and villages in cultural, social and economic development. This research is hoped to call for the establishment of new telecentres in other villages. The executive team has listed the following recommendations to develop countries like Iran.

1. Preliminary acculturation before the establishment of telecentres in the villages is extremely significant.
2. Telecentres can succeed in remote villages more than the villages adjacent to the cities.
3. Since the very establishment of telecentres, the people, the private agencies and the government have to be involved.
4. Strategic planning for telecentres has to be made.
5. Villagers should be invited for investment in telecentres in any way they can. Telecentres have to become self-reliant.
6. Youth should be encouraged.
7. Distance job seeking has to become known to everyone so that the villagers would have an economic motivation.
8. Villagers should know well the information technology and even its social traumas.
9. Annual studies should be conducted on the social and economic impacts of telecentres in the villages.
10. No gender, tribal and age discrimination has to be taken into account in these centers. Women and youths have to be warmly welcomed.
11. State organs have to offer facilities to telecentres to encourage the villagers.

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