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**MODERN DEMOCRATIC FEDERATIONS IN THE  
DIGITAL AGE: THE CONDITIONS AND  
PREREQUISITES OF ELECTRONIC GOVERNMENT  
(DE-)CENTRALIZATION**

MA thesis

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I have written this Master's thesis independently. All viewpoints of other authors, literary sources and data from elsewhere used for writing this paper have been referenced.

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## **MODERN DEMOCRATIC FEDERATIONS IN THE DIGITAL AGE: THE CONDITIONS AND PREREQUISITES OF ELECTRONIC GOVERNMENT (DE-)CENTRALIZATION**

Mariia Maksimova

### **ABSTRACT**

This thesis discusses the process of administrative (de-)centralization of electronic government in 11 democratic federations. The research is comparative in nature and process-tracing was used as a primary data analysis method in order to identify the factors that led to the centralization or decentralization of the three electronic government areas. The following factors were discussed in the study: *economic resources, the quality of public services, the quality of electronic government and the political orientation of the majority party in the parliament*. The work not only analyzes the prerequisites for the actions of the central government regarding the electronic government system aimed at redistributing intergovernmental power-relations but also categorizes these actions in the context of redistribution of *administrative* powers. Based on the results of the study, the factors of centralization or decentralization of each electronic government area are highlighted, and the main strategies are outlined. As the thesis argues, the desire of federal center to improve the quality of public services and quality of electronic government leads to the decentralization of electronic services area with the centralization of electronic administration, while increasing of economic resources leads to greater centralization of both electronic administration and electronic services.

## TABLE OF CONTENTS

Introduction.....	5
1. Theoretical and methodological approaches to the study of the “electronic government” concept and its (de-)centralization.....	13
1.1. Electronic government: an independent object of study or dependent variable? .....	13
1.2. History and conceptualization .....	16
1.3. Models of implementation and architectural solutions .....	22
2. Electronic government and (de-)centralization in the democratic federations: methodological approach and limitations .....	26
2.1. How to study federalism: administrative, political and fiscal approach.....	26
2.2 The relationship between electronic government and (de-)centralization in a federal environment.....	29
2.3 Theoretical framework and data coding .....	32
2.4 Research method.....	38
3. (De-)centralization of electronic government in democratic federations: an empirical measurement .....	41
3.1 Argentina .....	41
3.2 Austria .....	45
3.3 Australia.....	48
3.4 Bosnia and Herzegovina .....	51
3.5 Belgium .....	54
3.6 Brazil .....	56
3.7 Germany .....	58
3.8 India.....	61
3.9 Mexico .....	63
3.10 Switzerland.....	66
3.11 United States of America.....	68
Conclusion .....	71
Bibliography.....	77

## Introduction

The modern world is characterized by the penetration of information technologies into all spheres of society. Recently, attention is paid to the concept of “electronic government”, which refers to the use of information and communication technologies (ICT) in order to increase the variety and quality of public services provided to citizens and businesses actors while making government more efficient, accountable, and transparent (Schware, 2005; West, 2004). It happens due to the fact, that the introduction of electronic government faces a number of conceptual and practical problems. First, there is still no universal approach to understanding what this concept is, which is exacerbated by academic discussion about related terms such as: “electronic governance”, “open government” and “electronic democracy”. Secondly, there is a gap between normative and empirical studies of this phenomenon, as a result of which its potential to transform different spheres of society is confirmed and denied at the same time. Thirdly, the very nature of information technologies implies a constant change, as well as variety of the implemented architectures and strategies of electronic government in countries with different social, economic and political institutions. In these conditions, further theoretical comprehension and elaboration of the concept are still relevant.

In the general term, the electronic government implies continuous optimization of the services provision, public administration and participation of citizens through changes of internal and external relations through the introduction of information and communication technologies (Baum et al., 2000). For the purpose of the study, in this work electronic government is understood as “...[t]he continuous optimization of service delivery, constituency participation, and governance by transforming internal and external relationships through technology, the Internet and new media” (Gartner Group (2000), as cited in J. Seifert (2003)). Thus, the process happens in different areas, both within the authorities and in the sphere of interaction between the actors of politics among themselves. Three of them are singled out: electronic administration, electronic services, and electronic participation (Curtin, 2007).

The electronic administration is mostly about the informatization of processes within the bureaucracy, from computerization and the establishment of electronic document management to the automatization of other sectors of government. The electronic services sector includes mechanisms for the provision of public services

through websites, web-portals or specialized centers. Electronic participation contains mechanisms for involving citizens in discussing problems and making decisions: from feedback channels to electronic voting. Regarding internal government processes, the electronic government directed at reducing transaction costs, simplifying information flows and increasing the efficiency of the bureaucracy, the final result of which is the transformation of hierarchical, bureaucratic structures (Grundén, 2012) and the reduction of corruption (Ionescu, 2013).

At the country level, there are noticeable differences in the design of electronic government, the methods and results of its implementation and it can partly be attributed to the fact that this process can be considered as an innovation. In political science, innovation is basically understood as a kind of political course that has a relative novelty for the actor-recipient of innovation and is aimed at changing certain institutions of public policy (Walker, 1969). Moreover, unlike reform, innovation is not only a political course but also a technology (Anheier & Fliegau, 2013). One of the obstacle for the research is that depending on the context, the study of electronic government is complicated by the fact that it is being introduced into the political reality as a part of administrative reform and other modernization programs.

Based on the theory of diffusion of innovation, this activity is a complex nonlinear process, in which it is possible to identify several stages. An integral part of it is the outlining of its institutional design, which includes the scope of innovation, its objectives, functionality, technology, etc. This process is highly influenced by so-called entrepreneurs - actors with interests and resources for creating a new institution and changing the rules of the game. In turn, in the process of deciding whether to implement an institutional design, actors are guided by different motives from rational choice to coercion from the outside. Attempts to combine all the factors into a single model were made within the framework of the diffusion approach, which assesses the influence of internal determinants and external conditions on the introduction of innovation. The key internal characteristics are economic, political, demographic and other variables, which include a wide range of factors from the level of gross domestic product per capita (GDP) to the level of education and political culture (Jun & Weare, 2010, Tolbert et al., 2008). In this paper, these assumptions will be partly reflected in the hypotheses of the study.

As can be seen from this, the field for research is surprisingly wide, and the studies which are already conducted on the matter, do not narrow it. That is why, following the idea of W. Booth, G. Colomb & J. Williams (2003), in this paper, it was decided to shift the focus to a sphere directly connected to the interaction of different levels of government in relation to electronic government. Thus, the author concentrates on the factors that influence the process of (de-)centralization of electronic government, meaning by that *the redistribution of **administrative** powers between different levels of the state*. The focus is on the countries that have a federative structure given the fact that from the theoretical point of view, initiatives in the field of computerization of state administration may conflict with the principles of federalism. The problem lies in the very nature of federative relations. Based on the definition of William Riker, the state is federal if “*the activities of government are divided between regional governments and a central government in such a way that each kind of government has some activities on which it makes final decisions*” (Riker, 1975: p.101). Thus, it can be considered as some autonomy of the actors, which is an important point because information technology emphasizes and promotes a horizontal or "network" model of communication and interaction (Seifert, 2003) which can lead to the loss of this autonomy by sub-national units.

The research focus on examining the process of implementing the electronic government system is quite popular within the academic community. Nevertheless, as with any issue related to such complex concepts as electronic government and the relationship of power actors to each other, there is no consensus in this field regarding the factors that influence the process of decentralization or centralization of this sphere. There are quite a few studies on the subject of decentralization, but most of them are concerned with the question of the horizontal decentralization as an architectural design and focus on the models of electronic government. Nonetheless, some researchers are concerned that this may have an impact on federal power-sharing practices between the national government and other levels of the state administration (Doty et al., 2002; Hill, 2004; Schedler et al., 2004).

The concept of an electronic government goes in close connection with the idea of democratization. Moreover, in this study, the idea of looking at authoritarian regimes is denied. It is justified by the fact that the process of centralization or decentralization of the electronic government in conditions of authoritarianism is determined by the desire of the

federal center to concentrate all the power in their hands. The purpose of this analysis is to understand what kind of cause-and-effect relations are inherent in the centralized and decentralized institutional design of electronic government, and in the case of authoritarian regimes, the conditions and requirements for such decisions have nothing to do with the need within which the government operates in the democracies.

The research is faced with the problem: a systematic study of the relationship between factors that affect the process of administrative (de-)centralization of electronic government is essentially non-existent. Moreover, despite the fact that democratic federations are a research field that has been popular for the past several decades, the author has not succeeded in finding works aimed at a comparative analysis of all democratic federations. Based on these two premises, the **research question** was formulated: *Why in some democratic regimes the federal states pursue a policy of centralizing an administrative sphere of electronic government, while in others its' decentralization is pursued?* This formulation of the question allows to consider not only the centralized and decentralized models of administrative power-sharing introduced in a particular state but also the institutional and historical prerequisites for such an action. There is a wide range of unexplored areas and questions of how centralization processes work, why they occur, and what the consequences are. The reasons that lead countries with the democratic regimes to centralize this area can demonstrate the real need for such political decisions under certain conditions. Thus, the **dependent variable** of this study is the *downward vertical (de-)centralization of electronic government administrative sphere* which refers to the transfer of administrative power from/to the national level to/from the subnational units.

To select the cases in order to study what factors influence the process of (de-)centralization of electronic government, the Freedom House materials are used. According to reports, Freedom House gives the status of "electoral democracy" if the following conditions are presented in the state: 1) the existence of a competitive multiparty political system; 2) grant universal suffrage for all citizens; 3) regularly held elections are safe, honest and reflect the opinion of the population; 4) in the course of the pre-election campaign, equal opportunities are provided for access to the media of the main political parties (Campbell, 2008). Thus, the analysis is based on 11 countries: Argentina, Austria, Australia, Bosnia and Herzegovina, Belgium, Brazil, Germany, India,



Mexico, Switzerland, USA. It should be noted that despite the fact that Pakistan is also considered as a democratic federation, the author decided to exclude this case from the pool of the study due to the fact that according to Freedom House, during the period from 2000 to 2013 it belonged to the group of countries with an authoritarian regime. In addition, although this period could be excluded from the timeframe of the study, until 2000 and after 2013 there was no action by the federal center regarding redistribution of powers within the electronic government system.

This study is a **comparative one**, given the fact that this method gives a deeper understanding of each case and allows to take into account factors that may not be noticeable in statistical analysis. Also, it is necessary to consider the fact that it is practically impossible to measure the degree of centralization or decentralization in a country using numerical values. To avoid the problem of “many variables, few cases”, several solutions are proposed, one of which is to increase the number of cases to the maximum possible in two ways - by geographical position and time period. In this study, such a design means working with all the strategies and legislation of the electronic government sphere affecting the power-sharing in every country that is a democratic federation. Focusing on federal government actions and not on the entire electronic government system design is done to separate the simple distribution of administrative tasks between levels of power from the process of decentralization. It is assumed that the implementation of electronic government strategy or legislation implies a clear indication of the specific policy vector. Some may argue that due to its nature there can be a tendency for both centralization and decentralization at the same time, which can significantly complicate the research task. In order to cope with this problem, the documents will be considered within the framework of a typology, which was already mentioned above, that will help to differentiate them in their focus: electronic administration, electronic services, and electronic participation.

Also, to increase the number of cases the extending the time frame is considered - all of the cases after the third wave of democratization has been chosen. That is a blurry restriction also given the fact that in every country the process of informatization has begun at different times, but in this work, the period is since 1990 to the present, however, it should be noted that in most states the process started around beginning of 2000-s. In this case, it means that all the cases under analysis have common factors that do not need

testing or studying - they have the same political regime, administrative-territorial division, and a time interval. Finally, the author proposes to reduce the number of independent variables, working only with the most common ones.

The number of cases in this work is measured not by countries, but by the actions of the federal center in the area of electronic government affecting the administrative power-sharing between the national level and the subnational units, which creates a high number of cases and complicates the study which uses the qualitative methods and not a quantitative. However, these cases are grouped by the countries in which they occur - each country is specific in its political system and the historical prerequisites of various outcomes of implementation of innovation. Also, the simple model does not allow to measure the degree of redistribution of powers within the electronic government administrative sphere. To cope with this problem, the author does not seek to measure the level of decentralization but suggests only to note the fact of changing power relations through their coding as "decentralization," "centralization" or "nothing.". The three dimensions of decentralization are discussed: fiscal, political and administrative (Rodden, 2004), however, the focus of this work is *administrative dimension* of it and focuses on legal accompaniment - who issues the legislative acts, to whom they are directed and who is obliged to obey them.

In this paper, it is proposed the use the qualitative process-tracing method, which, by means of a detailed description of the case, not only answers questions about the significance of hypotheses but also reveals additional factors that could determine the outcome. Thus, it is **the process of (de-)centralization of 11 democratic federations in the period from 1990 to 2017** that is an object of the research. At the same time, the focus is on the factors that influence the **process of (de-)centralization of electronic government**. From the subject area of our research follows **the aim of the work**: by analyzing electronic government (de-)centralization of 11 democratic federations the goal is to determine the factors that affect this process.

***The objectives of this study are:***

1. Consider the theory behind the concept of 'electronic government' and theories that explain the impact of various factors on this process;
2. Operationalize the key concepts underlying the dependent and independent variables;

3. Formulate hypotheses derived from the selected theoretical framework and correlated with the object and subject of the study;
4. Conduct an analysis of the identified factors and their impact on the (de-)centralization process of electronic government;
5. Interpret the results.

Most of the data is taken from the secondary data sources. Even if to point out the administrative power-sharing is one part of the work, it is also essential to find the prerequisites for it in the framework of this study's research question. The data on the current political situation in countries, as well as an analysis of the economic situation and ratings of the provision of public services (including electronic), will be a significant part of the study. The theoretical basis of this work consists of the four approaches, which are intended to shed light on the system of electronic government. In this paper, it is considered as not a part of a political course but as a mechanism for redistributing administrative powers between levels of power. The theoretical framework is based on the works on federalism and the very processes of decentralization, in addition to economic, political and administrative aspects.

Regarding the factors influencing the administrative centralization or decentralization of electronic government sphere, which is shown through the analysis of the official documents, the author proceeds from: 1) the concept of the "diffusion of innovation", according to which this process can be caused either due internal or external factors; 2) academic literature on the matter of decentralized and centralized processes. Due to the lack of the previous research results on the topic of the research question, author decided to proceed with more general ideas which can provide the basis for developing research framework. The following indicators were chosen for formulating the hypotheses of the study and are considered to be the **independent variables** of the study: 1) the quality of the provision of public services which is measured as the Government Effectiveness index by World Bank; 2) the quality of electronic government which is measured with the electronic government Development Index (EGDI), provided by United Nations; 3) the economic resources of the state which is measured by GDP per capita, for which World Bank data is used; 4) the political factor which takes into account the ideology of the ruling party in the parliament - the Comparative Study of Electoral

Systems used to check the results of elections in each country, after this step the ideological affiliation identified by the Manifesto Project.

The *first chapter* of the thesis is a theoretical one and deals with the literature overview on the topic of electronic government as innovation, federative relations, presents the main trends in the study of the processes of centralization and decentralization. In addition to that, the main conceptual problems and models are derived. In the *second chapter* the theoretical framework for the study is discussed, the operationalization of variables is presented in addition to suggested hypotheses to answer the research question. In addition, the methodology of the work, as well as a detailed description of the method of data analysis are described. The *third chapter* presents an analysis of empirical data, discusses the results of the analysis of the government actions affecting downward vertical administrative decentralization of electronic government and derives the typology for the redistribution of powers within this area. It is followed by the main findings of the study.

## 1. Theoretical and methodological approaches to the study of the “electronic government” concept and its (de-)centralization

The purpose of this chapter is to discuss the academic literature on electronic government, existing research and problems. In this chapter, there is an attempt to answer several fundamental questions that will determine the vector of further research on the chosen topic:

1. *How is the topic of electronic government studied?* In the first section of this chapter, the main directions in the literature studying electronic government will be discussed in which the electronic government is seen as: a) an independent subject for study; b) an independent variable; c) criticizing the concept of electronic government; and d) as a dependent variable;
2. *What is electronic government?* This part of the chapter will be devoted to the analysis of the analytical works that determine the main characteristics of this phenomenon;
3. *What are the models of electronic government?* This part of this chapter will describe in more detail the theoretical models that were developed for the analysis of electronic government.

### 1.1. Electronic government: an independent object of study or dependent variable?

Despite the theoretical and empirical variety of works devoted to the concept of electronic government, they can be divided into several groups: the group of works that put electronic government at the center of the question as an independent subject of study, the group that studies electronic government as an independent variable, the group of works devoted to criticism of the concept and the group considering electronic government as a dependent variable. The studies included in these groups will be described below.

In the *first group* of the studies, there are such authors as G. Cutrin (2007), Z. Fang (2002) and J. Melitski (2003) who argue that the conceptualization of electronic government is based on its essential characteristics as a system of technological solutions. From this perspective, the introduction of electronic government is seen as the use of new

information technologies in public administration in order to make it easier for citizens and businesses to access public services. In addition, special attention is paid to the design and architecture of services. Another view within this research group is the conceptualization of electronic government as a social and political phenomenon. For example, K. Jun & C. Weare (2011) focus on the process of introducing electronic government, associated with a certain socio-political effect. The same group includes the attempts of a number of researchers (Yildiz, 2007; Schelin, 2006; Andersen & Henriksen, 2006; Layne & Lee, 2001; Balutis, 2001) to build typologies, theoretical and practical models of electronic government. The works use different classification criteria, but the diversity of models used in practice underline the point that there is a need to develop an approach for their comparison.

The *second group* of works focuses on causal links between electronic government, public policy, and management. Thus, in the framework of this approach, electronic government is viewed as an independent variable, however, the degree of its transformational potential in relation to public policy is assessed in different ways. In the first subgroup, electronic government is seen as an element of administrative reform in the spirit of the concept of "new public management". Such authors as M. Holzer & S. Kim (2006), W. Wong & E. Welch (2004) and M. Moon (2002) indicate that electronic government has a positive impact on optimizing bureaucratic processes, reducing transaction costs and improving the quality of public services. Another direction within this group is considering electronic government in the context of the concept of "governance without a government" in addition to the network approach, and they give an opportunity for deeper transformations of public policy through the introduction of ICT. In their opinion (Tolbert & Mossberger, 2006; Edmiston, 2002; Borins, 2002; Noveck, 2003; Chadwick & May, 2003), electronic government is a step towards drastic changes in public policy towards "e-democracy", "network public policy" and "good governance". These studies indicate that electronic government has a transformative impact on public policy processes because of its evolutionary nature, but with some limitations. Hence, criticism of the normativity of electronic government as a concept with "automatic nature" follows, which is reflected in the *third approach* in the study of electronic government. For example, V. Bekkers (2012) expresses concern that the concept still does not have an explanatory power, and research in this area is scattered

and descriptive. Another fact is that academic research should shift the focus from its current object to questions that electronic government has to solve in the long-run in the interests of the whole society (Jaeger, 2005). Another criticism has a more practical justification and is based on empirical observations of the real functioning of electronic government. A number of studies (Linde & Karlsson, 2013; Parent, Vandebeek, & Gemino, 2005; Sørum, Andersen, & Vatrapu, 2012) demonstrate that very often the expectations from the introduction of electronic government into public administration are not justified: the changes either do not occur at all or are very limited.

The *fourth approach* can be considered as an answer to this criticism. Within this group of the studies, the electronic government appears as a dependent variable. Researchers such as B. Furuholt & F. Wahid (2008), C. Stanforth (2006) and M. Ahn & S. Bretschneider (2011), based on the assumptions of the new institutionalism within the rational choice theory approach, believe that the design of electronic government and the results of its implementation largely depend on the interests of actors, who are considered to be decision-makers in this field. The author of the concept “design-reality gap” R. Heeks (2006) and the authors who used this concept in their studies (Dada, 2006; Choi, Park, Rho, & Zo, 2016) find the reasons for the failure of the concept implementation in the discrepancy between the design and environment conditions. The works of J. Fountain (2004), as well as researchers such as K. Yang (2003), A. Schellong (2006), K. Jun & C. Weare (2011), and C. Tolbert, K. Mossberger, & R. McNeal, (2008) in line with the new institutionalism discuss that the results of the introduction of electronic government practices depend on the institutional checks (rules and norms) that have existed in bureaucratic structures earlier. Thus, C. Ciborra (2005) argues that the main factor affecting the introduction of electronic government is the economy, but due to management failures, corruption, distortion of market relations and lack of democracy, the functioning of electronic government cannot be seen in its full power.

Another area of research in this group is the evaluation on the introduction of electronic government from the point of view of citizen users in a sense of “adoption of technology” (Carter & Bélanger, 2005; Wangpipatwong et al., 2008; Hung, Chang, & Yu, 2006) - according to this group, the development of electronic government depends on the *demand* of citizens for these services. These studies are mainly based on surveys on the government websites and/or government officials and are limited to analytical

techniques in understanding the impact of individual factors. Another point of view relates to research within the concept of diffusion of innovation, which demonstrates that the adoption and development of electronic government can be determined not only by internal factors, but also external factors relative to the subject being analyzed: horizontal and vertical influence, competition, etc. For example, state's population (Holzer & Kim, 2006), access to financial, technological and human resources (Schwester, 2009), or coercion from the federal center by allocating more funds; the desire of another region to be more competitive in comparison with neighboring regions; the desire to be part of an 'information and open' society (Graham, Shipan, & Volden, 2013).

All the described above theories give a general idea of the direction of study on the subject of electronic government. Nevertheless, despite a significant number of works, there is still no single conceptual approach for analyzing this process, which makes it necessary to search for new frameworks and models that integrate numerous theoretical approaches. World experience needs to be studied further not only due to the constant updating of empirical data but also in connection with the existence of research gaps. Although, the existing research have formed the basis of more narrow studies, which are based on the empirical data and devoted to the process of implementing electronic government in public administration. The next section is dedicated to the analysis of these theoretical models.

## **1.2. History and conceptualization**

For this work, it is necessary to understand what electronic government is and what lies at its basis, which is a rather difficult goal. This is due to the fact that attempts for the informatization of the public sector, as well as its' academic comprehension, have been going on before the emergence of electronic government as a concept which started around the 1990s. It originates from the successful practice of introducing new information technologies in the financial sector, namely e-commerce. Initially, electronic government was the result of the transfer of innovation from the financial sphere to the socio-political one.

It is possible to single out several discourses present in the political environment that influenced the development of this technology. First, there is a discussion about the idea of an information society (Masuda, 1980; Castells, 1997; Duff, 2013) and technological determinism (Chandler, 1995; Wajcman, 2002), which emphasizes the



opinion that in a new type of society, the scientific and technological progress will exert a more pronounced influence on all spheres of people's lives, including politics, economics, and culture. The point is that new information technologies should be used in the public administration system because of the changing technical and semantic structure of interaction between citizens, business, and the state. Despite the fact that these ideas were criticized (Webster, 2014; Lash, 2002), discussions about the transformative power of new technologies received strong normative arguments (Lee & Perry, 2002) and were introduced to the political agenda.

The second direction of discourse relates to the reforms of public administration, more precisely, to the concept of new public management. It involves the reform of the bureaucratic apparatus, which is based on the transformation of state bodies into a service structure in relation to society. Among the tasks the following goals are proclaimed: strengthening transparency and accountability, improving the quality of decisions, controlling their implementation, reducing costs, ensuring broad access for citizens to government data, participating in setting up the “rules of the game”, applying the new institutional economics to public administration (Barzelay, 2001). Within the framework of this approach, citizens and business are considered as consumers of services and the level of service is at the forefront.

The idea of the “state as administrator” was replaced by the “state as a manager”. At the same time, the main emphasis was placed on the provision of high-quality public services to find the most cost-effective solution to this problem, in addition to that the government introduced ICT into its' internal processes. For the first time this phenomenon, as an analytical concept, was presented in the United States of America (USA) (Gore, 1993), and then it began to spread around the world. The electronic government program envisaged the development of electronic payment mechanisms and the filing of documents, the creation of databases for commercial use. In the future, the scope of use expanded from the transfer of e-commerce ideas to the provision of public services and the improvement of interagency cooperation. In this form, electronic government did not imply the redistribution of power between the state and society. The experience of the electronic government service development in the USA, which acted as an actor-innovator in this field - had a significant impact on the development of this process in the future.

Until the mid-1990s, ICT in public administration and politics was mainly presented as mainframes and desktop computers (Dawes, 2008). Only at the beginning of the 2000s did the discourse appear that the open nature of the Internet is promising enough to enable interaction of various organizations (including state authorities) with the environment (Scott & Davis, 2015). From the experience of the USA, it follows that, firstly, there is a progressive expansion of the concept through the introduction of ICT in various areas of public policy and administration. Secondly, electronic government was not initially considered as a separate and independent concept, since its institutional meaning and design was formed on the basis of the objectives of administrative reform and the prevailing concept of governance. At the present time, electronic government has become a global phenomenon, which, however, does not mean academic unanimity with regard to conceptualization, detailed copying of design in the process of technology implementation, and even more so, the same result of the implementation of this practice in different cases.

