Open Innovation in the Public Sector:

Review and Integration of the Management and Public Administration Literatures

Research in Progress

Diane Poulin

Management Department, Administrative Sciences Faculty and

Interuniversity Research Center on Enterprise Networks, Logistics and Transportation (CIRRELT) Pavillon Palasis Prince, bureau 1525

2325 rue de la Terrasse Université Laval, Québec, PQ, Canada
Email: diane.poulin@fsa.ulaval.ca

Christopher L. Tucci

College of Management
École Polytechnique Fédérale de Lausanne (EPFL CDM MTEI CSI), Switzerland
Email: christopher.tucci@epfl.ch

Gianluigi Viscusi

College of Management
École Polytechnique Fédérale de Lausanne (EPFL CDM MTEI CSI), Switzerland
Email: gianluigi.viscusi@epfl.ch

ABSTRACT

This paper develops linkages and bilateral influences between the "open innovation" paradigm and research in Public Administration. To this end, the article aims to investigate the different areas of interest of the Public Administration literature to understand how scholars in the field have interpreted open innovation, further identifying the key characteristics of open innovation adopted in the public sector, with a specific focus on e-government, digital governance, and their impact on public management. We perform a literature review from 1995 to 2016, connecting and integrating the Management and Public Administration literatures on open innovation, currently mostly developed in silos, considering topics such as inclusive management, organizational control mechanisms, information use and production, and the dynamics of value creation and production for open innovation in the public sector. We anticipate that the results will help draw new avenues of research for academic researchers as well as tracks of useful actions for practitioners in the public sector.

*Keywords***:** Open innovation; Strategy, Public Management; e-Government; Digital Governance

Open Innovation in the Public Sector: Review and Integration of Management and Public

Administration Literature

This article investigates the linkages and influences between the "open innovation" (OI)

paradigm and Public Administration (PA) research (Hood, 1990; Lane, 2000; Prentice, 1984;

White & Adams, 1994), with a specific focus on e-government, digital governance, and their

impact on public management (Dunleavy, Margetts, Simon, & Tinkler, 2006). We argue that the

topic is relevant for understanding the important but underinvestigated nature of innovations

transforming government organizations (Feller, Finnegan, & Nilsson, 2011), particularly for e-

government, digital governance and the recent attention of public managers to open government

(Mergel & Desouza, 2013). These innovations may be a way of enforcing co-production and

social innovation with regard to policy making and the social value of open government ICT-

enabled initiatives (Misuraca & Viscusi, 2015; Viscusi, Castelli, & Batini, 2014). In what

follows, we discuss the background and motivations for the proposal, the research method

adopted, and insights on the preliminary results.

Background and motivations

Henry Chesbrough coined the term "open innovation" in 2003 when he published the book *Open*

Innovation: The new imperative for creating and profiting from technology (Chesbrough, 2003).

As pointed out by Chesbrough & Bogers (2014), since then, an entire research field has emerged

in management, which includes complementary perspectives relying on the work of Eric von

Hippel (2005; 1988), the latter focusing mainly on "user innovation" but also covering to some

degree "open source innovation" (von Hippel & Von Krogh, 2003), "open distributed

innovation" (von Hippel, 2005) and "open collaborative innovation" (Baldwin & von Hippel,

2011). These perspectives emphasize low-cost or free production of public, non-rivalrous, non-

excludable goods, and thus may actually be considered a component of the definition proposed

by Chesbrough & Bogers (2014) to unify the field, which states: "*Open innovation is a*

distributed innovation process based on purposively managed knowledge flows across

organizational boundaries, using pecuniary and non-pecuniary mechanisms in line with each

organization's business model" (p. 27). In particular, a difference between von Hippel (1988)

perspective and open innovation as introduced by Chesbrough is that the latter goes beyond the

externalization of research & development (Chesbrough, Vanhaverbeke, & West, 2006, p. 82).

Also, the following points of differentiation are worth noting for open innovation as defined by

Chesbrough with regard to other innovation theories: i) equal importance of external and internal

knowledge; ii) the key role of business models in converting R&D into business value; iii) the

relevance of Intellectual Property Management (IP); iv) the presence of innovation

intermediaries; v) the purposive outbound flows of knowledge and technology (Chesbrough et

al., 2006, p. 11). Also, considering open innovation in Public Administration research, the

adoption of business models is specifically controversial when uncritically translated to this

domain, due the firm based origin of the concept of business model (Massa, Tucci, & Afuah,

2017; Zott, Amit, & Massa, 2011) and the profit orientation of value proposition, not

automatically suitable to be applied to public organizations, first considering the difference

between public and private sector (Lane, 2000; Prentice, 1984), and actually not all necessarily

following, e.g., a new public management perspective (Dunleavy et al., 2006).

