Development Phases of E-Government

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Abstract

In post-digital ecosystem, the implementation of effective electronic government systems comes to the fore as a strategic priority. Removing paper based processes and increasing integration of the systems used by different departments and agencies are directly related to the power of a government. e-Transformation of the government from traditional to electronic takes place in four stages, namely the phase of initial presence, unification, integration and social transformation. In the initial presence phase, each government institution separately provides services to citizens through its own site. In the unification phase, citizens will be able to access all government agencies' systems through a single website with a single username and password. In the integration phase, the systems of all government agencies will be linked to a common reference and archive system as well as common databases. Finally, in the last phase, the most important phase of electronic government applications, it will be ensured that citizens and the government will meet on the internet through electronic government applications. In this phase, the society will become an information society, and thus increase its productivity at individual level. Therefore, e-government projects have strategic importance for governments. In this context, the study emphasizes the importance of the involvement of the society to electronic government projects and suggests a new classification for the development phases of e-government.

Keywords: *Electronic Government, Digital Economy, Digital Divide, Social Transformation*

Elektronik Devletin Gelişim Evreleri

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Öz

Post-dijital ekosistemde etkin elektronik devlet uygulamaların hayata geçirilmesi stratejik öncelik kazanmıştır. Kağıt belgelere dayalı iş süreçlerinin ortadan kaldırılması ve devlet kuruluşlarının sistemlerinin birbirleri ile entegre edilmesi devletin gücüyle doğrudan ilgilidir. Devletin e-dönüşümü dört evrede gerçekleşmektedir. Bu evreler varlık gösterme, birleşme, entegrasyon ve toplumsal dönüşüm evreleridir. Varlık gösterme evresinde, her devlet kurumu birbirlerinden bağımsız olarak kurdukları kendi siteleri aracılığıyla vatandaşlara hizmet vermektedir. Birleşme evresinde, vatandaşlar tüm devlet kurumlarının sistemlerine tek bir kullanıcı adı ve şifre ile tek bir web sitesi aracılığla erişebilirler. Entegrasyon evresinde, tüm devlet kurumlarının sistemleri ortak veritabanı, referans ve arşiv sistemine bağlananır. En önemli evre olan toplumsal dönüşüm evresinde vatandaş ve devlet elektronik devlet uygulamaları vasıtasıyla internette buluşur. Bu evrede toplum bilgi toplumuna dönüşür ve bireysel seviyede verimlilik artar. Elektronik devlet projeleri devletler açısından stratejik öneme sahiptir. Bu çalışma elektronik devlet uygulamalarına toplumun ve vatandaşların dahil edilmesinin önemini vurgulamakta ve e-devletin gelişim aşamaları için yeni bir sınıflandırma önermektedir.

Anahtar Kelimeler: *Elektronik Devlet, Dijital Ekonomi, Dijital Bölünme, Sosyal Dönüşüm*

Introduction

Electronic government refers to integration of government systems and the provision of public services and information to individuals and institutions via internet (Civelek and Sözer, 2003). Electronic government can be combined with organizational change in the structures and operations of government institutions (Field, Muller, Lau, and Gadriot-Renard, 2003). Electronic government also represents some concepts like modernity, innovation, and flexibility in public service delivery (Adjei-Bamfa, Maloreh-Nyamekye, and Ahenkan, 2019). Electronic government involves the continuous optimization of services, participation and governance by replacing internal and external relations by means of the internet technology (Fang, 2002). Electronic government also includes key issues of governance, such as the active involvement of stakeholders in the process of shaping, discussing and implementing public policies. Consequently, electronic government is a model that envisages the participation of all parties involved in network coordination structures related to horizontal coordination and interaction structure, and uses decentralized communication networks developing with information and communication technologies (Yılmaz, 2007). Electronic government enables the effective use of information technology to provide public services directly and uninterruptedly to citizens (Mahmoodia & Nojedeh, 2016). In digital economy, the most important production factor is information (Civelek M. E., 2009). The method of production is also changing in digital economy, which eventually leads to changes in the social structure (Civelek M. , 2018). Essentially, digital economy refers to the transition from the industrial society to the information society. The transition from the industrial society to the information society starts with digitalization (Farnham, 2000) which started in 1950s and made a distinct bounce in the 1990s (Press, 2015). Since the 1960s, the implementation of information technologies to the public institution has led to a qualitative change in the relationship between citizens and governments (Bennett , 1992). The Internet has completely changed the way individuals, businesses and governments work. It has become the main tool for the dissemination of information, products and services (Alawneh, Al-Refai, & Batiha, 2013). As a result, the transition to the information society reveals the new social and economic structure