As it was explained above, the application of information technologies in the sphere of public administration is a relatively new subject of research in the modern scientific literature, however, despite this, there are many works that consider this phenomenon from different perspectives: social science, economic, technical studies. Thus, it can be said that electronic government is an interdisciplinary subject of research. In some ways, it is a problem, because this state of affairs gives rise to various interpretations of the concept of 'electronic government' depending on the scientific sphere in which it is applied. Another related problem is that there are many related terms, such as: "electronic governance", "electronic democracy", "virtual state", "electronic state", "open government", etc. As a consequence, there is a risk of *conceptual stretching* and the *lack of explanatory power* of the concept of electronic government due to its metaphorical nature. The third problem is the ideological congestion and normativity of the term. So, each area of research treats this concept in its own way, introducing nuances that seem important for a particular area of academic knowledge, which leads to more complicated research.

Further analysis will not be done to select or create the most 'complete' definition (they all have the right to exist, since they reflect different aspects of electronic government), the task is to describe the problem field of the phenomenon, demonstrate a

range of approaches, show their scatter and breadth of interpretations of the phenomenon. In addition, it is important in order to understand the general picture of the phenomenon and to give a presentation of how this phenomenon is understood in this study.

The most part of the electronic government definitions can be divided into two groups: understanding in a narrow and broad sense. In the narrow sense, “electronic government” is reduced to or equated with technological tools - communication channels, sites, electronic mechanisms of interaction, etc., that is, as a technical subsystem. Broadly speaking, “electronic government” is understood as a new system of interaction between the state and society, that is, as a social subsystem. In turn, the social subsystem consists of various variables relating to the structure of the organization and the work process, people and other physical resources (Bellamy & Taylor, 1998).

During its existence, the concept of electronic government has evolved from an understanding of this phenomenon in simple technological dimension to a complex multidimensional social phenomenon. In addition, one must understand that definitions differ depending on the academic sphere and the direction of the organization or aspect of the phenomenon that is being investigated. However, despite the variety of definitions, several main academic directions in understanding the concept can be identified (OECD, 2003):

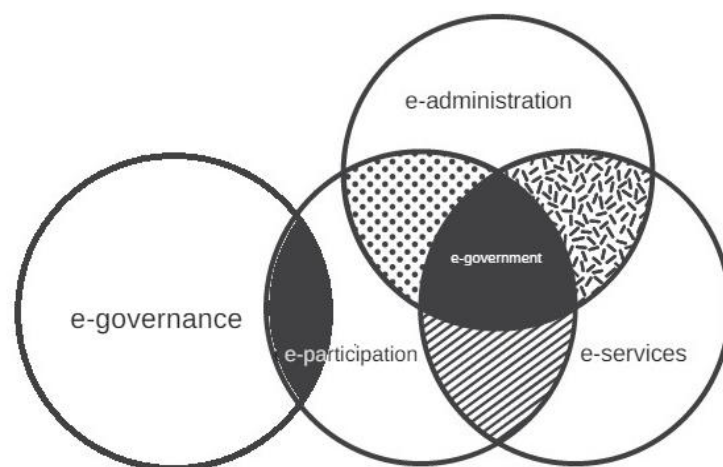
1. As the interaction of state bodies with citizens and businesses by using ICT, i.e., as an electronic communication channel;
2. As the process of providing public services to citizens in electronic form, the basis is the idea of provision of the services by the state as a form of democratic principles implementation;
3. As the use of ICT in public administration with a purpose to transforming relations with citizens, businesses, and other branches of government;
4. As the use of ICT as one of the means to improve management effectiveness, that is, as a means to improve governance.

It should be noted that at this stage the theoretical field becomes considerably diffuse, not only because of the abundance of different definitions but also due to the convergence between the concepts of electronic government and electronic governance. Precisely because of this, the author considers that it necessary to indicate how these two concepts are separated in this work - in order to avoid confusion. Firstly, to understand

what electronic governance is, it is necessary to determine its basis. Thus, this concept is based on a network approach that focuses on a multitude of actors and institutions (both national and supranational) that participate in the governing process (e.g. Kooiman, 2000; Peters, 2000; Rhodes, 1996). A distinctive feature here is the fact that the state is seen only as one of the stakeholders, whose opinion is not the only one in the decision-making process. Another part of this concept is the idea of good governance, which is based on the principles of: 1) participation and consensus orientation; 2) strategic vision; 3) responsiveness, effectiveness and efficiency; 4) accountability and transparency; 5) equity and rule of law (Graham et al., 2003). Some scholars (e.g. Finger & Pécoud, 2003; Palvia & Sharma, 2007) consider electronic governance to be a broader concept than electronic government, since it involves a change in social relations: for example, the widespread use of e-voting as a mechanism of direct democracy.

Despite the fact that many researchers and organizations exclude the function of electronic participation from the electronic government area (e.g. Bélanger & Carter, 2008; Palvia & Sharma, 2007) in this work the typology of G. Cutrin (2007) is used, who argued that the electronic government practices in the sphere of public administration take place in different directions, both within the authorities and in the interaction of public policy actors among themselves. Thus, there are three main ones of them: *electronic administration*, *electronic services*, and *electronic participation* (Ibid: p.6) On this basis, the author insists that electronic government and electronic governance has conceptual overlaps in the aspects of electronic participation using ICT, an illustration of this suggested relationship can be seen on the Picture 1.

Picture 1. *Model of electronic government and electronic governance interaction*



Source: Author (2018)

Based on the discussed topics above, author argues that the electronic governance focuses more on the process of interaction and on what is its outcome. In turn, electronic government emphasizes the mechanisms of ICT and its implementation. This paper uses a fairly broad definition of electronic government, developed by Gartner Group:

*“The continuous optimization of service delivery, constituency participation, and governance by transforming internal and external relationships through technology, the Internet and new media.”* (Gartner Group (2000), as cited in J.Seifert (2003))

Electronic administration involves informatization of intra-bureaucratic processes, from computerization and the establishment of electronic document management to automated support for other sectors of electronic government. It affects basically all administrative and operational processes of the government, in which information and communication technologies are used, including day-to-day office tasks and basic management functions of public organizations, such as planning, organization, recruitment, management, and control.

The electronic services sector includes ICT-mechanisms for providing state (or municipal) services through websites, portals or specialized centers. It is characterized by the provision of public services to citizens and other target audiences, using information and communication technologies. Electronic services consist of information, communication and transaction services provided in various areas of public activities, such as health, social security, and education. Most often this sector is represented in the form of a matrix "G2". It is based on the interaction of three types of actors: the government (G), the business (B) and the citizens (C). There can be several variants of such interactions (see Table 1.2). For example, the modules "G2B" and "B2G" assume that the business is either a customer or a service provider. Modules "G2C" and "C2G" include providing citizens with state (municipal) services in electronic form, as well as feedback - ordering services or monitoring their implementation. In addition, there are internal electronic government relationships, such as government-to-employees (G2E) and employees-to-government (E2G). There are also other relationships, such as government-to-NGOs (G2N), government-to-market (G2M), etc (Vila & Wheeler, 2003).

Table 1.1. Matrix of interactions within electronic government

	Government	Business	Citizens
Government	G2G	G2B	G2C
Business	B2G	B2B	B2C
Citizens	C2G	C2B	C2C

Source: H. Song (2004)

Electronic participation is characterized by democratic structures, processes, and methods using information and communication technologies to increase transparency, democratic decision-making, inclusion and participation of citizens. Basically, this is a set of methods and tools that provide electronic interaction of citizens and business with authorities in order to take into account citizens' opinion in political decision-making.

Thus, it can be concluded that the introduction of electronic government in the country is done with the purpose to manage the relations between the government and the citizens, and to reduce political confrontation between the actors due to the constructive electronic dialogue of the whole society and government. As a result, a new paradigm of public administration is being formed, based on interaction through the Internet for all structures and institutions of the society: civil servants, business, active citizens, educational and research institutions, public groups, civic organizations. Thus, electronic government is the concept of a new system of government, and element of a large-scale information transformation of society.

### 1.3. Models of implementation and architectural solutions

It is possible to single out several approaches to the classification of electronic government. The *first approach* - "evolutionary" - is based on the assumption of the progressive development of electronic government. The most popular are the following evolutionary models (see Table 1.2). There are other versions of evolutionary models of electronic government, generally similar in terms of criteria and stages of development. Despite the popularity, the disadvantages of this approach are the linearity of development and the universalization of the concept.

Table 1.2 Models of electronic government

Stage	Model of R. Silcock (2001)	Model of K. Layne and J. Lee (2001)	Model of M. Moon (2002)
1	Information publishing	Catalogue	Information publishing
2	Official two-way transaction	Transactions	Official two-way interaction
3	Multi-purpose portals	Vertical integration	Services and transactions
4	Portal personalization	Horizontal integration	Integration
5	Clustering of common services		Political participation
6	Full integration and enterprise transformation		

Another direction of research focuses on a more technical understanding of what electronic government is and how it is structured. This direction speaks about the information technology (IT) architecture of electronic government. So, J. Ross (2003) argues that the basis of the IT architecture is the approach to the organization of various applications, sorting, and storage of data, as well as access to these technologies, which is implemented in one way or another, depending on the goals and strategies of the controlling actor. In addition, an important role is played by the IT technologies themselves, in view of the fact that they can not only be the object of influence, but also the subject. One of the principles of such behavior is the constant variability of these technologies. Also, in large structures, it is common practice that not only one technology is put into use, but a few with different implementation time - this can lead to the fact that different innovations are at different levels of development. In addition, in some cases, it may turn out that the task that underlies the architecture can be too complicated to be accomplished by the efforts and resources of one actor and, thus, some of the functions can be transferred to other actors.

Speaking about the strategies for implementing this or that architectural solution, M. Farooq et al. (2013) address several areas that underlie this action. The demand-based strategy is characterized by some inconsistency since in most cases the very introduction

of electronic government functions is spontaneous and refers to bottom-up influence. The strategy was extended at the very beginning of the development of the concept and its implementation. Over time, the implementation of e-practices has shifted towards the institutionalization of high-level planning, the implementation of standards, and centralized regulation - to the enterprise architecture. That is, it is a question of a more centralized system, which implies the decision-making by one actor, that means that the power is concentrated at one location.

The main problem and topic of discussions regarding a centralized and decentralized approach is the question of power over organizational functions, that is, who is in charge and influences the production processes (King, 1983). R. Heeks (2000) insists that centralized systems differ in the way how they focus data in one place, simplifying access to it, reducing the need for duplication of functions, increasing the ability to control processes and reducing the total cost of using the system. However, the drawbacks of this practice are the use of more time for data exchange between actors; focus on functions that seem important to the center, not to the final user; decrease in flexibility since such structures are usually large and inactive for changes. In most cases it is necessary to change the whole system at once, since it is a single unit, which in turn also increases the vulnerability of the system.

Decentralized systems can be divided into two types: 1) the division of functions between different levels of government structure; 2) the division of functions between several state structures and agencies. Systems of this type are characterized by a closer interaction between the agent and the citizen, due to which citizens are more motivated to use the provided functions, which in turn leads to a rapid development of services. However, systems of this kind introduce barriers between agencies, which makes it difficult to exchange data and resources; increase the likelihood of duplication of function and reduce the possibility of monitoring. It should be noted, that this is mostly about the service provision and its' design.

Within the academic research, design can be identified by following features: 1) the purpose of creating electronic government, which is documented (normative documents, policy statements, programs, etc.); 2) the design of technological solutions to achieve goals (elements of web sites, electronic document management system, etc.). The real-life evidence model of electronic government demonstrates how design is



implemented and is determined by empirical qualitative and quantitative characteristics. For intra-organizational processes, such will be: the degree of penetration of ICT; the ratio of electronic and paper workflow; development of electronic interaction systems, indicators of the effectiveness of government bodies. In the second dimension, one should speak about information openness and functionality of websites; about the number of available services to the population; the role of electronic feedback forms or mechanisms in the decision-making process; about the degree of involvement of citizens. An evaluation of this kind can be based on indices and ratings, statistics, the results of a public opinion poll and an expert survey among civil servants.

## **2. Electronic government and (de-)centralization in the democratic federations: methodological approach and limitations**

The purpose of this chapter is to discuss the academic literature on the question of electronic government and (de-)centralizing processes relationship in a sense of power-sharing and not the architectural design. In this chapter, there is an attempt to answer several questions on the chosen topic:

1. *How is the federalism studied?* In the first section of this chapter, the main directions in the literature studying federalism will be discussed with the focus on the: a) fiscal federalism; b) administrative federalism; and c) political federalism.
2. *How can electronic government be connected with federalism?* This part of the chapter will be devoted to the analysis of the main works that determine the centralization or decentralization processes in relation to electronic government.

The last section of this chapter will be devoted to constructing a theoretical framework for the study, which will form the basis of the hypotheses. This is followed by a substantiation of the research method, as well as discussion of its limitations.

### **2.1. How to study federalism: administrative, political and fiscal approach**

The simplest approach to federalism is the one arguing that it is the way to manage the territory. This administrative structure is not the most common one - the unitary control system is still more applicable. Nevertheless, in some cases, in order to preserve territorial integrity, the state can divide responsibilities between actors at different levels. The main interpretation of federalism is considering it as an alliance. Thus, W. Riker (1975) believes that the main aspect of this territorial-administrative division is that through the negotiations and the search for compromise, the political elite voluntarily transferred part of its powers on the basis of a treaty that is primarily based on mutual trust.

I. Duchacek (1970) emphasizes that the main task in the negotiation process is to find a compromise in view of the fact that the future federal center must agree to share

power, and subnational units, after gaining authority, should not leave the country and sensibly assess their economic and political resources. The work of the classics of federalism is devoted to the question of how the treaty is going on between the territories. Thus, the theory of D. Elazar (1979) divides the idea of federalism and negotiations inside the country of the outdated concept of “centre-periphery”, in his understanding the interrelations between actors are structured more as a matrix model, rather than as a model with a common center, and the basis lies in the nature of the relationship and the strength of the whole system. Decentralization as the principle of the constitution of a federal state is of a contractual nature and concerns the structural distribution of powers among numerous centers (subjects of the federal system). Thus, in the matrix model, there are no higher or lower centers of power. Actors have more or less power (which are fixed in accordance with specific tasks) within the government to make appropriate political decisions (Elazar, 1994).

In turn, W. Riker (1964) believes that the basis of federalism implies a “top-down” strategy and assesses the benefits of such a solution for the current political elite, that is, one of the aspects of this relationship is bargaining. From this it follows that federal relations between levels of power imply not subordination, but negotiations and cooperation. In addition, actors make strategic choices to protect their interests, which may differ - some insist on creating a strong federal government, while others aim to reduce its role. Sometimes it also happens that actors are interested in promoting their personal interests, rather than the interests of the state and vice versa (Filippov, 2015). Consequently, a political transaction has a purely rational basis, since it is founded on the rational calculation of politicians. Accordingly, rationality and voluntariness are both conditions, and at the same time the characteristics of the transaction. In the case if the association is voluntary, if the calculation is rational - it means that in the course of the transaction, politicians who claim to be leaders on the national level and politicians who are very clearly tied to their territories in their own interests make mutual concessions and compromises, which meet the interests of each sides.

However, after the decision on the federalization of the country is made, the stage of establishing the system of the state's work comes - within the country, there is constantly a review of each level's functions. And the emphasis not only on the budget, political or administrative powers, but also on each separate sphere of public services.

The creation of the new programs, strategies, or changing the functioning system of social security - all this can change the balance of powers between different levels. The processes of decentralization and centralization within the federation are ongoing - the functions related to taxes, power struggles or the administration of public services are being revised quite frequently. Based on this set of authorities, most authors (Rodden, 2004; Falletti, 2005; Manor, 1999) are talking about fiscal (related to budgets and taxes), political (related to power struggles) and administrative (related to the technical implementation of any public services) decentralization.

The most studied type of decentralization is fiscal (Tiebout, 1961; Bird, 1993; Rodden et al., 2003) and one of the reasons for this is that it is easier to work with budgets and real figures than with abstract 'powers'. Having one's own source of income and the right to dispose of it, on one hand creates market conditions for local territorial units and in some cases favorably affects economic development (Akai & Sakata, 2002), and on the other makes them more demanding and independent from the federal center (Garrett & Rodden, 2000). It is for this reason that the center, disinterested in the excessive independence of the regions, in the majority of the cases, prefers to receive all revenues at its own disposal and later transfer money to the regions for specific needs.

Political decentralization is less popular within academia research, but no less important - in fact it is the main indicator of the democratic nature of the federation. In most cases, it is based on the existence of subnational elections. The huge increase in the percentage of elected politicians at local levels around the world is considered an indicator of the democratization of the most federations (Rodden, 2004), because this increases the level of feedback from citizens and business actors at the local level and increases the level of competition between regions in the political field (Tiebout, 1956). The problem for researchers of this decentralization type is that it is more difficult to measure, because only referring to normative criteria one cannot always grasp the real system of political management and miss informal institutions and practices within political elite interaction.

Administrative decentralization is a rare object of research. Most decentralization studies mainly work only with a political and fiscal direction (usually connecting them to each other), without paying attention to the administrative area within their research question or do not include it in the classification used for the study (Treisman, 2002; Lora, 2006; Kyriacou & Roca-Sagalés, 2011). This situation is primarily due to the fact that

administrative decentralization is difficult to measure - it is determined by the specific technical functions that performed by the particular level of power. There are many functions of this kind and a few authors propose to measure them as a function of the state in the sphere of each policy. In order to measure such functions, it is necessary to study the legal acts and see what technical functions are performed by the federal center for the provision of public services and which are subnational units. Nevertheless, it is extremely difficult to measure their importance and rank them.

Consequently, in any political action, including involving electronic government, the question is how to best organize the distribution of functions between levels of power. And if there is some consensus on issues of fiscal and political decentralization, indicated by the theory of C. Tiebout (1956), which is based on migration within the territorial units and decentralization which contribute to the Pareto-improvements, i.e the so-called "voting with the feet". In the case of administrative decentralization, there are still several unanswered questions, for example - which functions are better performed by the center, and which by the regions? Is administrative centralization part of the strengthening of the power vertical or is there a completely different purpose in its functions? Answers to these questions could show administrative powers in a different light and take them beyond the scope of the struggle of interests and economic efficiency.

## **2.2 The relationship between electronic government and (de-)centralization in a federal environment**

Even though it seems that such terms as centralization and decentralization are quite common in the academic literature, yet, studies that consider this concept as a process occurring in federations are rather small. The bulk of the work is focused on the study of various aspects of federations, for example, on how federations can become a unitary state or vice versa (Konitzer & Wegren, 2006; Weinstock, 2001), what mechanisms exist to hold the country from excessive centralization, describing the history of why it happens (Faguet, 2003; Diaz-Cayeros, 2006). Most of the work describing the process of centralization or decentralization basically calculates the gains and losses of all parties from an economic point of view, that is, it works with fiscal centralization (Brueckner, 2004; Martinez-Vazquez & McNab, 2003). Consequently, the authors of the works mainly focus on the internal mechanisms of the relationships between different levels of

the federation. The study of administrative processes is focused on the provision of public services in federations.

Changes in the field of electronic government in the context of the administrative authority of different government levels are studied even less frequently if they are studied at all. Usually, the scholars work with electronic government models of specific countries and answer questions related, *inter alia*, to the administrative division of the state, but do not put them as the main questions. The combination of two important aspects of federation management - the distribution of powers and the electronic government in the context of comparative research seems to be an important knowledge of how to work most effectively with governance mechanisms within the state. This knowledge has two sides - a theoretical one, which complements the studies on federations and processes within them, and practical one, explaining the specific effects and prerequisites of these practices.

The main amount of academic research on the question of electronic government and redistribution of powers see it as an independent variable, that is, the authors focus their attention on how this innovation affects certain indicators. Thus, the first direction in this approach focuses on the role of electronic government as a factor that influences the change of connections between actors. R. Petersen & W. Seifert (2002) argue that there is a transformation towards horizontal ties, a weakening of a strict vertical and hierarchical system, and a blurring of the boundaries between the various actors of the political arena. B. Reece (2006) believes that the introduction of new information technologies blurs the boundaries not only between different levels of power but between all actors, which leads to more decentralized models. J. Fountain (2004) holds the same point of view and points out that this process also touches on the legal relationship between the government at the national level and the government on the local level, which makes them even more complicated than it is now. This can lead to a decrease in the effectiveness of service delivery due to the complex structure and the reduction of the possibility of control by citizens. D. Lenihan (2002), demonstrates in his work on Canada that the introduction of electronic government replaces the fundamental components, which leads to a blurring of boundaries between levels of power, and in the future that can make actors highly dependent on each other. Such a one-sided perspective seems unsatisfactory. In addition, it is quite fairly criticized by C. Reddick (2012), who insists

that the introduction of new information technologies in the public administration is highly susceptible to bureaucratic forces and, above all, is a managerial strategy. In addition, technology has absolutely not affected the relationships between actors, and their impact on centralization and decentralization still needs to be studied.

The second group of studies adheres to this point of view and considers electronic government as a strategy that is introduced for a specific purpose. K. Hinkelmann et al. (2010) note that the introduction of innovation in a state with a federal structure leads to the situation where the very definition of this phenomenon is quite difficult since each actor identifies it in its own way. It becomes even more complicated when trying to standardize the process, its implementation in the daily life of actors and in the very interaction between them. Authors such as J. Roy (2006) and S. Dawes (2008) insist that although electronic government implementation models at different levels of government are constantly changing and at different levels of development, the main task for them is to obtain what either benefit that goes along with the introduction of innovation in view of its characteristic of blurring boundaries both territorial and administrative. It is because of this, according to the authors, there is an increase in the level of competition between different actors both in the provision of services and the introduction of other programs aimed at the introduction of new information technologies.

Apparently, the research field is extremely wide, as it always happens with such complex concepts as “electronic government” and “federalism”. Nevertheless, it can be said with certainty that researchers of these phenomena very seldom consider (de-)centralization of electronic government as a dependent variable. For example, the author was able to find only one study, which partially touches on the topic of this work. In their work, S. Greenberg and S. Ramdial (2006) emphasize that already established centralized or decentralized relations between national and regional actors play an important role in the introduction of this or that electronic government strategy in federations. To fill the obvious gap in the research, in this paper it was decided to shift the emphasis to the factors influencing the decentralization or centralization of electronic government system.

Some may note that at the present time the differences between federative and unitary states are being erased due to the fact that the processes of centralization or decentralization are observed in both country structures. In addition, it is needed to plunge deeper into the processes taking place in the governing processes of the state in order to

understand to which category it belongs to (even if it written in the official documents) (e.g. Rifqinizamy, 2014). In order to partly overcome this problem only those states that have registered the federal structure of the country in the constitution are considered. Moreover, in this work, the focus is on the federal states due to the fact that this kind of administrative-territorial organization clearly separates the functions and autonomy of subnational units - it becomes easier to trace the process of (de-)centralization since it become more noticeable in such kind of environment.

### **2.3 Theoretical framework and data coding**

After the discussion on the variety of literature describing the subject and object of this research, it is necessary to shape a theoretical framework that can show the causal links between the variables and on basis of which it is possible to put forward hypotheses. The theoretical basis of this work consists of several approaches, which from different perspectives highlight one event - the actions taken by the federal government in the field of electronic government administrative sphere. It should be noted, that such an action is seen not as part of architectural design, but as a political decision to apply a mechanism for redistributing administrative powers between state levels of power. Thus, the author seeks to study not the actual implementation of electronic government services, but desire of federal center to change the administrative power-relations in this area. Theoretical substantiation for such reforms is taken, on the one hand, from work on federalism and the very processes of decentralization, and on the other - the economic preferences of the parties with different ideologies. In fact, theories are based on the economic, political and administrative aspects.

In addition, it should be noted that due to the insufficient amount of academic studies on the subject of this study - there is no common theoretical agreement on the issue. Thus, the author is faced with the fact that there is an unlimited number of unstudied factors that can influence the (de-)centralization process of electronic government. To overcome this problem, the author focuses on the most common indicators used in political science academic literature. Thus, not only the theoretical framework is built, but also the basis for future research in this direction is laid.