Taking the above discussion into account, it is worth noting that public sector and societal issues

have only been relatively recently introduced as potential research areas of interest for studying

open innovation (Chesbrough & Bogers, 2014), while in the last years, the research on open data

and open government have received growing attention and interest by practitioners and scholars

interested in e-government (Lee & Kwak, 2012; Misuraca & Viscusi, 2014; Orszag, 2009; Zuiderwijk & Janssen, 2014) and public sector innovation through information and communication technologies (Cordella & Bonina, 2012).

As pointed out by Lane (2000, pp. vii–viii) the public sector is a set of institutions, which coordinate the interests of different groups that solicit in various ways for public activities; thus, the concept of public sector includes both the activities carried out by public institutions as well as how decisions are made and implemented by them (Lane, 2000, p. vii). These issues are actually the subject studied in Public Administration research as an applied social science (Lane, 2000; Prentice, 1984). Notwithstanding the growing interest in the role of information and communication technology (ICT) in government (Danziger & Andersen, 2002), the attention to the concept of e-government at the end of the 1990s (M J Moon, 2002), and subsequent development in practice as well as a research field on its own (Grönlund & Horan, n.d.; Yildiz, 2007), the position of e-government in the Public Administration literature as well as their relationship are still to fairly arm's length, as argued by Bannister & Grönlund (2017). Furthermore, ICT and e-government articles are often focused on different values with regard to the three approaches to Public Administration (*managerial*, *political*, and *legal*) identified by Moon et al. (2014). Also, people having a background in information systems, computer science or engineering entered in the field of e-government often with limited knowledge of Public Administration research and practice, thus often moving the focus on the impact on technology on services rather on issues such as power structures, reforms, etc. (Bannister & Grönlund, 2017). Accordingly, although research on open government / open data emerged during the development and (ongoing) consolidation of open innovation research in management, the link between the fields of Public Administration and Management research as well as the degree of

influence of the latter on the former have been not well developed, to our knowledge, with the exception of preliminary work by Assar, Boughzala, & Isckia (2011) and Feller et al. (2011), the former explicitly questioning: "*How Web 2.0 and OI can be used to change the current model of e-government towards a more social, open and participatory model?*" (Assar et al., 2011, p. 2). Hence, we argue that an understanding of the kind of open innovation perspective adopted, if any, in initiatives related to, for example, open government/open data is also relevant for clarifying the role attributed to citizen participation and engagement. For example, citizen engagement's role in policy making and the phenomenon of policy informatics is emerging as a topic of great interest (Desai & Kim, 2015; Ferro, Loukis, Charalabidis, & Osella, 2013; Johnston, 2015; Koussouris, Lampathaki, Kokkinakos, Askounis, & Misuraca, 2015). Policy informatics faces the same questions posed, for example, for crowdsourcing in the private sector: When may it be better for solving problems than traditional alternatives such as internal solutions or designated contracting (Afuah & Tucci, 2012)? Indeed, depending on the perspective adopted with regard to open innovation, citizens can be considered (1) active in purposively managed knowledge flows across public organizational boundaries (with bidirectional and co-production effects, for example, on decision-making and service design or delivery), or (2) merely support for deliberation and policy making (with consequently little pervasiveness and influence with regard to knowledge flows across public organizational boundaries).

To this end, we have carried out a preliminary analysis of the e-government literature to understand how open innovation has been interpreted by e-government scholars to identify the key characteristics of open innovation adopted in the public sector, especially with regard to the current focus on open government (Viscusi, G., Poulin, D., & Tucci, C., 2015). The two phenomena have both similar and divergent facets (Traunmüller, 2014) as well as different *digital*

governance attitudes (G. Misuraca & Viscusi, 2014), where e-Government "attitudes" have a

limited citizen/ service perspective with regard to open government 'attitudes', due to the former

interest in administrative activities performance rather than opening them to include citizens in

service and government actions, policies, and politics. However different, both e-government

and open government are studied primarily and specifically within the e-government research

field, while in areas such as political science, policy studies or information systems and public

administration research are topics among others, but not the core ones. The insights from this

preliminary analysis of the literature has shown that the term "open innovation" has been

adopted in a loose way with regard to the main perspectives from the field of management

science, i.e., a lack of awareness of the origins of the terminology or the main characteristics of

it. In particular, according to the results discussed in Viscusi, G., Poulin, D., & Tucci, C. (2015),

"Open innovation" appears to be the term most used among the papers for the following journals.