which we may call the post-digital ecosystem (Sözer, Civelek, and Çemberci, 2018). In this new ecosystem, information management is the most important source of power and accurate management of information has a strategic importance. The government, within this context, is essentially an organization for information management; and effective use of information is related directly to the power of the government. Therefore, today, digitalization has a vital role for the governments. That being said, governments around world realized the importance of the digital revolution and have implemented electronic government projects. Today electronic government systems have become the core factor for public administration (Torres, Pina, and Acerete, 2005). According to Garson, there are four theoretical approaches in which e-government is conceptualized. The first approach includes the potential of decentralization and democratization. The second is the normative / dystopic approach which emphasizes the limitations and contradictions of technology. Sociotechnical systems approach is the third one and it emphasizes the continuous and bi-directional interaction between technology and institutions. The fourth approach relates the e-government to global integration theories (Dekker, 1999).

Approaching from a historical perspective, it is seen that states which cannot keep up with the social and technological developments are erased from the stage of history. In the future, it will be technology that will be the determining factor in identifying the borders of countries in the future. The government is an information management organization and it is in constant communication with various individuals and institutions through public institutions to fulfil its functions. In this context, a strong state needs to have this communication carried out very effectively. Otherwise, the fact that the government is far from the developments in information technologies means that the government is separated from the society and thus, cannot govern the society. For this reason, many states are developing e-Government projects with great ambition.

The transactions carried out on paper-based processes increase both bureaucracy and public spending. In order to decrease public expenditures, transition to electronic environment has become a necessity. E-Government projects should be considered as a transformation project that will be realized by the society and the government together in order to

prevent the pernicious effects of the digital divide. Electronic government represents transformation in the relationship between citizens and government (Mossberger, Tolbert, and Stansb, 2003). Success of electronic government projects mostly depend on the adaptation of the citizens (Akman, Ali, Mishra, and Arifoglu, 2005). Citizens are increasingly demanding more and better services over the Internet. Governments are forced to evaluate systems and make improvements to better serve them (Gupta and Jana, 2003).

Through the Internet, the government can be integrated with every part of the society. However, in the implementation of government projects, the issue of digital divide within the country should be tackled in order to ensure equality between different segments of the society. Increasing Internet penetration within the country is very important for the realization of e-Government projects. Establishing the world's best e-government system would not be adequate either so it is essential that the use of this system is done by citizens in an accurate and effective way. In addition, it is very important that the laws are adapted to electronic documents and electronic signatures. In this way, an efficient and effective electronic government infrastructure can be established.

E-government projects are of strategic importance for states. In this context, the study emphasizes the importance of the involvement of the society to electronic government projects. The main motivation behind this study was to discuss social aspects of digital transformation. This study suggests a new approach to the electronic government stage models and defines the development phases electronic government. In the study, firstly, benefit of the electronic government was mentioned. Subsequently, social structure in post-digital ecosystem was defined. Consequently a new classification for the development phases of e-government was suggested.

Benefits of E-Government

In fact, e-government is accepted as a model that necessitates structural and mental transformation of the state. The primary reason for the rapid spread of e-government applications is that public administrations have become cumbersome, ineffective, complex and inefficient, and have

started to experience a serious legitimacy crisis in the eyes of the citizens who finance it with these qualities (Delibaş and Akgül, 2010). The four main objectives of electronic government are as follows: (1) restructuring managerial functions and processes (2) removing barriers to coordination and cooperation in public administration (3) monitoring the performance of the state (4) improving relations between the state and citizens (Ciborra and Navarra, 2005). In electronic government applications, governments aim to achieve efficiency, effectiveness and data quality improvement. Subsequently, they aim to improve general administrative services, functions and activities (Andersen and Henriksen, 2006). Electronic government systems have several benefits for government, business and citizens (Jaeger, 2003). Citizens are the main beneficiaries of e-Government systems (Sanchez and Macias, 2019). Citizens have different roles such as policymakers, public servants, tax-payers and entrepreneurs (Castelnovo, 2013). In other words, they can simply be considered as the owners of the government. Therefore, the aim of electronic government systems is to increase the public value (Twizeyimana and Andersson, 2019). Electronic government applications can be evaluated according to the capability to produce public value (Castelnovo and Simonetta, 2008). Electronic government provides various benefits such as accountability, transparency, and reduced corruption (Krishnan, Teo, and Lymm, 2017). Electronic government practices encourage citizens' participation in decision-making and improve quality while making the state more transparent, accountable and effective (Osei-Kojo, 2017).

