2018

Open Innovation for Smart Government: A Literature Review

Ashraf Munib Ahmed Qutaishat
University of Minho, qash99@yahoo.com

Konstanze Alex
Dell Inc., konstanze.alex@dell.com

Follow this and additional works at: https://aisel.aisnet.org/capsi2018

Hybrid Innovation for Smart Government: A Literature Review

Ashraf Munib Ahmed Qutaishat, University of Minho, Portugal, qash99@yahoo.com

Konstanze Alex, Dell Inc., United States, konstanze.alex@dell.com

Abstract

This paper aims to produce a literature review and an initial attention-based hybrid innovation framework that can offer a better understanding of attention requirements for smart government. Although smart government, social technologies and open innovation are considered current research topics in the government context; the majority of publications are focusing on the implementation, implications, and technical aspects of these technologies. Currently, there are no studies that focus on the role of communication practices supported by social media monitoring that can enable mindful attentional engagement required to smart government, understood as government concerned with the well-being of citizens.

Keywords: Smart Government; Hybrid Innovation; Attention; Social Media Monitoring.

1   Introduction

Advancements in technology have its benefits. It brought people together, changed organisations, influenced decision-making and improved procedures. Recently, many governments have started to integrate innovative technologies in the public sector to provide citizens with better services and promote participation and collaboration in governments' decisions.

The continuous development the Internet, especially social technologies, is continuously introducing new issues. In this regard, Criado, Sandoval-Almazan, and Gil-Garcia (2013) have identified several issues to be further investigated. Some of these areas are:

- Social media innovations and institutional/organisational change;

- Measuring social media effects in government;

- Citizens' engagement, participation, and co-production; and

- Social media, open government, and big data - Smart government.

Criado et al. (2013) argue that social technologies provide an open, observable space for interactions between governments and citizens. However, traditional structures, the existence of many levels hierarchies, and complex bureaucratic procedures can create challenges for governments when using social media to interact with citizens. Therefore, an institutional change is required (Criado et al. 2013; Mergel 2012; Walser and Schaffroth 2010).

The real-time communication attribute of social media technologies can change how social media is used as a source of interactions. For instance, using social media to promote citizens' participation in decision-making and policy formulation as well as enable collaboration between governments and citizens rather than for regular interactions between governments and citizens (Criado et al. 2013).

Governments should not isolate social technologies from other technological developments; instead, they should integrate social media technologies with other e-government systems. Such integration can lead to the creation of smart government, which can be described as a government that anticipates citizens' needs, grant its citizens with the necessary tools to address their community's challenges, work with citizens to improve services, resource allocating, and focusing decision-makers attention to

advance the well-being of society (Ocasio et al. 2018; Criado et al. 2013; Gil-Garcia 2012; Ocasio 1997).

The literature review in this paper serves as a prelude to a doctoral thesis that will address the following research question:

"How can the communicative practices supported by social media monitoring promote the mindful attentional engagement required for smart government?"

There are three main aspects to this research question:

- Communicative practices supported by social media monitoring;

- Mindful attentional engagement; and

- Smart government.

The communicative practices supported by social media monitoring can draw the attention of governments to what needs to be considered and prioritised during strategy formulation and resource allocation to improve services and empower citizens (Ocasio et al. 2018).

Governments should attend to the needs and expectations of citizens by engaging with them in routinized and mindful communications. While routinized communications aim to open a dialogue with citizens; mindful communications seek the identification of emerging or unexpected issues and needs. Social technologies can provide support for these types of communication. Therefore, the communicative practices supported by social media monitoring can facilitate the achievement of the society's well-being and citizen empowerment by directing the engagement between governments and citizens towards particular issues, decisions, and actions.

Citizen empowerment is crucial to the realisation of smart government due to government's collaboration with citizens to improve services, policies, products, and applications through utilisation of linked open government data and linked services.

Our literature review is structured into several sections including this foregoing introduction. The second section focused on how can smart governments collaborate and empower their citizens to address and realise their communities' issues and goals by utilising the communicative practices supported by social media monitoring. This section provides an initial attention-based innovation framework for smart government. The third section is dedicated to discuss literature review. The final section is focused to summarise and give the contributions of this literature review.

2   Background

Governments consume and produce enormous amounts of data; these large volumes of data create confusion and can either hinder or promote the quality of attention and decision-making. Emerging ICTs (information and communication technologies) and e-government systems have focused on addressing this issue and improving government practices, performance, services and communications with citizens (Abu-Shanab 2013), which establish the settings for the emergence of smart government (Gil-Garcia 2012).

In the past decade, many governments attempted to improve the services and communications with citizens by exposing them to the private sector and benefiting from collaborative ICTs to meet the expectations of their citizens and have better operations cost controls. These attempts to some extent

improved government accountability and increased the public awareness; but they were mostly focused on cutting costs by automating processes and increasing e-government services (Shadbolt et al. 2012; Walser and Schaffroth 2010). Furthermore, government communications with citizens have transformed into open and citizen-centred channels through the use of social media technologies (Meijer et al. 2012b).

