

Chapter 21

E-government in the Turkish Republic of Northern Cyprus

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This chapter describes the process of e-government application and defines the barriers to and outcomes of e-government adoption in the Turkish Republic of Northern Cyprus. Archival document analysis, analyses of Northern Cyprus government Websites, analyses of governmental statistics and e-government-related laws and regulations are utilized for this study. The main findings of the study are that (i) e-government applications are still in their infancy, i.e. in the cataloguing, and to a lesser extent in transaction level; (ii) there is a lack of an adequate IT infrastructure, qualified IT personnel and meaningful and useful content on government Websites; (iii) digital divide is a serious problem that hinders e-government development; and (iv) a new organizational structure that can plan and coordinate the implementation of e-government applications has to be established. The lessons derived from this case study may benefit efforts to understand the adoption of e-government, especially in small countries in the Mediterranean region and elsewhere.

1 Introduction

This chapter describes the process of e-government application and defines the barriers to and outcomes of e-government adoption in the Turkish Republic of Northern Cyprus. This introductory section first explains the concept of e-government and its importance, as it is the central notion of this chapter. Second, the national context

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of the case under study (the Turkish Republic of Northern Cyprus) is presented to the readers in some detail. In the third and final part of the section, the reasons for considering the case of North Cyprus as an e-government example that deserves attention are explained.

1.1 Importance of the E-government Concept

The concept of electronic government (e-government) has been a major subject of scientific interest in the public administration literature at least for the last decade (Fountain, 2001; Garson, 2003; Heeks, 2006; West, 2005). Defined as “utilizing the Internet and the World Wide Web for delivering government information and services to citizens” (UN and ASPA, 2002, p. 1) and other stakeholders of government, such as businesses and government agencies themselves, the concept and its applications have become so popular that, Bannister, cynically, argues that it is the “flavour of the month” in academic circles (2007, p. 228).

A “stages approach” for understanding e-government development is widely used in the literature:

E-government development is studied by building models of its stages. A widely accepted model, presented by Layne and Lee (2001, p. 124), argues that e-government projects evolve through four stages of development as their integration and technological and organizational complexity increase.

The first stage is cataloguing, providing government information by creating government agency Websites. At this stage, only one-way communication between the government and the governed is possible.

The second stage is transaction. Agencies at this stage can provide online transactions with government agencies. This makes two-way communications possible. The cataloguing and transaction stages focus on creating an electronic interface for government information and services.

The third stage is the integration of government operations within functional areas in government. Agencies working in the same functional area integrate their online operations. For example, database sharing by the FBI, CIA and NSA.

The final stage is horizontal integration. Different functional areas are integrated within the same electronic system and put to use through a central portal. The last two stages focus on the integration of the provision of e-government activities within the existing governmental structure (Yıldız, 2009, p. 19).

It has to be emphasized that Layne and Lee’s model is an oversimplification. The stages of this model do not necessarily follow each other in a neat, step-by-step fashion. In addition, since countries like the TRNC has the opportunity to observe the development of e-government in other countries, their learning curve is lessened. Consequently, several stages can be observed simultaneously in countries like the TRNC. For example, as government agencies create a basic web presence via their Websites (stage 1), they may simultaneously provide online transactions (stage 2). In addition, they may attempt to integrate with similar online agencies

(stage 3) and connect to a central portal that links all projects to each other (stage 4). This difference in e-government development between the developed and the developing countries largely stems from the time lag regarding e-government implementation. Thus, Layne and Lee's model has partial applicability on the evolution of e-government in developing countries (Yildiz, 2009, pp. 185–186).

1.2 Country Background Information

In order to examine and explain the development and applications of e-government in the Turkish Republic of Northern Cyprus, it is essential to present some background information about the history, geography and demography of the country under examination, and the island that hosts it: Cyprus is the third largest island in the Mediterranean Sea, after Sicily and Sardinia; it is the biggest island in the Eastern Mediterranean. It lies 65 km to the south of Turkey and 112 km to the west of Syria, its closest neighbours.

There have been settlers in this island for almost 4,000 years. Throughout this time period, it has been controlled successively by Mycenaean, Phoenicians, Assyrians, Egyptians, Persians, Macedonians, Romans, Byzantines, Franco-English, Franks, Venetians, Ottoman Turks, British, and since 1960, by Turkish and Greek Cypriots. After an unsuccessful and violent cohabitation experience under an unworkable constitution (Mallinson, 2005, p. 5, 9), the Turkish Cypriot Community established its own state in 1983 under the name of the Turkish Republic of Northern Cyprus (TRNC, or North Cyprus), which is recognized only by Turkey. International diplomatic efforts are underway in order to find a peaceful solution to the Cyprus problem.