As for the *Government Information Quarterly (GIQ)* and *Electronic Journal of e-Government*,

the term results from 1989 and 2012 respectively, whereas for *Information Polity* it appears first

in 2008. Chesbrough is mentioned only once in *GIQ* in 2012. Whereas von Hippel appears twice

in *GIQ* (1989 and 2012) and only once in a paper published in 2007 in the *Electronic Journal of

e-Government* (three times total). Chesbrough appeared together with Open innovation in a 2014

paper published in *GIQ* and in a paper published in 2012 by the *Electronic Journal of e-

Government* (two times total). As for von Hippel, the name appears together with Open

innovation in a paper published in *Information Polity* in 2012 and in a paper appearing in 2014 in

the *Electronic Journal of e-Government* (two times total). Finally the three terms appeared

together in a paper published in 2012 in the *Electronic Journal of e-Government*. Thus in 60% of

the occurrences of the terms, open innovation has been used without a specific reference to the

two main perspectives that are discussed in management. Finally, it is worth noting that "von Hippel" appears as main and/or only source for open innovation by contributions focusing on collaborative approaches to public sector innovation (e.g., Szkuta, Pizzicannella, & Osimo, 2014) and participatory politics (e.g. , Loader & Mercea, 2011).

Method

Taking the above issues into account, and to encourage a better understanding of the linkages between concepts and perspectives from the management literature as well as how they play out in public organizations (Feldman, 2005, p. 4), it is necessary to go into greater depth and further consider the different areas of Public Administration research. We therefore conduct a conventional or traditional review of literature on the subject (Boell & Cecez-Kecmanovic, 2015; Brocke et al., 2015), extending the work presented in Viscusi, G., Poulin, D., & Tucci, C. (2015). We opted for a traditional review, aiming at providing "an assessment of a state of knowledge in a problem domain and identification of weaknesses and needs for further research" (Boell & Cecez-Kecmanovic, 2015, p. 163), also considering the difference between our review and systematic reviews as for purpose and aims, selection and relevance criteria, role of the researcher, and content (Boell & Cecez-Kecmanovic, 2015, p. 164). Yet, as criteria for good literature review practice, we will consider especially *comprehensiveness*, *ongoing engagement* as part of the hermeneutic stance we adopt (Boell & Cecez-Kecmanovic, 2014), *criticality*, and *innovativeness* (Boell & Cecez-Kecmanovic, 2015, p. 168). Accordingly, we will cover a wide range of publications and information sources and bridge the gap between academic researchers and practitioners. In addition, the literature review also has the advantage of being explicit, complete and reproducible. Furthermore, to our knowledge, no comprehensive review has been conducted to date on this subject. Finally, the review will contribute to the effort to provide a

better communication between, if not integration of, the two fields, thus continuing some work begun mainly in the late 1980s and 1990s (Golembiewski, 1987; Nutt & Backoff, 1993; Preston, 1986; Rainey, 1989) and worth developing today with the business relevance of open initiatives / data in the Public Sector (Cresswell, Burke, & Pardo, 2006) and the debate on public value (Alford & O'Flynn, 2009). To conduct this review, we will follow a multistep process as recommended by Tranfield et al. (2003) as well as Schryen (2015) and adopted in other similar works management research (for example, Zott, Amit, & Massa, 2011). Besides the motivations for the review, the steps will include i) *search* and *acquisition*, ii) *analysis*, *interpretation*, and *synthesis*, iii) *guidance* and *conclusion*. From 1995 to 2016, the review will include articles published in peer-reviewed academic journals in which the notion of open innovation, e-government, public management (and others key words like digital government, and so on)[1], as well as professional or practitioner journals, books, and public organizational reports. As for the concepts considered in the literature review (Webster & Watson, 2002), specific attention will be given to the analysis of the linkages of open innovation with other perspectives investigated for connecting research in Management and Public Administration, considering, in particular:

- The role of *inclusive management* with regard to participation and inclusion as independent dimensions of public engagement (Feldman, 2005; Quick & Feldman, 2011).

- The challenges of open innovation for *organizational control mechanisms* with regard to the question of how to balance the need for government regulation and the decentralization implied by the principle of openness (Ouchi, 1979, 1984).