Social technologies have been integrated with various private sector systems and structures (Criado et al. 2013) to maximise organisational benefits, better achievements of objectives, and improve customer reach. Furthermore, the integration granted the private sector with free information about their products, services, applications, and competitors (Loukis et al. 2017; Fensel et al. 2012). As a consequence of the successful utilisation of social technologies in the private sector; many governments sought to adopt and integrate various ICTs with their systems, leading to new technological trends to emerge (i.e. linked open government and public social media monitoring).

3   Innovation in the public sector

Government innovations are driven by the needs and expectations of two main actors: governments, and citizens (Fuglsang 2010). Citizens are demanding their governments to fit their services more adequately, to be more innovative, transparent, responsive, and shift their political culture from information dissemination to information communication. Governments are attempting to meet those demands by utilising and integrating various ICTs with their systems; while they implement various constraining policies and legislations (Loukis et al. 2017; Kankanhalli et al. 2017). Moreover, governments cannot directly adopt open innovation approaches and methods from the private sector directly without adjusting them to the fundamental characteristics and dynamics of governments.

Government innovation can be realised in three different approaches:

- Open innovation as a top governmental initiative;

- Open innovation as a formula for problem-solution method; and

- Continuous incremental improvements on current government services, products, and applications.

In the first approach, open innovation will be prioritised as a smart government issue of interest (Ocasio et al. 2018; Loukis et al. 2017; Fuglsang 2010; Hartley 2005). Governments can employ passive social media monitoring - which is defined as monitoring issues of interest over the internet without interacting with other entities and influence the subject under the monitoring (Loukis et al. 2017) - to focus their attention on the expressed needs of their citizens, and then develop new services, products, and applications to meet those needs.

In the second approach, governments can use passive social media monitoring - which is defined as actively interacting with other entities over the internet regarding the issue being monitored. Then governments can utilise their open and linked data with the obtained information resulted from the passive monitoring to find solutions for the needs and issues that are predefined by experts in the governmental environment (Ocasio et al. 2018; Loukis et al. 2017; Fuglsang 2010; Hartley 2005).

Finally, governments can utilise hybrid innovation - which is similar to open innovation, but the difference is that the stakeholders are both the government and citizens - and active social media monitoring with their open and linked data to engage with citizens; then introduce continuous

incremental improvements on their services, products, and application. This method can empower citizens to address and realise their communities' goals by implementing a multi-way communication with their government (Ocasio et al. 2018; Loukis et al. 2017; Fuglsang 2010; Hartley 2005).

The social media communicative capabilities and practices can direct the mindful attentional engagement required for smart government, determine strategic agendas, and create a complete knowledge (Ocasio et al. 2018; Loukis et al. 2017; Criado et al. 2013; Geiger and Von Lucke 2012).

To accomplish this, governments should pay attention to and learn from the best practices in the private sector regarding the utilisation of social media monitoring and linked open data (Loukis et al. 2017; Schmachtenberg et al. 2014) to overcome the challenges when utilising social media monitoring and when governments open and link their data (Geiger and Von Lucke 2012; Bizer et al. 2009; Chesbrough 2006).

However, many scholars (Loukis et al. 2017; Kankanhalli et al. 2017; Mergel 2017, 2012; Criado et al. 2013; and Gil-Garcia 2012) among others have expressed concerns regarding the limited knowledge, security, lack of strategizing, and privacy of using social technologies by governments. Other scholars have emphasized on the impacts and limitations of analysing and collecting data through social technologies (Loukis et al. 2017; Mergel 2017; Olmedilla et al. 2016; Severo et al. 2016; Jain et al. 2010). Therefore, governments should focus when forming strategic agendas on exploiting the free information provided by their citizens on social media platforms to advance their communities, well-being of citizens, and empowering them to realise their communities' goals.

3.1 Smart government and open innovation

Many scholars attempted to describe what smart government is; however, there is still no comprehensive definition for smart government. Smart government is seen by many scholars as the new evolution of e-government. Some scholars see the smart government as a framework for governments to address the challenges in delivering services, increase citizen participation, and create a collaboration between governments and citizens to innovate, improve services and the well-being of citizens by utilising ICTs (Recupero et al. 2016; Gil-Garcia et al. 2014; Howard 2013). Other scholars see it as an opportunity to improve intra-governmental collaboration, information communication, and public strategic management to address society's challenges (Shamsi et al. 2018; Gil-Garcia et al. 2014; Gil-Garcia 2012). However, to implement smart government, proactive initiatives and strategic agendas must be made by governments, and the public should draw their attention to these initiatives.

Many cities around the world are taking advantage of advances in ICTs to implement smart government. They aim to benefit from emerging technologies to make intelligent decisions and infrastructure by collecting data from the whole society to improve services (Washburn et al. 2009; Giffinger et al. 2007).