Thus, factors related to (de-)centralization of electronic government:

- *Quality of public services;*



- *Quality of electronic government services;*
- *Availability of economic resources;*
- *Affiliation of the main party in the Parliament of the country.*

### **The quality of public services and quality of electronic government services**

There is a point of view that has a sufficiently high explanatory power in the case when the reasons for the introduction of electronic government into the sphere of public administration are considered. For example, authors such as R. Gil-García & T. Pardo (2005), J. Bertot et al. (2010), and many others say that electronic government practices enhance the quality of public administration. Using the decentralized electronic government architecture, there is a reduction in the distance between state actors and the end user, which also positively affects the quality of public administration (Heeks, 2000). In addition, the competition between actors for the consumer and other economic and political benefits, which J. Roy (2006) and S. Dawes (2008) say, can play a role in this process. It is from these theories that the first two hypotheses follow:

- 1) *If there is a need in the state to improve the quality of public services, there will be the decentralization of electronic government.*

World Governance Indicator of government effectiveness. This is a factor that is “capturing perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies” (Kaufmann et al, 2011: p.4)

- 2) *If there is a need in the state to improve the quality of electronic-services, there will be the decentralization of electronic government.*

The second dimension focuses on electronic spheres of service-provision, which can be considered as a development of the public administration system. The quality of the provision of electronic services will be measured using the e-government Development Index (EGDI), provided by United Nations.

### **The economic resources**

M. Lipset et al. (1993) and many other authors associate the establishment and strengthening of democracy with the economic development of the state or, to put it simply, with its wealth. In addition, W. Riker (1964) insisted, that the preferences of each level of government are based on the economic resources as one of the factors that this level possesses. In turn, the introduction of electronic government is associated with democratic processes within the country (West, 2004; Hampton, 2014). Proceeding from this, the third hypothesis of this work is as follows:

- 3) *If the state has sufficient economic resources, there is a tendency to decentralize electronic government.*

It is taken as the basis for the third variable - GDP per capita. The GDP per capita indicator is not chosen by chance: firstly, it is a universally recognized indicator for measuring the wealth of a nation, which is used in particular by the World Bank, whose data we used to encode this variable, and secondly, GDP per capita is the indicator closest to the micro-level welfare, that is, to the well-being of individual citizens, which is traditionally taken as a basis in the intra-parliamentary debate in the area of economic policy.

### **Affiliation of the main party in the Parliament of the country**

The fourth hypothesis is based on the E. Downs (1957) theory, which assumes the assumption that party ideology is determined by the needs of the voter and his preferences. According to S. Toubeau and M. Wagner (2015), it can be assumed that right-wing parties are more inclined to centralize powers, introduce unified state standards and create federal government bodies for the electronic government, while the left-wing parties are pursuing a decentralization policy. Thus, next hypothesis is formulated as follows:

- 4) *If the majority party in parliament represents the left ideological wing, then there will be a decentralization of the electronic government.*

The ideological commitment of the majority party in the Parliament is defined by two steps. The Comparative Study of Electoral Systems will be used to check the results

of elections in each country. The ideological affiliation will be identified by the Manifesto Project.

*Table 2.1.* Independent variables of the study

Type	Variable	Data	Time range	Source
Administrative	Quality of public services	Index ranges from -2.5 to 2.5 with higher value indicating more effective, competent, and independent civil service	2000 – 2016	World Bank
	Quality of e-government	Index ranges from 0 to 1 with higher value indicating more effective, competent, and independent civil service	2003 – 2016	United Nations
Economic	Economic resources	GDP per capita (current US\$)	1990-2017	World Bank
Political	Affiliation or the main party in the Parliament	The main party in the Parliament after elections	1990-2017	The Comparative Study of Electoral Systems
		Right-left position of party		Manifesto Project

It should be noted that the empirical sources for the dependent variable are legal acts and strategies that affect the area of electronic government. Due to the fact that these materials are subjected to qualitative analysis - it is necessary to identify the rules that the author of the work was following in the process of encoding (Table 2.2).

*Table 2.2* Rules of the coding for dependent variable

Category	Description	Sub-category	Description
Electronic administration	Is about the area of intra-bureaucratic processes and affects administrative and operational processes of the government in the planning, organization, recruitment, management, and control.	Centralization	There is the redistribution of administrative powers between federal center and regions which leads to concentration of it in the federal center or limits the autonomy of subnational unit
		Decentralization	There is the redistribution of administrative powers

			between federal center and regions which leads to concentration of it in the regions
		Nothing	There is no redistribution of powers happening
Electronic services	Is about ICT-mechanisms for providing services through websites, portals or specialized centers.	Centralization	There is the redistribution of administrative powers between federal center and regions which leads to concentration of it in the federal center or limits the autonomy of subnational unit
		Decentralization	There is the redistribution of administrative powers between federal center and regions which leads to concentration of it in the regions
		Nothing	There is no redistribution of powers happening
Electronic participation	Is about establishing ICT-channels for the interaction between government and citizens or business actors.	Centralization	There is the redistribution of administrative powers between federal center and regions which leads to concentration of it in the federal center or limits the autonomy of subnational unit
		Decentralization	There is the redistribution of administrative powers between federal center and regions which leads to concentration of it in the regions
		Nothing	There is no redistribution of powers happening

The main criticism is that this type of encoding does not allow to show the depth and strength of the (de-)centralization process of each individual country. Nevertheless, this encoding concentrates on the general trend, which, as it seems to the author, corresponds to the goal of the research set at the beginning of the work. In addition, it is necessary to point out the difficulties that are associated with limited the time, resources and knowledge of the author of this work. Some of the empirical material is presented in different languages, which can make it difficult to understand the essence of the documents. In addition, the encoding is made by one person and even after several checks of the encoding - errors or omissions on the part of the author are possible. For a deeper understanding of how it was done, the example is presented in the Table 2.3.

*Table 2.3 Example of encoding for the case of Bosnia and Herzegovina*

<b>Year</b>	<b>Source</b>	<b>Content</b>	<b>Result of encoding</b>
2004	Council of Ministers of BiH, (2004)	"...should be and efficient mechanism of adoption of international norms and standards for the field of information and communication technologies and public administration." (p. 83)	Category: electronic administration Sub-category: centralization
2005	Agency for informational Society (2018)	Agency for Information society established. Coordination and verification of all issues related to standards and quality of the ICT	Category: electronic administration Sub-category: centralization
2006	Centre for policy and governance (2015)	Special regulatory body that is supposed to supervise operations and fulfillment of relevant standards	Category: electronic administration Sub-category: centralization
2008	Bajramovic, K. (2011).	Implementation of standardized software for the institutions	Category: electronic administration Sub-category: centralization
	Mediacentar Sarajevo (2011)	The sub-national units are encouraged to implement more effective and cheaper service-provision projects (p.38)	Category: electronic services Sub-category: decentralization

Source: Author (2018)

All the above-mentioned academic works try to explain and study the factor of electronic government, taking as a basis different models of classification, in addition,

most of the works are descriptive studies, without attempting to identify the cause-and-effect relationship of the implementation of a particular model into practice. Moreover, in most cases, the case pool analyzed by the researchers is small: either two bright cases are compared at diametrically opposite positions, or an analysis of the implementation of practices in a specific region is carried out. In other words, there is no multifactorial research, like the work that will be attempted to be done in this paper, in the scientific literature. In addition, the centralization and decentralization in the field of electronic government is studied from the view of the technological characteristics of the services provided with no emphasis on the redistribution of administrative powers between the federal center and regions. Based on these two white spots in the research space of electronic government, the author is justifying the scientific novelty of this work. Are the described theoretical models able to reflect the reality of democratic federations that use new information technologies in the sphere of public administration? The answer to this question is to be obtained in the third chapter of this work.

## **2.4 Research method**

Insufficient for statistical research and too large for the case-study pool of cases considered in this paper, and the absence of the theoretical approach predetermined the choice of the main method of data analysis - process-tracing. This decision is due to the fact that this study is comparative in view of the fact that this gives a deeper understanding of each case and allows to take into account factors that may not be noticeable in statistical analysis. To increase the explanatory power of the electronic government (de-)centralization phenomenon, the author proposes to increase the number of cases to the maximum in two ways - geographically and by the time period. In this study, this design means working with all the actions of the federal center, affecting the redistribution of powers in relation to electronic government in each country that is a democratic federation. In addition, to expand the number of cases it is proposed to use the extended time frame. Also, it is worth noting the fact that reforms that did not lead to the redistribution of powers will also be noted in the study (if any of them happen). This is due to the author's desire to avoid selection of cases by the dependent variable.

In this case, all the actions under analysis have been taking place in federal democratic states in the last 27 years, which means that they all have common factors that do not need testing or studying - they have the same political regime, administrative-

territorial division and a time interval. Finally, the author proposes to reduce the number of independent variables, working only with the most important factors. Such a result can be achieved by carefully drawing up a theoretical framework to focus the analysis on the most important ones. Each country is specific in its political system, the historical prerequisites, as well as in economic factors. In addition, there is no data for some independent variables for several time periods - for example, the quality of public services or the index of quality of electronic government is not presented for the whole time, which significantly complicates the work with data in the case of quantitative methods. In this scenario, a simple quantitative model does not allow to measure the degree of redistribution of powers as a result of reforms. To ease the collection of data, the author proposes to code the actions of the federal center regarding electronic government as “decentralization”, “centralization” or “nothing” without giving any detailed information on the essence of the reform.

Thus, the most convenient method for working with selected cases is a qualitative method, namely, the *process-tracing*, which is a consistent description of the event and can explain the cause-effect relationships between the variables. According to D. Beach & R. Pedersen (2013) if the researcher is using the process-tracing method, it is important not to make generalizing conclusions. Analyzing a large number of cases, it becomes possible to compare them among themselves, find common and differed elements. Thus, this method allows to deeply immerse in each case and understand the causal relationships of each of them in much greater detail than the quantitative methods.

In addition, it is necessary to point out the difficulties and limitations when using this method for analyzing the (de-)centralization of electronic government in 11 democratic federations:

- 1) The most important disadvantage is that this method is not designed to obtain generalized factors, but rather the purpose is the theory-building;
- 2) To study such a time span in different countries, it is necessary to study all initiatives that in one way or another affect electronic government. This process can be complicated by the fact that most of the documents are presented in the official language of the country, and translation into a language known to the author may be somewhat inaccurate;

- 3) The use of this method in this study does not measure the degree of centralization or decentralization of electronic government.



### **3. (De-)centralization of electronic government in democratic federations: an empirical measurement**

In this chapter, the author is faced with the task of reflecting the main characteristics of the federal center action on the matter of electronic government, considered in 11 countries that are democratic federations, and emphasize the influence of a number of factors on the process (de-)centralization of this sphere in these states. Starting from the independent variables identified in the second chapter of this work, in analyzing each case it is necessary to answer the following questions:

1. What was the policy regarding (de-)centralization of electronic government?
2. What was the level of quality of public services and the quality of the electronic government of the country in question and what impact did these factors have on (de-)centralizing of electronic government in a particular state?
3. What was the level of economic development of the country in question and what impact did this factor have on (de-)centralization of this sphere of a particular state?
4. What was the ideological position of the main party in the national parliament of the country in question and what effect did this factor have on (de-)centralization of this sphere of a particular state?

When writing each paragraph of this chapter, the author was guided by two goals: (1) briefly describe the characteristics of the case in question in the context of (de)centralization of power; and (2) link the change in power relations between the center and regions with a number of variables.

#### **3.1 Argentina**

Argentina is one of those countries in which the federal center draws its attention to electronic government quite often, and powers are actively redistributed between different levels. The strategy in this case is focused on centralization in the field of electronic administration by setting standards for the provision of services and internal organization, as well as the creation of coordinating bodies. In turn, in the field of electronic services, the federal center adheres to a more decentralized policy, with an emphasis on the mechanisms for providing information by regional authorities to citizens.

The question of electronic participation is not affected at all. More precise description can be seen in the Appendix 1.

To understand why this happened - it is needed to go back into history. In the early 2000s, the country experienced an economic crisis that severely shattered the economy and led to hyperinflation. In response to the incident, several domestic decisions were taken, which tried to lighten the pressure from the budget and from the federal center. However, for the first time, the electronic government was talked about exactly in this period, in 2000, when the goal of its development was included in the program of modernization of the country (INFOLEG - Información Legislativa, 2000a). The first steps in this direction were manifested through decentralized actions in the field of electronic services. However, this coincided with the new "Great Depression", which hit raw material prices - almost the whole national economy was affected, which led to a deficit of budget money.

Because of this, as a result, the state apparatus turned out to be practically financially dried-out, which affected the process of introducing innovation. As it can be seen in the Table 3.1, there is nothing surprising in that the index of quality of public services in the early 2000s became negative, and electronic government indicators were not at a high level at the beginning of its implementation. After coming to power in 2003, the new president, Nestor Kirchner, known for his left-wing ideas, begins the process of transferring the electronic government system to partial control of the federal center, both in the administration and in providing services to the public (INFOLEG - Información Legislativa, 2005a). This is mainly expressed in the creation of regulatory institutions and quality standards. In addition, in the same 2003, the main party in the country's parliament was the "Justicialist Party", for which this time is marked by a more leftist policy, in contrast to the previous period. An interesting fact is that the period of centralization is accompanied by an increase in the level of the country's economic development, which may be related to overcoming the crisis and economic recovery, and further decline of the quality of public services.

**Table 3.1**

Decentralization - an action aimed at decentralization

Centralization - an action aimed at centralization

0 - Lack of action affecting intergovernmental relations in this year

Year	Electronic administration	Electronic services	Electronic participation	Quality of public services	Quality of electronic government
2000	0	Decentralization	0	0.03	-
2001	Centralization	0	0	-	-
2002	Centralization	0	0	-0.28	-
2003	0	Decentralization	0	-0.05	0.58
2004	0	0	0	-0.06	0.59
2005	Centralization	Centralization	0	-0.12	0.60
2006	0	0	0	-0.05	0.58
2007	0	0	0	-0.02	-
2008	Centralization	0	0	-0.15	-
2009	Centralization	0	0	-0.32	-
2010	0	0	0	-0.16	0.55
2011	0	0	0	-0.12	-
2012	0	0	0	-0.24	0.62
2013	0	0	0	-0.28	-
2014	0	0	0	-0.16	0.63
2015	Centralization	0	0	-0.08	-
2016	0	Decentralization	0	0.18	0.69
2017	0	Decentralization	0	-	-

Source: Author (2018)

Consequently, as can be seen from the data, after the reforms, the situation does not change dramatically - the quality of public services and the quality of electronic government remain at a low level. A brief increase in the quality of public services index is observed after their decentralization in 2003, as it can be seen on Graph 3.1, when the regions were instructed to regulate the publication of public information on electronic resources, which was part of the Improving the Quality of Democracy and its Institutions

program (INFOLEG - Información Legislativa. 2003a). However, this period is again replaced by centralization, characterized by the prevalence of the left-wing tendencies in the parliament. More attention should be paid to the post-2015 period, which is characterized by the decentralization of electronic services (INFOLEG - Información Legislativa, 2016a; INFOLEG - Información Legislativa, 2016b). This year, the Cambiemos party prevailed in the country's parliament, which in the political spectrum is leaning to the right, in contrast to its predecessor, Front for Victory. This is accompanied by an increase in the electronic government index and the quality of public services.

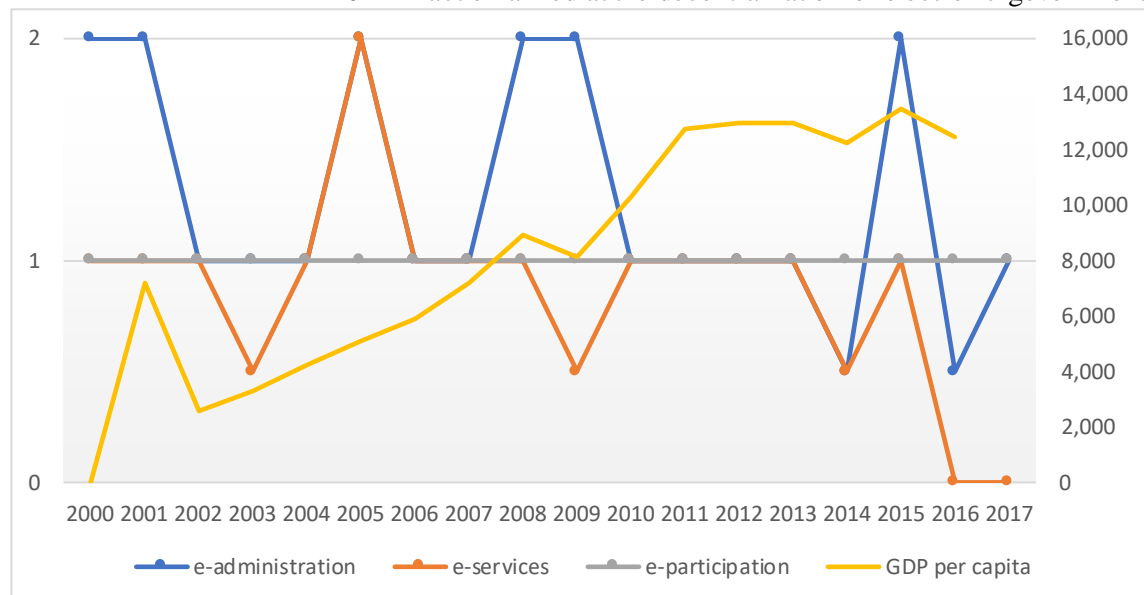
**Graph 3.1**

2 – An action aimed at centralizing electronic government

1 - No actions in the area of electronic government

0.5 – An action in the area of electronic government without redistribution of powers

0 - An action aimed at the decentralization of electronic government



Source: Author (2018)

Based on this, it can be concluded that the strategy for making political decisions in the field of electronic government in the case of Argentina is strongly determined by the policy, which, in turn, relies on working with the most problematic areas of public administration. There is an understanding that to improve the quality of electronic government it is necessary to decentralize it, however, for such a model, regions need more resources and it was not possible after the economic decay of the early 2000s. As a result, the country reduced its main indicators, trying to improve them through centralized activities in the administrative sphere. In addition, it can be noted that the process of redistribution of authority within the electronic government occurs in different time

cycles, depending on the functional orientation. It is also interesting that in the period from 2010 to 2015, the issue of electronic government regulation falls completely out of the political agenda, which is followed by a period of decentralization in the service sector, and the issue of electronic participation has never been addressed at all.

### 3.2 Austria

Austria belongs to a group of countries in which electronic government reforms occur frequently and address both the large-scale issues associated with the redistribution of powers and the individual functions necessary to make the system work more efficiently. The distribution of reforms in the country is as follows: in the field of electronic administration, the main emphasis is on centralization by creating regulatory authorities that are controlled by the federal center. In turn, in the field of electronic services, the federal center adheres to a more decentralized policy, with a particular emphasis on cybersecurity and interaction both between different levels of government and between regions. The scope of electronic participation by the federal center is not affected. More detailed description can be seen in the Appendix 2.

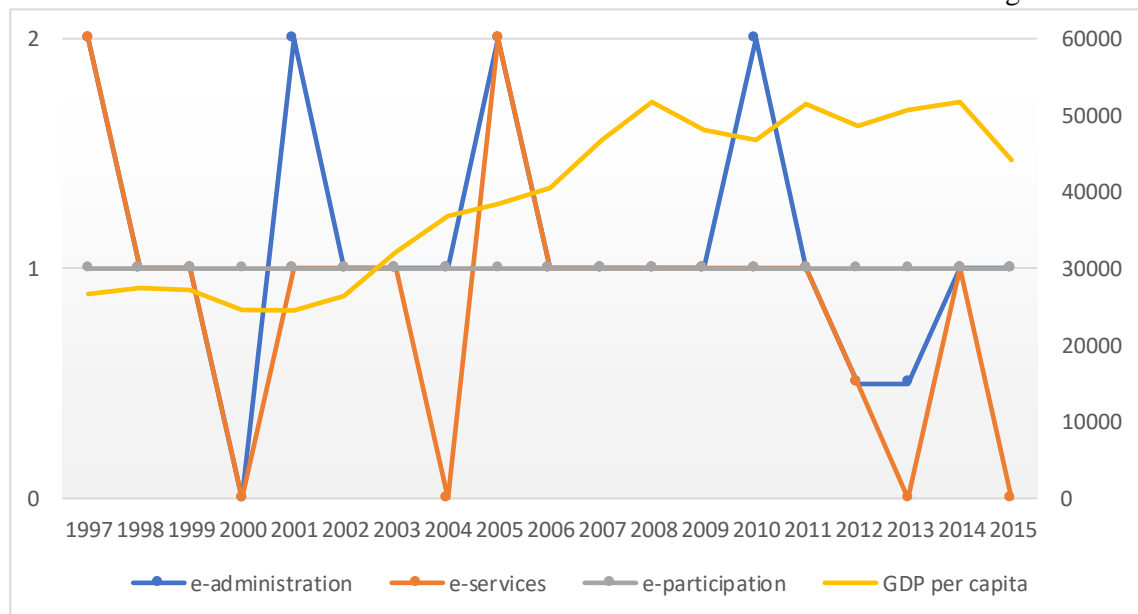
**Graph 3.2**

2 – An action aimed at centralizing electronic government

1 - No actions in the area of electronic government

0.5 – An action in the area of electronic government without redistribution of powers

0 - An action aimed at the decentralization of electronic government



Source: Author (2018)

As can be seen from the Graph 3.2, in contrast to Argentina, reforms in Austria go in blocks - several in a row and affect different areas of the electronic government simultaneously. In 1997-2001 and 2005-2006 there was a tendency for centralization. The reforms aimed at decentralization are interesting in the period from 2013 to 2015. For the first time, the electronic government as an independent phenomenon started talking in 1997, with the adoption of the 'Information Society Action Plan', which established a legal basis for the formation of the information society and the implementation of electronic services (Warta et al., 1999). At that time, the policy of the central government concerned the centralization of both the administration and service delivery spheres - eProcurement was created, as well as the federal center engaged in the creation of centralized web services for interaction with citizens. The cases of centralization of electronic administration in 2001 and 2005-2006 practically do not differ from each other: the country shows rather low per capita GDP, but the quality of public services and the electronic government quality index are at a high enough level.

The most interesting moment in the reforms comes after the parliamentary elections of 2002 - for the first time in a long time the majority receives the "Austrian People's Party", which is more right-wing in its economic policy than the "Social Democratic Party". It is in these 4 years that the legislative activity on electronic government is reviving, consisting of several acts - 2004 and 2005 - when emphasis is placed on centralizing administration and decentralizing the provision of services. In 2004, the Electronic government act was adopted, which prescribes regional responsibility for the provision of electronic documents, as well as identification issues (RIS - E-Government-Gesetz - Bundesrecht konsolidiert, 2018). In 2005, an ICT strategy unit is created, the task of which is the legal and organizational issues of eGovernment, coordination of technical infrastructure, program and project management, budget control and procurement, which in turn leads to the fact that regional structures cease to be individual units and enter in a single system of cooperation between the center and other regions in the provision of services (European Commission, 2016).

A major wave of decentralization redistribution of powers to the service sector has been observed since 2013. At this point, the party majority in the parliament belongs to the "Social Democratic Party", which has been on this position since 2006 and since 2011, the Austrian quality of public services has seen a decline, which continues to the present.

As a result of the new laws, emphasis is placed on the decentralization of electronic services with a stress on data protection, cybersecurity and the strengthening of cross-sectoral interaction, which at the time was considered as the responsibility of the regions (Federal Chancellery of the Republic of Austria, 2013; E-government Bund-Länder-Gemeinden, 2015).

**Table 3.2**

Decentralization - an action aimed at decentralization

Centralization - an action aimed at centralization

0 - Lack of action affecting intergovernmental relations in this year

Year	Electronic administration	Electronic services	Electronic participation	Quality of public services	Quality of electronic government
1997	Centralization	Centralization	0	0	-
1998	0	0	0	1.87	-
1999	0	0	0	-	-
2000	Decentralization	Decentralization	0	1.93	-
2001	Centralization	0	0	-	-
2002	0	0	0	1.94	-
2003	0	0	0	1.99	0.67
2004	0	Decentralization	0	1.86	-
2005	Centralization	Centralization	0	1.68	0.76
2006	0	0	0	1.83	-
2007	0	0	0	1.87	-
2008	0	0	0	1.78	0.74
2009	0	0	0	1.66	-
2010	Centralization	0	0	1.84	0.67
2011	0	0	0	1.62	-
2012	0	0	0	1.57	0.78
2013	0	Decentralization	0	1.59	-
2014	0	0	0	1.57	0.79
2015	0	Decentralization	0	1.48	-

2016	0	0	0	1.51	0.82
2017	0	0	0	-	-

Source: Author (2018)

It is interesting that for periods when reforms do not affect the powers of different levels, one or more parliamentary elections are taken place, excluding the elections of 2013. At the same time, GDP, quality of public services, and quality of electronic government do not provide unbiased explanations for such reforms, although some relationships can be traced (see Table 3.2). Thus, improving of the quality of public services index leads to periods of centralized actions by the federal center, which are expressed in the creation by the federal government of institutions designed to develop and coordinate policies in the field of electronic government. At the same time, after the deterioration of the quality of electronic government, there are decentralized trends in electronic services.