---

[1] The search will be carried out first on repositories such as Elsevier's Scopus, ISI Web of Science, Business Source Complete (Ebsco), and the e-Gov Reference Library (EGRL).

- The patterns of *information use and production*, considering the *paradox in producing information*: whereas analysts systematically produce information mostly not directly used in decision making, they continue to produce reports because of the symbolic value of the activity (Feldman, 1989).

- The dynamics of *value creation and production* for open innovation in the public sector considering the debate raised in the Management field, for example, crowdsourcing (Afuah & Tucci, 2013) in contrast with the alternative stance in the public sector concerned with public value and social value (Benington & Moore, 2011; Kroeger & Weber, 2014).

Conclusion

Although in this paper we discuss the early stages of the research (motivations, search, acquisition, and preliminary analysis) we anticipate that the results of the review will help to draw new avenues of research for academic researchers as well as useful actions for practitioners in the public sector:

- The translation of open innovation in Public Administration will be clarified for scholars and public managers.

- The connection and integration of Management and Public Administration literatures on open innovation are currently developed in silos, according to the above-mentioned themes and topics.

- The review aims to provide a clear theoretical framework to support public managers and policy makers for informed decision-making on organizational actions and public initiatives for carrying out open innovation in the public sector.

REFERENCES

Afuah, A., & Tucci, C. (2012). Crowdsourcing as a solution to distant search. *Academy of Management Review*, *37*(3), 355–375. http://doi.org/10.5465/amr.2010.0146

Afuah, A., & Tucci, C. (2013). Value Capture and Crowdsourcing. *Academy of Management Review*, (July), 457–460.

Alford, J., & O'Flynn, J. (2009). Making Sense of Public Value: Concepts, Critiques and Emergent Meanings. *International Journal of Public Administration*, *32*, 171–191.

Assar, S., Boughzala, I., & Isckia, T. (2011). eGovernment Trends in the Web 2.0 Era and the Open Innovation Perspective: An Exploratory Field Study. In M. Janssen, H. J. Scholl, M. A. Wimmer, & Y. Tan (Eds.), *Electronic Government* (Vol. 6846, pp. 210–222). Berlin, Heidelberg: Springer Berlin Heidelberg. Retrieved from http://www.springerlink.com.offcampus.lib.washington.edu/content/m1467878hg1520m4/

Baldwin, C., & von Hippel, E. (2011). Modeling a Paradigm Shift: From Producer Innovation to User and Open Collaborative Innovation. *Organization Science*, *22*(6), 1399–1417. http://doi.org/10.1287/orsc.1100.0618

Bannister, F., & Grönlund, Å. (2017). Information Technology and Government Research: A Brief History. In *Proceedings of the 50th Hawaii International Conference on System Sciences* (pp. 2943–2952). Retrieved from http://hdl.handle.net/10125/41512

Benington, J., & Moore, M. H. (2011). *Public Value - Theory and Practice*. Houndmills, Basingstoke, Hampshire, UK: Palgrave Macmillan.

Boell, S. K., & Cecez-Kecmanovic, D. (2014). A hermeneutic approach for conducting literature reviews and literature searches. *Communications of the Association for Information Systems*, *34*(1), 257–286.

Boell, S. K., & Cecez-Kecmanovic, D. (2015). On being "systematic" in literature reviews in IS. *Journal of Information Technology*, *30*(2), 161–173. http://doi.org/10.1057/jit.2014.26

Brocke, J. vom, Simons, A., Riemer, K., Niehaves, B., Plattfaut, R., & Cleven, A. (2015). Standing on the Shoulders of Giants : Challenges and Recommendations of Literature Search in Information Systems Research. *Communications of the Association for Information Systems*, *37*(1), 205–224.

Chesbrough, H. (2003). *Open Innovation: The new imperative for creating and profiting from technology*. Harvard Business Review Press.

Chesbrough, H., & Bogers, M. (2014). Explicating Open Innovation: Clarifying an Emerging Paradigm for Understanding Innovation. In H. Chesbrough, W. Vanhaverbeke, & J. West (Eds.), *New Frontiers in Open Innovation* (pp. 3–28). Oxford: Oxford University Press.

Chesbrough, H., Vanhaverbeke, W., & West, J. (2006). *Open Innovation: Researching a New Paradigm*. *OUP Oxford*. Oxford ; New York: Oxford Univ. Press. http://doi.org/10.1111/j.1467-8691.2008.00502.x

Cordella, A., & Bonina, C. M. (2012). A public value perspective for ICT enabled public sector reforms: a theoretical reflection. *Government Information Quarterly*, *29*(4), 512–520. http://doi.org/10.1016/j.giq.2012.03.004

Cresswell, A. M., Burke, G. B., & Pardo, T. A. (2006). *Advancing Return on Investment Analysis for*

Government IT: A Public Value Framework.

