



Electronic Democracy Mechanisms: Initiatives and Development Directions

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ABSTRACT

Different approaches exist to notions of e-government and e-democracy in scientific literature. Analyzing these approaches, it can be concluded that e-government is created by the initiative of “upper” level of hierarchy for the purpose of services to government interests. E-democracy starts to be formed from “lower” level of hierarchy while it reflects the interests of citizens in the first instance. In paper explores the views on the transformation of public administration and the formation of e-democracy. The perspectives and local initiatives in Azerbaijan on direction of development of e-democracy mechanisms are specified.

Keywords: public administration, e-government, e-democracy

INTRODUCTION

Nowadays, the tendencies in transformation of political institutions and public administration are observed in the light of the requirements of information century and globalization. Within the context of deepening globalisation process, national governments yield to construct the international cooperation and relations between citizens and governments at the required level by expressing their attitude towards the changes in public administration.

M. McLuhan (1964) had first suggested the concept of “communication age” in 1962. It is to be mentioned that the works on the concept of information age and information society are constantly increasing in scientific literature in recent years. The views on information revolutions, information age, communication age, information society, teledemocracy, direct democracy, public administration, society management and meritocracy are reflected in works of researchers such as Young (1958), Bell (1972-1973), Toffler (1980), Becker (1981-2007), Masuda (1981-1990), Habermas (1991), Rheingold (1993), Freeman and Seit (1997), Castels (1996-2002), Weiner and Brown (1997), Hedrick (2002), Webster (2002), Vimmer (2003), Schedler (2002-2004), and Briggs and Berg (2004).

The development of Information Communication Technologies (ICT) is having an impact on social, economic and political life. Specifically, the development of ICT, electronic government (e-government) building and the formation of electronic democracy (e-democracy) mechanisms has significantly modified the public administration and political processes. Currently, advanced technologies and the requirements imposed on state government services are transforming the functions of e-government. For the formation of efficient public administration mechanisms and the society management, the development of a new e-government concept targeting direct democracy is essential. The transformation of civil rights, close participation of those in public-social processes and decision-making would allow to achieve the efficiency and democracy in public administration.

The analysis of the published scientific literature on e-government in 2005-2010 years within the context of development countries shows that the obtained results allow the research of application opportunities of e-government and the determination of important research directions, specifically within the context of developing countries. The increase of interest in several research directions, including the redoubling of attention to research methodologies and paradigms, the increase in quality of scientific-research works, the development of conceptual basis of e-government, etc. are indicated (Wahid 2012). Main scientific-research topics include the factors affecting the development of e-government, e-government system and its applications, the impact of e-government on government bodies and citizens, the mutual link between ICT infrastructure and e-government, and etc. (Zhang et al.2014).

At present, all governments pursue the process of informatization. It can be thought that, as a result of the rapid development of ICT and the impact of information revolutions the considerable digital divide among the governments in different regions of the world will be observed in near future.

The views on reforms carried out in public administration and the concept of e-government building are explored. The perspectives in direction of formation of e-democracy and development of e-democracy mechanisms are specified.

THE TRANSFORMATION OF PUBLIC ADMINISTRATION AND ELECTRONIC DEMOCRACY

Communication-information revolutions modify the modern management concept and political technologies. These modifications necessitate the formation of e-government and it is not only a tool of technological solution of several management issues, but also the projection of relations between the state and citizen to virtual space. In this regard, the attempts to increase the activities of governments and to accelerate the activities in direction of

creation of electronic space in order to achieve a political power in general are understandable.

Rahman et al. (2014) indicate the potential factors of application of e-government in their literature review on e-government and those factors are classified in 4 categories: institutional, resources, access opportunities and legal aspects. Chen et al. (2005) suggest tools and strategies for application of e-government. Ozkan et al. (2011) show that the increasing number of countries adopts the e-government strategy considering the advantages such as the strengthening of activities in the sphere of public administration and efficiency increase. Sharif et al. (2011) think that e-government building does not only depend on technological problems, but also different factors affect it, human, social, cultural and economic aspects must be considered alongside. Bwalya et al. (2012) comment on problems encountered in the sphere of e-government building in developing countries.

Alshehri et al. (2011) have analyzed recent research works regarding the stages of e-government, existing problems and advantages. In research work, several topical issues on e-government, including the notion of e-government, application issues, advantages of e-government, and the problems of e-government are investigated.