For instance, in 2013, the United Arab Emirates announced its vision to implement smart government by granting citizens free access to government services at anytime from anywhere (Shamsi et al. 2018).

The South Korean government made a smart government initiative in (2011) aimed to grant citizens with free access to services through ICTs and increase citizen participation by improving information communication (Chung 2015).

In Spain, Santander city has been funded by the European Union to equip the city with various sensors for better infrastructure management by collecting data to improve public services, environment, and well-being of citizens (Gil-Garcia et al. 2014).

The term smart government is used to describe a government that is resilient, innovative, open to citizens, efficient in allocating resources and utilising ICTs, continuously attempting to anticipate its citizens' needs, and realise its community's goals by focusing its attention, resources, and technologies to resolve these needs and accomplish goals.

Innovation in the public sector has two stakeholders: The citizens, and the smart government (Scholl and Scholl 2014). While the continued reliance on closed innovation worked well for governments; new emerging government challenges and continuous technological developments made it difficult for governments to rely solely on this type of innovation (Loukis et al. 2017; Kankanhalli et al. 2017).

These challenges and developments created the need to adopt innovative approaches and practices that are open in nature. Although, many governments utilise open innovation practices; the notable lack of strategizing and prioritising smart government agendas alongside the regulations that governments must adhere to, have resulted in retaining smart government in its early stages (Ham et al. 2015; Bekkers et al. 2013; Christos et al. 2013; Mergel and Desouza 2013).

To implement smart government it is imperative for governments to be open to citizens. Government openness should enable citizens to collaborate with their governments by using the free resources and information generated to increase transparency, citizen confidence in their governments, advance democracy, and improve the well-being of citizens (Kankanhalli et al. 2017; Harrison and Sayogo 2014; Geiger and Von Lucke 2012).

For instance, Erna Ruijer, Stephan Grimmelikhuijsen, and Albert Meijer (2017) have studied the democratic processes and interactions in open government between governments and citizens by utilising Yrjö Engeström (2001) activity theory model.

The Obama administration in the United States initiated an open government portal to grant citizens free access to government data to contribute to policy-making and improve services, products, and applications (Lee et al. 2012).

In Asia, the Singaporean government utilised an open government portal to promote transparency, participation, and collaboration with their citizens (Yang and Kankanhalli 2013).

In Europe, the Netherlands government launched the "De Publieke Zaak" initiative to facilitate innovation by collaborating with citizens (Kankanhalli et al. 2017).

Finally, Greece made one of the significant initiatives in its history - "Διαύγεια" which translates to "Clarity" - to promote linked and open government, transparency, and collaboration (Stamati et al. 2015).

Citizens' insights can contribute to increase government's awareness and direct their attention to social issues, public issues, and needs. Directing government's attention to citizens' needs and issues can lead to open a dialogue between citizens and governments where governments listen to citizens and engage actively with them to resolve these issues. Therefore, many governments have begun implementing the first steps of smart government to:

- Grant citizens access to their data to facilitate innovation;

- Provide better services, products, tools, and applications; and

- Improve communication with their communities (Kankanhalli et al. 2017; Mergel and Desouza 2013).

However, despite governments' efforts to implement smart government, they are continued to be perceived by citizens as of low value due to the focus on processing raw data and automating systems (Kankanhalli et al. 2017). For instance, Janssen, Charalabidis, and Zuiderwijk, (2012) have studied the dimensions of open government; they have found several benefits, challenges, and myths associated with implementing it. Therefore, formulating strategic agendas by governments emphasising on utilising technological advancements - especially in social media monitoring - to collaborate with citizens can lead to their efforts to be perceived as of high value, obtain the benefits and overcome the challenges associated with smart government.

3.2   Smart government and hybrid innovation

Societies are continuously changing. Citizens constantly demand their governments to improve their services, products, application, listen to them, involve them in policy formulating and decision-making processes, and shift their culture from data provision to information communication (Geiger and Von Lucke 2012).

The fundamental idea of smart government is governments collaborate with citizens over the internet to improve government services, products, and application. Hybrid innovation and social technologies can enable citizens to collaborate with their governments adequately and grant governments with more transparency and better communication with citizens (Shadbolt et al. 2012; Bizer et al. 2009; Ayers and Völkel 2008).

The tremendous amount of linked and open government data can create knowledge and applications that add value to citizens due to the use, reuse, and interconnection of data. Geiger and Von Lucke (2012) have studied the concepts of open government and linked open government. In their study, they draw attention to how publishing a more government-friendly data can promote citizen participation and collaboration, increase government transparency and efficiency, and enable innovation (Loukis et al. 2017; Janssen et al. 2012).

Citizens collaboration with their governments can create new communities that utilise the collective knowledge "wisdom of the crowds" and the comprehensive interconnections between linked and open government data to improve the public sector, lower government's operational costs, and advance the well-being of society (Geiger and Von Lucke 2012).