Danziger, J. N., & Andersen, K. V. (2002). The Impacts of Information Technology on Public Administration: An Analysis of Empirical Research from the "Golden Age" of Transformation. *International Journal of Public Administration*.

Desai, A., & Kim, Y. (2015). Symposium on Policy Informatics. *Journal of Policy Analysis and Management*, *34*(2), 354–357. http://doi.org/10.1002/pam.21823

Dunleavy, P., Margetts, H., Simon, B., & Tinkler, J. (2006). *Digital Era Governance – IT Corporations, The State, and E-Government*. London: Oxford University Press.

Feldman, M. S. (1989). *Order without design: Information production and policymaking*. Stanford University Press.

Feldman, M. S. (2005). Management and Public Management. *The Academy of Management Journal*, *48*(6), 958–960. http://doi.org/10.2307/20159716

Feller, J., Finnegan, P., & Nilsson, O. (2011). Open innovation and public administration: transformational typologies and business model impacts. *European Journal of Information Systems*, *20*(3), 358–374. http://doi.org/Doi 10.1057/Ejis.2010.65

Ferro, E., Loukis, E. N., Charalabidis, Y., & Osella, M. (2013). Policy making 2.0: From theory to practice. *Government Information Quarterly*, *30*(4), 359–368. http://doi.org/http://dx.doi.org/10.1016/j.giq.2013.05.018

Golembiewski, R. T. (1987). Public-Sector Management Today: Advanced Differentiation and Early Institutionalization. *Journal of Management* , *13*(2), 323–338. http://doi.org/10.1177/014920638701300208

Grönlund, Å., & Horan, T. A. (n.d.). Introducing e-Gov: History, Definitions, and Issues. *Communications of the Association for Information Systems*, *15*.

Hippel, E. von, & Krogh, G. von. (2003). Open Source Software and the "Private-Collective" Innovation Model: Issues for Organization Science. *Organization Science*, *14*(2), 209–223. http://doi.org/10.1287/orsc.14.2.209.14992

Hood, C. (1990). Public Administration: lost an empire, not yet found a role? *New Developments in Political Science*, 107–125.

Johnston, E. W. (ed. . (2015). *Governance in the Information Era - Theory and Practice of Policy Informatics*. Routledge.

Koussouris, S., Lampathaki, F., Kokkinakos, P., Askounis, D., & Misuraca, G. (2015). Accelerating Policy Making 2.0: Innovation directions and research perspectives as distilled from four standout cases. *Government Information Quarterly*, *32*(2), 142–153. http://doi.org/http://dx.doi.org/10.1016/j.giq.2015.03.001

Kroeger, A., & Weber, C. (2014). Developing a Conceptual Framework for Comparing Social Value Creation. *Academy of Management Review*, *39*(4), 513–540.

Lane, J.-E. (2000). *The public sector: concepts, models and approaches*. Sage.

Lee, G., & Kwak, Y. H. (2012). An Open Government Maturity Model for social media-based public engagement. *Government Information Quarterly*, *29*(4), 492–503. http://doi.org/10.1016/j.giq.2012.06.001

Loader, B. D., & Mercea, D. (2011). Networking democracy? Social media innovations and participatory politics . *Information, Communication & Society*, *14*(6), 757–769. http://doi.org/10.1080/1369118x.2011.592648

Massa, L., Tucci, C. L., & Afuah, A. (2017). A Critical Assessment of Business Model Research. *Academy of Management Annals*, *11*(1), 73–104. http://doi.org/https://doi.org/10.5465/annals.2014.0072

Mergel, I., & Desouza, K. C. (2013). Implementing Open Innovation in the Public Sector: The Case of Challenge.gov. *Public Administration Review*, *73*(6), 882–890. Retrieved from http://10.0.4.87/puar.12141

Misuraca, G., & Viscusi, G. (2014). Is Open Data Enough? E-Governance Challenges for Open Government. *International Journal of Electronic Government Research*, *10*(1), 19–36.

Misuraca, G., & Viscusi, G. (2015). Shaping public sector innovation theory: an interpretative framework for ICT-enabled governance innovation. *Electronic Commerce Research*, 1–20. http://doi.org/10.1007/s10660-015-9184-5

Moon, M. J. (2002). The evolution of e-government among municipalities: Rhetoric or reality? *Public Administration Review*, *62*(4), 424–433.