Thus, the following conclusions can be drawn: first, Austria is responsive to the indicators of the quality of public services index and the quality of electronic government. Improving or deteriorating of the ratings lead to the response of the federal center. The ideological affiliation of the majority party plays a role in the direction of redistribution reforms - the left-wing party was more inclined to centralize the electronic administration, while the more right-wing party was more focused on electronic services and their decentralization. Moreover, the economic component seems to be unimportant - the growth or fall of GDP does not greatly affect the desire of the center to transfer or take away powers from subnational units.

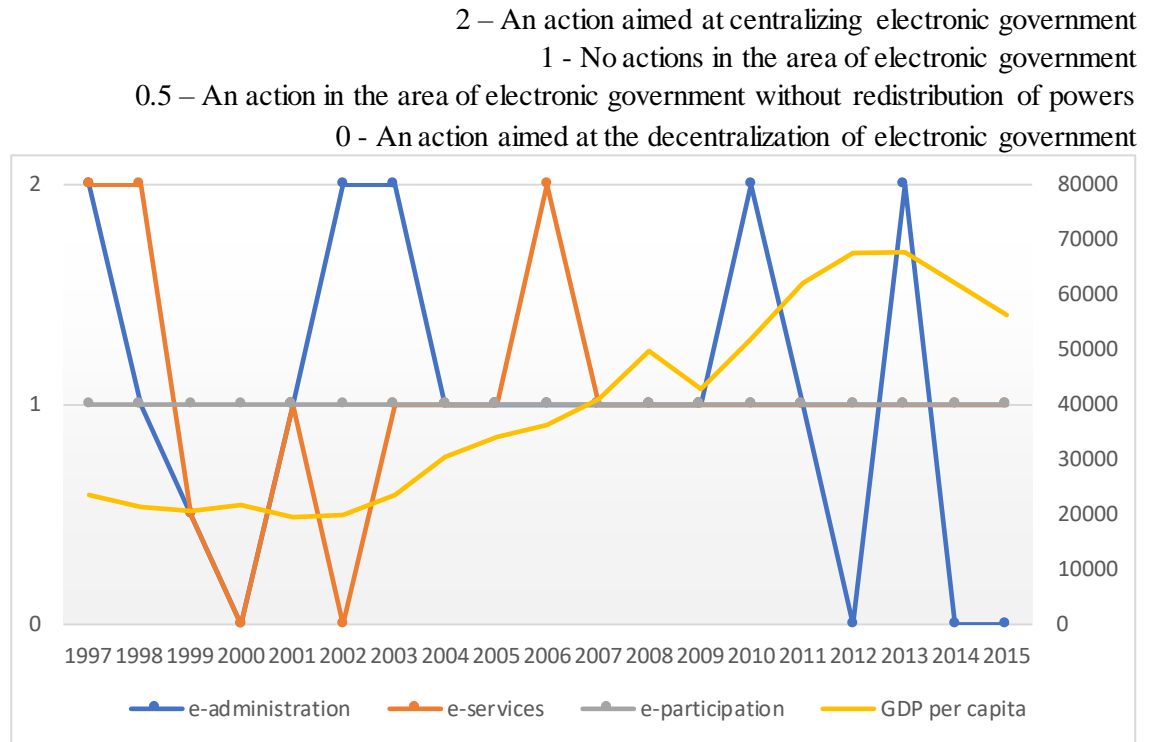
### 3.3 Australia

Australia is an example of a country that carries out reforms in the field of electronic government quite often, but the main focus is on the administrative issue. Basically, the responsibility for providing services rests with the Australian states, and the federal center is responsible for creating framework programs and strategies that are recommendatory in nature. The attention of the federal center is the field of electronic administration and mostly about the architecture of electronic government, technical standards and the use of new technologies. With regard to the provision of electronic services, the main focus is on the creation of a single access point, as well as promoting the improvement of the



quality of services provided. As in the cases examined earlier, the scope of electronic participation is not within the sphere of interests and is not affected in any way. The more comprehensive picture can be seen in the Appendix 3.

**Graph 3.3**



Source: Author (2018)

Action in the field of electronic government in Australia are not very different in content from other countries - they are also mainly aimed at establishing quality standards. However, there is a focus on the administrative component. As it can be seen on the Graph 3.3, for the first time, the issue was raised in 1997 with the adoption of the program “Investing For Growth”, which focused on protecting information and providing services to the public through a single access point, which served to better regulate information flows (Australian Government, 1997). For these purposes and for the creation of regulatory programs, the National Office of the Information Economy was created (Clark, 2003).

The first time period, which was aimed at decentralization, was during 2000-2002, and this was precisely about the sphere of service provision, so at that time the responsibility of subnational units for developing electronic services and improving their quality was established (AGIMO archive, 2018a; AGIMO archive, 2018b). The second timeframe is 2012-2016, when a number of initiatives were taken to change the internal

architecture of electronic government, such as cloud services and improving overall performance (Australian Government. Department of Finance, 2012; Australian Government. Department of Finance, 2014; National Archives of Australia, 2015; Digital Transformation Agency, 2018).

Even though the majority party in parliament, representing the right-wing forces – “Liberal Party of Australia”, was replaced in 2007 by the more social-democratic “Australian Labor Party” in the period from 2004 to 2009, there is a time of no attention to electronic government initiatives that were accompanied by a high level of the quality of public services and the quality of electronic government (Table 3.3). In addition to the fact that the change in the ideological orientation of the party does not in any way affect initiatives in this direction, the elections did not influence the tendency in adopting laws - the reforms were held both in the election year and during the non-elections period. The focus of the federal center on decentralization initiatives in the field of electronic administration is observed after 2013, when the Liberal/National Coalition came to power, which could become the agenda due to the deterioration in the quality of public services index that has been observed since 2011.

**Table 3.3**

Decentralization - an action aimed at decentralization

Centralization - an action aimed at centralization

0 - Lack of action affecting intergovernmental relations in this year

Year	Electronic administration	Electronic services	Electronic participation	Quality of public services	Quality of electronic government
1997	Centralization	Centralization	0	-	-
1998	0	Centralization	0	1.68	-
1999	0	0	0	-	-
2000	Decentralization	Decentralization	0	1.81	-
2001	0	0	0	-	-
2002	Centralization	Decentralization	0	1.72	-
2003	Centralization	0	0	1.84	0.83
2004	0	0	0	2.00	0.84
2005	0	0	0	1.75	0.87

2006	0	Centralization	0	1.71	-
2007	0	0	0	1.82	-
2008	0	0	0	1.79	0.81
2009	0	0	0	1.70	-
2010	Centralization	0	0	1.77	0.78
2011	0	0	0	1.69	-
2012	Decentralization	0	0	1.62	0.83
2013	Centralization	0	0	1.64	-
2014	Decentralization	0	0	1.60	0.91
2015	Decentralization	0	0	1.56	-
2016	Decentralization	0	0	1.58	0.91

Source: Author (2018)

Thus, in the case of Australia, it can be concluded that the main factor determining the actions of the federal center on the matter of the electronic government system is the quality of public services. The level of economic development of the country, according to the data, does not have any significant impact on this issue. Speaking about the political orientation of the dominant party in the government, it can be concluded that this also does not play any role.

### 3.4 Bosnia and Herzegovina

Until a certain time, the electronic government sphere was not touched on the agenda of Bosnia and Herzegovina. Attention to the use of new information technologies in the sphere of public administration was drawn after 2003, when the Memorandum of Understanding on the development of ICT in the country was signed between the Government and the United Nations Development Program (UNDP) (Council of Ministers of BiH, 2004). In the field of electronic administration, practices are reduced to the creation of regulatory bodies, as well as the establishment of standards for the quality of service delivery. The electronic services policy focuses on recommendations for regional authorities on the provision of services for which the federal center is not responsible, aimed at improving the quality and cost of the procedure. The issue of electronic participation, as in previous cases, was not addressed. In addition, if in the early

2000s the government actively tried to regulate the sphere of electronic government, then after 2010 there were no such attempts at all. All of the actions taken in relation to electronic government consisted of the redistribution of powers between different levels of government. The more detailed description can be seen in the Appendix 4.

In 2004, several strategies were adopted that generally established practices for electronic government - Strategy by the Council of Ministers and Policy, Strategy and Action Plan for the development of the information society in Bosnia & Herzegovina for the period 2004 – 2010 (Huskić, 2006). As is known, Republika Srpska as a part of the country is highly decentralized and is practically not controlled by the federal center. In order to overcome this problem and regulate this sphere, in 2005 a centralized Agency for Information Society was formed, whose task was to create a platform for coordinating electronic government practices in different parts of the country (Agency for informational Society, 2018). However, it can not be said that the practices were successful, partly because of strong decentralization, a complex bureaucratic system and the lack of direct communication between different levels of government. In general, it can be noted that the federal level does not deal with the reform of electronic government, transferring these functions to the lower levels.

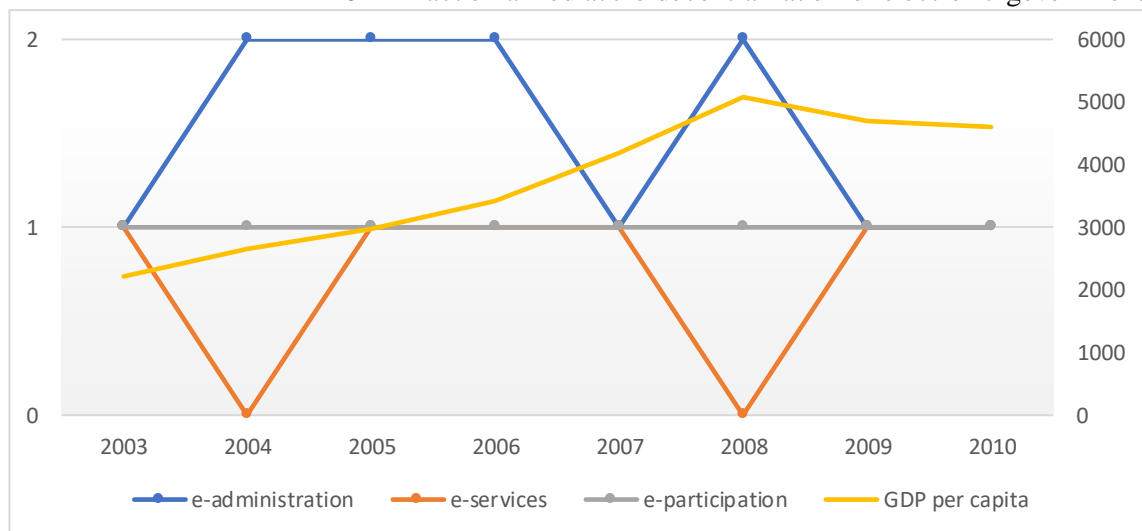
**Graph 3.4**

2 – An action aimed at centralizing electronic government

1 - No actions in the area of electronic government

0.5 – An action in the area of electronic government without redistribution of powers

0 - An action aimed at the decentralization of electronic government



Source: Author (2018)

As already noted, UNDP played a big role in the reforms. The organization not only closely follows the situation in the field of information technology and the development of the information society of the country, but also included Bosnia and Herzegovina in the Legislation Database Project (LDB), and the Civil Service Training Project (CSTP), which proposes the creation of a clear, simple and transparent electronic government system, which in the future will have a positive effect on the relationship between authorities and citizens. Nevertheless, the country not only has one of the lowest quality indicators of electronic government in Europe, but also the negative index of quality of public services (Table 3.4).

**Table 3.4**

Decentralization - an action aimed at decentralization

Centralization - an action aimed at centralization

0 - Lack of action affecting intergovernmental relations in this year

Year	Electronic administration	Electronic services	Electronic participation	Quality of public services	Quality of electronic government
2003	0	0	0	-0.74	0.31
2004	Centralization	Decentralization	0	-0.63	0.38
2005	Centralization	0	0	-0.75	0.40
2006	Centralization	0	0	-0.62	-
2007	0	0	0	-0.84	-
2008	Centralization	Decentralization	0	-0.60	0.45
2009	0	0	0	-0.71	-
2010	0	0	0	-0.74	-

Source: Author (2018)

Bosnia and Herzegovina is an example of how, due to the weakness of the state, serious economic and political problems, domestic policy begins to be regulated by supranational organizations. They are beginning to carry out active activities to improve the situation within the country and offer their development programs. Such programs in many ways try to organize a single electronic space with equal access to it, which can lead to the creation of centralized institutions at the level of the federal center. This practice is shown by the concentration of the federal center on the active centralization of the administrative sphere of electronic government.

### 3.5 Belgium

The case of Belgium is an example of a country with a strong decentralization, due to the frequent differentiation into Wallonia and Flanders. In the area of electronic administration, strategies are mainly concerned with the creation of federal standards and regulators. Practices on electronic services focus on creating open services, creating a secure information space and using new developments in information technology to improve the quality of the service delivery process. The scope of electronic participation as in previous cases is not addressed in the agenda of the federal center, which in this case is most likely connected with the previously mentioned strong decentralization of the state apparatus. The more in-depth description can be seen in the Appendix 5.

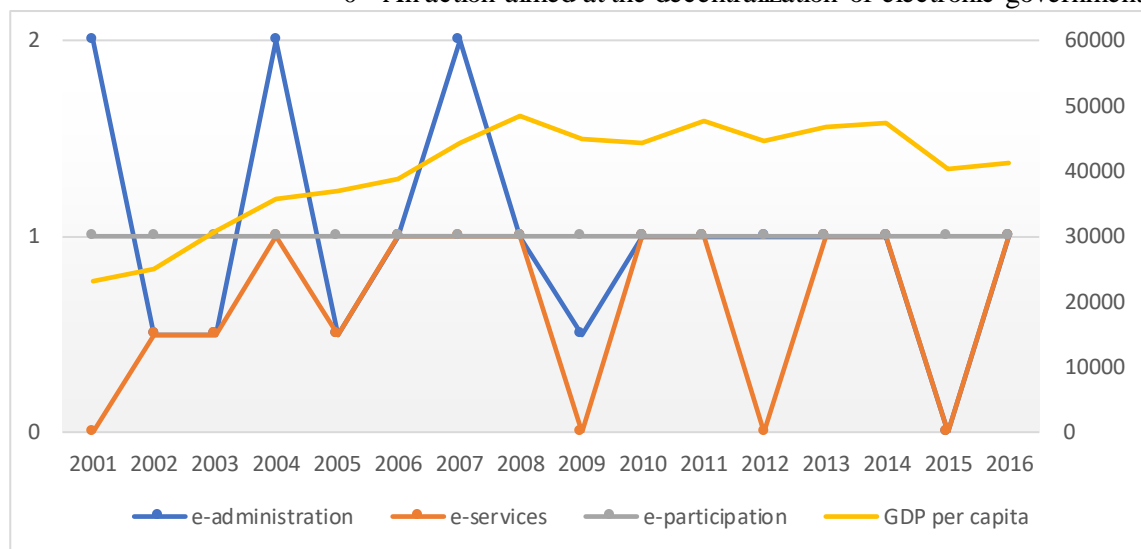
**Graph 3.5**

2 – An action aimed at centralizing electronic government

1 - No actions in the area of electronic government

0.5 – An action in the area of electronic government without redistribution of powers

0 - An action aimed at the decentralization of electronic government



Source: Author (2018)

As it can be seen from the Graph 3.5, the electronic government sphere became part of the agenda in 2001, within the framework of the cooperation agreement between the Federal State and communities and regions on the development and operation of a single electronic platform (e-platform) (European Commission, 2009). This initiative can be divided into several areas: Federal Department for ICT was created, which was responsible for coordinating the actions of actors and developing information standards; federal authorities have become responsible for the development of a faster, more technologically and open system to provide services for citizens. The purpose of the

signed cooperation agreement is the use of information and communication technologies to provide information to all citizens and all companies and other organizations and authorities in a user-oriented manner of providing information, and to enable them to conduct electronic transactions with authorities in a secure and secure environment. Thus, the data of all parties and partners should become publicly available, offered to citizens, companies and other organizations, as well as parties to the cooperation agreement, through a variety of communication channels.

**Table 3.5**

Decentralization - an action aimed at decentralization

Centralization - an action aimed at centralization

0 - Lack of action affecting intergovernmental relations in this year

Year	Electronic administration	Electronic services	Electronic participation	Quality of public services	Quality of electronic government
2000	0	0	0	1.73	-
2001	Centralization	Decentralization	0	-	-
2002	0	0	0	1.98	-
2003	0	0	0	1.93	0.67
2004	Centralization	0	0	1.87	0.75
2005	0	0	0	1.71	0.74
2006	0	0	0	1.75	-
2007	Centralization	0	0	1.61	-
2008	0	0	0	1.39	0.68
2009	0	Decentralization	0	1.57	-
2010	0	0	0	1.57	0.72
2011	0	0	0	1.66	-
2012	0	Decentralization	0	1.60	0.77
2013	0	0	0	1.61	-
2014	0	0	0	1.38	0.76
2015	Decentralization	Decentralization	0	1.44	-
2016	0	0	0	1.33	0.79

Source: Author (2018)

Important and interesting is the moment that one can clearly separate the cycles and focus of the federal government's strategies. In the case of the period from 2001 to 2007 the main focus was on the centralization of electronic administration, from 2008 to 2015, emphasis was placed on the decentralization of the provision of electronic services. In general, working with a highly decentralized Belgium, there are difficulties due to the fact that there is only one parliament in the country, as well as GDP with public service quality indexes, but the electronic government structures and approaches to their provision vary considerably. In addition, as can be seen from the data presented above, the strategies for centralization were mainly conducted during a period characterized by a high level of the index of service delivery to the population, while decentralized processes fell into the period when this index deteriorated (Table 3.5). The electronic government quality index is stable, while decentralized processes occurred during a period of insignificant declines in the country's GDP.

### **3.6 Brazil**

Reforms in the field of electronic government in Brazil are often managed and regulated as a set of individual functions of different directions of this innovation, and generally set a general framework for management. In general, the adopted strategies are single proposals, and not a set of measures aimed at one or another area of electronic government. Thus, in the field of electronic administration, the main emphasis is on creating regulating and coordinating authorities, development strategies, developing quality and technology standards and. The practice of providing electronic services in comparison with the field of administration is rarely affected and mainly focuses on improving the level of services and the creation of centralized access points. In addition, attention is paid to the sphere of electronic participation, for example, the development of new forms of interaction between state authorities and citizens is part of the agenda, as well as the creation of a single point for this interaction. The more detailed description can be seen in the Appendix 6.

As it can be seen from the Graph 3.6, for the first time, electronic government appeared on the agenda in 2000 with the creation of the Executive Committee on electronic government (CEGE), chaired by the President's Chief Staff, whose task was to coordinate the implementation of electronic government practices (Bwalya & Mutula,



2014). The low indicators that the country demonstrated and the active social policy, through which the president and the majority party tried to attract the electorate, led to a lot of reforms aimed at centralizing the electronic government during the period that took place from 2000 to 2010. The focus during this period was on the creation of guidelines and quality standards.

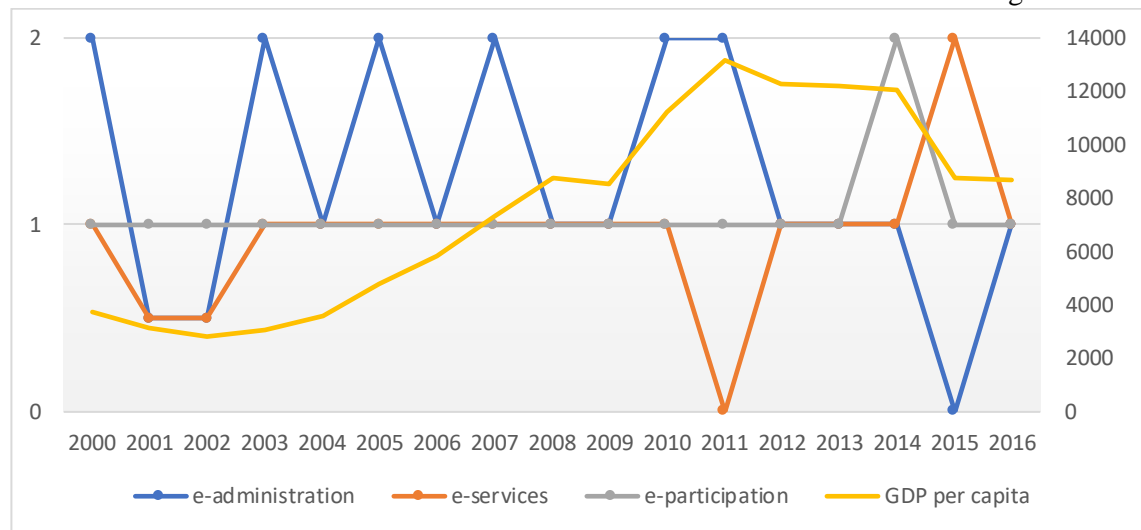
**Graph 3.6**

2 – An action aimed at centralizing electronic government

1 - No actions in the area of electronic government

0.5 – An action in the area of electronic government without redistribution of powers

0 - An action aimed at the decentralization of electronic government



Source: Author (2018)

**Table 3.6**

Decentralization - an action aimed at decentralization

Centralization - an action aimed at centralization

0 - Lack of action affecting intergovernmental relations in this year

Year	Electronic administration	Electronic services	Electronic participation	Quality of public services	Quality of electronic government
2000	Centralization	0	0	0.09	-
2001	0	0	0	-	-
2002	0	0	0	0.05	-
2003	Centralization	0	0	0.20	0.53
2004	0	0	0	0.02	0.57
2005	Centralization	0	0	-0.09	0.60

2006	0	0	0	-0.32	-
2007	Centralization	0	0	-0.21	-
2008	0	0	0	-0.09	0.57
2009	0	0	0	-0.09	-
2010	Centralization	0	0	-0.03	0.50
2011	Centralization	Decentralization	0	-0.11	-
2012	0	0	Decentralization	-0.13	0.62
2013	0	0	0	-0.09	-
2014	0	0	Centralization	-0.14	0.60
2015	0	Centralization	0	-0.18	-
2016	0	0	0	-0.17	0.63

Source: Author (2018)

In the period from 2011 to 2012, there are several strategies aimed at decentralization of both electronic services and electronic participation (Table 3.6). In this case, it is interesting that in this period of time there is an increased level of economic development of the country. In addition, the basic laws towards decentralization were adopted after the deterioration of the electronic government quality index. Consequently, it can be concluded that electronic government reforms are affected by economic resources - for example, an increase in the GDP index leads to the decentralization of electronic services and participation, as well as the quality of public services, the deterioration of which leads to decentralized practices.

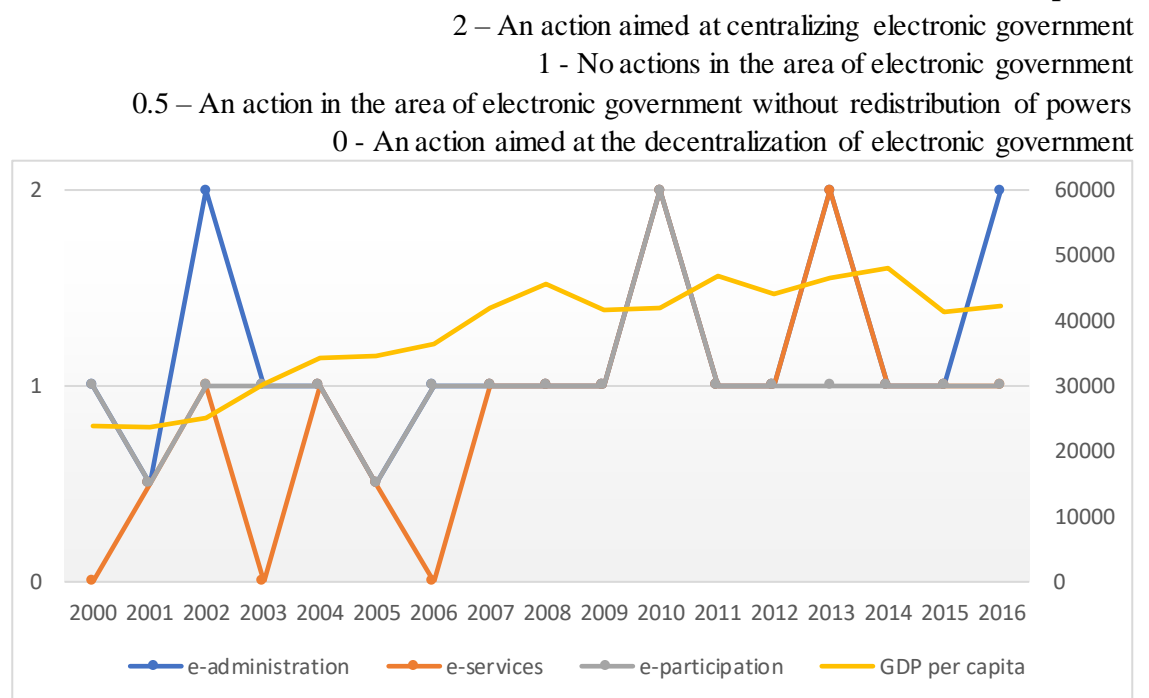
### 3.7 Germany

Reforms in the field of electronic government in Germany are taking place quite often and as it can be seen after the beginning of 2010 there are becoming the blocks of actions aimed at different spheres, rather than single edicts. The distribution of the cases of reforms is as follows: in the field of electronic administration, the main focus is on the creation of regulatory bodies and the creation of strategic frameworks; electronic services are distinguished by attention to the quality and quantity of services; electronic participation is considered by the federal government as cooperation between the center

and the regions, however, with a preponderance towards the federal center. The more detailed description can be seen in the Appendix 7.