The TRNC covers an area of 3,355 km², which is approximately one-third of the island of Cyprus. To the south and west of TRNC is the Republic of Cyprus (South Cyprus), a member of the European Union (EU), with its predominantly Greek Cypriot population and its close political and economic ties to Greece.

The population of the TRNC is 265,000 according to the 2006 Census. Many other Turkish Cypriots also live in foreign countries such as Turkey and the United Kingdom. The official language of North Cyprus is Turkish. Because of the British military and administrative presence in Cyprus during the nineteenth and twentieth centuries, English is also widely spoken.

The political system of the TRNC is parliamentary democracy. The system of government is as follows: The president and the council of ministers form the executive. A prime minister directs and coordinates the council of ministers. The Assembly of the Republic with its elected members is the legislature. The judiciary is made up of the Assize Courts, District Courts and Family Courts, with the Supreme/Constitutional Court at the top of the judicial system.

The TRNC is a unitary state. Its capital city is Lefkoşa (Nicosia). The population of the capital city is approximately 85,000. It is the main administrative and business centre of the country. Other big cities in the TRNC are Güzelyurt in the west (the

major citrus production centre of the country), the resort towns of Girne (Kyrenia) is on the northern coast, and Gazimagusa (Famagusta) in the east.

The country is divided into five administrative districts (Lefkoşa, Gazimagusa, Girne, Güzelyurt and İskele) for efficient administration of the Republic. Districts are governed by a “district officer” (Kaymakam), who is the local representative of the central government. There are two types of local governments: Municipalities in urban areas (28 in total) and villages in rural areas (187 in total) (TRNC Prime Ministry, 2009). The country hosts 40% of its population in rural areas. This urban–rural ratio is quite different from most EU countries (UNDP, 2007, p. 13), which are highly urbanized.

The economy of the TRNC is based on the services sector. Agriculture and trade have traditionally been significant sources of income. Tourism is currently the most important economic activity. The provision of higher education through public and private universities is also becoming an increasingly important economic sector. New private universities established in TRNC gradually add more value to the North Cyprus economy both through their students’ economic activities and with the outcomes of the research and development (R&D) facilities that they host. As mentioned below in detail, a strategic planning effort is underway, which aims to stimulate the country’s economy even more through the use of technology.

Within this historical, political and administrative context presented concisely above, this chapter introduces the adoption of e-government only in the Turkish Republic of Northern Cyprus (TRNC), as opposed to the Republic of Cyprus (South Cyprus).

1.3 Reasons for Considering the Case of Northern Cyprus

Many governments are trying to harness e-government for higher levels of sustainable social and economic development; however, these efforts are limited by two main shortcomings in the application of e-government at the international/global level. First, digital divide, different levels of access to and use of information and communication technologies (ICTs) at individual, organizational and nation-state levels limits e-government use (Kaufman, 2005, p. 293). Second, an important portion of the e-government literature still focuses on the developments in developed countries of the North, especially the United States (Stowers, 2003) and Europe, while much can be learned from relatively less-developed parts of the world as well. This chapter aims to contribute to the solution of both these problems, by examining the e-government development process of a less-researched country, the Turkish Republic of Northern Cyprus.

More specifically, this study is important as it adds value to the e-government literature in three different ways: First, there are only few studies that examine and evaluate e-government adoption in Southern Cyprus, either by Southern Cyprus itself or as a part of the e-government efforts in the European Union. However, to the best of our knowledge, there is no scientific study that systematically describes and evaluates e-government adoption in TRNC. This study is a first in this regard.

Second, the example of e-government adoption in TRNC is useful as it provides practitioners with useful information about the advantages and disadvantages of adopting e-government in small countries. Specifically, researchers may examine the possibilities of profiting from the small size of the population for rapid technology diffusion in e-government service provision, and the imperatives towards administrative centralization in small countries while implementing e-government projects.

Third, there are many Turkish Cypriots living in other countries such as the United Kingdom and Turkey. Therefore, e-government adoption in the TRNC partially has to be geared towards the needs and expectations of these expatriates, who need to take care of their businesses with TRNC government without ever coming to the island, or doing so as less often as possible. E-government thus becomes the tool of this long-distance relationship between the TRNC government and its citizens.

