Sustaining Change within Technology-Oriented Public Organizations

Mauro ROMANELLI
University of Naples Parthenope
Via G. Parisi 13, 80132 Napoli, Italy
mauro.romanelli@uniparthenope.it

Abstract. *Technology helps to drive cultural and managerial change within public organizations and to enhance a knowledge management approach, sustaining openness and revitalizing democracy and participation, driving public institutions and citizens as active co-producers of social, democratic and public value and policies. Public organizations are changing for meeting the needs of citizens by embracing information technology as a source that enables public administration to connect with citizens opening up to civic contribution and participation of civil society for sustainable change and vision to drive strategy and action.*

Keywords: *information technology, change, public organizations, sustainability.*

Introduction

The advent of information and communication technologies (ICTs) helps public organizations to support public trust (Goodsell, 2006), communicate with citizens and various stakeholders as active co-producers of social, democratic and public value (Moore, 1995). In particular, ICTs contribute to facilitating the interaction between the citizen and the State (e-governance) (Finger & Pècoud, 2003).

ICTs help to restore the relationship of confidence between citizens and government driving public organizations to support the dialogue with civil society, promoting change through partnerships, developing collaborative and cooperative processes by interacting with citizens as partners (Bryer, 2006). Technology should help public organizations to change by involving the civil society to collaborate within networked governance and developing open innovation by including external knowledge in decision-making processes (Hartley, 2005; Mergel, 2018).

ICTs exert influence on organizational change in terms of technological, human, social and managerial aspects to be considered (Orlikowski & Yates, 2006). In particular, ICTs help to support institutional change within public administration (Gascó, 2003). ICTs contribute to creating a new public space and sphere for discourse, conversation and social exchange (Papacharissi, 2002). ICTs help to focus on the interface between citizens and government and facilitate the flows of information within government and for civil rights and access to information (Mayer-Schönberger & Lazer, 2008).

As Yildiz (2012) has stated, the use of technology in government activities opens up to some questions that relate to e-government research and the future in terms of democracy enhancement, interdisciplinary approach, performance evaluation and measurement. So, introducing information technology exerts influence on change within public administration. The motivations of the study rely on discovering how technology can favor social and cultural change within public administration beyond technology-driven innovation. The research question relies on identifying how technology provides sources for change within public administration. In particular, sustainability is an emerging concept and value that addresses vision and action for public administration. Sustainability is a source for public organizations that are proceeding towards strategic and organizational change. Identifying the trajectories of change by using and developing the potential of information technology helps to advance some hypotheses of development within strategy, culture and organization of public administration as an institution embedded within social and economic ecosystems (Guthrie, Dumay, & Farneti, 2010).

The study aims to elucidate how the use of technology drives public administration to proceed towards sustainability as a source for change and also helps to support change within public organizations that rediscover the importance of developing an orientation towards a knowledge management approach,

enhancing openness as public value between transparency and accountability, and encouraging the participation of citizens in public policy.

The contribution of this study is to propose a framework of analysis to identify how public organizations are changing by embracing ICTs. Technology contributes to influencing the extension of change and exerting influence on three areas of managerial capabilities and development: implementing a knowledge management approach; promoting openness between transparency and accountability; revitalizing the democratic and participatory potential of a public administration that involves citizens in policy debate and asks them for an active contribution to policy processes.

This study relies on the analysis of literature that refers to the relationship between ICTs and knowledge management, openness, democracy and participation as three areas to be developed in order to exert influence on the organizational and cultural change within public organizations, opening up to a new season of the relationship of confidence between the citizen and the government.

The paper is structured in six sections. Following the introduction and methodological section, the third paragraph elucidates the role of information technology within the public organization seeking a sustainable change. In the second section, the fourth paragraph identifies the areas of change enabled by the advent of information technology: developing a knowledge management approach to processes; promoting openness between transparency and accountability; revitalizing democracy and participation. In the fifth paragraph, a framework of analysis is elucidated and the discussion follows. Finally, conclusions are outlined.

Methodological section

The study is theoretical and relies on public organizations changing by embracing information technology as a means for proceeding towards sustainability a literature review relating to that developing strategic, managerial and technological sources that drive public organizations to evolve as a community that contributes to value creation and encourages efforts and cooperation for public wealth. The selected contributions refer to the relationship between ICTs and knowledge management, openness, democracy, and participation. The selected contributions are interpreted in a narrative synthesis in order to elucidate new perspectives and advance theoretical frameworks on emerging issues (Denyer & Tranfield, 2006; Dixon-Woods, Agarwall, Young, Jones, & Sutton, 2004).