In their recent research works, Siskos et al. (2014) suggest a system consisting of eight assessment criteria by using multi-criteria methodology for the assessment of e-government. The assessment of e-government is carried out based on four parameters: infrastructure, investment, electronic processes and users' attitude.

It is to be mentioned that the formation of electronic technologies and the use of those in public administration change the character of administration. Traditional authority competences in information society are realized based on new structure and administration principles. In other words, conceptual approaches are mostly directed towards the notion of electronic governance. The notion of electronic governance – is characterized by the establishment of horizontal, rather than vertical links of administration due to less normative restrictions of administrative activity and organizations. Practically, authority

differs from traditional administration and in this case, state authority and administration is postulated as the highest level of hierarchy in decision making. The management does not only distinguish with the hierarchy model of administration, it is also considered as more efficient in satisfying the public demand.

The differences between traditional government and new administration concept can be shown based on several criteria. Unlike the traditional government, the main indicator of new administration is regarded as a consent, bargain and agreement. While traditional government preferred legislation and regulations, norms and collective initiative, new administration principles, government authority in network society mainly include commissions, forums, and democratically organized groups. If previously, administrative information was considered centralized and closed, now information is shared, open, transparent and discussed in network forums.

The research show that the views of researchers on the realization of reforms in public administration and the concept of e-government forming differ. Some suggest that the initiatives realized in the sphere of administration at the time completely differ from previous approaches. In other words, e-government forming increases the efficiency of government bodies' activities and forms an implicitly new public administration model. Other researchers occupy more cautious stance and consider e-government as a new tool for solving the existing problems. In this regard, 3 elements of e-government are mentioned (Schedler et al. 2001, 2004; Alguliyev, Yusifov 2016):

1. Electronic democracy and participation – is considered for the formation of public opinion and decision making with the help of electronic tools (e-voting, citizen networks, etc.)
2. Electronic production network – is considered as a tool for the cooperation among public institutions and also of civil society institutions.
3. Electronic public services – is considered for the provision of services to users, citizens or business sector via national, regional or local portals.

If the first element is related to a political system in general, the other two can be seen as a continuation of the reforms carried out at any level (Schedler et al. 2001).

The efficiency in administration can be achieved with close participation of citizens and civil societies in the process of politico-administrative decision-making. E-government creates a new environment in this regard. According to some researchers, the transition from the notion of e-government to e-democracy is necessary (Wimmer 2003; Williams 2006; Carrizales 2008; Meier 2012). The framework of this process is constituted by the increase of trust to government bodies by the existence of e-government on one hand, and by the need of trustworthy approach to democratic views of citizens by government authorities.

The strengthening and development of democratic institutions, the use of ICT and information infrastructure for the purpose of broadening the participation of citizens in public and political processes reflect the essence of e-democracy (Williams 2006; Meier 2012; Anttiroiko 2003). In a broad sense, e-democracy can be defined as the engagement of citizens and organizations in political processes by considering thoughts and opinions. If we review the evolution process of the notion of e-government, several important phases of its development can be noted. Firstly, the notion of “teledemocracy” emerged with the creation of cable television in the end of 60’s and the beginning of 70’s of XX century must be mentioned (Becker 1981, 2007). According to opinions of some researchers, teledemocracy can be viewed as the precedent of e-democracy. Teledemocracy is expressed as enabling the participation of citizens in any political debate by using television or telephone at the same time. The viewer watching any political event in TV set can participate in that event by using telephone. The main purpose of teledemocracy was the provision of close participation of citizens in political processes and realization of structural reforms based on the existing technical feasibilities of electron communication tools (Becker 1981, 2007).

However, in 80’s of XX century the experiments conducted using TV set and telephone has neither determined the establishment of new form of democracy, nor the efficiency of participation of citizens in political

processes. Alongside, teledemocracy constituted the framework for future “electronic republic” (Grossman 1995; Fountain 2001). This approach dwells on the theoretical foundations of reforms realization in the sphere of public administration developed by Habermas (1991) at the end of the 1980’s. Based on his ideas, the scientific society has begun to develop the research on mutual relationship between new technologies, the formation of the structure of civil society, also in direction of determination of the impact of information infrastructure and Internet on democracy. The research conducted in direction of cyberspace formation, the emergence of the notion of “cyberdemocracy” started to be considered as a main concept of transformation to e-democracy (Rheingold 1993; Williams 2006; Kaczmarczyk 2011). In this period, the concept of “virtual community” suggested by Rheingold (1993) was justified by the fact that computer networks will become a tool of stimulating the formation of necessary social capital for the strengthening of democratic values.