This chapter first provides the background of e-government adoption in the TRNC, by presenting facts and figures about the history and geography of the country, its demographic and economic profile, style of government, within a very brief overview. Then, the chapter proceeds to provide information about the process of e-government adoption, beginning with the examination of the organizational legal and technological infrastructure, levels of technology use and contents of the government Websites at the central and local level (in municipalities). Finally, the chapter closes with the general evaluation of the TRNC's e-government efforts, barriers to e-government adoption and their potential solutions and, finally, the conclusions that could be drawn from this example.

2 E-government in Cyprus

Analyses of e-government adoption in the island of Cyprus so far has been limited to its southern part, that is, the Republic of Cyprus. For example, Kokkinaki, Mylanos and Mina (2005) examined the e-government initiatives in Southern Cyprus and found them to be at the elementary level of providing information and thus, in need of improvement. Similarly, an EU Report (2005) on Southern Cyprus's ICT performance and prospects evaluates the country's performance within Europe as one of the laggards, and recommends the increasing of electronic services provision in addition to information provision in a way to catch up with the other EU member countries.

At the local level, Zevedos (2006) paints a dark picture of the provision of electronic government services and the state of electronic democracy efforts at the local government level in South Cyprus. In his study, he compares and contrasts the implementation of electronic government and electronic democracy efforts of a local government unit in South Cyprus (Limassol Municipality) with those of nine other municipalities from five different countries (four British, two Scottish, one Irish, one Welsh and one Greek). He concludes that the municipalities in South Cyprus lack a clear e-government strategy, suffer from inadequate organizational

capacity (Limassol municipality, for example, does not have an Information Technology Department), lack of qualified human resources and top management support (Zevedos, 2006, p. 116–117). Zevedos (2006, p. 139) also argues that municipalities in South Cyprus have to realize that e-government and e-democracy are not ends in themselves, they are rather means to a bigger end, namely, the transformation of the political and administrative systems according to new public management principles. He also emphasizes the need to plan the e-government adoption process carefully and to involve all the stakeholders of this major transformation in the process.

In contrast to the above-mentioned studies on electronic government in South Cyprus, analyses of e-government adoption in the Northern part of the island, that is, the TRNC, are almost non-existent. One such rare document in which the e-government efforts in the TRNC have been measured and evaluated is the e-readiness Survey prepared by the United Nations Development Program's (UNDP, 2007) "Partnership for the Future" (PFF) branch. Based on a survey carried out by UNDP-PFF in 2005 in the Turkish Cypriot community, the study's main findings are as follows:

First, in the TRNC, citizen Internet usage rate in 2005, despite relatively high prices and slow connection speeds, was close to the EU average. Of the surveyed persons, 51% have a computer and 39% have Internet access (UNDP, 2007, p. 5). Table 21.1, presented below, provides information about technology ownership in the TRNC at both individual and household level, as of 2006.

Table 21.1 Technology ownership in Turkish Republic of Northern Cyprus

Technology	Number of owners (individuals)	Number of owners (households)	Percentage of owners (households)
Personal computer	33,691	29,218	40.23
Mobile phone	138,405	64,200	88.4
Internet	16,018	15,700	21.62
Telephone line	56,157	51,525	70.95
Television	102,842	70,960	97.71
Satellite dish	59,717	51,201	70.5

Source: TRNC State Planning Organization (2006).

Second, the problem of digital divide is present in the TRNC. There is a digital divide in geographical terms (urban vs. rural), and in terms of age, gender, education and economic means (income). For example, in North Cyprus, being young is not sometimes an advantage in using technology. Due to the high unemployment rate, many people under the age of 25 cannot afford to buy a computer and obtain Internet access (UNDP, 2007, p. 5, 13, 15, 17). This point about barriers for young people to use technology is very interesting, since most of the digital divide literature discusses barriers for older people.

Third, there is not enough demand for and awareness about e-government among the population of the TRNC. Of the surveyed people, 60% indicate that they see no

need to use computers or connect to the Internet. The cost of computer ownership is a minor factor (8%) here, as opposed to the lack of need (59%) and lack of knowledge regarding Internet access (11%). This problem is also closely related to the lack of meaningful content and the small number of online services present (UNDP, 2007, pp. 6, 13–14, 17, 38).