It is important that after the appearance of the electronic government issue on the agenda in 2000, which was reflected in the "BundOnline2005" (European Commission, 2014), the eGovernment program of the Federal government, unlike previous cases, the it stands out for its strategy of development and spreading innovation - from the beginning more decentralized practices are applied. It can be seen from the Graph 3.7, that most of the decentralization falls on the period until 2000 to 2006, and after 2010, electronic government reforms are mostly centralized in their nature. It is worth mentioning that the beginning of the centralized period coincides with the parliamentary elections.

**Graph 3.7**



Source: Author (2018)

In 2009, the new parliamentary elections won by the “Christian Democratic Union”, but unlike in 2005, it was done with a significant margin, which lead to taking votes from the “Social Democratic Party”. From this point in time, the sphere of electronic government is reformed in a much more centralized way and the model implementation of innovation looks like this - the federal center sets clear objectives, proposes certain measures to achieve these goals and create incentives for the regions, giving them, however, some freedom of action. Taking a closer look at the content of the reforms in 2010, it can be seen that the task of implementing the high standards was set with the

establishment of the IT Planning Council and creation of National eGovernment Strategy, which promotes the integration of the federal center and the regions (IT Planungsrat, 2015). Nevertheless, until 2013, very low indicators of the quality of public services are shown, which falls in inverse proportion to GDP (Table 3.7).

**Table 3.7**

Decentralization - an action aimed at decentralization

Centralization - an action aimed at centralization

0 - Lack of action affecting intergovernmental relations in this year

Year	Electronic administration	Electronic services	Electronic participation	Quality of public services	Quality of electronic government
2000	0	Decentralization	0	1.88	-
2001	0	0	0	-	-
2002	Centralization	0	0	1.72	-
2003	0	Decentralization	0	1.42	0.76
2004	0	0	0	1.49	0.79
2005	0	0	0	1.50	0.80
2006	0	Decentralization	0	1.65	-
2007	0	0	0	1.64	-
2008	0	0	0	1.52	0.72
2009	0	0	0	1.58	-
2010	Centralization	Centralization	Centralization	1.57	0.73
2011	0	0	0	1.55	-
2012	0	0	0	1.60	0.80
2013	Centralization	Centralization	0	1.54	-
2014	0	0	0	1.73	0.79
2015	0	0	0	1.74	-
2016	Centralization	0	0	1.74	0.82

Source: Author (2018)

As in the case of Austria, electronic government reforms in Germany are responsive to indicators of quality of public services and are also determined by the ideological affiliation of the majority party in parliament. Nevertheless, in Germany the

implementation strategy was characterized by an initial decentralized orientation, the view of which was replaced with the more centralized position - the certain consensus was created regarding a single information space and the implementation of common parameters for the evaluation and operation of electronic government.

### 3.8 India

India is a type of countries that do not often implement electronic government reforms that affect both individual functions and larger levels, redistributing powers between the federal center and the states. The main emphasis in developing strategies is to create strategies and standardize electronic administration, implement a more citizen-centric and business-center environment for electronic services, and develop electronic voting mechanisms in the field of electronic participation. The more detailed description can be seen in the Appendix 8.

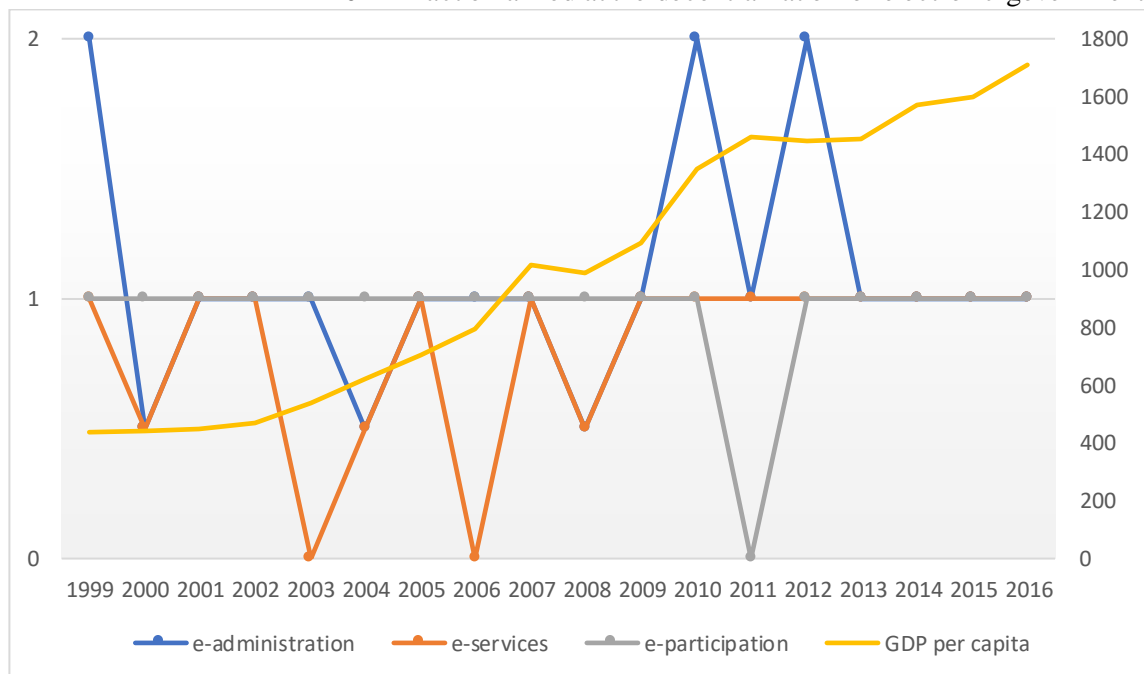
**Graph 3.8**

2 – An action aimed at centralizing electronic government

1 - No actions in the area of electronic government

0.5 – An action in the area of electronic government without redistribution of powers

0 - An action aimed at the decentralization of electronic government



Source: Author (2018)

The history of electronic government in India begins in 1999 with the creation of the Union Ministry of Information Technology, whose task was to create an e-strategy

that would determine the development of this innovation in the coming years (Narayan & Narayanan, 2016). As can be noted from the data shown on the Graph 3.8, the attention of the federal center to one or another sphere of electronic government depends on the time period. So, until 2006, the main focus was on the field of electronic services, while from 2010 to 2012 the main area of policy change was the sphere of electronic administration, and it was its centralization. It is also interesting that in this period of time the economic development of the country is higher. While the quality index of electronic government remains approximately the same throughout the period considered in this paper, the quality of public services is consistently low and, as can be seen from the data, attempts to decentralize electronic services were made during this period (Table 3.8). After the next period of decline of this index, attempts to centralize the sphere of electronic administration begin.

**Table 3.8**

Decentralization - an action aimed at decentralization

Centralization - an action aimed at centralization

0 - Lack of action affecting intergovernmental relations in this year

Year	Electronic administration	Electronic services	Electronic participation	Quality of public services	Quality of electronic government
1999	Centralization	0	0	-	-
2000	0	0	0	-0.13	-
2001	0	0	0	-	-
2002	0	0	0	-0.12	-
2003	0	Decentralization	0	-0.08	0.37
2004	0	0	0	-0.16	0.39
2005	0	0	0	-0.10	0.40
2006	0	Decentralization	0	-0.10	-
2007	0	0	0	0.12	-
2008	0	0	0	-0.02	0.38
2009	0	0	0	-0.01	-
2010	Centralization	0	0	0.02	0.36
2011	0	0	Decentralization	0.01	-

2012	Centralization	0	0	-0.17	0.38
2013	0	0	0	-0.17	-
2014	0	0	0	-0.20	0.38
2015	0	0	0	0.09	-
2016	0	0	0	0.10	0.46

Source: Author (2018)

Since the states in India were formed not on the basis of territorial principle but on the basis of ethnic or linguistic unity, on the one hand, the federal center tries to create a single information space, to set the general framework and strategies for electronic government for everyone, and on the other, to allow states to be more flexible and independently determine the strategy of some projects that can bring to the economic development of the country. The reforms of centralization or decentralization in the country are largely due to the peculiarities of federalism based on the ethnic principle. In addition, the level of economic development and the quality of public services have some influence. In the case if a part of the regions requires special conditions, then they can receive the needed functions for independently regulating any issues. At the same time, in many respects, under the influence of international organizations such as DfID, G-8, the UNDP and the World Bank under the banner of E-governance for Development (Maden, 2004), India is implementing centralization reforms to improve the quality of public services.

### 3.9 Mexico

Since the presidential and parliamentary elections in 2000, the country is considered an electoral democracy and from the same time there were discussions about the electronic government system which took place within the e-Mexico National System strategy (Ruiz Alanís et al., 2014). The task for this period was the creation of a nationwide Internet portal that would provide the citizens with information on the development of the regulatory framework of the state and improve the work of public authorities and quality of public services in various sectors. Reforms in this area during period can be characterized as frequent and large-scale - they do not concern certain functions, but more general issues related to the control, evaluation and organization of electronic government. Thus, in the field of electronic administration, the emphasis is on

standardizing processes and coordinating federal agencies among themselves. The sphere of electronic services is characterized by coordination processes on the part of the federal center, in turn, electronic participation is marked by the use of a specially created site for these purposes, which is controlled by the federal center, through which the relationship between the government and citizens is built. The more detailed description can be seen in the Appendix 9.

As can be seen from the presented data on the Graph 3.9, one can single out the fact that the main thrust of electronic government strategies in Mexico is centralization. The situation in Mexico at the beginning of the 2000s does not seem bad - the index of quality of public services is quite high, the electronic government quality index is also stably high (Table 3.9). Nevertheless, centralized practices are beginning to be implemented in the country with respect to different areas of electronic government, for example, the National Development Plan for 2001-2006 (PND) is being adopted in 2001, which is a strategy for future action and the creation of quality standards (United Nations, 2004). In 2005, the Intersecretarial Commission on the Electronic Government was created, the aim of which is to the adequate coordination of federal agencies (Ortiz & García, 2016).

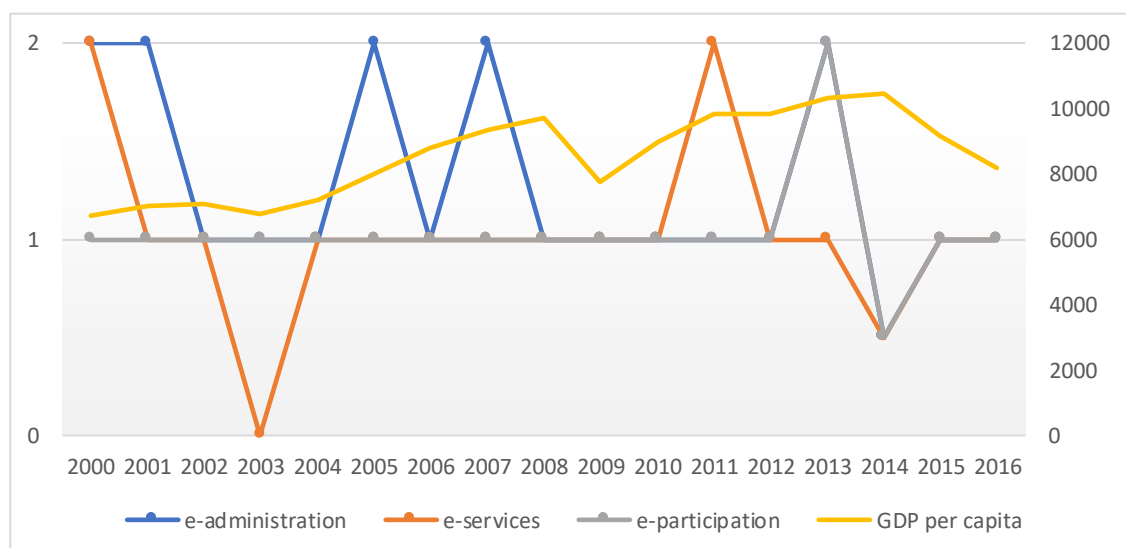
**Graph 3.9**

2 – An action aimed at centralizing electronic government

1 - No actions in the area of electronic government

0.5 – An action in the area of electronic government without redistribution of powers

0 - An action aimed at the decentralization of electronic government



Source: Author (2018)



**Table 3.9**

Decentralization - an action aimed at decentralization

Centralization - an action aimed at centralization

0 - Lack of action affecting intergovernmental relations in this year

Year	Electronic administration	Electronic services	Electronic participation	Quality of public services	Quality of electronic government
2000	Centralization	Centralization	0	0.24	-
2001	Centralization	0	0	-	-
2002	0	0	0	0.27	-
2003	0	Decentralization	0	0.21	0.59
2004	0	0	0	0.12	0.59
2005	Centralization	0	0	0.07	0.61
2006	0	0	0	0.09	-
2007	Centralization	0	0	0.17	-
2008	0	0	0	0.19	0.59
2009	0	0	0	0.17	-
2010	0	0	0	0.16	0.51
2011	0	Centralization	0	0.31	-
2012	0	0	0	0.34	0.62
2013	Centralization	0	Centralization	0.34	-
2014	0	0	0	0.20	0.57
2015	0	0	0	0.21	-
2016	0	0	0	0.14	0.62

Source: Author (2018)

An important note is that there are no reforms in the field of electronic government, which in any way could affect the redistribution of powers between different levels of power in the period from 2008 to 2010, which may be related, as in the case of Argentina, with lack of resources - according to the data, this period of time characterized by global economic crisis and a sharp decline in economic development is shown. The same pattern is observed after 2013, when data show a decline in GDP per capita. Therefore, in this

case, this may affect the implementation of some reforms that might affect the redistribution of powers in the field of electronic government.

### 3.10 Switzerland

The example of Switzerland is inverse to the one of Belgian - in a heavily decentralized country, there has been a centralization of the electronic government system. Hence, a large number of cases of reforms aimed at centralization, and a small number of actions that are decentralizing in nature. The main thrust of electronic administration strategies is to create a legal, administrative, technical and organizational framework; the creation of state standards through regulators, as well as the collaboration between different levels of government. The scope of electronic services is characterized by attention to the implementation and promotion of various projects. The area of electronic participation is mainly focused on the implementation of electronic voting practices. The more comprehensive description can be seen in the Appendix 10.

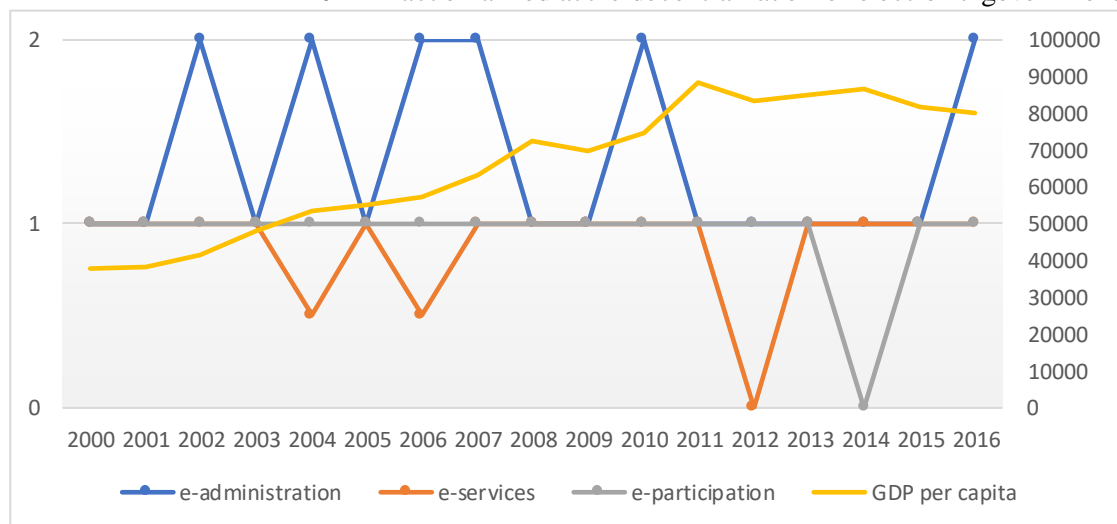
**Graph 3.10**

2 – An action aimed at centralizing electronic government

1 - No actions in the area of electronic government

0.5 – An action in the area of electronic government without redistribution of powers

0 - An action aimed at the decentralization of electronic government



Source: Author (2018)

As can be seen from the Graph 3.10, prior to 2002, the actions of power redistribution were not carried out. In 2002, the first eGovernment strategy was developed, the task of which was to create a basis for the functioning of electronic government, the optimization of services and the development of the network (Prins,

2007). The main indicators of the country, such as the quality of electronic government is at a high level, while the quality of public services index shows a decrease during the period from 2010 to 2013. It is worth to mention that this period of time is distinguished by decentralized processes in the field of electronic services and electronic participation (Table 3.10).

**Table 3.10**

Decentralization - an action aimed at decentralization

Centralization - an action aimed at centralization

0 - Lack of action affecting intergovernmental relations in this year

Year	Electronic administration	Electronic services	Electronic participation	Quality of public services	Quality of electronic government
2000	0	0	0	2.04	-
2001	0	0	0	-	-
2002	Centralization	0	0	2.00	-
2003	0	0	0	1.82	0.76
2004	Centralization	0	0	2.18	0.75
2005	0	0	0	1.85	0.75
2006	Centralization	0	0	2.08	-
2007	Centralization	0	0	2.04	-
2008	0	0	0	2.04	0.76
2009	0	0	0	1.95	-
2010	Centralization	0	0	1.88	0.71
2011	0	0	0	1.87	-
2012	0	Decentralization	0	1.89	0.81
2013	0	0	0	1.82	-
2014	0	0	Decentralization	2.11	0.73
2015	0	0	0	2.00	-
2016	Centralization	0	0	2.02	0.75

Source: Author (2018)

Thus, the main factor that determines the decentralized reforms in the area of electronic government can be identified as the quality of the provision of public services.

Switzerland saw a big problem in the disunity and heterogeneity of the country's information system, as a result of which it created many centralized institutions. The political orientation of the majority party in the country's parliament, as well as the level of economic development, do not seem to have any influence on this process.

### **3.11 United States of America**

Reforms in the electronic government of the United States are generally large-scale, because the more detailed and individual functions are regulated at the state level, while the federal center sets the rules in areas that seem to it socially important. The main thrust of electronic administration strategies is to create regulatory bodies, designate certain politicians responsible for this policy, and attract attention to the issue of data exchange. The area of electronic services is characterized by attention to the implementation of an interconnected service delivery system between different levels of government and cantons, as well as the creation of a portal that can act as a single point of access to public services. As in many cases, the sphere of electronic participation was not touched on in any way by the federal center. The more detailed description can be seen in the Appendix 11.

The electronic government appeared within the political agenda in 2001 with the creation of the position of associate director for information technology and electronic government (Forman, 2002), elevating electronic government strategy in 2003 and 2004, which led to the creation of the Portfolio Steering Group with state's representatives (United Nations, 2003). As can be seen from the data shown on the Graph 3.11, the redistribution of powers is mainly centralized in its nature and focuses on the sphere of electronic services. In addition, there are two waves that characterize the moment when the issue of electronic government was more active on the agenda - 2001-2003 and 2011-2016. It should be noted that during these periods the Congress had mainly representatives of the Republican Party.

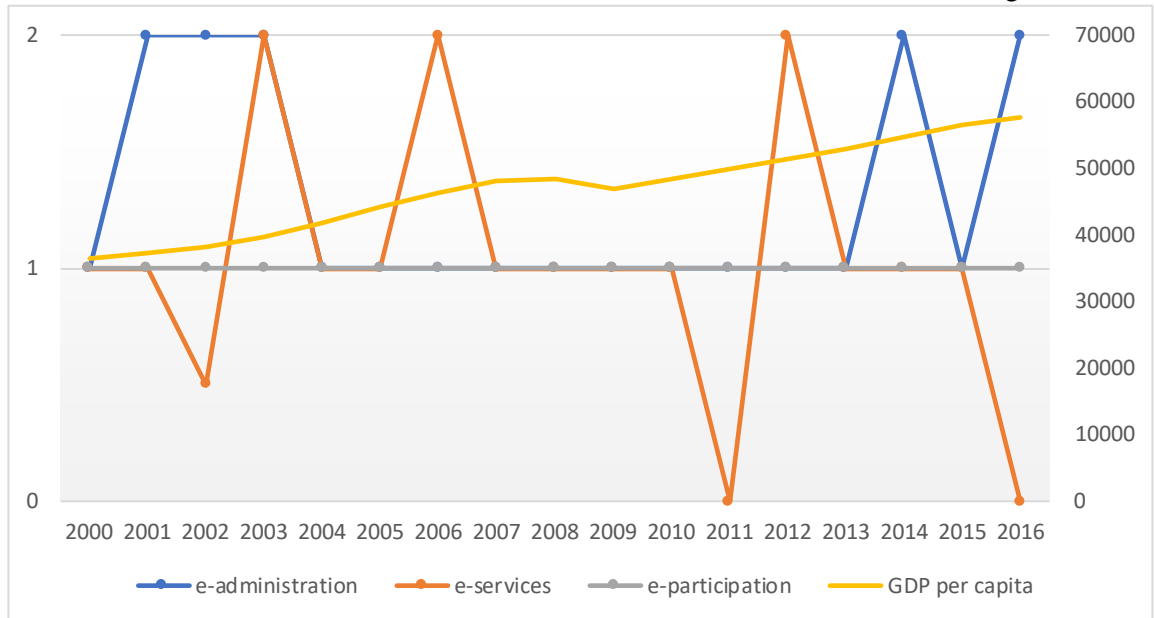
**Graph 3.11**

2 – An action aimed at centralizing electronic government

1 - No actions in the area of electronic government

0.5 – An action in the area of electronic government without redistribution of powers

0 - An action aimed at the decentralization of electronic government



Source: Author (2018)

The main indicators of the country are developing by common patterns - both the index of quality of public services and the quality rating of the electronic government in the period from 2000 to 2007 were quite high, but since 2008 there has been a sharp decline in the index of quality of public services and a gradual decline in the rating of the electronic government (Table 3.11). The answer to this was the attempts of the federal center to relieve itself of authority in the field of electronic services and allowed subnational units to work with certain aspects of this system on their own. So, in 2011, Executive Order 13571 – ‘Streamlining Service Delivery and Improving Customer Service’ was adopted, focusing on streamline service delivery and improving the experience of its customers (The White House, 2011). Moreover, in 2016 subnational units became responsible for compliance with applicable privacy requirements and manage privacy risks (The White House, 2016a).

**Table 3.11**

Decentralization - an action aimed at decentralization

Centralization - an action aimed at centralization

0 - Lack of action affecting intergovernmental relations in this year

Year	Electronic administration	Electronic services	Electronic participation	Quality of public services	Quality of electronic government
2000	0	0	0	1.80	-
2001	Centralization	0	0	-	-
2002	Centralization	0	0	1.68	-
2003	Centralization	Centralization	0	1.60	0.93
2004	0	0	0	1.76	0.91
2005	0	0	0	1.54	0.90
2006	0	Centralization	0	1.59	-
2007	0	0	0	1.65	-
2008	0	0	0	1.61	0.86
2009	0	0	0	1.51	-
2010	0	0	0	1.56	0.85
2011	0	Decentralization	0	1.52	-
2012	0	Centralization	0	1.53	0.87
2013	0	0	0	1.52	-
2014	Centralization	0	0	1.47	0.87
2015	0	0	0	1.46	-
2016	Centralization	Decentralization	0	1.48	0.84

Source: Author (2018)

Consequently, it can be concluded that in the case of the United States of America the policy regarding electronic government and redistribution of functions largely depends on several factors: the political conjuncture, the quality of public services and the quality of electronic government. All these factors are closely related - one can influence the other and vice versa. In turn, the level of economic development does not show any influence on this issue.