It must be mentioned that if the first stages of formation of e-democracy was confined with the provision of the access of citizens to publicly important information, and also with the opportunity to vote in decision-making of any government decisions, the opportunities of both parties were widened in subsequent evolution processes and practically, an opportunity was created to select the extent of participation of citizens in processes Bimber 1998; Hill et al. 1998; Hilbert 2009; Kaczmarczyk 2011). This was considered as the creation of the opportunity for citizens to express their opinion freely at any level of decision-making and the increase of transparency considerably.

Different approaches exist to notions of e-government and e-democracy in scientific literature. Specifically, ICT experts think that e-democracy must be viewed as an integral part of e-government. In contrast, humanitarian-social sphere experts consider that e-government must be viewed as an integral part of e-democracy. Analyzing these approaches, it can be concluded that e-government is created by the initiative of “upper” level of hierarchy for the purpose of services to government interests. E-democracy starts to be formed from “lower” level of hierarchy while it reflects the interests of citizens in the first instance.

If the government today, figurally saying, is able to satisfy the call of times, e-government in this case can be a strong and effective administration mechanism allowing the solution of several social problems, including the direct dialogue between the citizen standing in front of any democratic society and the government. This fact can be evaluated as a transition from representative democracy to direct democracy.

LOCAL INITIATIVES ON DEVELOPMENT OF E-DEMOCRACY MECHANISMS

Large-scale economic reforms implemented by Azerbaijan during the past five years have resulted in notable progress to improve regulatory efficiency and encourage domestic economic diversification, different areas especially in ICT. Main policy documents concerning ICT policy adopted since 2010-2014 (MCHT of Azerbaijan, 2014; Azerbaijan ICT EIPIC). In 2012 approved Development Concept “Azerbaijan 2020: A Look into the Future”. In accordance with the concept a new period of development starts in Azerbaijan 2012, and to achieve the goals of the concept, new and important tasks fall on the ICT sphere, e-government and e-democracy (Azerbaijan ICT EIPIC).

Application of ICT has developed more quickly in acting enterprises and during the year the number of computers in the companies and the number of companies with access to Internet has increased. In 2015, 7188 companies had connected with the state bodies via Internet and their number compared to 2013 increased for 16.3 times (Statistical Committee of Azerbaijan, 2015).

Total number of fixed telephone sets (including all telephone sets) per 100 population made 17 units and mobile phone numbers made 107 in 2014. At the beginning of 2015, 2161.3 thousand computers were available in the country, of which 1412.5 thousand – in households, 328.8 thousand – in legal entities and 420.0 thousand – in private owners operated without creating

legal entity. 75 from 100 populations were internet users at the beginning of 2015 (Statistical Committee of Azerbaijan, 2015).

In 2015, the number of e-services provided through e-government portal by public agencies in Azerbaijan has reached 417. In general, the number of e-services available on the websites of public agencies is 481 (E-services).

At present, the states carry out initiatives, projects, and strategies at regional, national and local levels in direction of transition to information society and development of e-democracy mechanisms. Also in our country, "The National Strategy on Development of Information Society in the Republic of Azerbaijan for 2014-2020 years" is adopted. The conduct of effective regulation under the conditions of information society, the expansion of e-government and the increase of effectiveness of public administration with application of ICT, the development of democratic principles, the achievement of high quality of electronic services and etc. are attributed to the goals of the National Strategy (National Strategy on DIC of Azerbaijan).

Some researchers have supported e-government as a path to e-democracy, whereas others have been more cautious about the subject.

In different approaches reviewed the similarities between the concepts of e-government and e-democracy as well as evaluate e-government and e-democracy initiatives in the local case studies.

Note that, the method of usage ICT in society and the concept and intensively of its usage and business sectors usually brings about a change in quality. Therefore, comprehension and acceptance of the means of ICT serve as potential factors of further development of the society. The rapid development of ICTs, increasing interest of citizens and the whole society to ICTs in last years resulted in the wide application of ICT in different spheres.