Public organizations as technology-enabled institutions: from introducing technology in government to promoting sustainable change

ICTs contribute to organizational and institutional change within public administration (Gascó, 2003; Orlikowski & Yates, 2006), improving the administrative action and enabling the government to better connect with citizens (Meijer, Bannister, & Thaens, 2012).

Information technology helps cultural and operational change within public administration with regards to using knowledge in process management, promoting openness and revitalizing democratic values and mechanisms for citizen participation. Public organizations use information technology to improve the efficiency of government services provision to citizens (e-government) (West, 2004), to support democratic processes by involving citizens in policy-making and fostering public values as transparency, participation, transparency, accountability, impartiality (e-governance) (Dawes, 2008; Bannister & Connolly, 2012; Cordella & Bonina, 2012).

As Calista and Melitski have stated (2007) «e-government concentrates on making life more convenient for customers that stems from an administrative plan, while e-governance focuses on a politics plane, which sanctions the role of citizens» (p. 113). The focus of e-government design and implementation is on citizens' needs. The role of digitization is to help to facilitate and accelerate change within public organizations. E-government maturity models relate to technology as a source for human-centered change to benefit customers and citizens too (Andersen & Henriksen, 2006; Layne & Lee, 2001).

With regards to the use of ICTs and Internet in government processes some trends are identified (Dunleavy, Margetts, Bastow & Tinkler, 2006): using technology in government is opening up to a new digital governance era in terms of citizen-centered processes in the interaction government-citizen, and driving the transition towards reengineering of back-office functions, client-based re-organization and services digitalization. Promoting technology in government helps institutional change in terms of «adjustment of the whole set of technological, managerial, and political variables affected by ICTs implementation» (Gascó, 2003, p. 13).

Technology in government helps to facilitate the orientation towards information management, citizen-centered approach and collaborative processes within social and economic ecosystems. In particular, ICTs contribute to driving the transition towards an information human processing and government (Mayer-Schönberger & Lazer, 2008) and developing an *info-cracy* (Zuurmond & Snellen, 1997). Promoting change relies on developing a community/citizen-centered approach (Meijer, 2011) and sustaining public innovation by involving public and private actors to cooperate for value creation (Ansell & Törfing, 2014). ICTs contribute to driving the future of policy-making and governance through platforms that enable information and knowledge exchange (Misuraca, Broster, & Centeno, 2012). Public organizations are embracing information technology to promote democratic principles of equity, impartiality and fairness, and develop multilateral accountability focused on satisfaction, trust and legitimacy following a public value view (Cordella & Bonina, 2012; O'Flynn, 2007). Public organizations should invest in information technology and develop collaborative processes that open up to value creation. The advent of technology helps a public organization to support democratic life, public trust and sustainable change (Fiorino, 2010; Goodsell, 2006).

ICTs serve as a means to achieve better government in terms of leadership, openness and transparency, business capabilities and operational ICT management, perception of responsiveness, process-based trust driven by interaction with citizens (Lips, 2012; Tolbert & Mossberger, 2006). ICTs contribute to change by providing services citizen-centered, access to information as public key resource for building an enduring relationship between citizens, government and business (Fang, 2002), opening up to new forms of governmental legitimacy and spaces of governance that promote change for social inclusion, transparency, and consultation (Navarra & Cornford, 2012).

Technology helps change in government and public organizations in terms of openness, knowledge, democracy, and participation.

According to Bertot, Jaeger and Grimes (2012) using ICTs helps change by creating a culture of transparency. Promoting transparency enables participatory, collaborative and open government that supports citizen engagement and change within public administration (Mergel, 2012; McDermott, 2010). Jaeger and Bertot (2010) have stated that developing e-government as a tool of transparency enables citizen engagement and involvement facilitating both cultural and technological change. Promoting governmental transparency of policy-making helps the development and economic growth (Relly & Sabharwal, 2009).

Public sector organizations seeking sustainability should learn how to use and manage knowledge for efficiency and quality of public services (Massaro, Dumay, & Garlatti, 2015), developing knowledge strategies to use, disseminate and share knowledge to achieve social and environmental issues (Bratianu & Bolisani, 2015; Leon, 2018; Leon, 2013). The use of information technology helps development and sustainability by fostering knowledge management processes and citizen participation and governance (Al-Sudairy & Vasista, 2012)

Public organizations are sustaining the democratic potential of ICTs in order to promote meaningful citizen engagement (Panagiotopoulos, Al-Debei, Fitzgerald & Elliman, 2012). The advent of information technology-enabled greater access to the policy process as a result of dialogue and shared values enhancing the quality of citizen participation (Grönlund, 2001; Kakabadse, Kakabadse, & Kouzmin, 2003).