The most efficient use of information by public institutions ensures an effective and strong government structure. The effective use of information, which is the most important production factor of digital economy, is vital for the economies of countries to survive in the post-digital ecosystem. The capitalist economy, dominated by money-based production, is now deadlocked. The rapid decrease in dependency on human in business processes brings about unemployment. Uncertainty brought by unemployment will cause capitalism to collapse. In the post-digital ecosystem, in which the knowledge-based mode of production is adopted, countries should set up effective electronic government systems in order to maintain their independence.

Thanks to e-government practices, the integration of public institutions with each other is ensured by the enabling of all government agencies to use the common database, electronic archive and reference system. With integration, there will be no need for repeated transactions. Furthermore, citizens will not be asked to bring many documents from various institutions. The information and documents of an individual in all government departments can be accessed through a single system, which will definitely eliminate unnecessary paper work in government operations. In this way, the costs of paperwork, postage and excessive personnel costs will be reduced and the government institutions will eventually become more efficient.

It will be ensured that the citizens living in remote areas and abroad will get closer to the government. With the diminishing effect of the human factor, problems such as corruption and bribery are prevented in the government. The integration of the systems belongs to government and public sector enables informal and underground economy to be controlled. In economy tracking, tracing and transparency increase. In this way, trust and commitment of citizens to the government increases. Trust is an essential element of efficient implementation and adoption of electronic government systems (Shirish and Thompson, 2005). E-Government has a vital role to establish efficient and transparent government (Prattipati, 2003).

Social Structure in Post-Digital Ecosystem

Technological developments have a very important role in the world history. The change in the forms of production in history also causes a change in the way people live. Social turmoil and revolutions took place simultaneously with the change in the mode of production. Nowadays, as the information becomes the most important production factor, it is observed that capitalist system has entered into a vicious circle. Besides this, in many countries, there are social upheavals and revolts which are directed by the internet and social media.

Societies that can keep pace with change seem to be more effective throughout history. In this context, digital divide stands against countries

as a major obstacle. Digital divide is the imbalance in access to technological possibilities among the social segments. The imbalance in access to technological possibilities inevitably causes imbalance in terms of their ability to access to the information. Considering that information as the most important factor of production in the digital economy, the difference between the lower income groups and the higher income groups is deepening. This phenomenon is called economic divide.

As has been said above, trust is an important aspect of successful electronic government. Privacy is the key element in order to build trust, (Kim, Donald, and Raghav Rao, 2009). In post-digital ecosystem, one of the most important factors that affect social structure is the lack of privacy that primarily has negative consequences for people's mental health. However, there was nothing that could be done against it. Technological advances drive humanity towards the inevitable conclusion. People must accept the continuous recording of all communications, transactions and actions to sustain their lives (Houle, 2018). The development of the Internet of Things technologies will ensure that most of the devices owned by people are connected to the Internet (Rifkin, 2014). In the near future, personal belongings of humans such as toothbrushes, watches, glasses, vehicles, pencils etc. will all be connected to the internet (Morgan, 2014). This means there will be a total surveillance and record of all the human activities. This phenomenon naturally threatens the privacy and makes people more visible and traceable. Due to the increasing use of social media sites, people intentionally make themselves open for this threat. For the people, basic motivation factor in social media web sites is to widen their personal influence area. While doing so, they waive their privacy for the sake of increasing personal effect. Especially, for security purposes, electronic government applications continuously collect biometric information of individuals. These applications do not offer people a choice. Today, individuals do not have any choice other than living under total surveillance. Big data analysis techniques are continuously improving in the meantime, and companies that possess big data know people better than they know about themselves personally. Today, some are trying to establish control over citizens by using the social score system as a social control tool. The

use of electronic government systems as a social control tool and the help-lessness of citizens against it is a serious problem. As a result, it may cause social explosions.

Development Phases of E-Government

In the literature, citizen-centered integrated e-government services are the most important indicator of a mature electronic state. The maturity of elec-tronic government refers to the extent to which a government in a country has established an online presence. This approach reflects an evolutionary perspective (Khan and Krishnan, 2019). Although there are different ap-proaches, most of the models in the literature emphasize the importance of integration into improve e-government services (Andersen and Henrik-sen, 2006). In the extant literature, many stage models have been sug-gested. Electronic government stage models typically consist of five stages (1) publication of information on websites, (2) communication with citi-zens via electronic channels, (3) offering transaction services online, (4) delivery of integrated e-government services (5) e-democracy to involve citizens in decision-making (Chasin & Scholta, 2015) (Scholta, Mertens, and Kowalki, 2019). According to another approach, the phases of elec-tronic government are as follows: (1) Building online websites with simple and basic information, and allowing users to download some application and registration forms (2) to fill in online service and registration forms and to enable interactive transactions (3) providing connections between local systems and central systems and allowing the use of similar func-tions (4) ensuring that all transactions of institutions are carried out from a single point (Sang, Tang, and Trimi, 2005). In this paper the rise of e-government in a country is discussed in four phases which are initial pres-ence, unification, integration and social transformation. This classification was first suggested by Civelek and Sözer in 2003 (Civelek and Sözer, 2003). In initial traction, government institutions set up their own single and iso-lated web sites. Subsequently, in the unification, all the institutions come together and set up common web site. On this unified web site, citizens can reach the systems of all the institutions by using unique username and password. In the next step, systems of the institution are integrated and electronic documents are used. The last stage is the social transformation