During the beginning of 2015 the rate of households with computers among all households across the country rose from 53.2 percent to 58.3 percent. Also note that, 56.5 percent of household computers were desktops and 43.5 percent was portables (MCHT of Azerbaijan, 2014).

By the end of 2014, 75.2 percent of families had access to the Internet. In last 5 years, the rate of broadband connection of households rose from 18.9 percent to 64.6 percent. The popularity rate of the Internet young people is obviously higher, as 40.1 percent of Internet users are under the age of 24. Significant advances have also been accomplished in the computerization of schools in last years. 93.1 percent of schools have computers, and ratio is 22 schoolchildren per computer (MCHT of Azerbaijan, 2014).

Statistics showed that 70.8 percent of computer users had e-skills. 58.6 percent of companies operating in Azerbaijan hold their own computers. Compared with 2013 the number of companies using own computers rose and the number of computers they own creased by 12.8 percent (MCHT of Azerbaijan, 2014).

The beginning of 2015, 78.1 percent of companies with computers, and 43.1 of all companies across the country had access to the Internet. 60.8 percent of computers used by business sector connected to the Internet.

Establishment of e-government and application of online services, enhancing an infrastructure and service delivery are regarded as one of the key indicators so they are accessible and affordable for the public at any level. It is primarily aimed at simplifying for the relationship between public institutions and citizens and promoting transparency.

In 2014 the Cabinet of Ministries approved the list of information systems and resources integrated into e-government portal and also technical feasibility requirements for further integration. The approval of the list information systems and resources to connect e-government portal will enable to develop relations among public institutions to raise the efficiency of public authorities and to promote transparency (EGOV portal).

In 2014, 113 new services were added into the portal. According to the list 322 of 452 e-services and in total 398 services were integrated and this number is 40 percent higher than the previous years. 46 public institutions joined the portal by the end of 2014 (MCHT of Azerbaijan, 2014; EGOV portal).

In order to make it more user-friendly, mobile application of the portal with 10 services became available. Within the m-government concept the number of such services is expected to reach 50-60 in 2016.

The gateway e-government provides efficient use of the existing government information systems, ensuring a safe contact between them, when issuing queries and rendering e-services, makes it possible not to ask citizens of the documents available in information systems (MCHT of Azerbaijan, 2014).

ICT in Healthcare. Health informatization centre was established in order to monitor the healthcare status of the population, and all the existing databases and systems were integrated into the centre. All maternity hospitals, inpatient and outpatient children's polyclinics became connected in a centralized way to the electronic information system applied by the Ministry of Healthcare via citizen's e-health card and over 3.5 million citizens became registered (MCHT of Azerbaijan, 2014).

Currently, more than 10 e-registers have been created by the Ministry of Healthcare. Electronic surveillance system of infectious diseases was created in order to develop the process of collecting, analyzing and processing and to strengthen epidemiological surveillance, and all sanitary-epidemiological institutions connected to the system.

ICT in education. Two online services e-applications for State Program for study of students abroad in the 2007-2015 and online-check of recognition of foreign higher education qualifications and definition of their equivalence (nostrification) of the Ministry of Education integrated into e-government portal (MCHT of Azerbaijan, 2014).

The application of ICT in labour protection. Ministry of Labour and Social Protection introduced e-services portal to fulfil social services via a single window. In this portal all the 12 e-services of the ministry are classified in different groups and the services automatically linked with E-government portal.

E-property. State Property Committee introduced 31 online services integrated with the e-government portal. Owners permitted to get registry data about real estate, as well as information about collateral or incarcerated

real estates through e-services introduced by the committee. Services like the estate, payments, address references, specialized cash auctions of the committee are integrated with e-government portal (MCHT of Azerbaijan, 2014).

E-services in other public institutions. In 2014 services, and in total 10 services of State Migration Service, such as reception and restoration of citizenship, prolonging the period of temporary residence, permission for permanent residence, permission for work and prolonging the period, employment in migration agencies and others integrated to e-government portal (MCHT of Azerbaijan, 2014).

The Civil Service Commission launched online trial test exam service for those who will take trial exams civil servant vacancies and this service also integrated to e-government portal.

Q&A for tax-payers service introduced by the Ministry of Taxes started also integrated with e-government portal. This service provides quick answers for tax-payers or regular citizens by forwarding their queries to tax experts (MCHT of Azerbaijan, 2014).