How technology helps change within public organizations

Public organizations are embracing ICTs in order to interact with citizens, searching a dialogue for better developing policy solutions to improve social and democratic performances: adopting or sustaining an information or knowledge approach or orientation to managing processes; promoting openness between ensuring transparency and building accountable relationships with citizens and various stakeholders; opening up to participation encouraging citizens to be included in democratic processes and, moving citizens from passive information access to actively participate.

Developing a knowledge management approach

Investigating the aspects related to knowledge management in the public sector is becoming a relevant research theme. Knowledge management refers to know what an organization knows and implies to transform data in information as a strategic source to be valued and used (Bellamy, 2003).

ICTs help to transform public organizations using ICTs to drive innovation and develop a knowledge management approach to problem-solving and defining public policies (Edge, 2005). Technology helps public organizations to use knowledge as the most important strategic source to achieve sustainability (Davenport & Prusak, 1998). The use of information technology helps knowledge management processes and citizen participation and governance (Al-Sudairy & Vasista, 2012). Public sector organizations seeking sustainability should learn how to use, manage and share knowledge to achieve social and environmental issues (Bratianu & Bolisani, 2015; Leon, 2018; Leon, 2013; Massaro, Dumay, & Garlatti, 2015).

Developing knowledge management systems and culture helps ICTs contribute to creating and using knowledge as a source to improve public services quality, accessibility, productivity and innovation (Fang, 2002). ICTs help to support knowledge management, development and implementation within public sector organizations (Suurla, Mustajarvi & Markkula, 2002). Thereby, in the public sector technology-based knowledge management tools are advancing while information management systems are well developed (Cong & Pandya, 2003; Wiig, 2002).

Promoting openness

Informing citizens helps to improve policies and enhance governmental legitimacy (Meijer & Thaens, 2003). Transparency an institutional relation and information exchange refers to the availability of information about an organization that allows the external actors to monitor the internal workings or performance of that organization (Meijer, 2013). Transparency is seen by policymakers as a panacea for enabling good governance. Democratic institutions as transparent organizations contribute to restoring the trust of citizens in public institutions (Curtin & Meijer, 2006; Grimmelikhuijsen, 2009).

Governments use ICTs to promote information access and transparency of government organizations making public organizations directly accountable to citizens (Meijer, 2003). Building a transparent, participatory and collaborative government is the issue of an open government paradigm that fosters citizen engagement and supports the interaction with the public (Mergel, 2012) as a vision that relies on promoting openness as an opportunity for change (McDermott, 2010) and synergy between the right to information and government data infrastructure (Yannoukakou & Araka, 2014).

Public organizations should develop a citizen-centered view proceeding along a *continuum* between transparency and accountability (Fox, 2007). Information technology makes public organizations as open, responsive institutions willing to serve the interest of citizens (La Porte, Demchak, & Jong, 2002). Introducing ICTs in government helps to support and facilitate cultural and technological change by creating a culture of transparency that facilitates government activity monitoring, policy discussion, citizen engagement and deliberative processes in policymaking (Bertot, Jaeger, & Grimes, 2012; Jaeger & Bertot, 2010) in order to restore public trust (Moon, 2002).

Revitalizing democracy and citizen participation

The role of technology is to sustain the creation of social capital in communities as a means for encouraging public participation (Komito, 2005) that relates mainly to policy and decision-making having a direct impact and relations to policy goal and democracy (Tambouris *et al.*, 2015).

Technology helps to support the direct, participatory and strong democracy (Barber, 1999) in terms of quality and equality of deliberation (Anttiroiko, 2003), and to enhance the quality of democratic governance by providing better information to citizens enabling them to exert influence on policymaking (Kakabadse, Kakabadse, & Kouzmin, 2003; Grönlund, 2001).

Technology helps to develop effectiveness and by promoting a flow of information citizenry-government and effective citizen participation in the political process (Watson & Bundy, 2001) and enabling citizens to participate in deliberation and decision making (Tsagarousianou, 1999).

