



Reaping or Losing Digital Dividend? The Use of Social Media for Enhancing Public Participation: A Literature Review

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ABSTRACT

The Internet has made social media a rapidly moving and vigorous domain and has changed the landscape for communications. It has changed different processes and engagement of human interaction and it is becoming hard to separate from people lives. The population of the internet and social media user are growing bigger every day, and so the opportunity for public participation. This study subsequently will identify of how government can take advantage of that digital dividend. To understand the issue, this research used a robust systematic literature review approach. The findings conclude that social media could help citizens to connect online and organize faster for collective action in order to put pressure when government performance does not meet people expectation.

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1. Introduction

Prominently, digital technologies is becoming hard to separate from people lives, notably the internet that has turned into basic daily needs. More and more people utilizes this technological advancements and the access to it has increased because it brings more choice and greater convenience (World, 2016). One of the technological innovations example that have greatly revolutionized different aspects of the human life is social media.

The boom of the Internet made social media a rapidly moving and vigorous domain and has changed the landscape for communications. To a great extent, it has changed different processes and engagement of human interaction. Today, the adoption of social media has greatly impacted in the society in different dimensions including the business environment (Bertot, Jaeger, & Hansen, 2012).

Not only by businesses or private companies, social media also already used today by government agencies. The landscape of public agencies and bureaucracies around the world are changing because of the existence of social media tools. This technology can improve

interactivity between a government and the public, and they reach populations that do not consume traditional media as frequently as others (Graham & Avery, 2013).

As stated also in Social Media in the Public Sector (Mergel, 2013b: p. 3), the use of social media applications is being driven mainly by innovative citizen use, and government organizations are slowly adopting the tools for connecting with their audiences where those audiences prefer to receive information and news on social networking sites. Typically, these innovative technologies are adopted and used for three functions or purposes: (1) to increase transparency, (2) to support inter and intra organizational collaboration, and (3) to enable innovative forms of public participation and engagement (*ibid*).

Transparency means to provide information for citizens about what their government is doing and supply the records through the use of open data and social media applications. Collaboration through social media is defined in the United States of America Open Government Initiative memo as new forms to “solicit public feedback to assess and improve their level of collaboration and to identify new opportunities for

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cooperation” (Mergel, 2013a). While participation refers to the use of Internet and social media technologies to engage the public with the government. And it should be accomplished by providing “increased opportunities to participate in policymaking and to provide the government with the benefits of citizen collective expertise and information (*ibid*).

This study subsequently will focus on participation because of nowadays the issue took a higher extent of discussion among scholars, due to a major number of internet users and social media respectively, hence a greater opportunity for citizen to participate. According to annual research of *Hootsuite* and *We Are Social* published in the early 2019, there are 4.388 billion of people are using internet and 3.484 billion of active social media users around the world (Kemp, 2019: p. 7-8). Moreover, the global mobile social media users rose 10% or 297 million from the previous year reaching 3.256 billion of people.

The positive trend also occurs in every region and countries around the globe. In Indonesia, the country’s digital has a year-on-year increase of internet users and active social media users since January 2018 until January 2019. The number of internet users has 13% of growth, while its active social media users has the largest uptick by 15% or almost 20 million users. Both has almost 150 million users, while the mobile social media users reach 130 million.

In addition, those data are supplemented by Information and Communication Technology (ICT) usage survey from the Ministry of Communication and Informatics (2017: p. 40-41). It showed that 92.82% of respondents are social media users, with reaching more than 90% of users either urban or rural inhabitant. Based on education, the smallest percentage of users that did not went to school are reaching high percentage by 73%. Moreover, 80.32% of social media users are age 50-65 years old.

Those numbers are evidence that most of the population has access to the internet, with new users coming online every day. This study subsequently will identify of how we can take advantage of digital dividend.

2. Research Method

To understand this study, I used systematic literature review approach. I collect secondary data from scientific journals and other critically appraise research studies. The documents that collected from the internet are analyzed using content analysis technique.

3. Findings

3.1 Previous Research

The problems addressed in this paper are related to the digital dividend and social media practices. It is important to take advantage of relevant research results

that have been done before to understand some matters that are related. However, so far, there is a little volume of published studies describing the use of social media for public engagements or participation. Even so, it still needs to select a number of previous studies that are considered relevant, which can provide an overview and direction for the research undertaken. Some previous studies can be divided into two perspectives of results.