“ASAN service” centre under the State Agency for Public Service and Social Innovations under the President of the Republic of Azerbaijan was established by the Decree of the President of the Republic of Azerbaijan in 2012. Aim of the establishment of “ASAN service” centres are to reduce an extra expenses and loss of the time by the citizens, to achieve observing the respect to the ethical rules and the kind behaviour vis-à-vis the citizens, to upgrade the level of professionalism, to strengthen a confidence towards the state structures, to increase transparency and strengthen the fight against corruption, to ensure a larger use of electronic services, to expand the effectiveness of institutional reforms in this area (State Agency of PSSI of Azerbaijan).

Thus, ASAN Service centres employ a "one-stop-shop" principle by providing about 270 services from 10 state entities and around 25 private companies. Thus, the model embodies the successful example of Public-Private Partnership. Overall number of rendered services together with the

functional subsidiary services is more than 270 (MCHT of Azerbaijan, 2014; State Agency of PSSI of Azerbaijan).

Around 6 million people have received ASAN services since its inception. Mobile ASAN Service is a top innovative approach developed by the State Agency for ensuring the universal accessibility of the citizens to services throughout the country. This service ensures proactive approach by bringing state services to the people. It involves well-equipped large buses that travel to the regions to deliver services in rural and remote and hard-to-reach areas that do not host ASAN Service centres.

The centres of ASAN Service aim to enhance transparency, to strengthen the fight against corruption, to reduce citizens' additional costs and time loss and to provide an easy access to public services.

CONCLUSION

The views on transformation of public administration and formation of electronic democracy are explored in the article. Principal discussions are directed towards the preservation of human values and formation of democratic society. Despite the existence of different attitudes to notions of e-government and e-democracy, it can be concluded by the analysis of those that e-government is established by the initiative of "upper" level of hierarchy for the purpose of serving to government interests. In contrast, e-democracy is formed from "lower" level of hierarchy while it reflects the interests of citizens at first instance. Thus, it can be noted that, the realization of e-government concept is directed towards the development of e-democracy and the views on management of society will be altered by the development of efficient mechanisms of e-democracy.

The following are suggested as the development directions of e-democracy principles: the development of relations between citizens and government; the formation of communication and information culture between the government and other socio-political activity entities, the provision of transparency and open government reforms; the development of

electronic voting mechanisms; the formation of citizen-centric systems and the increase of effectiveness.

E-democracy provides the formation of more effective relations either among the citizens, or between citizens and government structures, civil society and the business sector. However, different approaches to e-democracy exist and those are subject to consistent critique. The contradictions between e-government concept which is essential for carrying out the reforms in the sphere of public administration and e-democracy have become a serious discussion topic in recent scientific literature.

REFERENCES

- Alguliyev RM and Yusifov FF (2016) *Challenges of transformation from e-government to e-democracy*, 14th international conference on e-Society 2016, April 9-11, Algarve, Portugal, pp. 217-220.
- Alshehri M and Drew S (2011) *E-government principles: implementation, advantages and challenges*. International Journal Electronic Business 9(3): 255-270.
- Anttiroiko AV (2003) *Building Strong E-Democracy - The Role of Technology in Developing Democracy for the Information Age*. Communications of the ACM 46(9): 121-128.
- Azerbaijan ICT environment, innovation policies & international cooperation (Azerbaijan ICT EIPIC). Available at: http://eeca-ict.eu/images/uploads/pdf/EECA_counires_-_reports_NEW/ICT-Env_Inno-policies_and_Inter-coop_report_AZERBAIJAN.pdf (accessed 15 September 2016).
- Becker T (1981) *Teledemocracy: Bringing Power Back to the People*. The Futurist. 6-9.
- Becker T (2007) *Teledemocracy, Section: E-Democracy, Category: Introduction to E-Democracy*. Information Resources Management Association, 1519-1520. Available at: www.irma-international.org/viewtitle/11706/ (accessed 20 September 2016).
- Bimber B (1998) *The Internet and Political Transformation: Populism, Community, and Accelerated Pluralism*. Polity 31(1): 133-160.
- Bwalya KJ, Plessis TD and Rensleigh C (2012) *E-government implementation in Zambia – prospects*. Transforming Government: People, Process and Policy 8(1): 101-130.
- Carrizales T (2008) *Critical Factors in an Electronic Democracy: a Study of Municipal Managers*. The Electronic Journal of e-Government 6(1): 23-30.