Fourth, citizens use the Internet mainly from their houses (59%), workplaces (18%) and Internet cafes (12%). The participants of the survey declared that they use the Internet an average of 10 h per week (UNDP, 2007, pp. 18–19).

Fifth, although the survey reports that access to broadband Internet was not available in the TRNC as of 2005 (UNDP, 2007, p. 20), as of 2009, it is available. ADSL is provided by the Telecommunications Department of the TRNC Government. Third generation (3G) mobile technology is also available through the mobile phone service provider companies, KKTCcell (an affiliate of Turkcell) and Vodafone (formerly Telsim). The judicial system and the Ministries of Finance and Interior use a high-speed connection, which is called “gigabit ethernet” (Personal Communication, 2009).

Sixth, although there is a monopoly regarding fixed line telephones, the mobile phone market, which functions as a duopoly, is partly liberalized. Mobile phone penetration was 68% as of 2005 (UNDP, 2007, p. 37). The figure in Table 21.1 (88%) shows that household mobile phone ownership percentage has been increasing rapidly.

Finally, it is reported that government Websites are static. They are not updated regularly. Most Websites are focusing on one-way information dissemination to a great extent. Therefore, the government plans to provide more interactive services, such as online applications, online payments of invoices/taxes, and online training. The constraints that the TRNC government face are the current tender regulations, the lack of adequate telecommunications infrastructure, lack of qualified IT personnel, and shortage of government funds (UNDP, 2007, p. 7).

In conclusion, in order to speed up e-government development and adoption, coordinated government and business action is required. Of utmost importance is the need to provide high-speed Internet access with lower prices. This process has to be accompanied by an awareness campaign regarding what can be achieved by the widespread use of e-government services in the TRNC.

3 Reasons for E-government Adoption

E-government adoption in the TRNC is not an isolated development. Instead, e-government efforts are an inseparable part of the greater transformation process of government reform. The high-level political decision makers are well aware of this critical connection, as can be seen below in a public statement by the TRNC President, Mehmet Ali Talat (2006), who strongly emphasized the important part played by e-government efforts in TRNC’s greater plans for government reform, and the goal of becoming a member of the EU as

We need transparency, democracy, rule of law, social justice, modern technological structuring and functional administrative arrangements to better institutionalize the administrative mechanism of the Turkish Republic of Northern Cyprus. This is why we place importance on the E-government concept. And again, this is why we are trying to establish the superiority of law and a network between different institutions of the State as envisaged by the Constitution. These are painstaking efforts and can only be realized with the participation of all our people.

The State should not be compatible only with certain people, political groups or mentality, but with all Turkish Cypriots, and should be able to meet the needs of the people. We should never forget that the higher institution we call “the State” exists to serve its people. This service cannot be limited to meeting minimal demands, bureaucratic procedures, providing security or paying salaries. A social order, which offers modern and democratic facilities, social services, educational and cultural openings based on equal opportunity, economic wealth, and rights and freedoms, should be created. It is one of our priorities to comply with the norms of the European Union.

This motivation for e-government adoption is demonstrated clearly in a recent decision of the council of ministers, numbered E-149-2009, in which e-government is defined as a means to an end. The underlying objective is to “reform the government in a way to minimize complaints and do away with the factors that inhibit productivity in the public sector”. The institutional outcomes for the setting of these objectives are the establishment of the two new units in the Prime Ministry of the TRNC for (i) minimizing red tape and (ii) protecting the rights of citizens. In an effort to create parallel systems for citizen complaints and satisfaction, a call centre (0392-2283141, internal 163) is established and an institutional address for written complaints in the Public Personnel Department are provided in addition to the online system (TRNC E-Government Portal, 2009).

Such political will and determination to reform government, however, is not always sufficient for the successful adoption of e-government. The presence of a well-thought-out national information policy/strategy for the TRNC is also of greatest importance. Such a strategy should include the introduction of a more rigorous education system that would produce more able information users, better integration of the basic parameters of the national information policy in major legal documents such as the Constitution and the laws, creation of a national information infrastructure and the establishment of a government agency/authority that would be in charge of organizing, coordinating and overseeing the national information policy/strategy, equipped with adequate powers and funds (Sağsan, 2000).

4 Organization of E-government in Northern Cyprus

This section explains the organization of e-government in TRNC. To this end, first, the organizational structures that plan, govern and oversee e-government efforts are explained. Then, the legal developments that enable e-government implementation are listed and explained in detail. Finally, organization of the physical outcomes of e-government efforts, which materialize in central and local government Websites, is examined.