3.3   Social media for hybrid innovation

For proper citizen participation, collaboration between governments and citizens, and adequate implementation of smart government; social technologies have to be prioritised and integrated with various government systems.

The use of social media by governments can transform the public sector due to the common workspaces provided and the communicative potentials (Ocasio et al. 2018; Geiger and Von Lucke 2012). There have been many studies on social technologies in the public context; however, the majority have focused on implementation, impacts, limitations, and utilisation of these technologies.

Oliveira and Welch (2013) have surveyed several government managers about what social media tools are being used to accomplish specific goals and what influence the usage of social media in their departments.

Mossberger et al. (2013) have studied the use of social media technologies in the large cities of the United States and found that social media usage has increased dramatically.

Campbell et al. (2014) have studied social media usage in county departments and non-profit organisations in New York and found that there is limited use of social media with the primary focus on marketing purposes and raising community awareness.

Loukis et al. (2017) have studied the possibility of government evaluation of information provided by citizens - over social media platforms by utilising social media monitoring - based on political, crowdsourcing, and diffusion perspectives to promote open innovation.

Although government adoption of social media technologies aims to improve communications with citizens; it also creates social, administrative, and political expectations. According to Loukis et al. (2017), social media technologies can improve communications between governments and citizens. In their study, they have found that governments communicate with their citizens over social media in two ways: A) Passive social media monitoring, and B) Active social media monitoring. While the passive monitoring of social media might not deliver the goals sought after by governments and citizens; the active monitoring of social media can be resource and time consuming.

Social media technologies have the potentials to create socially sustainable innovation due to the transformation of society to a society of knowledge (Fuglsang 2010). However, without adequate methods, strategic agendas, and knowledge to utilise social media; governments can face a lot of issues and pressure (Loukis et al. 2017; Bekkers et al. 2013; Criado et al. 2013).

Government is the largest collector and provider of data. Therefore, they should seek to implement adequate social media monitoring tools for gathering insights from citizens to improve their actions, services, applications, decisions, and policies (Stamati et al. 2015; Janssen et al. 2012; Janssen 2011). Such adequate tools can empower citizens to address their economic, cultural, and social challenges as well as creating a multi-way communication between citizens and governments.

3.4 Mindful attentional engagement for smart government

Dealing adequately with things requires the focus and concentration of one's mind (James 1890; Ocasio 1997). Attention in psychology is an intense occupation of one's mind in one of what appears to be several issues.

Ocasio, W. (1997) has introduced the attention-based view model of the organisation based on three principles:

- Decision-makers actions depend on issues and solutions they focus on;

- The issues and solutions depend on the situations they are located in; and

- The situations depend on the allocation of resources within particular organisation procedures, communications, and processes.

These three principles describe how the decision-makers focus on events within organisations and how these events influence the decisions that result in moving organisations in specific directions.

Hoffman and Ocasio (2001) have introduced an industrial attention model. The model focuses on public attention to non-normal events within an industry and how the public attention can shape the attention degree of the entire industry towards these events. The fundamental idea in the model is that non-normal events will not attract external entity's attention to industry procedures if they are resolved by organisations standard actions and procedures. However, when non-normal events are not resolved by organisations standard actions and procedures; they will start to attract external entity's attention to the industry procedures.

Rerup (2009) has developed an attentional triangulation based on the relationship between attention to weak indications and how organisations learn from crises to design preventative measures. There are three dimensions of the organisational attentional triangulation:

- Attention stability: continuous focus on issues;

- Attention vividness: the degree of complexity of presented relevant issues; and

- Attention coherence: the degree of attention similarity to different issues.

Ocasio et al. (2018) have studied how can strategic management, communications, and attention-based view change processes within organisations; then proposed more comprehensive functions of communication channels to shape and sharpening organisational attention.

Organisational attention is characterised as observing, analysing, and concentration of decision-makers' time and efforts to resolve issues (Ocasio 1997). Therefore, integrating smart government with social media monitoring can create a mindful attentional engagement for governments.

The mindful attention is based on the theoretical foundations of the organisational attention theory by Ocasio et al. (2018), Rerup (2009); Hoffman and Ocasio (2001), and Ocasio (1997). The mindful attentional engagement can focus government perspective on citizens' most important needs.

For instance, smart government can utilise its linked and open data with social media monitoring to open a dialogue with citizens to stimulate hybrid innovation and improve services, resource allocation, transparency, policies, decision-making, communications, and advance the well-being of the society.

3.5 Towards a hybrid attention-based innovation framework

Combining the theoretical foundations of organisational attention theory with social media monitoring to open a dialogue with citizens and stimulate hybrid innovation results in a hybrid attention-based innovation framework for smart government (see figure 1). There are several aspects of this framework:

- Citizen collaborate with governments to innovate through multi-way communication;

- Direct and indirect communication channels enable citizens to participate in decision-making and policy formulating;

- The direct and indirect communication channels contribute to the attainment of attention (perspective, selection, and engagement) and the establishment of mindfulness attentional engagement (stability, vividness, and coherence);

- The establishment of mindful attentional engagement between governments and citizens lead to the realisation of community's goals.