- Chen YC and Knepper R (2005) *Digital Government Development Strategies. Lessons for Policy Makers from a Comparative Perspective*, In *Electronic Government Strategies and Implementation*. Idea Group publishing. 464 p.
- Electronic government portal (EGOV portal). Available at: <http://www.e-gov.az/> (accessed 5 October 2016).
- E-services. Available at: www.mincom.gov.az (accessed 5 October 2016).
- Fountain J (2001) *Building the Virtual State. Information Technology and Institutional Change*. Washington: Brooking Institution Press. 256 p.
- Grossman LK (1995) *The Electronic Republic*. Reshaping Democracy in the Information Age. N.Y.: Viking (20th Century Fund). 290 p.
- Habermas J (1991) *The Structural Transformation of the Public Sphere: An Inquiry into a Category of Bourgeois Society*. MIT Press. 301 p.
- Hilbert M (2009) *The Maturing Concept of E-Democracy: From E-Voting and Online Consultations to Democratic Value Out of Jumbled Online Chatter*. *Journal of Information Technology & Politics* 6:87–110.
- Hill KA and Hughes JE (1998) *Cyberpolitics: Citizen Activism in the Age of the Internet*. Oxford: Rowman and Littlefield Publishers Inc. 224 p.
- Kaczmarczyk A (2011) *Cyberdemocracy as a Future Product of Political Systems Engineering*. *Frontiers in Science* 1(1): 5-15.
- McLuhan M (1964) *Understanding Media: The Extensions of Man*. London: Routledge and Kegan Paul. 318 p.
- Meier A (2012) *eDemocracy & eGovernment*, Berlin: Springer-Verlag. Heidelberg. 226 p.
- Ministry of Communications and High Technologies of Azerbaijan (MCHT of Azerbaijan, 2014) Available at: www.mincom.gov.az (accessed 5 October 2016).
- Ozkan S and Kanat EI (2011) *E-Government adoption model based on theory of planned behavior: Empirical validation*. *Government Information Quarterly* 28(4): 503-513.
- Rahman Sh, Rashid N and et al. (2014) *Determining factors of e-government implementation: a multi-criteria decision-making approach*, In: PACIS 2014, Chengdu, China, 24 – 28 June.
- Rheingold H (1993) *The virtual community: Homesteading on the electronic frontier*. Reading, Massachusetts: Addison-Wesley. 447 p.
- Schedler K and Scharf M (2001) *Exploring the Interrelations Between Electronic Government and the New Public Management - A Managerial Framework For Electronic Government*. Workshop on Developing a Basic Research Program for Digital Government at the Kennedy School of Government at Harvard University.1-14.
- Schedler K and Schmidt B (2004) *Managing the e-government organization*. *International Public Management Review*. 1-20.
- Shareef MA, Kumar V and et al. (2011) *e-Government Adoption Model (GAM): Differing service maturity levels*. *Government Information Quarterly* 28(1): 17-35.

- Siskos E, Askounis D and Psarras J (2014) *Multicriteria decision support for global e-government evaluation*. Omega 46: 51–63.
- State Agency for Public Service and Social Innovations under the President of the Republic of Azerbaijan (State Agency of PSSI of Azerbaijan). Available at: <http://www.asan.gov.az/> (accessed 5 October 2016).
- State Statistical Committee of the Republic of Azerbaijan (Statistical Committee of Azerbaijan, 2015), *Information Society in Azerbaijan*. Available at: www.stat.gov.az (accessed 5 October 2016).
- The National Strategy on development of information society in the Republic of Azerbaijan for 2014-2020 years (National Strategy on DIC of Azerbaijan). Available at: <http://president.az/articles/11312> (accessed 5 October 2016).
- Wahid F (2012) *The Current State of Research on eGovernment in Developing Countries: A Literature Review*. In: H. Scholl, M. Janssen, M. Wimmer, C. Moe & L. Flak (Eds.), *Electronic Government*. Springer. 7443, pp. 1-12.
- Williams RW (2006) *Democracy, Cyberspace, and the Body* Available at: <http://clogics.eserver.org/2006/williams.html> (accessed 29 July 2016).
- Wimmer M (2003) *Knowledge Management in Electronic Government*. Springer-Verlag
- Zhang H, Xu X and Xiao J (2014) *Diffusion of e-government: A literature review and directions for future directions*. Government Information Quarterly 31(4): 631–636.

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