Those mentioned below are a little part of the previous research regarding digital divide and social media practices. Based on the previous research, it can be seen that much of them have produced interesting and informative results as well as showed evidence of the importance of the social media implementation.

To sum up, although much previous research have produced valuable insights and informative results, most studies focusing among areas or general information and rarely focus on the government social media and public participation. I found that there are two views regarding digital dividend as explained below:

In the electoral campaigns held in Portugal between 2009 and 2011, Artur Afonso Sousa, Pedro Agante, and Luís Borges Gouveia (2013) held a research about the use of an application called iLeger. They claim that the results of five experiences suggest that short-term and live events, and the direct involvement of media can facilitate the citizen participation.

Furthermore, Hye Hyun Hong (2013) conducted research about government websites and social media’s influence on Government-Public relationships. Its results showed support for a positive relationship between the online experience and public trust in government.

On the contrary, Lorna Philip et al. (2017) stated that there are territorial inequalities in digital infrastructure that have negative impacts upon personal and business lives in deep rural areas. Its analysis was based on data published by the UK telecommunications regulator, Ofcom, and identifies and reflect on the entrenched nature of the urban-rural digital divide in Great Britain.

While in the case study of three ASEAN cities, Sataporn Roengtam et al. (2017) research found that social media use has not yet affected the internal organisational processes in the government three cities. Thus, social media use is not appropriate as a space for citizen-government interaction. This result supported by prior research that stated social media are somewhat underutilized by local governments, with about a 70% overall use rate (Missy Graham and Elizabeth Johnson Avery, 2013).

In addition, Aulia Hadi (2018) research explained that the presence of ICT complicates the rural-urban relations, in which those accessing the internet in the rural areas particularly, is only half than those in the urban areas. This digital divide is not only about infrastructure and access, but also includes digital skills and literacy.

3.2 Digital Transformation and Public Participation

As mentioned by Allan Martin (2008), Digital Transformation is now commonly interpreted as such usage of Information and Communication Technology (ICT). Fundamentally new capabilities are created in business, public, government, and in people’s and society life (2008, p. 173). Governments around the world are in the midst of a historic transformation as they abandon analogue operating models in favor of their digital counterparts.

A recent study by Deloitte (taken from Eggers, W.D., Bellman, J.) identifies three levels of maturity with regard to governments’ digital transformation; whereas it acknowledges a set of five factors that shape the path to digital transformation: strategy, leadership, workforce skills, digital culture, and user focus (Figure 1).

	Early	Developing	Maturing
Strategy	Aimed at cost reduction	Aimed at improving customer experience and decision making	Aimed at fundamental transformation of processes
Leadership	Lacks awareness and skills	Digitally aware	Digitally sophisticated
Workforce development	Insufficient investment	Moderate investment	Adequate investment
User focus	Absent	Gaining traction	“Central” to digital transformation
Culture	Risk averse; disintegrated	Risk tolerant; accommodates innovation and collaboration	Risk receptive; fosters innovation and collaboration

Figure 1. Characteristics of a digitally maturing public organization

To address government and civil society, Zinder and Yunatova (2016) mentioned that the goals of Digital Transformation of the government, business, and the whole society in Digital Era were considered in the e-government programs. As we all know, the winds of e-government are penetrating through public organizations and public administration across the world. More and more governments are using ICT, especially internet or web-based network, to provide services between government agencies and citizens, businesses, employees and other non-governmental agencies.

Fang (2002, p. 3) further sets the goal to ensure “citizen participation in government, enhancing communications and facilitating democratic processes” in 2002 and to plan bidirectional interactions showed in Figure 2.



Figure 2. An early schematic system of participants and their interactions for E-Government models based on Fang (2002, p. 10)

Perspective on government Digital Transformation is described in the global United Nations report (UNDESA, 2014) which highlights the necessity of a deeper transformation based on people engagement, participation and online collaboration of the citizens, government, and businesses. For implementing such collaboration, significant transformation in the cultural sphere is required: ‘to transform mind-sets and build a culture of collaboration, transparency and accountability’ (UNDESA, 2014, p. 77).

3.3 How ICTs Promote Public Participation?

In recent years, e-government has enabled enhanced public participation in government decisions through e-participation. According to UNDESA (2016), e-participation can be defined “as the process of engaging citizens through ICTs in policy, decision-making, and service design and delivery in order to make it participatory, inclusive, and deliberative”. Even though it is still an evolving concept, there is vast evidence that e-participation technologies expand opportunities for civic engagement. That is including increased possibilities for people to participate in decision-making processes and service delivery to make societies more inclusive (UNDESA, 2016, p. 49).