4.1 Organizational Structure

The organizational structure that plans, coordinates and oversees e-government development in the TRNC is a system called “KamuNet” (Public Network). This network is made up of the representatives of government agencies organized in four different boards: E-transformation Execution Board (Minister and undersecretary level), KamuNet Senior Board (Experts), Agency Representatives Board (representatives from government agencies) and Advisory Board (members of the civil society representatives). The main duty of all these boards is to determine the projects to be implemented and then to oversee the successful implementation and coordination of these e-government projects (TRNC KamuNet, 2009).

In addition to the public network system with its multiple board-based structure that aims to maximize participation in e-government policy planning and decision making, there is a strategic planning effort underway, as explained in detail in the following sections. Here it suffices to mention that this strategy foresees the establishment of a new and autonomous government agency in order to plan, implement and evaluate e-government efforts.

4.2 Legal Infrastructure for E-government

This section examines and explains in detail the legal infrastructure of e-government adoption in the TRNC. To this end, ICT-related articles in the TRNC Constitution and several laws about the adoption and use of various technologies are examined.

The TRNC Constitution includes several articles that relate to the successful adoption and use of technology in the country. First, Article 21 of the TRNC Constitution, protects the freedom of communication and the privacy of personal communication. Second, Article 30 guarantees the freedom of the TRNC citizens to use various means of communication without any kind of restriction. Finally, Article 59 gives the state of TRNC the duty of providing the adequate technologies for the education of its citizenry.

There are also a few specific laws that form the legal infrastructure for the adoption of e-government in the TRNC. Specifically, there are four laws, which deserve mention. Two of these laws are related to the organizational planning of e-government in the TRNC. These are the “Technology Development Regions Act” and “Telecommunications Department Foundation Act”. The other two laws are about the legal infrastructure of e-government, namely, the “Right to Information Act” and the “Electronic Signature Act”. Concise summaries of these laws¹ are presented below in chronological order.

First, the Technology Development Regions Act of 2005 (Law Number: 02/2005) provides the legal infrastructure for the establishment of these special regions as

¹Full texts of these laws in Turkish can be downloaded from the Turkish Republic of Northern Cyprus National Assembly (Republic Assembly) Website, at <http://www.cm.gov.nc.tr/>.

centres of technology research and development. These centres are located within the boundaries of the universities in order to use the highly trained university researchers in their endeavours.

Second, the Right to Information Law of 2006 (Law Number: 12/2006) organizes the processes with which TRNC citizens use their right to information regarding the activities of the government agencies in their countries. Enactment of this law is closely linked with the objective of creating a responsive, transparent and accountable public administration system. The law explains the processes of application to and the answering of these applications. It also defines the limits of the right to information in TRNC, such as the protection of government and trade secrets.

Third, the Telecommunications Department Law of 2007 (Law Number: 21/2007) does not establish this department, but reorganizes it according to the technological and legal requirements of the day. As such, the law lists the qualifications of the technical staff, who are to be recruited for the department. The objective is to set the parameters for the recruitment of qualified technical and administrative personnel, who can ably oversee the development of a technological infrastructure in the country.

Finally, the Electronic Signature Act of 2007 (Law Number: 93/2007) organizes the legal and technical framework for the use of secure electronic signatures for real persons and legal entities in the TRNC. To this end, this law aims to regulate the activities of the electronic signature providers and the authentication mechanisms of electronic signatures. It is explicitly written in this law that electronic signatures create the same legal results with regular paper-based signatures.

The presence of the above-mentioned articles of the Constitution and the laws are all positive developments towards the establishment of a legal infrastructure for e-government adoption in the TRNC. A recent law on the protection of personal data was enacted in 2007 (Law Number: 89/2007). However, there is still a need for adapting the current intellectual property and taxation laws to the conditions of the days in general and to the e-government adoption process in particular. There is also a need for legislation that targets the punishment of cyber crimes (UNDP, 2007, p. 12).

4.3 Turkish Republic of Northern Cyprus Government Websites

This section provides information about the current development level and content of TRNC government portals at both central and local government level. Before such a detailed analysis, two points are worth mentioning:

First, the TRNC aims to be an EU member in the future. Since the country has not been officially recognized as a sovereign state by the international community, government Website addresses are not “.gov”, but “.com”, “.org” or “.eu”. Proper “.gov” addresses are expected to be produced after the completion of the membership process.