phase in which digital divide is eliminated and real economic and social effects of the electronic government are seen.

Initial Presence Phase

The first phase of the electronic government is that all public institutions create their own web sites and communicate with citizens through these sites. In this phase, each government institution separately provides services to citizens through its own site. It is the earliest and primitive phase of e-government. This phase usually lasts until all institutions have a website. Afterwards, the unification phase is triggered. In this phase most government institutions create and operate their electronic government systems independent from each other (Aldrich, Bertot, & McClure, 2002) .

Unification Phase

In this phase, the services provided by all institutions on individual portals will be given on a single portal and common online service standards will be determined among institutions. Citizens will be able to access all government agencies' systems through a single website with a single username and password. Although services are provided on a single website at this phase, the inter-system integration of government agencies is limited. Unification on a single portal paves the way to system integration and eventually single e-government system.

Integration Phase

At this phase, the use of paper documents in government institutions will be terminated and all transactions will be carried out through electronic documents. Electronically signed documents will work as integrated on all state systems. During this period, dependence on paper document and wet signature will end. The systems of all government agencies will be linked to a common reference and archive system as well as common databases. Repeated transaction and need for repeated applications to different institutions will come to an end as well.

Owing to recent technological developments, paper based documentation are being abandoned in all government processes. Electronic documents which are electronic records bearing electronic signature confirmed by a certificate authority also prevail in business processes. In the integration phase, governments should respond to these developments in order to meet the needs of business and citizens. To perform the processes in the paperless environment, all parties involved should be included in the electronic environment. Therefore, implementation of electronic document into business processes needs integration among government institutions. In the integration phase, government agencies need to work together in harmony. Furthermore, electronic government is not just a structure of government institutions. It should rather be considered as a whole with all its constituent elements. At this stage, reorganization and integration is necessary to create uninterrupted solutions (Yıldız, 2007). These uninterrupted solutions are only possible with the integration of all parties involved in the processes.

Social Transformation Phase

In this phase, non-formal education campaigns are carried out to cover all individuals in the society in order to prevent digital divide within the society. Increasing Internet penetration within the country is very important for the realization of e-Government projects. Establishing the world's best e-government system is not enough. This needs to be used by citizens in a correct and effective manner. Although e-government services offer great advantages and benefits, the number of citizens using these services is an important indicator in evaluating the system used (Kurfalı, Arifoglu, Tokdemir, and Paçin , 2017).

In this context, public should be informed. This will be possible by designing the education system in accordance with the Internet era. Computerization campaigns should be considered as a social education project to address the problem of lack of education on the internet, not as the elimination of infrastructure problems. Internet penetration rate is very important for the success of e-government projects (Civelek M. E., 2009). In a country where Internet penetration is low, it would be difficult to bring the government to the Internet and adapt the laws to the Internet (Civelek

and Sözer, 2003). Additionally, to involve citizens in the e-government projects, governments should focus on the technical, psychological and behavioral aspects (Alawneh, Al-Refai, and Batiha, 2013). Electronic government should focus on the improvement of public participation and updating democratic mechanisms (Santa, MacDonaldb, and Ferrer, 2019).

Conclusion

The increase of expectations of individuals from the government in the post digital ecosystem requires changing the perception of the government in the society. In this case, the most important action that governments should take is to implement a social transformation project that will enable individuals in the lower income groups to be included in the new ecosocial system. Thus, it is important to meet the expectations of individuals at all levels from the government. The e-Transformation of the government from the traditional to the electronic takes place in four stages, namely the phase of initial presence, unification, integration and social transformation. The last phase of social transformation is the most important phase of electronic government applications. In this phase, it will be ensured that citizens and the government will meet on the internet through electronic government applications. Within the society, attempts will be made to decrease the digital divide between the new ecosocial system individuals and the former economic system individuals who do not use the internet. The real economic and social effects of the electronic government will emerge at this stage. In this phase, the society will become an information society and increase its productivity at individual level. Therefore, e-government projects are of strategic importance for states.

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