The use of ICTs and the increased availability of open and innovative channels of communication between government and citizens, including social media, has made e-participation more widespread and pervasive than ever before. It allows people to interact more frequently with officials on an increasing host of issues. Today, ICTs allow the general population and non-governmental organizations “to collaborate in the design of public services and participate in their delivery to provide more coherent and integrated solutions to complex challenges” (OECD, 2014). In other words, e-participation goes beyond merely requesting people to provide their views about decisions and services proposed by the government. It mobilizes and shapes action.

Inclusive societies, environmental sustainability, and shared economic development “depend critically on effective governance capacities at national, local and municipal levels, including political commitment and leadership”; they also depend on the “legal and economic empowerment of people, especially those most excluded, and of their civil society organizations, to participate effectively in national and local decision-making” (UNDESA, 2012a).

Engaging people in decision-making are essential for the pursuit of sustainable development for a number of reasons. First, greater engagement and participation in policy-making has an intrinsic value in terms of deepening democracy and making governance more responsive and transparent.

Second, it can help realign national development strategies to meet the SDGs. In order to ensure economic growth while preserving the planet, greater participation is needed, for example on how taxes should be spent and on what services should be provided and where.

In fact, engaging citizens in such processes, both at national and local levels, is instrumental to collectively deciding how to implement the SDGs, as well as redefining the missions of the State and of public administration. This is vital to ensure that people have a sense of shared ownership of the SDGs, as well as their trust in governments.

Third, people's participation in policy decisions leads to more informed strategies for poverty eradication and more inclusive societies by helping design targeted services, particularly for vulnerable groups. More targeted and inclusive e-services and e-participation can help empower women and youth and address the many challenges faced by vulnerable groups, including older persons and persons with disabilities.

Fourth, people's participation in policy decisions can promote the effectiveness of public policy and service delivery. It can contribute resources to development efforts and cut unnecessary expenditure, since greater understanding of people's needs encourages innovative partnerships among government, businesses, academia, NGOs and the general population.

Fifth, participatory decision-making can mobilize new resources, capacities and ideas. In the past, the public was seen as passive recipients of services and governments were the main providers of "solutions", today we witness a shift in how services are conceptualized, managed and delivered. Given the opportunity to actively participate in service delivery, people can contribute distinctive resources in terms of time, effort, ideas and expertise. As they co-create public value through their own ideas and talents, people's participation and collaboration in service delivery promotes innovation for environmental sustainability, inclusive economic growth and social development.

There are different degrees of e-participation that move from more "passive" to "active" engagement (UNDESA, 2014). Active participation can be defined as "a relationship based on partnership with the government in which citizens actively engage in defining the process and content of policy-making" (OECD, 2001). This definition captures the essence of public participation, both offline and online. People can be involved in public decisions and service delivery in many different ways and degrees. People can be informed of government decisions and availability of services, they can be consulted about certain decisions, or they can be asked to take part in decisions; again with varying degrees of involvement.

3.4 Social Media and Government Transformation

Osimo (2008) asserted that the rapid advancement of Web 2.0 technologies and social media applications could help public sector organisations create real transformation in key issues such as transparency, accountability and improvement in community engagement. He argued that social media applications could improve the engagement between public sector organisations and the community. For example, citizens may be able to communicate with government by using

social media applications such as Facebook and Twitter, or access the latest information and contribute multimedia contents through YouTube, Instagram and other applications.

The use of social media in public sector organisations has had many positive impacts such as increasing citizen awareness about the ability to contribute to the government in terms of policy-making (Anttiroiko, 2010; Osimo, 2008). Many developed countries such as the United Kingdom, United States, Australia, Germany and New Zealand have used social media to build interactive public services (Anttiroiko, 2010). In fact, there are many examples of how social media applications have benefited public sector organisations to improve daily operations and engage with the citizens.

A study by Osimo (2008) on the implementation of social media in the government context found that social media is relevant for many different types of public sector organisations to achieve their objectives. This study used case studies of existing social media applications in public sector organisations and found that social media has been used in regulatory activities, cross agency cooperation, knowledge management and even in law enforcement (Osimo, 2008).