Second, the history and the ethnic makeup of the island of Cyprus necessitate the use of multiple languages (Turkish, Greek and English) on TRNC Websites.

The existence of multilingual content may enable Greek Cypriots to utilize TRNC government Websites as well.

4.3.1 Central Government Websites

The government portals examined in this section are those of central government ministries, together with other related government agencies such as the Central Bank and the State Planning Organization. Most of these Websites provide government information and a limited number of government services. The most impressive of the central government Websites are those of the judiciary. This system includes interactive services for lawyers, such as modules for legal correspondence and tracing debt proceedings or bankruptcy cases. Overall, the central government Websites are mostly at cataloguing and, to a lesser extent, interactive levels of Layne and Lee's e-government development levels model. A list of these Websites is presented below in Table 21.2.

Table 21.2 URLs of TRNC Central Government Ministries and Agencies

Agency	URL
Turkish Republic of Northern Cyprus Presidency	http://www.kktcb.eu/
TRNC Prime Ministry	http://www.kktcbasbakanlik.org/
TRNC Ministry of Foreign Affairs	http://www.trncinfo.com/
TRNC Ministry of Finance	http://www.kktcmaliye.com/
TRNC Ministry of National Education, Youth & Sport	http://www.mebnet.net/
TRNC Ministry of Health	http://www.saglikbakanligi.com/
TRNC Ministry of Agriculture and Natural Resources	www.kktob.org
TRNC Ministry of Public Works and Transportation	http://www.kktculastirma.com/
TRNC Ministry of Labour and Social Security	http://www.csgeb.eu/
TRNC Ministry of Tourism, Environment and Culture	http://www.turizmcevrekultur.org
TRNC State Planning Organization	http://www.devplan.org/
TRNC Court Authorities	http://www.mahkemeler.net/
TRNC Kamunet	http://www.kamunet.net/
TRNC E-government	http://www.edevlet.eu/
The Central Bank of TRNC	http://www.kktcmerkezbankasi.org/
TRNC Court Ombudsman	http://www.kktcombudsman.org
TRNC Development Bank	http://www.kktckb.org/
European Union Coordination Centre	http://www.eucoordination.org/
North Cyprus Tourism Centre	http://northcyprus.cc/
Turkish Trade Promotion Office, TRNC	http://www.igemekktc.org/
External Representations	http://www.trncinfo.com/

Source: <http://www.investinnorthcyprus.org/links.html>.

4.3.2 Local Government Websites

This section provides information about the Websites of major local government units in the TRNC. It should be noted that, due to limited web presence, only the major municipality Websites are examined in this section and presented below in

Table 21.3. No systematic study could be found on the other local government level, that is, village Websites in the TRNC.

Table 21.3 URLs of Main TRNC Local Government Units and their unions

Local government unit	URL
Union of Cyprus Turkish Municipalities	http://www.ktbb.org/
Nicosia Turkish Municipality	http://www.lefkosabelediyesi.org/
Kyrenia Municipality	http://www.girnebelediyesi.com/
Famagusta Municipality	http://www.magusa.org/
Morphou Municipality	http://www.guzelyurtbelediyesi.com/
Gönyeli Municipality	http://www.onlinegonyeli.com/

Source: <http://www.investinnorthcyprus.org/links.html>.

There are a total of 28 municipalities in the country. These TRNC municipalities provide government information and services such as preparing and updating online maps (Lefkoşa Municipality); enabling citizens to learn the amounts of their utility bills and property taxes from the municipality Website; and providing interactive city guides by utilizing geographical information systems (Gazimagusa Municipality). Gönyeli Municipality also stands out as its Website enables its visitors to pay their local taxes online, to browse the three-dimensional city information system and to apply for services for the elderly. These municipalities plan to develop their Websites in more interactive ways, parallel to the “informatics island” strategy of the country, which is explained in detail below (Aybar, 2010).

5 Evaluation and Conclusion

This section first presents and evaluates the challenges that e-government applications in the TRNC face in the present and in the future. Then, some recommendations are provided for the solution of these problems.

5.1 Challenges and Future Issues

E-government adoption efforts in the TRNC are still in their initial stages. Government agencies form their own Websites separately, and only recently a central e-government portal (the citizens’ portal, available at <http://www.vatandas.edevlet.eu>) connected them into a single entry/access centre. Introduction of a smart card system as a means to the establishment of a central e-government portal is underway. The enactment of several additional laws may pave the way to the integration of all the e-government information and services in a portal.