Fig. 1 shows how can governments collaborate with their citizens through active dialogues to gain insights and perspectives on issues and what needs to be resolved in the community.

Governments can enable citizen participation in decision-making and policy formulating by utilising direct and indirect communication channels. On the other hand; citizens can use the direct and indirect communication channels and utilise the linked and open government data to innovate in government services, application, and policies. The direct communication channels can take several forms such as but not limited to (petitions and direct written complaints to government departments, phone calls to government departments); and the indirect channels can take several forms, but not limited to (Facebook, Twitter, social media monitoring tools, government online websites).

These direct and indirect communication channels can contribute to the achievement a proper functioning democracy, attainment of attention, establishment of mindfulness attentional engagement, and transformation of the public sector to a sector that support and promote innovation (Kankanhalli et al. 2017; Harrison and Sayogo 2014; Meijer et al. 2012a; Janssen et al. 2012; Grimmelikhuijsen 2009; Rerup 2009). After the government gain a perspective of the issues and what needs to be resolved; they listen to their citizen in order to prioritise what issues need to be resolved first. Then government engagement with their citizens can determine the best method to resolve the selected issue.

The attainment of attention and the establishment of mindfulness attentional engagement can place governments at the core of social citizen-centred networks that empower citizens and lead to the realisation of the public mission and community's goals.
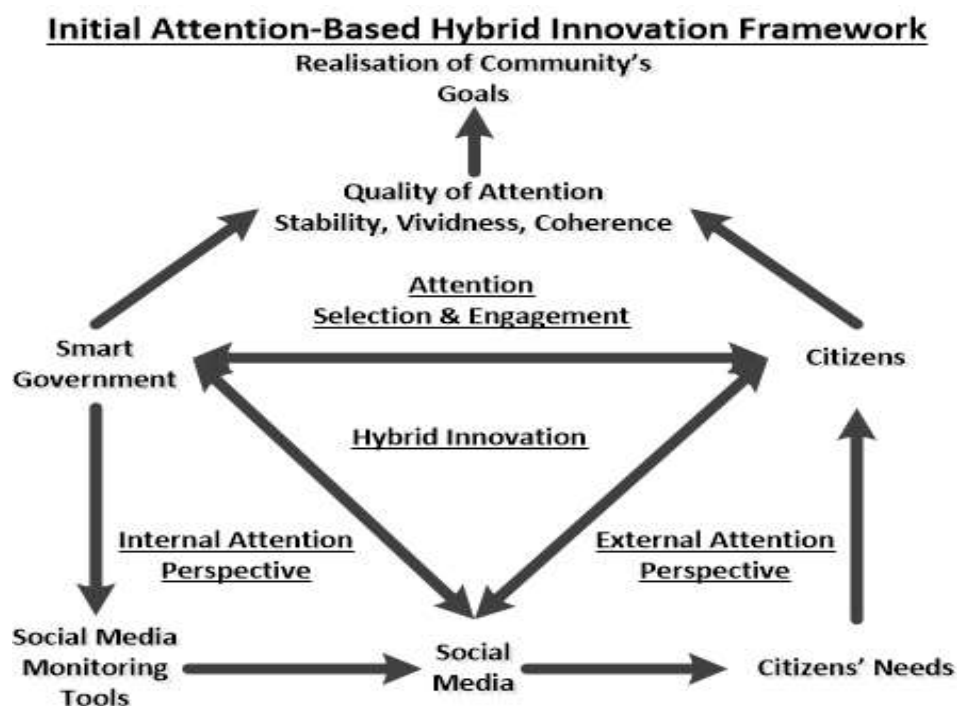

Figure 1 - Initial attention-based hybrid innovation framework.

4   Discussion

What is known about organisational attention in the information systems field? While information systems are directed to reduce organisations operations costs and broadening organisations capabilities; organisational attention is linked to shape organisational change and organisational learning.

Many scholars focused on the impacts, implementation, and technicalities of social technologies on organisational learning and knowledge creation. However, further research is needed regarding focusing of attention, mindful attentional engagement, and utilisation of social technologies and social media monitoring communicative practices and capabilities in the smart government context.

Studies have revealed that governments that interact, collaborate, and grant citizens with the ability to participate in decision-making tend to have better services, higher achievement rates, and higher citizen well-being and satisfaction than governments that do not. And although many scholars focused on the impacts, implementation, and technicalities of social technologies on organisational learning and knowledge creation; further research is needed regarding the short-term and long-term benefits focusing of attention, the success factors of the mindful attentional engagement, and utilisation of social technologies communicative practices and capabilities in the smart government context.