Additionally, a study by Chang and Kannan (2008) focused on developing a framework for the government to harness the power of social media and to understand social networking and its potential for government use. The authors suggest that public sector organisations should embark on social media pilot projects to further understand their nature, and be open-minded to the effectiveness of social media in facilitating the fulfilment of services.

3.5 Digital Divide vs. Digital Dividend

The OECD (2001, p. 5) defines the digital divide as "the gap between individuals, households, businesses, and geographic areas at different socioeconomic levels with regard both to their opportunities to access ICTs and to their use of the internet for a wide variety of activities".

DiMaggio et al. (2010) described the digital divide as being "inequalities in access to the Internet, extent of use, knowledge of search strategies, quality of technical connections and social support, ability to evaluate the quality of information, and diversity of users" (p310).

While, Sparks (2013, p28) noted that the digital divide is a term "used to cover a broad range of social differences in access to and use of digital equipment and services, most notably personal computers, and the ability to access the internet in terms of both physical connection and facility of use".

Norris (2001) defines the term as a multidimensional phenomenon incorporating three aspects. Namely (a) the global divide, referring to the divergence of internet access between the developed and less-developed societies. (b) The social divide, concerning the gap between information rich and poor in each nation; and (c) the democratic divide, signifying the difference between those who do, and do not, use the panoply of

digital resources to engage, mobilize and participate in public life.

Although the original sense of digital divide stressing on the physical availability of computers and connectivity, Warschauer (2003) highlights the digital divide also incorporates access to additional resources allowing people to use technology well.

Aulia Hadi (2018, p. 19) further stated that discussing the digital divide should go beyond the physical access or beyond simply seeing the internet as a medium. Understanding the digital divide needs to focus on the ways people use the internet to define their culture.

The great challenge in recent days is bridging the digital divide to achieve and maximize the digital dividends. It requires better understanding of how technology interacts with other factors that are important for development. The digital technologies of the internet promote development through three main mechanisms: inclusion, efficiency, and innovation (World, 2016). The benefits of these mechanisms can be seen throughout the economy (Figure 3).

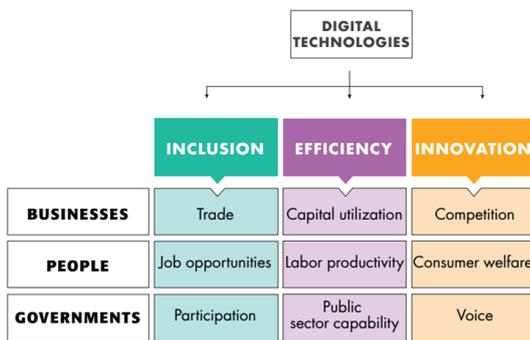


Figure 3. How the three mechanisms apply to businesses, people, and governments (World Bank reports: 2016, p. 12)

For businesses, the internet promotes inclusion of firms in the world economy by expanding trade, raises the productivity of capital, and intensifies competition in the marketplace, which in turn induces innovation. It brings opportunities to households by creating jobs, leverages human capital, and produces consumer surplus. While for citizens, it enable them to access public services, strengthens government capability, and serves as a platform for citizens to tackle collective action problems.

Moreover, the internet can make governments more capable and responsive. They provide services that are typically nontradable and are not subject to market competition. One might expect the internet to bring large benefits in public service provision, such as: (1) better tools for communicating with citizens and providing information; (2) allow greater participation—not only improving electoral participation, but also through inclusion in government assistance programs, or feedback to and monitoring of public officials, that could improves public sector capability; (3) the internet opens new avenues for participatory democracy. For instance, in digitally advanced countries like Estonia, the Republic of Korea, and Singapore, are beginning to take advantage of data analytics and digital platforms for faster, more informed, and integrated policy-making.

4. Conclusion

The findings conclude that ICT and social media applications could help public sector organisations create real improvement in community engagement or public participation. Not only improving electoral participation, but also through inclusion in government assistance programs, or feedback to and monitoring of public officials, which could improves public sector capability.

Moreover, social media could help citizens to connect online and organize faster for collective action in order to put pressure when government performance falls short of people’s expectations.