## Conclusion

In this paper, the goal was to determine the reasons for (de-)centralization, which was understood as the redistribution of administrative powers between different levels of government, of electronic government system in 11 democratic federations, considering this process through the prism of the federal state actions. The main attention was focused on the key characteristics of the systems of these countries: *GDP per capita, the quality of public services, the quality of electronic government and the political affiliation of the majority party in the parliament.*

The results of the research show that each country is interested in the quality of public services and the quality of electronic government indexes. However, the prerequisites for such interest differ depending on a number of conditions. First of all, the considered cases can be divided into several groups, taking into account their economic situation as a basis. Thus, several groups can be distinguished - countries with a more stable developed economy and political situation (Australia, Austria, Belgium, Germany, Switzerland, and USA) and countries subject to economic and political crises (Argentina, Bosnia and Herzegovina, Brazil, India and Mexico).

The first group of countries, characterized by a developed economy and a stable political situation, in turn, can be divided into countries that mostly focus on the quality of public services and the quality of the electronic government - Australia, Switzerland. The second group is presented by countries in which the issue of electronic government becomes the question of the political agenda - Austria, Germany, USA. The second group of countries, in turn, is divided into countries whose economic and political situation forces international organizations to actively promote the formation of information technologies policies in addition to the reforms in the field of public administration - Bosnia and Herzegovina, and India. The second subgroup presents countries that, due to economic instability and lack of resources, tend to change their policy in order to achieve more cost-effective implementation, depending on the economic situation in the country (Argentina, Brazil, Mexico).

The reasons that determine the political decisions aimed at centralization or decentralization in the field of electronic government vary depending on the group of countries. The findings are presented in the Appendix 12.

Summing up, it is important to return to the hypotheses given at the beginning of the study:

- 1) *If there is a need in the state to improve the quality of public services, there will be the decentralization of electronic government;*
- 2) *If there is a need in the state to improve the quality of electronic-services, there will be the decentralization of electronic government;*
- 3) *If the state has sufficient economic resources, there is a tendency to decentralize electronic government;*
- 4) *If the majority party in parliament represents the left ideological wing, then there will be a decentralization of the electronic government.*

In the case of the *quality of public services* and how this factor influences the policy of redistribution of powers, the concept of the principal agent M. McCubbins and T. Schwartz (1984) should be considered. According to this theory, there are two ways to control the principal for an agent - the creation of institutions that constantly regulate the activity of the agent and track the results of this activity or focusing on performance and the reaction of the principal on the signals about the problem in the system. Thus, considering the federal center as a principal and the subnational unit as an agent, then a number of countries making changes within electronic government systems not because of failures or improvements in certain indicators, but on the principle of constant support of system operability and evolution.

Thus, it can be noted that in the case of economically developed and politically stable countries, the state is either responsive to serious failures in the system (the main indicator of such failure is the external indicators - the quality of public services index) or directly works with the electronic government system and makes adjustments, which, in addition, are associated with the development of the system and its constant change. Nevertheless, the first case, as a rule, leads to a review of the powers between the levels of power, while the second leads to actions that do not affect the redistribution of powers.

Usually, the transaction costs of adopting and implementing laws that redistribute powers are higher than in the case of reforms that do not aim to change the balance of intergovernmental relations. In the first case, there is a need to think over the redistribution of the budgets of all levels, to not cause discontent of subnational units, to bring regional legislation in line with the federal and so on. This probably means that



politicians are less interested in the processes of centralization, if there are no serious reasons for this. And serious concern in the field of electronic government - noted by both external and internal observers - may be one of such reasons. However, as the data and observations show, the first conclusion can be drawn: in the case when the quality of public services is reduced, the federal center decides to decentralize the area of electronic services (Australia, Switzerland, Austria) and centralize the electronic administration (USA). Inside the federation structure, it can be considered as an expression of the federal center's trust in subnational units, and in the scenario then the operating system does not work or fails - the main actor (the federal center) may decide to independently outline the strategy on which the regions will cope with this problem.

The *second hypothesis*, connected with the quality of electronic government and the influence of its index on the strategy of the federal center, strangely enough, did not justify itself. According to the data, there is no clear correlation between these two factors. The only example in which the influence of the quality index of electronic government on the policy of the federal center can be traced is the United States. Thus, in the case of a decline in the quality of electronic government index, the federal center uses the same strategy as in the case of the reduction in the quality of public services - there is a centralization of the electronic administration, which is mainly shown through the creation of standards aimed at the change of the system functioning. The area of electronic services is becoming more decentralized and aimed at improving the quality of it.

The *third hypothesis* is related to the availability of resources and it should be noted that in the case of decentralization it is not as relevant as for centralization processes, especially in the group of countries with an unstable economy and political crises. However, it may seem unexpected that the centralization reforms took place while there is a GDP growth in the state which means more economic resources available. Examples of such countries are India, Brazil and Argentina. Moreover, these strategies of the federal center concerned both the sphere of electronic administration and the sphere of electronic services. Perhaps this is due to the fact that such a policy was mainly expressed through the creation of portals that act as a single point of access for citizens to public services. Usually, the implementation of such an initiative requires a sufficient amount of resources, not only to develop the resource, but also to finance its future activities.

In a situation where the economic or political crisis in the country does not allow it to ensure the existence of an electronic government at a proper level, or when a country obtains membership in an international organization that requires compliance with a number of criteria in exchange for partnership with other countries or economic privileges - international organizations begin to determine the vector of the country's development. In this connection, an important question arises about the sovereignty of the national state and international organizations that interfere in the internal processes of the country. Nevertheless, in this context, it is not only about the state's autonomy and its involvement in international processes that is interesting, it is also about the tendencies in the context of the redistribution of powers that supranational organizations demonstrate. So, most initiatives offer decentralization of electronic government. As a rule, this is due to the desire to involve citizens in the decision-making process, as well as the creation of a transparent and efficient service delivery system.

Finally, referring to the *last hypothesis* of the study - the ideological affiliations of the majority party in the parliament - it showed itself questionable. On the one hand, there is a trend in which ideologically more left-wing parties tend to centralize electronic administration - an example of this is Argentina with the "Justicialist Party", or Austria with the "Social Democratic Party". On the other hand, as it turned out, the more right-wing parties are more active in the policies connected with the electronic government. For example, they are more inclined to centralize the electronic government system in the field of electronic administration - most of the time then this tendency was presented in the United States, the Republican presented the majority in the Congress. However, more attention on their part is focused on electronic services, namely, on its decentralization - such processes were observed in Austria during the majority of "The Austrian People's Party", and in Argentina with "Cambiemos" party in charge. The question of how parties of different ideological wings behave in relation to the policy of redistribution of powers is still open and also requires more attention in the question of the policy of each particular party, since parties, even belonging to one side of the political spectrum, can differ in implemented policy.

An important conclusion of this work is the fact that centralization of administrative powers is a process not only actively pursued in modern democratic federations (more active than the process of decentralization). Moreover, as it follows from the data, there

is also demonstration that the governments of different countries in the situation when there is a need to improve the functioning of the electronic government prefer the creation of a unified system of management and control over the sphere of electronic administration, as the most simple and attractive way that sets a rigid vector of development and the achievement of clearly defined goals. In addition, centralization allows the federal center to quickly receive systematic information about the state of affairs in the electronic government system throughout the country, which also looks to be preferable action. The main reasons why the center can abandon the idea of centralization in order to improve the quality of work is a lack of resources or special regional needs, the unification of which can lead to negative consequences. The question of how much centralization policy is effective and how to measure this strategy can be a topic for future study.

From all that has been said, several conclusions follow, which should form the basis for further research in the field of (de-)centralization of the electronic government in democratic federations:

1. Theoretical approaches that have confirmed their application in this study are theories that create a logical connection *"improving the quality of public services - more decentralization of electronic government"* and *"increasing economic resources - more decentralization of electronic government"*. In the first case the theory has confirmed itself, with some limitations, such as the fact that correlation is observed mainly only in economically developed countries with a stable political situation. In addition, decentralized processes are observed in the field of electronic services, but not in electronic administration or electronic participation. The second theory was disproved - increasing economic resources leads to greater centralization of both electronic administration and electronic services. In addition, this phenomenon was observed mainly in countries with a low level of economic development and with unstable political situation - this may be due to the fact that in these countries the very quality of electronic government institutions is low and, if additional funds are available, the federal center chooses a strategy of centralization to improve their quality and efficiency.

2. There are several approaches that did not prove their validity in interpreting the results of cases analysis. These factors turned out to be theories that create a logical connection *"improving the quality of electronic government - more decentralization of electronic government"* and *"the left party prevails in parliament - more decentralization of electronic government"*. Thus, the only case in which the first approach was proved - the United States. In addition to that, a common strategy is usually used: if the quality of public services is reduced - centralization of electronic administration and decentralization of electronic services follows. Perhaps the reason for a closer focus on the quality of public services shows that the federal center views electronic services as the next stage in the development of the government system by the state administration. The second theory was that the practice of both left and right - wing parties regarding electronic government turned out to be almost identical, except that the right-wing parties were more active in this matter and more focused on issues of electronic services. In fact, these theories fell victim to the 'imperfect' political reality of democratic federations. In the opinion of the author, for an adequate assessment of the processes in these countries, it is necessary to abandon linear logic and to develop a new theoretical model that would be based on a more detailed study of the activities of actors.
3. The analysis carried out in this paper proved the evidence on the possibility of studying the electronic government administrative (de-)centralization processes in democratic federations. It should be pointed out that the research method which was chosen for this work, the process-tracing, can be seen as rather limited in terms of reflecting the depth of the power redistribution processes in selected cases. Thus, it may have a negative impact on the comparative characteristics of the study. However, this work can be considered as a basis for future research. In the following studies of the administrative (de-)centralization of electronic government, the difficulties can be overcome by choosing another coding method that takes into account the depth of the processes. Another strategy would be to use the different operationalization of variables, or a more careful and specific case-selection which will serve as a way to increase the validity of the study.

## Bibliography

- Adams, C. (Ed.). (2015). Proceedings of the 15th European Conference on eGovernment 2015: ECEG 2015. Academic Conferences Limited.
- Agency for informational Society (2018) Retrieved 7 May 2018, from <https://www.aidrs.org/>
- AGIMO archive (2018a). Creating, implementing and updating Online Action Plans. Retrieved 7 May 2018, from [https://www.finance.gov.au/agimo-archive/seminars\\_and\\_events/2000-2001/online\\_action\\_plans.html](https://www.finance.gov.au/agimo-archive/seminars_and_events/2000-2001/online_action_plans.html)
- AGIMO archive (2018b) Better Services, Better Government. Retrieved 7 May 2018, from [https://www.finance.gov.au/agimo-achive/\\_data/assets/pdf\\_file/0016/35503/Better\\_Services-BetterGov.pdf](https://www.finance.gov.au/agimo-achive/_data/assets/pdf_file/0016/35503/Better_Services-BetterGov.pdf)
- AGIMO archive (2018c) Interoperability Technical Framework for the Australian Government. Retrieved 7 May 2018, from [https://www.finance.gov.au/agimo-achive/\\_data/assets/file/0004/12298/interoperability\\_framework.pdf](https://www.finance.gov.au/agimo-achive/_data/assets/file/0004/12298/interoperability_framework.pdf)
- Ahn, M. J., & Bretschneider, S. (2011). Politics of E-Government: E-Government and the Political Control of Bureaucracy. *Public Administration Review*, 71(3), 414–424.
- Akai, N., & Sakata, M. (2002). Fiscal decentralization contributes to economic growth: evidence from state-level cross-section data for the United States. *Journal of Urban Economics*, 52(1), 93–108.
- Andersen, K. V., & Henriksen, H. Z. (2006). E-government maturity models: Extension of the Layne and Lee model. *Government Information Quarterly*, 23(2), 236–248.
- Anheier, H. K., & Fliegau, M. T. (2013). The contribution of innovation research to understanding governance innovation: a review. *Governance challenges and innovations: Financial and Fiscal Governance*, 137-170.
- Australia, Management Advisory Committee, Australia, Management Advisory Committee, & Australian Public Service Commission. (2002). *Australian Government use of information and communications technology*. Canberra: Australian Public Service Commission.
- Australian Government (1997). *Investing for Growth - Australia, a Regional Financial Centre*. Retrieved 7 May 2018, from <http://archive.treasury.gov.au/contentitem.asp?ContentID=185>

- Australian Government (2013) Public Governance, Performance and Accountability Act 2013. Retrieved 7 May 2018, from <https://www.legislation.gov.au/Details/C2013A00123>
- Australian Government. Department of Finance (2006) 2006 e-Government Strategy, Responsive Government: A New Service Agenda - Department of Finance and Deregulation. Retrieved 7 May 2018, from <https://www.finance.gov.au/publications/2006-e-government-strategy/>
- Australian Government. Department of Finance (2010) Australian Government Data Centre Strategy 2010-2025. Retrieved 7 May 2018, from [https://www.finance.gov.au/files/2012/04/AGDC\\_Strategy.pdf](https://www.finance.gov.au/files/2012/04/AGDC_Strategy.pdf)
- Australian Government. Department of Finance (2012) APS ICT Strategy 2012-2015. Retrieved 7 May 2018, from [https://www.finance.gov.au/files/2013/01/APS\\_ICT\\_Strategy.pdf](https://www.finance.gov.au/files/2013/01/APS_ICT_Strategy.pdf)
- Australian Government. Department of Finance (2014) Cloud Computing Policy. Retrieved 7 May 2018, from <https://www.finance.gov.au/sites/default/files/australian-government-cloud-computing-policy-3.pdf>
- Bajramovic, K. (2011). Implementing e-Government in Bosnia and Herzegovina: Practices and Challenges for the State government.
- Balutis, A. P. (2001). E-government 2001: Understanding the challenge & evolving strategies. *Public Manager*, 30(1), 33.
- Barzelay, M. (2001). The new public management: Improving research and policy dialogue (Vol. 3). Univ of California Press.
- Baum, C., & Di Maio, A. (2000). Gartner's four phases of e-government model. Gartner Group, 12.
- B-Ccentre (2012) National Cyber-Strategy. Retrieved 7 May 2018, from [https://www.b-ccentre.be/wp-content/uploads/2013/03/cyberseceustra\\_fr.pdf](https://www.b-ccentre.be/wp-content/uploads/2013/03/cyberseceustra_fr.pdf)
- BCSS (2009) Federal eGovernment Strategy. Retrieved 7 January 2018, from <http://www.ksz-bcss.fgov.be/fr/bcss/page/content/websites/belgium/about/mission/strategy.html>
- Beach, D., & Pedersen, R. B. (2013). Process-tracing methods: Foundations and guidelines. University of Michigan Press.

- Bekkers, V. (2012). Why does e-government looks as it does? looking beyond the explanatory emptiness of the e-government concept - IOS Press. Retrieved from <https://content.iospress.com/articles/information-polity/ip000279>
- Bélanger, F., & Carter, L. (2008). Trust and risk in e-government adoption. *The Journal of Strategic Information Systems*, 17(2), 165-176.
- Bellamy, C., & Taylor, J. A. (1998). *Governing in the Information Age*. Open University Press.
- Bertot, J. C., Jaeger, P. T., & Grimes, J. M. (2010). Using ICTs to create a culture of transparency: E-government and social media as openness and anti-corruption tools for societies. *Government Information Quarterly*, 27(3), 264–271.
- Bird, R. M. (1993). Threading the fiscal labyrinth: Some issues in fiscal decentralization. In *National Tax Journal XLVI* (pp. 207–227).
- Booth, W. C., Colomb, G. G., & Williams, J. M. (2003). *The craft of research*. University of Chicago press.
- Borins, S. (2002). On the Frontiers of Electronic Governance: A Report on the United States and Canada. *International Review of Administrative Sciences*, 68(2), 199–211.
- Brueckner, J. K. (2004). Fiscal decentralization with distortionary taxation: Tiebout vs. tax competition. *International Tax and Public Finance*, 11(2), 133–153.
- Campbell, D. F. (2008). The basic concept for the democracy ranking of the quality of democracy.
- Carter, L., & Bélanger, F. (2005). The utilization of e-government services: citizen trust, innovation and acceptance factors. *Information systems journal*, 15(1), 5-25.
- Castells, M. (1997). *Power of Identity: The Information Age: Economy, Society, and Culture*. Cambridge, MA, USA: Blackwell Publishers, Inc.
- Centre for policy and governance (2015) Digital Signature Law . Retrieved 7 May 2018, from [http://www.cpu.org.ba/media/28570/SUMMARY\\_Efficiency-and-Transparency-Instruments-eRegisters-and-eAdministration-in-Bosnia-and-Herzegovina.pdf](http://www.cpu.org.ba/media/28570/SUMMARY_Efficiency-and-Transparency-Instruments-eRegisters-and-eAdministration-in-Bosnia-and-Herzegovina.pdf)
- Chadwick, A., & May, C. (2003). Interaction between States and Citizens in the Age of the Internet: “e-Government” in the United States, Britain, and the European Union. *Governance*, 16(2), 271–300.

- Chandler, D. (1995). Technological or media determinism.
- Chauhan, R. (2009). National E-Governance Plan in India, 25.
- Choi, H., Park, M. J., Rho, J. J., & Zo, H. (2016). Rethinking the assessment of e-government implementation in developing countries from the perspective of the design–reality gap: Applications in the Indonesian e-procurement system. *Telecommunications Policy*, 40(7), 644–660.
- Ciborra, C. (2005). Interpreting e-government and development: Efficiency, transparency or governance at a distance? *Information Technology & People*, 18(3), 260–279.
- Clark, E. (2003). Managing the transformation to e-government: An Australian perspective. *Thunderbird International Business Review*, 45(4), 377–397.
- Commission of Brazil. (2018). Electronic Government Accessibility Model. Retrieved 7 May 2018, from [http://www.cvm.gov.br/subportal\\_ingles/acessibilidade/acessibilidade.html](http://www.cvm.gov.br/subportal_ingles/acessibilidade/acessibilidade.html)
- Council of Ministers of BiH (2004) Strategy of Information Society Development in Bosnia and Herzegovina
- Curtin, G. G. (2007). E-government. *Encyclopedia of Political Communications*, Sage Publications.
- Cyberlawtimes (2009) Cyber Law India, Information Technology Act, IT Act, Amendment Act, 2008, 2006, 2000. Retrieved 8 May 2018, from <http://www.cyberlawtimes.com/information-technology-amendment-act-2006-2008-comes-into-force/>
- Dada, D. (2006). The Failure of E-Government in Developing Countries: A Literature Review. *The Electronic Journal of Information Systems in Developing Countries*, 26(1), 1–10.
- Dávila, I. (2003) Information Society and e-Government: The Mexican experience.
- Dawes, S. S. (2008). The Evolution and Continuing Challenges of E-Governance. *Public Administration Review*, 68, S86–S102.
- Diaz-Cayeros, A. (2006). *Federalism, Fiscal Authority, and Centralization in Latin America*. Cambridge University Press.
- Digital Transformation Agency (2018). Retrieved 7 May 2018, from <https://www.directory.gov.au/portfolios/prime-minister-and-cabinet/digital-transformation-agency>



- Doty, P., & Erdelez, S. (2002). Information micro-practices in Texas rural courts: Methods and issues for Egovernment. *Government Information Quarterly*, 19, 369–387.
- Downs, A. (1957). An economic theory of political action in a democracy. *Journal of political economy*, 65(2), 135-150.
- Duchacek, I. D. (1970). *Comparative federalism: The territorial dimension of politics*. Holt, Rinehart and Winston.
- Duff, A. S. (2013). *Information Society Studies*. Routledge.
- Edmiston, K. D. (2002). State and local e-government: Prospects and challenges. *American Review of Public Administration*.
- E-government Bund-Länder-Gemeinden (2015) Austrian interoperability framework for Austrian public services. Retrieved 7 May 2018, from [https://www.ref.gv.at/uploads/media/Austrian\\_Interoperability\\_Framework\\_AI\\_F-1.0.0\\_.pdf](https://www.ref.gv.at/uploads/media/Austrian_Interoperability_Framework_AI_F-1.0.0_.pdf)
- eGovernment Switzerland (2007) E-Government Strategy Switzerland. Retrieved 8 May 2018, from <https://www.egovernment.ch/en/umsetzung/e-government-strategie/>
- eGovernment Switzerland (2015) eGovernment Switzerland 2008 – 2015. Retrieved 8 May 2018, from <https://www.egovernment.ch/en/umsetzung/e-government-schweiz-2008-2015/>
- Ein Service des Bundesministeriums der Justiz und für Verbraucherschutz in Zusammenarbeit mit der juris GmbH. (2005) Gesetz zur Regelung des Zugangs zu Informationen des Bundes. Retrieved 7 May 2018, from <https://www.gesetze-im-internet.de/ifg/IFG.pdf>
- Ejustice (2003) Loi du 12 mai 2003 Retrieved 7 May 2018, from [http://www.ejustice.just.fgov.be/cgi\\_loi/change\\_lg.pl?language=fr&la=F&cn=2013121551&table\\_name=loi](http://www.ejustice.just.fgov.be/cgi_loi/change_lg.pl?language=fr&la=F&cn=2013121551&table_name=loi)
- Ejustice (2005) Loi relative aux communications électroniques. Retrieved 7 May 2018, from [http://www.ejustice.just.fgov.be/cgi\\_loi/loi\\_a.pl?language=fr&caller=list&cn=2005061332&la=f&fromtab=loi&sql=dt=%27loi%27&tri=dd+as+rank&rech=1&numero=1](http://www.ejustice.just.fgov.be/cgi_loi/loi_a.pl?language=fr&caller=list&cn=2005061332&la=f&fromtab=loi&sql=dt=%27loi%27&tri=dd+as+rank&rech=1&numero=1)

- Ejustice (2009) Loi relative aux services de paiement. Retrieved 7 May 2018, from [http://www.etaamb.be/fr/loi-du-10-decembre-2009\\_n2009011539.html](http://www.etaamb.be/fr/loi-du-10-decembre-2009_n2009011539.html)
- Elazar, D. J. (1979). Federalism and Political Integration. Ramat Gan, Israel: Turtledove Pub.
- Elazar, D. J. (1994). Federalism and the Way to Peace. Kingston: Institute of Intergovernmental Relations, Queen's University.
- Etaamb (2002) Loi du 07/07/2002 contenant des regles relatives a la protection des temoins menaces et d'autres dispositions. Retrieved 7 May 2018, from [http://www.etaamb.be/fr/loi-du-07-juillet-2002\\_n2002009754.html](http://www.etaamb.be/fr/loi-du-07-juillet-2002_n2002009754.html)
- Etaamb (2003) Loi du 16/01/2003 portant creation d'une banque-carrefour des entreprises, modernisation du registre de commerce, creation de guichets-entreprises agrees et portant diverses dispositions. Retrieved 7 May 2018, from [http://www.etaamb.be/fr/loi-du-16-janvier-2003\\_n2003011027.html](http://www.etaamb.be/fr/loi-du-16-janvier-2003_n2003011027.html)
- European Commission (2009) E-Government in Belgium. Retrieved 7 May 2018, from <http://ec.europa.eu/idabc/servlets/Docaac7.pdf?id=32602>
- European Commission (2014) eGovernment in Germany. Retrieved 7 May 2018, from <https://joinup.ec.europa.eu/sites/default/files/document/2014-06/eGov%20in%20DE%20-%20April%202014%20-%20v.16.0.pdf>
- European Commission (2015a) eGovernment in Switzerland, Edition 9.0. Retrieved 8 May 2018, from [https://joinup.ec.europa.eu/sites/default/files/document/2015-03/egov\\_in\\_switzerland\\_-\\_january\\_2015\\_-\\_v\\_9\\_0\\_final.pdf](https://joinup.ec.europa.eu/sites/default/files/document/2015-03/egov_in_switzerland_-_january_2015_-_v_9_0_final.pdf)
- European Commission (2015b) e-Government in Switzerland. Edition 10. Retrieved 8 May 2018, from [https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment%20in%20Switzerland%20-%20February%202016%20-%20Edition%2010\\_0%20-%20v3\\_00.pdf](https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment%20in%20Switzerland%20-%20February%202016%20-%20Edition%2010_0%20-%20v3_00.pdf)
- European Commission (2015c) Government in Germany. Edition 17. Retrieved 7 May 2018, from [https://joinup.ec.europa.eu/sites/default/files/document/2015-03/egov\\_in\\_germany\\_-\\_january\\_2015\\_-\\_v\\_17\\_0\\_final.pdf](https://joinup.ec.europa.eu/sites/default/files/document/2015-03/egov_in_germany_-_january_2015_-_v_17_0_final.pdf)
- European Commission (2016) eGovernment in Austria. Edition 19.0 Retrieved 02 April 2018, from [https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment\\_in\\_Austria\\_-\\_February\\_2016\\_-%2019\\_00%20-%20v3\\_00.pdf](https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment_in_Austria_-_February_2016_-%2019_00%20-%20v3_00.pdf)

- European Commission (2018a) Country information - Belgium. Retrieved 7 May 2018, from <https://ec.europa.eu/digital-single-market/en/country-information-belgium>
- European Commission (2018b) Federal Open Data Strategy - RIO - H2020 PSF - European Commission. Retrieved 7 May 2018, from <https://rio.jrc.ec.europa.eu/en/library/federal-open-data-strategy>
- Bwalya, K. J., & Mutula, S. M. (2014). *E-Government: Implementation, Adoption and Synthesis in Developing Countries* (Vol. 1). Walter de Gruyter GmbH & Co KG.
- Faguet, J. P. (2003). Decentralization and local government in Bolivia: an overview from the bottom up.
- Falleti, T. G. (2005). A Sequential Theory of Decentralization: Latin American Cases in Comparative Perspective. *The American Political Science Review*, 99(3), 327–346.
- Fang, Z. (2002). E-government in digital era: concept, practice, and development. *International Journal of the Computer, the Internet and Management*, 10(2), 1–22.
- Farooq, M. K., Shamil, S., & Awais, M. M. (2013). Enterprise Architectures for E-Government Development. *Developing E-Government Projects: Frameworks and Methodologies*, 139–164.
- Federal Chancellery of the Republic of Austria (2013) Austrian Cyber Security Strategy. Retrieved 7 May 2018, from <http://archiv.bundeskanzleramt.at/DocView.axd?CobId=50999>
- Federal Ministry of Economic and Technology (2006) iD2010 – Information Society
- Federal Register of Legislation (1999.). *Electronic Transactions Act 1999*. Retrieved 7 May 2018, from <https://www.legislation.gov.au/Details/C2005C00484/Html/Text>
- Filippov, M. (2005). Riker and federalism. *Constitutional Political Economy*, 16(2), 93–111.
- Finger, M., & Pécoud, G. (2003). From e-Government to e-Governance? Towards a model of e-Governance. In *Proceedings of the 3rd European Conference on E-Government-ECEG* (No. MIR-ARTICLE-2005-061, pp. 119-130).
- Forman, M. (2002). *E-Government Strategy*, 37.