There are factors that encourage or discourage e-government development in the TRNC. A significant inhibiting factor for the adoption of e-government in Northern

Cyprus is the lack of perceived need to use e-government services. The creation of useful and meaningful content on government Websites seems to be a big challenge for government agencies. Providing online services for the Turkish Cypriots who live outside Cyprus and eliminate their need to come to Northern Cyprus for conducting transactions with their government, for example, will be a huge step towards creating useful local content.

Another inhibiting factor is the presence of digital divide in the TRNC. North Cyprus government and businesses have to collaborate in order to combat this serious problem by providing additional channels of connectivity for disadvantaged persons and groups in the North Cyprus society.

Regarding encouraging factors, top-level political support and awareness is extremely important at this stage. A very critical factor is that the President, Mehmet Ali Talat, seems very well aware of the importance of e-government for the overall economic, political and democratic development of the country. Such a political awareness and support is a strong signal to all the bureaucrats about the importance of e-government.

E-government adoption process in the TRNC is not an isolated process from other administrative and political developments in and around the country. First, it is closely linked with the reorganization of the Northern Cyprus public administration system according to the principles of new public management, such as transparency, accountability, productivity and responsiveness. Since the TRNC is a small country, it may become a test bed for bigger countries to try the effectiveness and efficiency of new e-government services and the implementation of public management ideas during the execution of e-government projects.

Second, an important development that would shape the trajectory of the e-government adoption process in the TRNC is the possibility of TRNC's entry to the EU as a member. Therefore, one way to evaluate the case of e-government in TRNC becomes one of adaptation to the EU standards on e-government adoption and implementation.

The EU pledges its financial support, among other things, for the "development and restructuring of infrastructure...in the areas of...telecommunications" (European Council Regulation, EC No 389/2006) as a means of encouraging the economic development of the TRNC. The country, in return, demonstrated its willingness to join the EU in a 2004 Referendum in which the southern part of the island opposed a reunion of the island under the EU.

5.2 Recommendations and Conclusions

The state of e-government and its applications in the Turkish Republic of Northern Cyprus are in their infancy. According to the e-government development stages of Layne and Lee, most applications are in the cataloguing stage. Government Websites mostly provide government-related information. There are few examples of the transaction stage, such as online payment of local taxes. The objectives of establishment of a portal, and the use of smart cards, together with the "informatics

island” strategy, which is currently underway, all aim to pave the way to the integration stage. Within this context, the future of e-government in the TRNC will be determined by the solution of several problems, such as the lack of IT infrastructure, qualified IT personnel, meaningful and useful content, digital divide and the creation of an organizational structure that can steer e-government development.

A main recommendation of this chapter is the preparation of a strategy for e-government planning and implementation. Such a study is currently underway. The TRNC government is in the process of preparing a detailed plan for the solution of these problems. The plan is referred to as transforming (Northern) Cyprus to an “informatics island” (the “informatics island strategy”). To this end, a conference was convened in TRNC during October 23–24, 2009, which included technology experts from government, private IT firms and non-profit organizations in TRNC, as well as those from Turkey.

The most significant outcome of this conference is the preparation of a draft strategy for TRNC to begin its journey towards becoming an “informatics island”. Among the aims of this strategy, the ones that deserve special attention are as follows: An independent agency, which will be responsible from the transformation of the country into an informatics island, determination of the target technologies and potential markets and the elimination of technological and legal barriers, will be established. An institute, that would coordinate the training and placement of the necessary human resources, together with universities, will be set up. Technology parks in TRNC universities and the public–private partnership arrangements that surround them will be reoriented so as to provide maximum support for the objectives of the strategy. Another aim is to maximize the contribution of the Turkish Cypriot IT professionals, who live in other countries, and to reverse the brain drain in TRNC, especially in the IT sector. Finally, EU initiatives on ICTs will be closely monitored and if possible, integrated into this strategy preparation and implementation process (Informatics Island, 2009).

This strategic planning effort will be the main thrust through the solution of organizational, technical and legal problems of e-government development in TRNC in the next 10 years. It is believed that, in the long run, ICT-based growth will accompany other strategic sectors in the Northern Cyprus economy, namely tourism and higher education.

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