For example, culture is one of the success factors of the smart government implementation as well as government social media monitoring due to its ubiquity. Culture can be found in organisations (e.g. governments) and outside organisations (e.g. citizens and communities). Utilising social media monitoring by governments can have unpredictable impacts; it can influence citizens' behaviour and enrich decision-making and policy formulating if it is utilised adequately, or it can create a conflict between citizens and their government if it was improperly utilised (i.e. compromising the privacy and security of citizens). Therefore, culture can determine how social media monitoring tools are utilised by governments and can the degree of smart government implementation.

There are a few publications that address some aspects of smart government implementation and social technologies utilisation by governments, but there are no publications that address mindful attentional engagement required for a smart government that is mediated by the communicative practices that are supported by social media monitoring. However, there was an indirect reference to the government's attention mediated by social media monitoring (Loukis et al. 2017; Kankanhalli et al. 2017; Criado et al. 2013).

Different theories can be applied to address the mindful attentional engagement required for a smart government mediated by social media monitoring. For instance, Activity theory could be used to study the activities involving smart government and citizens. Who is engaging in a particular activity? What are their goals? What are the results of a particular activity? What are the norms governing a particular activity? (Jonassen and Rohrer-Murphy, 1999). Ruijer et al. (2017) research is an example that supports this notion. In their study, they have applied the activity theory model to study the interaction of democratic processes between governments and citizens mediated by open data platform.

Social exchange theory can be applied to study what motivates smart government decisions and actions. The social exchange theory fundamental guideline is that decisions and actions are made when the benefits or outcomes exceed the costs or consequences. However, it can be difficult for governments to assess the benefits and consequences without a stable, vivid, and coherent attention.

For instance, how can smart governments evaluate intangible culture and social media monitoring communication factors? In 2002, David and Catherine employed social exchange theory to describe why the results of two customer relationship management "CRM" systems differ. They have found out that one organisation is more constructive and helpful regarding the requests they receive and react faster to their customers than the other organisation.

In comparison, there are similarities between an organisation employ customer relationship management systems to respond and socially interact with customers, and a government that utilise social technologies to interact and communicate with citizens.

Organisational attention theory can be utilised to study how organisations attend to external or internal events, evaluate tangible and intangible factors, then take decisions and actions. It can also help in describing how social media monitoring communicative practices can influence the attention of the smart government to events and citizens' needs.

The extensive research conducted on social technologies reveals various perspectives and levels of analysis. In organisations, decision-makers attend events; their attention falls within the communications, procedures, activities, issues, and actions distributed within the organisation (Ocasio 1997).

The diverse attributes of social technologies provide new and interesting perspectives when implemented in the government context. These perspectives can be studied at different levels of analysis (e.g. industry, organisation, individual, process); for each level of analysis, there are different standards and issues that have to be addressed.

For instance, research regarding the mindful attentional engagement required for smart government mediated by the communicative practices and capabilities supported by social media monitoring with a focus on an organisation level of analysis is novel in the field of information systems and technologies. The research novelty comes from the provision of new insights into the attention of smart government, what motivate their decisions and actions, and how they citizen collaboration and participation is enabled.

5   Conclusion

The new era of smart government is changing societies, communities, cities, and policies. As information systems and technologies continue to evolve; citizens also continue to demand to have reliable citizen-centred government services, products, applications, and participate in decision-making. They also demand their governments to shift to information communication rather than on information dissemination.

Many governments integrate ICTs with their e-government systems. However, it is not sufficient for governments to just integrate ICTs with their systems; they should develop strategic agendas, policies, and procedures for their utilisation. These new policies, strategic agendas, and procedures can grant governments with what they need to overcome the challenges and issues associated with the implementation of smart government (e.g. privacy, document and data quality, document mapping, data fusion, security, and link maintenance) (Bizer et al. 2009). Furthermore, the utilisation of social technologies can establish an adequate collaboration between governments and their citizens to improve services and develop government smartness (Geiger and Von Lucke 2012).

There are various issues related to smart government, social media monitoring by governments, mindful attentional engagement, and hybrid innovation. The first issue identified in this literature review was how these concepts evolved and presented in the information systems field.

The second issue was the existence of various ways for smart governments to collaborate with citizens by utilising of social technologies to improve government services, decisions, and procedures. This method of collaboration between smart governments and their citizens leads to empowering citizens to address their economic, cultural, and social challenges as well as the realisation of public mission.

The third issue was the introduction of an initial hybrid attention-based innovation framework for smart governments that can increase citizens' well-being, improve communications between citizens and government, government services, products, and application.

Overall, the communicative practices supported by social media monitoring tools can focus smart government attention towards what matters. Then sharpening their attention by engaging in a multi-way dialogue with their citizens to innovate, improve, and resolve public issues and needs. However, smart governments have to be careful in utilising these tools to avoid inappropriate use (e.g. compromising the privacy and security of their citizens and that of their own) and overcome the challenges associated with such processes.