- Fountain, J. E. (2004). *Building the virtual state: Information technology and institutional change*. Brookings Institution Press.
- Furuholt, B., & Wahid, F. (2008). E-Government Challenges and the Role of Political Leadership in Indonesia: The Case of Sragen (pp. 411–411). IEEE. <https://doi.org/10.1109/HICSS.2008.134>
- Garrett, G., & Rodden, J. (2000). Globalization and decentralization. In *Annual Meeting of the Midwest Political Science Association*, Chicago.
- Germany 2010. Retrieved 7 May 2018, from [https://www.bmwi.de/Redaktion/EN/Publikationen/information-society-germany-id2010.pdf?\\_\\_blob=publicationFile&v=1](https://www.bmwi.de/Redaktion/EN/Publikationen/information-society-germany-id2010.pdf?__blob=publicationFile&v=1)
- Gore, A. (1993). *Reengineering through information technology*. For sale by the U.S. G.P.O., Supt. of Docs. Retrieved from <http://agris.fao.org/agris-search/search.do?recordID=US201300166015>
- Government Publishing Office (2006) *Federal Funding Accountability and Transparency Act*. Retrieved 8 May 2018, from <https://www.gpo.gov/fdsys/pkg/BILLS-109s2590enr/pdf/BILLS-109s2590enr.pdf>
- Government Publishing Office (2014). *Digital Accountability And Transparency Act Of 2014*. Public Law, 9.
- Graham, E. R., Shipan, C. R., & Volden, C. (2013). The Diffusion of Policy Diffusion Research in Political Science. *British Journal of Political Science*, 43(03), 673–701.
- Graham, J., Plumptre, T. W., & Amos, B. (2003). *Principles for good governance in the 21st century*. Ottawa: Institute on governance.
- Greenberg, S. R., & Ramdial, S. (2006). *State e-government strategies: Identifying best practices and applications*. LIBRARY OF CONGRESS WASHINGTON DC CONGRESSIONAL RESEARCH SERVICE.
- Grundén, K. (2012). Competence development of e-government: a study circle approach. *Digital Democracy: Concepts, Methodologies, Tools, and Applications: Concepts, Methodologies, Tools, and Applications*, 146.
- Hampton, J. M. (2014). British Quaker Survey: examining religious beliefs and practices in the twenty-first century. *Quaker Studies*, 19(1), 7–136.

- Heeks, R. (2003). Most eGovernment-for-development projects fail: how can risks be reduced? (Vol. 14). Manchester: Institute for Development Policy and Management, University of Manchester.
- Hill, H. (2004). Transformation of the administration by e-government. *German Journal of Urban Studies*, 45(2).
- Hinkelmann, K., Thönssen, B., & Wolff, D. (2010). Ontologies for E-government. In R. Poli, M. Healy, & A. Kameas (Eds.), *Theory and Applications of Ontology: Computer Applications* (pp. 429–462). Dordrecht: Springer Netherlands.
- Holzer, M., & Kim, S.-T. (2006). Digital Governance in Municipalities Worldwide (2005): A Longitudinal Assessment of Municipal Websites Throughout the World. United Nations Public Administration Network. Retrieved from <http://edoc.vifapol.de/opus/volltexte/2009/1151/>
- Hung, S.-Y., Chang, C.-M., & Yu, T.-J. (2006). Determinants of user acceptance of the e-Government services: The case of online tax filing and payment system. *Government Information Quarterly*, 23(1), 97–122.
- Huskić, L. (2006) Policy Study: Improving Delivery of Basic Public Services to Citizens in Bosnia and Herzegovina
- IASPOINT - Integrated IAS General Studies by GKToday. (2015). Digital India - General Knowledge Today. Retrieved 8 May 2018, from <https://www.gktoday.in/academy/article/digital-india/>
- INFOLEG - Información Legislativa (2003). Resolución 259/2003 Subsecretaría General de la Presidencia de la Nación – Interés Nacional el emprendimiento denominado ‘Ámbito de Software Libre en el Estado Nacional’ | #informaticalegal. Retrieved 7 May 2018, from <http://www.informaticalegal.com.ar/2003/05/22/resolucion-2592003-subsecretaria-general-de-la-presidencia-de-la-nacion-interes-nacional-el-emprendimiento-denominado-ambito-de-software-libre-en-el-estado-nacional/>
- INFOLEG - Información Legislativa (2009b) Decreto 1479/2009. Aprobación convenio marco Sistema único de boleto electrónico (SUBE). Retrieved 7 May 2018, from <http://servicios.infoleg.gob.ar/infolegInternet/verNorma.do%3bjsessionId=F6E130EDD454D972FB8A36186216D3B4?id=159010>

- INFOLEG - Información Legislativa (2014) Ley 26939. Retrieved 7 May 2018, from <http://servicios.infoleg.gob.ar/infolegInternet/anexos/230000-234999/231154/norma.htm>
- INFOLEG - Información Legislativa. (2000a). Carta compromiso con el ciudadano. Retrieved 2 April 2018, from <http://servicios.infoleg.gob.ar/infolegInternet/anexos/60000-64999/62474/norma.htm>
- INFOLEG - Información Legislativa. (2000b). Establécese la competencia de la Oficina Anticorrupción como autoridad de aplicación de la Ley N° 25.188. Retrieved 7 May 2018, from <http://servicios.infoleg.gob.ar/infolegInternet/anexos/60000-64999/61934/norma.htm>
- INFOLEG - Información Legislativa. (2001). Decreto 243/2001. Retrieved 7 May 2018, from <http://servicios.infoleg.gob.ar/infolegInternet/anexos/65000-69999/66306/norma.htm>
- INFOLEG - Información Legislativa. (2003a). Decreto 1172/2003 Retrieved 02 April 2018, from <http://servicios.infoleg.gob.ar/infolegInternet/anexos/90000-94999/90763/norma.htm>
- INFOLEG - Información Legislativa. (2005a). Decreto 378/2005. Retrieved 02 April 2018, from <http://servicios.infoleg.gob.ar/infolegInternet/anexos/105000-109999/105829/norma.htm>
- INFOLEG - Información Legislativa. (2008) Decreto N° 1266/08. Retrieved 02 April 2018, from <http://servicios.infoleg.gob.ar/infolegInternet/verNorma.do?id=142998>
- INFOLEG - Información Legislativa. (2009). Decreto 512/2009. Retrieved 02 April 2018, from <http://servicios.infoleg.gob.ar/infolegInternet/anexos/150000-154999/153245/norma.htm>
- INFOLEG - Información Legislativa. (2016a) Ley 27275. Retrieved 02 April 2018, from <http://servicios.infoleg.gob.ar/infolegInternet/anexos/150000-154999/153245/norma.htm>
- INFOLEG - Información Legislativa. (2016b). Decreto nacional 434/2016. Retrieved 02 April 2018, from <http://servicios.infoleg.gob.ar/infolegInternet/anexos/255000-259999/259082/norma.htm>

- INFOLEG - Información Legislativa. (2016c). Decreto 561/2016. Retrieved 7 May 2018, from <http://servicios.infoleg.gob.ar/infolegInternet/anexos/260000-264999/260145/norma.htm>
- Informatica Legal (2009). Decreto 84/2009 – Implementa el Sistema Unico de Boleto Electrónico (SUBE) | #informaticalegal. Retrieved 7 May 2018, from <http://www.informaticalegal.com.ar/2009/02/04/decreto-842009-implementa-el-sistema-unico-de-boleto-electronico-sube/>
- Ionescu L. (2013) The Potential Role of E-Government in Mitigating Corruption // Economics, Management and Financial Markets. Vol. 8 (3). P. 126 – 131.
- IT Planungsrat (2015) National E-Government Strategy Update. Retrieved 7 May 2018, from [https://www.it-planungsrat.de/SharedDocs/Downloads/EN/Entscheidungen/18Sitzung\\_27\\_NEG-S-Fortschreibung\\_2015.pdf?\\_\\_blob=publicationFile&v=2](https://www.it-planungsrat.de/SharedDocs/Downloads/EN/Entscheidungen/18Sitzung_27_NEG-S-Fortschreibung_2015.pdf?__blob=publicationFile&v=2)
- Jaeger, P. T. (2005). Deliberative democracy and the conceptual foundations of electronic government. *Government Information Quarterly*, 22(4), 702–719.
- Jun, K.-N., & Weare, C. (2011). Institutional Motivations in the Adoption of Innovations: The Case of E-Government. *Journal of Public Administration Research and Theory: J-PART*, 21(3), 495–519.
- Kaufmann, D., Kraay, A., & Mastruzzi, M. (2011). The worldwide governance indicators: methodology and analytical issues. *Hague Journal on the Rule of Law*, 3(2), 220–246.
- King, J. L. (1983). Centralized versus decentralized computing: organizational considerations and management options. *ACM Computing Surveys (CSUR)*, 15(4), 319–349.
- Konitzer, A., & Wegren, S. K. (2006). Federalism and Political Recentralization in the Russian Federation: United Russia as the Party of Power. *Publius*, 36(4), 503–522.
- Kooiman, J. (2000). Societal Governance: Levels, models, and Orders of Social.
- Kyriacou, A. P., & Roca-Sagalés, O. (2011). Fiscal and Political Decentralization and Government Quality. *Environment and Planning C: Government and Policy*, 29(2), 204–223.
- Lash, S. (2002). *Critique of Information*. SAGE.

- Layne, K., & Lee, J. (2001). Developing fully functional E-government: A four stage model. *Government Information Quarterly*, 18(2), 122–136.
- Lee, G., & Perry, J. L. (2002). Are Computers Boosting Productivity? A Test of the Paradox in State Governments. *Journal of Public Administration Research and Theory: J-PART*, 12(1), 77–102.
- Lenihan, D. G., & Centre for Collaborative Government. (2002). *E-government, federalism and democracy: the new governance*. Ottawa: Centre for Collaborative Government/Centre pour la collaboration gouvernementale.
- Linde, J., & Karlsson, M. (2013). The Dictator's New Clothes: The Relationship Between E-Participation and Quality of Government in Non-Democratic Regimes. *International Journal of Public Administration*, 36(4), 269–281.
- Lipset, S. M., Seong, K.-R., & Torres, J. C. (1993). A Comparative-Analysis of the Social Requisites of Democracy. *International Social Science Journal*, 45(2), 154–175.
- Lora, E. (2006). *The State of State Reforms in Latin America*. World Bank Publications.
- Luna-Reyes, L. F., & Gil-Garcia, J. R. (2011). Using institutional theory and dynamic simulation to understand complex e-Government phenomena. *Government Information Quarterly*, 28(3), 329–345.
- Manor, J. (1999). *The political economy of democratic decentralization*. Washington, D.C: World Bank.
- Martinez-Vazquez, J., & McNab, R. M. (2003). Fiscal Decentralization and Economic Growth. *World Development*, 31(9), 1597–1616.
- Masuda, Y. (1980). *The information society as post-industrial society*. World Future Society.
- McCubbins, M. D., & Schwartz, T. (1984). Congressional oversight overlooked: Police patrols versus fire alarms. *American Journal of Political Science*, 165-179.
- Mediacentar Sarajevo (2011) Retrieved 7 May 2018, from [http://www.media.ba/bs/mcsonline/files/shared/Integralni\\_izvjestaj\\_lokalna\\_e-uprava\\_u\\_BiH\\_-\\_ENG\\_-\\_Final.pdf](http://www.media.ba/bs/mcsonline/files/shared/Integralni_izvjestaj_lokalna_e-uprava_u_BiH_-_ENG_-_Final.pdf)
- Melitski, J. J. (2003). *The adoption and implementation of e-government: The case of e-government in New Jersey*.
- Ministério do planejamento, desenvolvimento e gestão. (2016). *EGD - Estratégia de Governança Digital da Administração Federal - (2016 - 2019) — Governo Digital*



- [Arquivo Biblioteca]. Retrieved 7 May 2018, from <https://www.governodigital.gov.br/documentos-e-arquivos/egd-estrategia-de-governanca-digital-da-administracao-federal-2016-2019.pdf>
- Ministry of Electronics and Information Technology, Government of India (2004) IT Act Notifications GSR 582. Retrieved 8 May 2018, from <http://meity.gov.in/content/it-act-notifications-gsr-582>
- Ministry of Electronics and Information Technology, Government of India. (2006). National e-Governance Plan. Retrieved 8 May 2018, from <http://meity.gov.in/divisions/national-e-governance-plan>
- Ministry of Electronics and Information Technology, Government of India. (2012) National Policy on Information Technology, 2012. Retrieved 8 May 2018, from [http://meity.gov.in/writereaddata/files/National\\_20IT\\_20Policyt%20\\_20.pdf](http://meity.gov.in/writereaddata/files/National_20IT_20Policyt%20_20.pdf)
- Moon, M. J. (2002). The Evolution of E-Government among Municipalities: Rhetoric or Reality? *Public Administration Review*, 62(4), 424–433.
- Musafir, V. E. N., & de Freitas, C. S. (2015). Strategies, policies and evaluations of Brazilian electronic government. *Electronic Journal of E-Government*, 13(2), 136. Securities and Exchange
- Narayan, S. S., & Narayanan, S. (Eds.). (2016). *India Connected: Mapping the Impact of New Media*. SAGE Publishing India.
- National Archives of Australia (2015). Digital Continuity 2020 Policy. Retrieved 7 May 2018, from <http://www.naa.gov.au/information-management/digital-transition-and-digital-continuity/digital-continuity-2020/index.aspx>
- National Office for the Information Economy (1998). A strategic framework for the information economy: identifying priorities for action. - Version details. Retrieved 7 May 2018, from <https://trove.nla.gov.au/version/34203555>
- Noticias Jurídicas (2005b) Resolución de 26 de diciembre de 2005, de la Presidencia de la Agencia Estatal de Administración Tributaria, sobre organización y atribución de competencias en el área de recaudación. Retrieved 7 May 2018, from [http://noticias.juridicas.com/base\\_datos/Fiscal/res261205-eha.html](http://noticias.juridicas.com/base_datos/Fiscal/res261205-eha.html)
- Noveck, B. S. (2003). Designing deliberative democracy in cyberspace: The role of the cyber-lawyer. *BUJ Sci. & Tech. L.*, 9, 1.

- OECD (2014) Mexico: Legal Framework for the National Digital Strategy. Retrieved 8 May 2018, from <http://www.oecd.org/gov/mexico-legal-framework.pdf>
- OECD.(2003) OECD: The E-Government Imperative. OECD Journal on Budgeting 3(1)
- Open government partnership (2017) Open government national plan of the Argentine Republic. Retrieved 02 April 2018, from [https://www.opengovpartnership.org/sites/default/files/Argentina\\_Action-Plan\\_2017-2019\\_EN.pdf](https://www.opengovpartnership.org/sites/default/files/Argentina_Action-Plan_2017-2019_EN.pdf)
- Ortiz, C. C., & García, S. O. (2016). Report on Section II. D “Policies and Regulations in Mexico with Regard to Genetic Technology and Food Security”: Country Report: Mexico. In Genetic Technology and Food Safety (pp. 355-376). Springer, Cham.
- Österreichisches Parlament (2018). Bundesgesetz, mit dem das Datenschutzgesetz 2000 geändert wird. Retrieved 7 May 2018, from [https://www.parlament.gv.at/PAKT/VHG/XXV/I/I\\_01761/fname\\_643605.pdf](https://www.parlament.gv.at/PAKT/VHG/XXV/I/I_01761/fname_643605.pdf)
- Palvia, S. C. J., & Sharma, S. S. (2007, December). E-government and e-governance: definitions/domain framework and status around the world. In International Conference on E-governance (pp. 1-12).
- Parent, M., Vandebeek, C. A., & Gemino, A. C. (2005). Building Citizen Trust Through E-government. *Government Information Quarterly*, 22(4), 720–736.
- Peters, B. G. (2000). Governance and comparative politics. *Debating governance*, 36-53.
- Petersen, R. E., & Seifert, J. (2002). The Promise of All Things E? Expectations and Challenges of Emergent Electronic Government. *Perspectives on Global Development and Technology*, 1(2), 193–212.
- Pfeiffer, K. P., Giest, S., Dumortier, J., & Artmann, J. (2010). Country brief: Austria. eHealth strategies. Brussels: European Commission.
- Prins, C. (2007). E-government: A comparative study of the multiple dimensions of required regulatory change. *Electronic Journal of Comparative Law*, 11(3), 1-23.
- Reddick, C. G. (2012). *Public administration and information technology*. Burlington, MA: Jones & Bartlett Learning.
- Reece, B. (2006). E-Government Literature Review. *Journal of E-Government*, 3(1), 69–110.
- Rhodes, R. A. W. (1996). The new governance: governing without government. *Political studies*, 44(4), 652-667.

- Rifqinizamy, M. (2014). The Doctrine of Federalism in an Unitarian State: A Study of Local Autonomy in Indonesia and Devolution Power in United Kingdom. *Int'l J. Soc. Sci. Stud.*, 2, 91.
- Riker, W. (1975). Federalism. In F. I. Greenstein & N. Polsby (Eds.), *The handbook of political science, Volume V: Government institutions and processes*. Reading, MA: Addison Wesley.
- Riker, W. H. (1964). *Federalism: Origin, operation, significance*. Boston: Little, Brown.
- RIS - E-Government-Gesetz - Bundesrecht konsolidiert. (2018). Retrieved 7 May 2018, from <https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20003230>
- Rodden, J. (2004). Comparative federalism and decentralization: On meaning and measurement. *Comparative politics*, 481-500
- Rodden, J., Eskeland, G. S., & Litvack, J. I. (2003). *Fiscal Decentralization and the Challenge of Hard Budget Constraints*. MIT Press.
- Ross, J. (2003). Creating a strategic IT architecture competency: Learning in stages.
- Roy, J. (2006). E-government and local governance in Canada: an examination of front line challenges and federal tensions. *Public administration quarterly*, 30(1/2), 218–262.
- Ruiz Alanís, L., Morales Gómez, J. M., Contreras Orozco, M. de los D. L., & Olvera García, J. C. (Eds.). (2014). *Perspectivas del gobierno electrónico local en México (Primera edición)*. Toluca, Estado de México: Universidad Autónoma del Estado de México, Facultad de Ciencias Políticas y Sociales : Instituto de Administración Pública del Estado de México, A.C.
- Rupp, C. (2002). *The Austrian Electronic Economic Chamber*. <https://doi.org/10.28945/2569>
- S. Rothenpieler (2017) *National Cyber Security Strategy 2016*. Retrieved 7 May 2018, from <https://www.enisa.europa.eu/about-enisa/structure-organization/national-liaison-office/meetings/april-2017/170426-bis-enisa-nlo-presentation-v2.pdf>
- S. Sachdeva (2002) *e-Governance Action Plan for India* . . Retrieved 7 May 2018, from <http://unpan1.un.org/intradoc/groups/public/documents/APCITY/UNPAN014671.pdf>

- Schedler, K., Summermatter, L., & Schmidt, B. (2004). Managing the electronic government: from vision to practice. IAP.
- Schelin, S. H. (2007). E-Government: An Overview. *Modern Public Information Technology Systems: Issues and Challenges*, 110–126.
- Schellong, A. (2007). Extending the technology enactment framework. John F. Kennedy School.
- Schware, R. (2005). E-development: From excitement to effectiveness. World Bank Publications.
- Scott, W. R., & Davis, G. F. (2015). *Organizations and Organizing: Rational, Natural and Open Systems Perspectives*. Routledge.
- Secretaria de relaciones exteriores (2013) National Digital Strategy. Retrieved 8 May 2018, from <https://embamex.sre.gob.mx/italia/images/pdf/national%20digital%20strategy.pdf>
- Seifert, J. W. (2003). A primer on e-government: Sectors, stages, opportunities, and challenges of online governance. Library of Congress Washington DC Congressional Research Service
- Silcock, R. (2001). What is E-government. *Parliamentary Affairs*, 54(1), 88–101.
- Song, H. J. (2004). *Building E-Governance through Reform* (Vol. 2). Ewha Womans University Press.
- Sørsum, H., Andersen, K. N., & Vatrapu, R. (2012). Public websites and human–computer interaction: an empirical study of measurement of website quality and user satisfaction. *Behaviour & Information Technology*, 31(7), 697–706.
- Stanforth, C. (2006). Using actor-network theory to analyze e-government implementation in developing countries. *Information Technologies & International Development*, 3(3), pp-35.
- Subchefia para Assuntos Jurídicos (2001a) Decreto nº 3.714 Retrieved 7 May 2018, from [http://www.planalto.gov.br/ccivil\\_03/decreto/2001/D3714.htm](http://www.planalto.gov.br/ccivil_03/decreto/2001/D3714.htm)
- Subchefia para Assuntos Jurídicos (2001b) Decreto nº 3.865. Retrieved 7 May 2018, from [http://www.planalto.gov.br/ccivil\\_03/decreto/2001/D3865.htm](http://www.planalto.gov.br/ccivil_03/decreto/2001/D3865.htm)
- Subchefia para Assuntos Jurídicos (2001c) Lei nº 10.408 Retrieved 7 May 2018, from [http://www.planalto.gov.br/ccivil\\_03/leis/2002/L10408.htm](http://www.planalto.gov.br/ccivil_03/leis/2002/L10408.htm)

- Subchefia para Assuntos Jurídicos (2016) Decreto nº 8638. Retrieved 7 May 2018, from [http://www.planalto.gov.br/ccivil\\_03/\\_ato2015-2018/2016/decreto/d8638.htm](http://www.planalto.gov.br/ccivil_03/_ato2015-2018/2016/decreto/d8638.htm)
- TCu (2013), Audit on the National Policy for Regional Development in the Multi-Annual Plan (PPA) and the Annual Budgets Retrieved 7 May 2018, from [http://www.tcu.gov.br/consultas/juris/docs/conses/tcu\\_ata\\_0\\_n\\_2013\\_38.pdf](http://www.tcu.gov.br/consultas/juris/docs/conses/tcu_ata_0_n_2013_38.pdf)
- Thakur, S. (2015). India and the Philippines – A Comparative Analysis for Possible Adaptation in Africa, 32.
- The Electoral Knowledge Framework (2018) Countries with e-voting projects. Retrieved 8 May 2018, from <http://aceproject.org/ace-en/focus/e-voting/countries>
- The federal Council of Switzerland (2004) CC 152.3 Federal Act of 17 December 2004 on Freedom of Information in the Administration (Freedom of Information Act, FoIA). Retrieved 8 May 2018, from <https://www.admin.ch/opc/en/classified-compilation/20022540/index.html>
- The federal Council of Switzerland (2006) RS 152.31 Ordonnance du 24 mai 2006 sur le principe de la transparence dans l'administration (Ordonnance sur la transparence, OTrans). (n.d.). Retrieved 8 May 2018, from <https://www.admin.ch/opc/fr/classified-compilation/20051874/index.html>
- The Federal Government (2014) Digital Agenda 2014 – 2017. Retrieved 7 May 2018, from [https://www.digitale-agenda.de/Content/DE/\\_Anlagen/2014/08/2014-08-20-digitale-agenda-engl.pdf?\\_\\_blob=publicationFile&v=6](https://www.digitale-agenda.de/Content/DE/_Anlagen/2014/08/2014-08-20-digitale-agenda-engl.pdf?__blob=publicationFile&v=6)
- The Modernisation of Argentina's Public Administration - Centre for Public Impact (CPI) (2017). Retrieved 7 May 2018, from <https://www.centreforpublicimpact.org/case-study/modernisation-argentinass-public-administration/>
- The REDD Desk. (2007) National Development Plan 2007-2012. Retrieved 8 May 2018, from <https://theredddesk.org/countries/plans/national-development-plan-2007-2012>
- The White House (2011) Executive Order 13571--Streamlining Service Delivery and Improving Customer Service. Retrieved 8 May 2018, from <https://obamawhitehouse.archives.gov/the-press-office/2011/04/27/executive-order-13571-streamlining-service-delivery-and-improving-custom>
- The White House (2016a) Policies for Federal Agency Public Websites and Digital Services. Retrieved 8 May 2018, from