Moon, M. J., Lee, J., & Roh, C.-Y. (2014). The Evolution of Internal IT Applications and e-Government Studies in Public Administration Research Themes and Methods. *Administration & Society*, *46*, 3–36.

Nutt, P. C., & Backoff, R. W. (1993). Transforming Public Organizations with Strategic Management and Strategic Leadership. *Journal of Management*, *19*(2), 299–347. http://doi.org/10.1177/014920639301900206

Orszag, P. (2009). Open government directive. Memorandum for the Heads of Executive Departments and Agencies. Retrieved from http://www.whitehouse.gov/open/documents/open-government-directive

Ouchi, W. G. (1979). A Conceptual Framework for the Design of Organizational Control Mechanisms. *Management Science*, *25*(9), 833–848. Retrieved from http://www.jstor.org/stable/2630236

Ouchi, W. G. (1984). The m-form society: Lessons from business management. *Human Resource Management*, *23*(2), 191–213. http://doi.org/10.1002/hrm.3930230208

Prentice, A. (1984). Research in Public Administration. Graduate School of Library and Information Science. University of Illinois at Urbana-Champaign. Retrieved from http://hdl.handle.net/2142/7340

Preston, L. E. (1986). Business and Public Policy. *Journal of Management*, *12*(2), 261–275. http://doi.org/10.1177/014920638601200208

Quick, K. S., & Feldman, M. S. (2011). Distinguishing Participation and Inclusion. *Journal of Planning Education and Research*, *31*(3), 272–290. http://doi.org/10.1177/0739456X11410979

Rainey, H. G. (1989). Public Management: Recent Research on the Political Context and Managerial Roles, Structures, and Behaviors. *Journal of Management*, *15*(2), 229–250. http://doi.org/10.1177/014920638901500206

Schryen, G. (2015). Writing Qualitative IS Literature Reviews—Guidelines for Synthesis, Interpretation, and Guidance of Research. *Communications of the Association for Information Systems*, *34*(2015), 286–325.

Szkuta, K., Pizzicannella, R., & Osimo, D. (2014). Collaborative approaches to public sector innovation: A scoping study. *Telecommunications Policy*, *38*, 558–567. http://doi.org/10.1016/j.telpol.2014.04.002

Tranfield, D. C., Denyer, D. C., & Smart, P. (2003). Towards a methodology for Evidence-Based

Management. *British Academy of Management*, *14*(3), 207–222.

Traunmüller, R. (2014). Open Government and Electronic Government: Some Considerations. In A. Kő & E. Francesconi (Eds.), *Proceedings of the 3rd International Conference on Electronic Government and the Information Systems Perspective (EGOVIS 2014)* (Vol. 8650, pp. 201–207). Munich, Germany. Retrieved from http://link.springer.com/chapter/10.1007/978-3-319-10178-1_16

Viscusi, G., Castelli, M., & Batini, C. (2014). Assessing social value in open data initiatives: a framework. *Future Internet*, *6*(3), 498–517. http://doi.org/10.3390/fi6030498

von Hippel, E. (1988). *The Sources of Innovation*. New York, NY: Oxford University Press.

von Hippel, E. (2005). *Democratizing Innovation*. Cambridge, MA: MIT Press.

Webster, J., & Watson, R. T. (2002). Analyzing the past to prepare for the future: Writing a literature review. *MISQ Quarterly*, *26*(2), XIII–XXIII.

White, J. D., & Adams, G. B. (1994). *Research in Public Administration: Reflections on Theory and Practice*. SAGE Publications, Inc.

Yildiz, M. (2007). E-government research: Reviewing the literature, limitations, and ways forward. *Government Information Quarterly*, *24*, 646–665 ST–E–government research: Reviewing the. Retrieved from http://www.sciencedirect.com/science/article/B6W4G-4NB2SHG-1/2/44e1295cb1a705ac8597ab4825dbb1b5

Zott, C., Amit, R., & Massa, L. (2011). The business model: recent developments and future research. *Journal of Management*, *37*(4), 1019–1042. http://doi.org/10.1177/0149206311406265

Zuiderwijk, A., & Janssen, M. (2014). Open data policies, their implementation and impact: A framework for comparison. *Government Information Quarterly*, *31*(1), 17–29. http://doi.org/10.1016/j.giq.2013.04.003