References

Anttiroiko, A. V. (2010). Innovation in democratic e-governance: Benefitting from Web 2.0 applications in the public sector. *International Journal of Electronic Government Research* , 6(2), 18-36

Bertot, J. C., Jaeger, P. T., & Hansen, D. (2012). The impact of polices on government social media usage: Issues, challenges, and recommendations. *Government Information Quarterly*. <https://doi.org/10.1016/j.giq.2011.04.004>

Bertot, J. C., Jaeger, P. T., Munson, S., & Glaisyer, T. (2010). Social media technology and government transparency. *Computer*. <https://doi.org/10.1109/MC.2010.325>

Chang, A. M., & Kannan, P. (2008). Leveraging Web 2.0 in government. *EGovernment/Technology Series*. Retrieved from http://wiki.douglasbastien.com/images/f/f7/Ibm_Leveraging_Web_2.0_in_Government.pdf. Accessed 2013-05-09.

Chetty, K., Aneja, U., Mishra, V., Gcora, N., Josie, J. (2018). Bridging the digital divide in the G20: skills for the new age. *Economics: The Open-Access, Open-Assessment E-Journal*, 12 (2018-24): 1–20. <http://dx.doi.org/10.5018/economics-ejournal.ja.2018-24>

Chun, S. A., & Luna Reyes, L. F. (2012). Social media in government. *Government Information Quarterly*. <https://doi.org/10.1016/j.giq.2012.07.003>

Criado, J. I., Sandoval-Almazan, R., & Gil-Garcia, J. R. (2013). Government innovation through social media. *Government Information Quarterly*. <https://doi.org/10.1016/j.giq.2013.10.003>

DiMaggio, P. J., & Powell, W. W. (1983). The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. *American Sociological Review*. <https://doi.org/10.2307/2095101>

DiMaggio, P., Hargittai, E., Neuman, W.R., Robinson, J.P. (2010). Social implications of the internet. *Annu. Rev. Sociol.* 27, 307-336.

Eggers, W.D., Bellman, J. The journey to government’s digital transformation. Deloitte University