<https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/memoranda/2017/m-17-06.pdf>

- The White House (2016b) CIRCULAR NO. A-130 Retrieved 8 May 2018, from <https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/circulars/A130/a130revised.pdf>
- Tiebout, C. M. (1956). A Pure Theory of Local Expenditures. *Journal of Political Economy*, 64(5), 416–424.
- Tiebout, C. M. (1961). An economic theory of fiscal decentralization. In *Public finances: Needs, sources, and utilization* (pp. 79–96). Princeton University Press.
- Tolbert, C. J., & Mossberger, K. (2006). The Effects of E-Government on Trust and Confidence in Government. *Public Administration Review*, 66(3), 354–369.
- Tolbert, C. J., Mossberger, K., & McNeal, R. (2008). Institutions, policy innovation, and E-Government in the American States. *Public administration review*, 68(3), 549–563.
- Toubeau, S., & Wagner, M. (2015). Explaining party positions on decentralization. *British journal of political science*, 45(1), 97–119.
- Treisman, D. (2002). Defining and measuring decentralization: a global perspective. Unpublished Manuscript.
- Turner, J. (2002). Text - H.R.2458 - 107th Congress (2001-2002): E-Government Act of 2002. Retrieved 8 May 2018, from <https://www.congress.gov/bill/107th-congress/house-bill/2458/text/enr>
- U.S. Department of the State. (2017) Digital Government Strategy. Retrieved 8 May 2018, from <https://www.state.gov/digitalstrategy/>
- United Nations (2003) E-Government Strategy. Retrieved 8 May 2018, from <http://unpan1.un.org/intradoc/groups/public/documents/un/unpan032372.pdf>
- United Nations (2004) Responses to the Questionnaire sent to Governments by the Division for the Advancement of Women of the United Nations on Implementation of the Beijing Platform for Action (1995) and the Outcome of the Twenty-Third Special Session of the General Assembly. Retrieved 8 May 2018, from <http://www.un.org/womenwatch/daw/Review/responses/MEXICO-English.pdf>

- Universidad Nacional Autónoma de México (2014) Ley Federal de Competencia Económica - Ordenamiento - Legislación. Retrieved 8 May 2018, from <https://www.juridicas.unam.mx/legislacion/ordenamiento/ley-federal-de-competencia-economica>
- Verordnungen zum Datenschutzrecht: Österreichische Datenschutzbehörde. (2018). Retrieved 7 May 2018, from <http://archiv.dsb.gv.at/site/6201/default.aspx>
- Vila, J., & Wheeler, S. (2003). Just-in-Location Learning. In E-Learn: World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education (pp. 1237-1243). Association for the Advancement of Computing in Education (AACE).
- Wajcman, J. (2002). Addressing Technological Change: The Challenge to Social Theory. *Current Sociology*, 50(3), 347–363.
- Walker, J. L. (1969). The diffusion of innovations among the American states. *American political science review*, 63(3), 880-899.
- Wangpipatwong, S., Chutimaskul, W., & Papasratorn, B. (2008). Understanding Citizen's Continuance Intention to Use e-Government Website: a Composite View of Technology Acceptance Model and Computer Self-Efficacy. *Electronic Journal of e-Government*, 6(1).
- Warta, K., Wagner, P., Bredemeier, W., & Schwuchow, W. (1999) Electronic Information Services An Assessment of Market Development in Austria Austrian Report of the European Member States' Study II
- Webster, F. (2014). *Theories of the Information Society*. Routledge.
- Weinstock, D. (2001). Towards a normative theory of federalism. *International Social Science Journal*, 53(167), 75-83.
- West, D. M. (2004). E-government and the transformation of service delivery and citizen attitudes. *Public administration review*, 64(1), 15-27.
- Wong, W., & Welch, E. (2004). Does e-government promote accountability? A comparative analysis of website openness and government accountability. *Governance*, 17(2), 275–297.
- Yang, K. (2003). Neoinstitutionalism and E-Government: Beyond Jane Fountain. *Social Science Computer Review*, 21(4), 432–442.

Yildiz, M. (2007). E-government research: Reviewing the literature, limitations, and ways forward. *Government Information Quarterly*, 24(3), 646–665.

Zusammenarbeit mit der juris GmbH (2001) Verordnung zur elektronischen Signatur, de 16 November 2001. (BGBl I 2001, 3074, 22.11.2001). Retrieved 7 May 2018, from [https://www.bundesnetzagentur.de/SharedDocs/Downloads/DE/Sachgebiete/QUESS/Rechtsgrundlagen/SignaturVerordnungId18198pdf.pdf?\\_\\_blob=publicationFile&v=3](https://www.bundesnetzagentur.de/SharedDocs/Downloads/DE/Sachgebiete/QUESS/Rechtsgrundlagen/SignaturVerordnungId18198pdf.pdf?__blob=publicationFile&v=3)



**Appendix 1**

Table 1.1. Coding of the dependent variable. Case of Argentina

Year	Source	e-administration	e-services	e-participation
2000	INFOLEG - Información Legislativa. (2000a)		System for informing the citizens; monitoring and evaluation; Determine current levels or quality standards in the provision of services provided to users and quantifiable goals for their future performance.	
	INFOLEG - Información Legislativa. (2000b)	Auditante en el Sector Público Nacional established for coordinating the efforts of public institutions and organizations of the civil society and auditing its activity.		
2001	INFOLEG - Información Legislativa. (2001)	National public administration is responsible for supplying the instruments necessary for the development of electronic government at all levels of public management.		
2002				

## Appendix 1 (continued)

2003	INFOLEG - Información Legislativa. (2003a)		The regional authorities are responsible in the area of disclose of public information.	
	INFOLEG - Información Legislativa (2003)			
2004				
2005	INFOLEG - Información Legislativa. (2005a)	National government defines the technological standards for the interoperability between information systems for the interaction.	Regional government is responsible for the creation of a system accessible via Internet that will allow residents and citizens to make queries, complaints or suggestions, which will be sent to the corresponding agency and audited to be answered in a timely manner.	
	Noticias Jurídicas (2005b)			
2006				
2007				

## Appendix 1 (continued)

2008	INFOLEG - Información Legislativa. (2008)	CABINET AND PUBLIC MANAGEMENT SECRETARY of the CABINET OFFICE OF MINISTERS will aim to understand the planning and implementation of the National Plan Electronic Government, coordinating with national, provincial and municipal organisms.		
2009	INFOLEG - Información Legislativa. (2009)	Formation of a Multisectoral Cabinet oriented to exploit the possibilities offered by the Information and Knowledge Society.		
	Informatica Legal (2009)			
	InfoLeg - Información Legislativa (2009b)	.		
2010				
2011				
2012				
2013				

**Appendix 1 (continued)**

2014	INFOLEG - Información Legislativa (2014)			
2015	The Modernisation of Argentina's Public Administration - Centre for Public Impact (CPI) (2017)	Regulation for electronic administration are established.		
2016	INFOLEG - Información Legislativa. (2016a)		The regional authorities are responsible in the area of access to public information.	
	INFOLEG - Información Legislativa. (2016b)		The regional authorities should achieve more efficient, effective, and good-quality service delivery.	
	INFOLEG - Información Legislativa. (2016c)			
2017	Open government partnership (2017)		The regional authorities are responsible in the area of access to public information.	

**Appendix 2**

Table 1.2 Coding of the dependent variable. Case of Austria

Year	Source	e-administration	e-services	e-participation
1997	Warta, K., Wagner, P., Bredemeier, W., & Schwuchow, W. (1999)	The definition of a legal framework for the Information Society, development of government eProcurement	The implementation of new public information services by regions.	

## Appendix 2 (continued)

1998				
1999				
2000	Rupp, C. (2002)	Structured cooperation with the regional and local authorities.	The regional governments should make all services in electronic form.	
2001	European Commission (2016)	The Federal CIO advises the Federal Government at strategic and technical levels, supports the formulation of its eGovernment policies		
2002				
2003				
2004	RIS - E-Government-Gesetz - Bundesrecht konsolidiert. (2018)		The regional authorities should provide citizen card, sector-specific personal identifiers and electronic delivery of documents.	

## Appendix 2 (continued)

2005	European Commission (2016)	ICT Strategy unit - legal and organisational issues of eGovernment, coordination of technical infrastructure, programme and project management, budget control and procurement		
	European Commission (2016)		The regional governments are responsible for cooperation between the federal state, cities and municipalities	
2006				
2007				
2008				
2009				
2010	Pfeiffer, K. P., Giest, S., Dumortier, J., & Artmann, J. (2010)	Council of Ministers decides on the creation of the 'Centre of Excellence for the Internet Society - coordination of the national ICT policy, based on the „Austrian Internet Declaration“.		
2011				

**Appendix 2 (continued)**

2012	Verordnungen zum Datenschutzrecht : Österreichische Datenschutzbehörde. (2018)			
2013	Federal Chancellery of the Republic of Austria (2013)		Region governments should ensuring cyber security is a paramount common concern.	
	Österreichisches Parlament (2018)			
2014				
2015	E-government Bund-Länder-Gemeinden (2015)		Region governments promoting public services by fostering cross-border and cross-sectoral interoperability.	

**Appendix 3**

Table 1.3 Coding of the dependent variable. Case of Australia

<b>Year</b>	<b>Source</b>	<b>e-administration</b>	<b>e-services</b>	<b>e-participation</b>
1997	Australian Government (1997)	Establishing a government-wide intranet for secure online communication.	Establishing a government information center as a main point of access to information about government services;	
	Clark, E. (2003)	Implement and coordinate the federal government's online and Internet policies and to develop strategies for reducing the "digital divide."		

## Appendix 3 (continued)

1998	National Office for the Information Economy (1998)		Work toward cross-jurisdictional agreement on minimum standards.	
1999	Federal Register of Legislation (1999)			
2000	AGIMO archive (2018a)	Agencies to take full advantage of opportunities provided by the central government.	Regions enhancing online services.	
2001				
2002	Australia, Management Advisory Committee & Australian Public Service Commission. (2002)	Rules for following common Web design and other technical protocols, and transforming internal processes to lower transaction costs and operate more efficiently.		
	AGIMO archive (2018b)		Regions transforming the internal processes and with achieving and demonstrating "tangible returns".	
2003	AGIMO archive (2018c)	Interoperability Technical Framework for the Australian Government established standards.		
2004				



## Appendix 3 (continued)

2005				
2006	Australian Government. Department of Finance (2006)		Federal Center packages together different services from different agencies.	
2007				
2008				
2009				
2010	Australian Government. Department of Finance (2010)	Standards for reduce costs; creation of the shared IT services		
2011				
2012	Australian Government. Department of Finance (2012)	Regions targeting and coordinating ICT investment and sharing resources and services to deliver the greatest value and improve efficiency and effectiveness		
2013	Australian Government (2013)	Establishing performance framework.		
2014	Australian Government. Department of Finance (2014)	Regions using cloud services.		

**Appendix 3 (continued)**

2015	National Archives of Australia (2015)	Region's transition to entirely digital work processes.		
2016	Digital Transformation Agency (2018)	Regions decide on the system architecture.		

**Appendix 4**

Table 1.4 Coding of the dependent variable. Case of Bosnia and Herzegovina

<b>Year</b>	<b>Source</b>	<b>e-administration</b>	<b>e-services</b>	<b>e-participation</b>
2004	Council of Ministers of BiH (2004)	Establishing norms and politics.		
	Huskić, L. (2006)			
2005	Agency for informational Society (2018)	Agency for informational Society established for Coordination and verification of all issues related to standards and quality of the ICT.		

**Appendix 4 (continued)**

2006	Centre for policy and governance (2015)	Foundation of special regulatory body that is supposed to give work permits to Certification Authorities (CA) in BiH and later supervise their operations and fulfillment of relevant standards.		
2007				
2008	Bajramovic, K. (2011)	Standartized software for all institutions.		
	Mediacentar Sarajevo (2011)		Regions are to ease and simplify the administration procedures and make them cheaper.	

**Appendix 5**

Table 1.5 Coding of the dependent variable. Case of Belgium

<b>Year</b>	<b>Source</b>	<b>e-administration</b>	<b>e-services</b>	<b>e-participation</b>
2001	European Commission (2009)	Federal department for ICT is established.	Regions to improve the delivery of public services for citizens and businesses by rendering it faster, more convenient, less constraining and more open.	
2002	Etaamb (2002)			
2003	Etaamb (2003)			

## Appendix 5 (continued)

	Ejustice (2003)			
2004	European Commission (2009)	The use of open standards for all public bodies.		
2005	Ejustice (2005)			
2006				
2007	European Commission (2009)	Standards for creation of a bilingual access point which is accessible via the Internet and where the various federal, regional and community legal dispositions to stimulate employment could be consulted and updated.		
2008				
2009	BCSS (2009)		Regions to create an optimal service delivery to citizens, the limitation of administrative burden and the optimisation of the efficiency and effectiveness of public services;	
	Ejustice (2009)			

**Appendix 5 (continued)**

2010				
2011				
2012	B-Ccentre (2012)		Regions are in charge of a safe and reliable cyberspace.	
2013				
2014				
2015	European Commission (2018a)	Regions to digitize services and processes.	Regions to establish trust, security; social media and big data.	
	European Commission (2018b)		Regions make open by default all government data except data with privacy or security information.	

**Appendix 6**

Table 1.6 Coding of the dependent variable. Case of Brazil

<b>Year</b>	<b>Source</b>	<b>e-administration</b>	<b>e-services</b>	<b>e-participation</b>
2000	Bwalya, K. J., & Mutula, S. M. (2014)	Executive Committee on e-Government formulates policies, establish guidelines, coordinate and articulate the actions for e-government implementation.		
2001	Subchefia para Assuntos Jurídicos (2001a)			
	Subchefia para Assuntos Jurídicos (2001b)			

## Appendix 6 (continued)

2002	Subchefia para Assuntos Jurídicos (2001c)			
2003	Musafir, V. E. N., & de Freitas, C. S. (2015)	Eight technical committees established for standards and regulations.		
2004				
2005	Securities and Exchange Commission of Brazil. (2018)	Promotion universal access to e-government services through technical recommendations for building portal websites		
2006				
2007	Adams, C. (Ed.). (2015)	e-MAG is mandatory on sites and portals of the Public Administration.		
2008				
2009				

## Appendix 6 (continued)

2010	Adams, C. (Ed.). (2015)	Recommendations of good practices grouped in four technical booklets: usability; coding; web writing; design and content architecture developed under the Digital Identity of the Federal Government.		
2011	Adams, C. (Ed.). (2015)	EGTI defines the strategic policy of IT management for the Federal Executive Branch.	Regions to improve continuously the delivery of electronic services to society.	
2012	TCu (2013)			Creation of new forms and channels for participation by regions
2013				
2014	Musafir, V. E. N., & de Freitas, C. S. (2015)			Encourage the use of participa.br virtual environment for e-participation.
2016	Subchefia para Assuntos Jurídicos (2016)		Keep citizen data for queries on a single platform.	
	Ministério do planejamento, desenvolvimento e gestão. (2016)		Centralize public services in one place; eliminate formalities that have become obsolete with new technology.	

**Appendix 7**

Table 1.7 Coding of the dependent variable. Case of Germany

<b>Year</b>	<b>Source</b>	<b>e-administration</b>	<b>e-services</b>	<b>e-participation</b>
2000	European Commission (2014)		The objective is to eEnable all public services capable of electronic delivery by the end of 2005.	
2001	Zusammenarbeit mit der juris GmbH (2001)			
2002	European Commission (2014)	Office of the Chief Information Officer is responsible for IT strategy and. IT coordination within the Federal government		
2003	Federal Ministry of Economic and Technology (2006)		Regions should launch more services.	
2004				
2005	Ein Service des Bundesministeriums der Justiz und für Verbraucherschutz in Zusammenarbeit mit der juris GmbH. (2005)			



## Appendix 7 (continued)

2006	European Commission (2015c)		Modernisation of the Federal State Administration, at downsizing bureaucracy and at improving the quality and efficiency of public sector services.	
2007				
2008				
2009				
2010	IT Planungsrat (2015)	Need to meet state-of-the-art, high-performance and security standards for regions.	Integrated federal-local service provision.	Integrated federal-local channel for communication.
2011				
2012				
2013	The Federal Government (2014)	Uniform standards and championing greater interoperability	Cross-level solutions, such as the single government contact.	
2014				
2015				
2016	S. Rothenpieler (2017)	Cross-departmental strategic framework for the activities of the federal government.		

**Appendix 8**

Table 1.8 Coding of the dependent variable. Case of India

<b>Year</b>	<b>Source</b>	<b>e-administration</b>	<b>e-services</b>	<b>e-participation</b>
1999	Narayan, S. S., & Narayanan, S. (Eds.). (2016)	Union Ministry of Information Technology was created.		
2000	S. Sachdeva (2002)			
2001				
2002				
2003	Chauhan, R. (2009)		Right governance and institutional mechanisms at the center, state and local levels to provide a citizen centric and business centric environment for governance.	
2004	Ministry of Electronics and Information Technology, Government of India (2004)			
2005				
2006	Ministry of Electronics and Information Technology, Government of India. (2006)		Central government projects, but States have been given flexibility to identify a few additional state-specific projects, which are very relevant for the economic development of the State.	
2007				

**Appendix 8 (continued)**

2008	Cyberlawtimes (2009)			
2009				
2010	IASPOINT - Integrated IAS General Studies by GKToday. (2015)	Federal government is responsible for vision, approach, strategy, key components, implementation methodology, and management structure		
2011	Thakur, S. (2015)			Implementing of e-voting in state of Gujarat
2012	Ministry of Electronics and Information Technology, Government of India. (2012)	Standardize delivery of electronic services by providing Common Shareable Service Delivery Platforms		

**Appendix 9**

Table 1.8 Coding of the dependent variable. Case of Mexico

<b>Year</b>	<b>Source</b>	<b>e-administration</b>	<b>e-services</b>	<b>e-participation</b>
2000	Ruiz Alanís, L., Morales Gómez, J. M., Contreras Orozco, M. de los D. L., & Olvera García, J. C. (Eds.). (2014)	Federal government is responsible for development of government contents and services.	Federal government coordinates regions.	
2001	United Nations (2004)	Implementation of standarts.		

## Appendix 9 (continued)

2002				
2003	I. Dávila (2003)		Regions are to improve services, as a link between government and citizens.	
2004				
2005	Ortiz, C. C., & García, S. O. (2016)	Intersecretarial Commission on Electronic Government promoting and consolidating the use and use of information and communication technologies, through the adequate coordination of federal agencies and these with the federative entities.		
2006				
2007	The REDD Desk. (2007)	Standardize administrative processes and eliminate unnecessary rules; Facilitate citizens' interaction with government by repealing unjustified procedures and requirements		
2008				

**Appendix 9 (continued)**

2009				
2010				
2011	OECD (2014)		Requests for government information are the responsibility of federal center.	
2012				
2013	Secretaria de relaciones exteriores (2013)	Implementation of standards.		Creation of the portal by federal center in which the citizen could propose the lines of action for the new government
2014	Universidad Nacional Autónoma de México (2014)			

**Appendix 10**

Table 1.10 Coding of the dependent variable. Case of Switzerland

<b>Year</b>	<b>Source</b>	<b>e-administration</b>	<b>e-services</b>	<b>e-participation</b>
2002	Prins, C. (2007)	The development of e-government bases, establishing service optimisation, and creating networking development		
2003				

## Appendix 10 (continued)

2004	European Commission (2015a)	Technical directives and standards which aim to ensure interoperability among the different IT systems of the Swiss Public Administration.		
	The federal Council of Switzerland (2004)			
2005				
2006	European Commission (2015)	Implementation of guidelines how to implement an effective eGovernment strategy in a single administration, while remaining within the context of Switzerland's eGovernment standards and strategy.		
	The federal Council of Switzerland (2006)			
2007	eGovernment Switzerland (2007)	Federal center provides the cantons and the municipalities with guidelines for their own eGovernment strategies and measures.		
2008				

## Appendix 10 (continued)

2009				
2010	European Commission (2015)	All levels of government to further strengthen management, to focus on selected projects and to achieve better collaboration.		
2011				
2012	eGovernment Switzerland (2015)		Regional governments can promote specific projects.	
2013				
2014	The Electoral Knowledge Framework (2018)			Federal Council authorised 12 Swiss cantons to use electronic voting in federal votes.
2015				
2016	European Commission (2015b)	The development of a basic infrastructure to accelerate the development of eGovernment in Switzerland.		

## Appendix 11

Table 1.11 Coding of the dependent variable. Case of United States of America

Year	Source	e-administration	e-services	e-participation
2001	Forman, M. (2002)	Creation of the position of associate director for information technology and e-government, elevating e-government;		
2002	Forman, M. (2002)	Support “vertical” (i.e., intergovernmental) integration requirements; established an Office of Electronic Government, within OMB, to provide strong central leadership and full time commitment to promoting and implementing e-Government		
	Turner, J. (2002)			
2003	United Nations (2003)	Integrate agency-unique solutions to each crossagency E-Government solution, reducing costs and generating more citizen-centered results.	Agency contributes to, and participates in, 3 of the 4 categories of E-Government initiatives rather than creating redundant, or agency unique, IT projects.	
2004				



## Appendix 11 (continued)

2005				
2006	Government Publishing Office (2006)		Ensure the existence and operation of a single searchable website, accessible by the public at no cost to access.	
2007				
2008				
2009				
2010				
2011	The White House (2011)		Region will provide services in a manner that seeks to streamline service delivery and improve the experience of its customers.	
2012	U.S. Department of the State. (2017)		When missions overlap, collaborate with other agencies to develop cross-agency websites (portals); coordinate across government to disseminate emergency response info.	
2013				
2014	Government Publishing Office (2014)	Standards for governmentwide financial data standard as well as interim steps to improve the quality of data.		

**Appendix 11 (continued)**

2015				
2016	The White House (2016a)		A PIA is one of the most valuable tools Federal agencies use to ensure compliance with applicable privacy requirements and manage privacy risks.	
	The White House (2016b)	Implementation of standards		

## Appendix 12

Picture 1.1. Redistribution of administrative power in electronic government system

Stable developed economy and political situation				Countries subject to economic and political crises					
Australia, Austria, Belgium, Germany, Switzerland, and USA				Argentina, Bosnia and Herzegovina, Brazil, India and Mexico					
Countries that focus on the quality of public services and quality of electronic government.		The issue of electronic government becomes the question of the political agenda		The presence of international organizations actively contributing to the formation of electronic government policy		Countries that, due to economic instability and lack of resources, tend to change their policy in order to achieve more cost-effective implementation.			
Australia, Belgium, Switzerland		USA, Austria, Germany		Bosnia and Herzegovina, India		Argentina, Mexico, Brazil			
Factors determining the direction of the reforms regarding electronic government									
Centralization		Decentralization		Centralization		Decentralization			
e-admin- istration	e-ser- vices	e-participa- tion	e-admin- istration	e-services	e-participa- tion	e-admin- istration	e-ser- vices	e-participa- tion	
Need for single information space, improve the quality of public services if there is a need for large-scale reforms	Need for unified integrated electronic government system with the goal of improving performance	The need to create a single and direct channel for interaction between the government and citizens/business actors	Improving individual elements of the electronic government system, creating additional opportunities	The needs of subnational units in improving the quality of public services, the heterogeneity of subnational units	The needs of subnational units in direct interaction channels with citizens/business actors	The need to meet the criteria of supranational organizations, the need to improve the quality of public services	The need for centralized systems of public services due to a lack of regional funds and a digital divide	Improving the interaction between citizens and government with a task to develop a new strategy for government agencies	
						Lack of resources, the desire to relieve tension from the federal center, the needs of subnational units		The need to increase the flexibility of subnational units and reduce the cost of providing services	The needs of subnational units in building direct interaction channel with the citizens

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