ICTs help to improve the quality of information exchange government-citizens and strengthen participation by involving citizens in decision-making processes within deliberative and strong democracies in which citizens participate in the discussion about public affairs (Åstrom, 2001; Päivärinta & Sæbø, 2006).
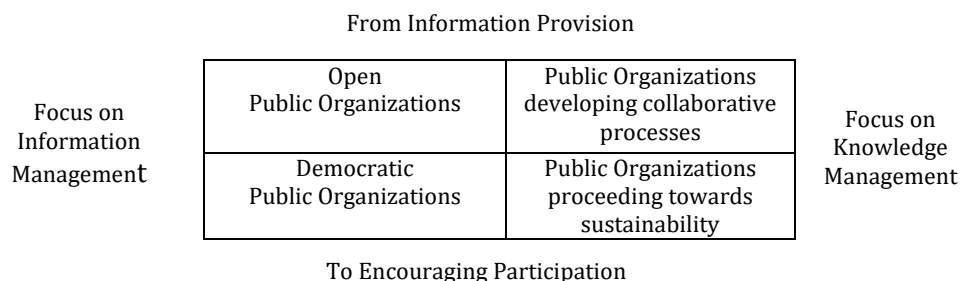
E-democracy as the use of ICTs to support the democratic decision-making processes relates to e-participation as knowledge, interactive and collaborative process that facilitates political participation by involving citizens, civil society, elected representatives, government and the whole community (Davies, 2015). ICTs help to change or reinforce parliamentary institutions, support participatory forms of citizenship and facilitate a two-way dialogue, fostering the interaction between citizen and public institutions and public involvement in the policy process (Pratchett, 2007).

Citizens can take part in the decision making by information, consultation and active participation (OECD, 2003) in various ways (Macintosh, 2004): e-enabling to support the access to information available; e-engaging for consulting a wide audience and sustaining debate on policy issues; e-empowering to support citizen active participation and co-production of policy to exert influence on the political agenda and policy formulation.

Discussion

Technology helps a public organization to promote strategic and operational change managing and using knowledge, developing transparency and accountability, promoting aware and active citizenship for policy contribution to sustain public values and create public value for society.

As shown in Figure 1, the study provides an analytical framework to identify a pathway to understand the trajectories of change within public organizations. The trajectories of change relate to some directions: from information provision to encouraging participation; from selecting information management to developing a knowledge management approach; promoting openness ranging from transparency to accountability. As institutions focusing on information management, public organizations behave as open institutions privileging openness of information and citizen access to information and behave as democratic institutions by encouraging active citizen participation in order to improve the quality of policy-making.

From Information Provision

Focus on Information Management	Open Public Organizations	Public Organizations developing collaborative processes	Focus on Knowledge Management
	Democratic Public Organizations	Public Organizations proceeding towards sustainability	

To Encouraging Participation

Figure 1. Towards changing public organizations: a framework of analysis

Democratic public organizations select an information orientation by increasing openness and transparency providing access to government information through websites, privileging one-way communication and limited consultative processes. Public organizations as information-oriented institutions are in an early stage in understanding the role and contribution of participation for

policymaking as an opportunity for building consensus and knowledge about public choices by involving and engaging citizens.

As institutions privileging a knowledge management approach, public organizations tend to promote information provision, citizen involvement, engagement and active participation in order to build cooperative and collaborative processes that engender new knowledge and identify a pathway that leads public institution to proceed towards sustainability as a source for change, as a vision for strategy and action in long-terms, that enables the co-production of policies that relies on making citizens as responsible partners and active participants in policy choices and services design.

Conclusions

Reinventing public administration for driving change relies on managing strategically ICTs as a source that supports public organizations and people, and helps to rediscover democratic values in order to enable transparent administrative processes, to foster involvement and participation of citizens to constructing the *res publica* as drivers for public value creation within communities.

ICTs help drive public organizations to engage aware and active citizenship for policy contributions. The main contribution of this study is to provide an interpretive framework in order to identify the trajectories of change leading public organizations to restore the relationship with citizens within communities.

Public institutions should use ICTs in order to revitalize democracy and enhance democratic values, removing the barriers to citizen access to information and knowledge as sources that enable value creation processes.

ICTs help to drive public organizations to proceed towards sustainability as a source for change relies on rediscovering the values of democracy by involving and engaging citizens in policy processes and decision-making and enabling access to information. Participation is emerging as a source and public value that enables communities to rediscover the meaning of people living together for wealth. Thereby, the design and implementation of e-participation initiatives seem to be still in its infancy.

This research has some limitations. The study is only a theoretical study based on narrative analysis. Any empirical research and case studies are presented. Future research perspectives imply to investigate how information technology helps to promote change through participation within local governments and autonomies and how technological innovation drives strategic and organizational choices of public administration.

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