- Press. <http://dupress.com/articles/digital-transformation-in-government/>
- Fang, Z. (2002). E-Government in digital era: concept, practice, and development. *Int. J. Comput. Internet Manag.* 10(2), 1–22. <http://unpan1.un.org/intradoc/groups/public/documents/apcity/unpan016377.pdf>, http://www.ijcim.th.org/past_editions/2002V10N2/article1.pdf
- Graham, M., & Avery, E. (2013). Government Public Relations and Social Media: An Analysis of the Perceptions and Trends of Social Media Use at the Local Government Level. *Public Relations Journal*.
- Hadi, Aulia. (2018). Bridging Indonesia's Digital Divide: Rural-Urban Linkages? *Jurnal Ilmu Sosial dan Ilmu Politik* Volume 22, Issue 1, July 2018 (17-33). ISSN 1410-4946.
- Hansen, D. L., Shneiderman, B., Smith, M. A., & Hogan, B. (2011). Analyzing Social Media Networks with NodeXL. *Analyzing Social Media Networks with NodeXL*. <https://doi.org/10.1016/B978-0-12-382229-1.00011-4>
- Hong, Hye Hyun. (2013). Government Websites And Social Media's Influence On Government-Public Relationships. *Public Relations Review* 39 (2013) 346–356. <http://dx.doi.org/10.1016/j.pubrev.2013.07.007>
- Kemp, Simon. (2019). Digital 2019: Essential Insights Into How People Around The World Use The Internet, Mobile Devices, Social Media, And E-Commerce. Kepios Pte. Ltd., We Are Social Ltd. and Hootsuite Inc. <https://datareportal.com>
- Martin, Allan. (2008). Digital literacy and the digital society. In: Lankshear, C., Knobel, M. (eds.) *Digital literacies: concepts, policies and practices*, vol. 30, pp. 151–176. Peter Lang, New York. ISBN 978-1-4331-0168-7. http://researchonline.jcu.edu.au/27788/1/27788_Lankshear_and_Knobel_2008.pdf
- Mergel, I. (2012). The social media innovation challenge in the public sector. *Information Polity: The International Journal of Government {&} Democracy in the Information Age*. <https://doi.org/10.3233/IP-2012-000281>
- Mergel, I. (2013a). A framework for interpreting social media interactions in the public sector. *Government Information Quarterly* <http://dx.doi.org/10.1016/j.giq.2013.05.015>
- Mergel, I. (2013b). *Social Media In The Public Sector: A Guide to Participation, Collaboration, and Transparency in the Networked World*. San Francisco, CA: John Wiley & Sons, Inc.
- Ministry of Communication and Informatics. (2017). *Survey Penggunaan TIK 2017, Serta Implikasinya Terhadap Aspek Sosial Budaya Masyarakat*. Research and Development of Human Resources Agency of the Ministry of Communication and Informatics.
- Norris, P. (2001). Digital divide: Civic engagement, information poverty, and the internet worldwide. Cambridge: Cambridge University Press.
- OECD, Organisation for Economic Co-operation and Development. (2001). *Understanding the Digital Divide*. OECD, Paris.
- (2014). 'Recommendation of the Council on Digital Government Strategies', [online], available: <http://www.oecd.org/gov/public-innovation/Recommendation-digital-government-strategies.pdf>.
- Osimo, D. (2008). *Web 2.0 in government: Why and how*. Joint Research Centre, European Commission: Institute for Prospective Technological Studies (IPTS). Retrieved from <http://ftp.jrc.es/EURdoc/JRC45269.pdf>
- Pfeffer, J., & Salancik, G. R. (1978). *The External Control of Organizations: A Resource Dependence Perspective*. Harper and Row. <https://doi.org/10.2307/2231527>
- Philip, L., Cottrill, C., Farrington, J., Williams, F., Ashmore, F. (2017). The digital divide: Patterns, policy and scenarios for connecting the 'final few' in rural communities across Great Britain. *Journal of Rural Studies* Volume 54, August 2017, p. 386-398. <https://doi.org/10.1016/j.jrurstud.2016.12.002>
- Serrano-Cinca, C., Fuertes-Callén, Y., & Mar-Molinero, C. (2005). Measuring DEA efficiency in Internet companies. *Decision Support Systems* (Vol. 38). <https://doi.org/10.1016/j.dss.2003.08.004>
- Sousa, Artur A., Agante, P., Gouveia, Luis B. (2013). Model of Digital Mediation for Direct Public Participation in Electoral Periods: How Important are the Media? *ICEGOV '13 Proceedings of the 7th International Conference on Theory and Practice of Electronic Governance*, p. 299-308. <http://dx.doi.org/10.1145/2591888.2591942>
- Sparks, C. (2013). What is the 'digital divide' and why is it important? *Javnost – the Public. J. Eur. Inst. Commun. Cult.* 20 (2), 27e46. <http://dx.doi.org/10.1080/13183222.2013.11009113>.
- UNDESA, UN Department of Economic and Social Affairs. (2012a). *UNTT Report to the Secretary-General: Realizing the Future We Want For All*, [Online], available: http://www.un.org/en/development/desa/policy/untaskteam_undf/
- (2012b). 'Promoting people's empowerment in achieving poverty eradication, social integration and productive and decent work for all', Report of the Expert Group Meeting, [Online], available: <http://www.un.org/esa/socdev/csocd/2013/egm-empowerment-fnal.pdf>.
- (2013). DPADM Concept paper 'Developing capacity for participatory governance through e-participation', [online], available: <http://workspace.unpan.org/sites/internet/Documents/CONCEPT%20PAPER%20e-Participation%2001.30.13.pdf>

- (2014). United Nations E-government Survey 2014: E-Government For the Future We Want. ISBN 978-92-1-123198-4. e-ISBN 978-92-1-056425-0.
<https://publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2014>
- (2016). United Nations E-government Survey 2016: E-Government In Support Of Sustainable Development. United Nations, New York (2016). ISBN: 978-92-1-123205-9. eISBN: 978-92-1-058156-1.
- Warschauer, M. (2003). Technology and social inclusion: rethinking the digital divide. Cambridge & Massachusetts: the MIT Press.
- World, B. (2016). World Development Report - Digital Dividends. The World Bank.
<https://doi.org/10.1017/CBO9781107415324.004>
- Zhao, F., Collier, A., Deng, H. (2014). A Multidimensional And Integrative Approach To Study Global Digital Divide And E-Government Development. Information Technology & People, Vol. 27 Iss 1 pp. 38 - 62.
<http://dx.doi.org/10.1108/ITP-01-2013-0022>
- Zinder, Evgeny and Yunatova, Irina. (2016). Synergy for Digital Transformation: Person's Multiple Roles and Subject Domains Integration. In: Chugunov, Andrei V.; Bolgov, Radomir; Kabanov, Yury; Kamps, George; Wimmer, Maria (eds) Digital Transformation and Global Society, pp. 155-168. Springer. ISBN 978-3-319-49700-6.