References

Abu-Shanab, E.A., (2013). The Relationship between Transparency and E-Government: An Empirical Support. EGOV/ePart Ongoing Research, 221, pp.84-91.

Ayers, D. and Völkel, M., (2008). Cool uris for the semantic web. Woking Draft. W3C.

Bekkers, V.J.J.M., Tummers, L.G. and Voorberg, W.H., (2013). From public innovation to social innovation in the public sector: A literature review of relevant drivers and barriers. Rotterdam: Erasmus University Rotterdam.

Bizer, C., Heath, T. and Berners-Lee, T., (2009). Linked data-the story so far. International journal on semantic web and information systems, 5(3), pp.1-22.

Campbell, D. A., Lambright, K. T., & Wells, C. J. (2014). Looking for friends, fans, and followers? Social media use in public and nonprofit human services. Public Administration Review, 74(5), 655-663.

Chesbrough, H.W., (2006). Open innovation: The new imperative for creating and profiting from technology. Harvard Business Press.

Christos, G., Xenia, Z., Antonis, R., Panagiotis, K., Jain, A., Gangadharan, G.R. and Yehia, T., (2013). Applying open innovation strategies to e-government for better public services. E-government success factors and measures: theories, concepts, and methodologies, pp.308-331.

Chung, C. S. (2015). The Introduction of e-Government in Korea: Development Journey, outcomes and future. Gestion et management public, 3(2), 107-122.

Criado, J.I., Sandoval-Almazan, R. and Gil-Garcia, J.R., (2013). Government innovation through social media.

David Gefen, C.M.R., (2002). Implementation team responsiveness and user evaluation of customer relationship management: A quasi-experimental design study of social exchange theory. Journal of management information systems, 19(1), pp.47-69.

Engeström, Y., (2001). Expansive learning at work: Toward an activity theoretical reconceptualization. Journal of education and work, 14(1), pp.133-156.

Fensel, D., Leiter, B. and Stavrakantonakis, I., (2012). Social media monitoring. Semantic Technology Institute, Innsbruck, p.16.

Fuglsang, L., (2010). Bricolage and invisible innovation in public service innovation. Journal of Innovation Economics & Management, (1), pp.67-87.

Geiger, C.P. and Von Lucke, J., (2012). Open government and (linked)(open)(government)(data). JeDEM-eJournal of eDemocracy and open Government, 4(2), pp.265-278.

Giffinger, R., Fertner, C., Kramar, H., Kalasek, R., Pichler-Milanović, N., & Meijers, E. (2007). Smart cities: Ranking of european medium-sized cities. vienna, austria: Centre of regional science (srf), vienna university of technology. www.smart-cities.eu/download/smart_cities_final_report.pdf.

Gil-Garcia, J. R., Helbig, N., & Ojo, A. (2014). Being smart: Emerging technologies and innovation in the public sector. Government Information Quarterly, 31, I1-I8.

Gil-Garcia, J.R., (2012). Towards a smart State? Inter-agency collaboration, information integration, and beyond. Information Polity, 17(3, 4), pp.269-280.

Grimmelikhuijsen, S., (2009). Do transparent government agencies strengthen trust?. Information Polity, 14(3), pp.173-186.

Harrison, T.M. and Sayogo, D.S., (2014). Transparency, participation, and accountability practices in open government: A comparative study. Government Information Quarterly, 31(4), pp.513-525.

Hartley, J., (2005). Innovation in governance and public services: Past and present. Public money and management, 25(1), pp.27-34.

Hoffman, A.J. and Ocasio, W., (2001). Not all events are attended equally: Toward a middle-range theory of industry attention to external events. Organization science, 12(4), pp.414-434.

Howard, R. (2013). Smart government key initiative overview. Online}: https://www.gartner.com/doc/2520516/smart-government-key-initiative-overview.

Jain, P., Hitzler, P., Yeh, P.Z., Verma, K. and Sheth, A.P., (2010), March. Linked Data Is Merely More Data. In AAAI Spring Symposium: linked data meets artificial intelligence (Vol. 11).

James, W., (1890). Attention. In W. James, The principles of psychology, Vol. 1, pp. 402-458. New York, NY, US: Henry Holt and Co.

Janssen, K., (2011). The influence of the PSI directive on open government data: An overview of recent developments. Government Information Quarterly, 28(4), pp.446-456.

Janssen, M., Charalabidis, Y. and Zuiderwijk, A., (2012). Benefits, adoption barriers and myths of open data and open government. Information systems management, 29(4), pp.258-268.

Jonassen, D.H. and Rohrer-Murphy, L., (1999). Activity theory as a framework for designing constructivist learning environments. Educational technology research and development, 47(1), pp.61-79.

Kankanhalli, A., Zuiderwijk, A. and Tayi, G.K., (2017). Open innovation in the public sector: A research agenda.

Lee, S.M., Hwang, T. and Choi, D., (2012). Open innovation in the public sector of leading countries. Management decision, 50(1), pp.147-162.

Loukis, E., Charalabidis, Y. and Androutsopoulou, A., (2017). Promoting open innovation in the public sector through social media monitoring. Government Information Quarterly, 34(1), pp.99-109.

Meijer, A., Koops, B., Pieterson, W., Overman, S.P. and Tije, S.T., (2012). Government 2.0: Key challenges to its realization.

Meijer, A.J., Curtin, D. and Hillebrandt, M., (2012). Open government: connecting vision and voice. International Review of Administrative Sciences, 78(1), pp.10-29.

Mention, How to monitor your brand with Mention, Mention Solutions. Available at: http://info.mention.com/monitor-your-brand-with-mention. Accessed: December 5, 2017.

Mergel, I. and Desouza, K.C., (2013). Implementing open innovation in the public sector: The case of Challenge. gov. Public administration review, 73(6), pp.882-890.

Mergel, I., (2012). The social media innovation challenge in the public sector. Information Polity, 17(3, 4), pp.281-292.

Mergel, I., (2017). Building holistic evidence for social media impact. Public Administration Review, 77(4), pp.489-495.

Mossberger, K., Wu, Y., & Crawford, J. (2013). Connecting citizens and local governments? Social media and interactivity in major US cities. Government Information Quarterly, 30(4), 351-358.

Ocasio, W., (1997). Towards an attention-based view of the firm. Strategic management journal, pp.187-206.

Ocasio, W., Laamanen, T., & Vaara, E. (2018). Communication and attention dynamics: An attention-based view of strategic change. Strategic Management Journal, 39(1), 155-167.

Oliveira, G. H. M., & Welch, E. W. (2013). Social media use in local government: Linkage of technology, task, and organizational context. Government Information Quarterly, 30(4), 397-405.

Olmedilla, M., Martínez-Torres, M.R. and Toral, S.L., (2016). Harvesting Big Data in social science: A methodological approach for collecting online user-generated content. Computer Standards & Interfaces, 46, pp.79-87.

Recupero, D.R., Castronovo, M., Consoli, S., Costanzo, T., Gangemi, A., Grasso, L., Lodi, G., Merendino, G., Mongiovì, M., Presutti, V. and Rapisarda, S.D., (2016). An innovative, open, interoperable citizen engagement cloud platform for smart government and users' interaction. Journal of the Knowledge Economy, 7(2), pp.388-412.

Rerup, C. (2009). Attentional triangulation: Learning from unexpected rare crises. Organization Science, 20(5), 876-893.

Ruijer, E., Grimmelikhuijsen, S. and Meijer, A., (2017). Open data for democracy: Developing a theoretical framework for open data use. Government Information Quarterly, 34(1), pp.45-52.

Schmachtenberg, M., Bizer, C. and Paulheim, H., (2014, October). Adoption of the linked data best practices in different topical domains. In International Semantic Web Conference (pp. 245-260). Springer, Cham.

Scholl, H. J., & Scholl, M. C. (2014). Smart governance: A roadmap for research and practice. iConference 2014 Proceedings.

Severo, M., Feredj, A. and Romele, A., (2016). Soft Data and Public Policy: Can Social Media Offer Alternatives to Official Statistics in Urban Policymaking?. Policy & Internet, 8(3), pp.354-372.

Shadbolt, N., O'Hara, K., Berners-Lee, T., Gibbins, N., Glaser, H. and Hall, W., (2012). Linked open government data: Lessons from data. gov. uk. IEEE Intelligent Systems, 27(3), pp.16-24.

Shamsi, R. S. H. A., Ameen, A. A., Isaac, O., Al-Shibami, A. H., & Khalifa, G. S. (2018). The Impact of Innovation and Smart Government on Happiness: Proposing Conceptual Framework.

Stamati, T., Papadopoulos, T. and Anagnostopoulos, D., (2015). Social media for openness and accountability in the public sector: Cases in the Greek context. Government Information Quarterly, 32(1), pp.12-29.

Surowiecki, J. (2004). The Wisdom of Crowds: Why the Many Are Smarter than the Few and How Collective Wisdom Shapes Business, Economies, Societies, and Nations. New York: Doubleday. 296.

Walser, K. and Schaffroth, M., (2010, October). BPM and BPMN as Integrating Concepts in eGovernment-The Swiss eGovernment BPM Ecosystem. In International Conference on Subject-Oriented Business Process Management (pp. 106-120). Springer, Berlin, Heidelberg.

Washburn, D., Sindhu, U., Balaouras, S., Dines, R. A., Hayes, N., & Nelson, L. E. (2009). Helping CIOs understand "smart city" initiatives. Growth, 17(2), 1-17.

Yang, Z. and Kankanhalli, A., (2013, June). Innovation in government services: The case of open data. In International Working Conference on Transfer and Diffusion of IT (pp. 644-651). Springer, Berlin, Heidelberg.