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Providing Government e-Services: An Extension of Applicability Check for Practitioners

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Abstract

Communities are grappling with unanswered questions regarding how to best manage and deliver e-services both within City Hall and with their citizen-clients. Moreover, researchers have raised concerns about the relevance of information systems research for both the academic realm and for real-world practitioners. Accordingly, the goals of this study are twofold. First, we seek to understand the internal and external concerns that result from municipal governments offering online services. We do so by involving practitioners in the research process in order to generate research that will prove useful to them while helping researchers fill gaps between phenomena as they exist in practice and in the current state of academic knowledge. Second, we propose an extension to Rosemann and Vessey's (2008) applicability check approach by offering an example of research focused on problems faced by practitioners who provide e-government services.

Keywords: Practical Relevance, Rigor, Academic Research, Research Process, Applicability Check, Government e-Services

Providing Government e-Services: An Extension of Applicability Check for Practitioners

This paper responds to concerns regarding the relevance and rigor of information systems (IS) research for both academics and real-world practitioners. More specifically, we argue that a strategy to obtain relevance is to involve practitioners in the research process (i.e., Benbasat and Zmud 1999; Lee 1999; Thomas and Tymon 1982; Baldridge, Floyd and Markoczy 2004; Tushman and O'Reilly 2007; Rosemann and Vessey 2008). Accordingly, we propose an extension to Rosemann and Vessey's (2008) applicability check approach by offering an example of research focused on problems faced by practitioners who provide online government services. By identifying 'fundamental issues', this research perspective has the potential to decrease knowledge deficiencies and focus on the interests of key stakeholders.

It has been argued that relevant research requires two-way interaction between researchers as knowledge producers, and practitioners as knowledge users (Thomas and Tymon 1982). Accordingly, the academic community needs to take a more proactive role and involve practitioners in topic selection (Benbasat and Zmud 1999). In short, we can increase the quality and relevance of results by 1) studying questions that challenge both existing scientific theory and conventional management practice early in the research process, and 2) understanding the practitioners' perspective and let methodological choices be guided by the parameters of practitioner experience (i.e., Baldridge, Floyd, and Markoczy 2004).

In order to meet this goal, we propose an extension to Rosemann and Vessey's (2008) applicability check approach where the first step in improving research relevance is to conduct applicability checks with practitioners.

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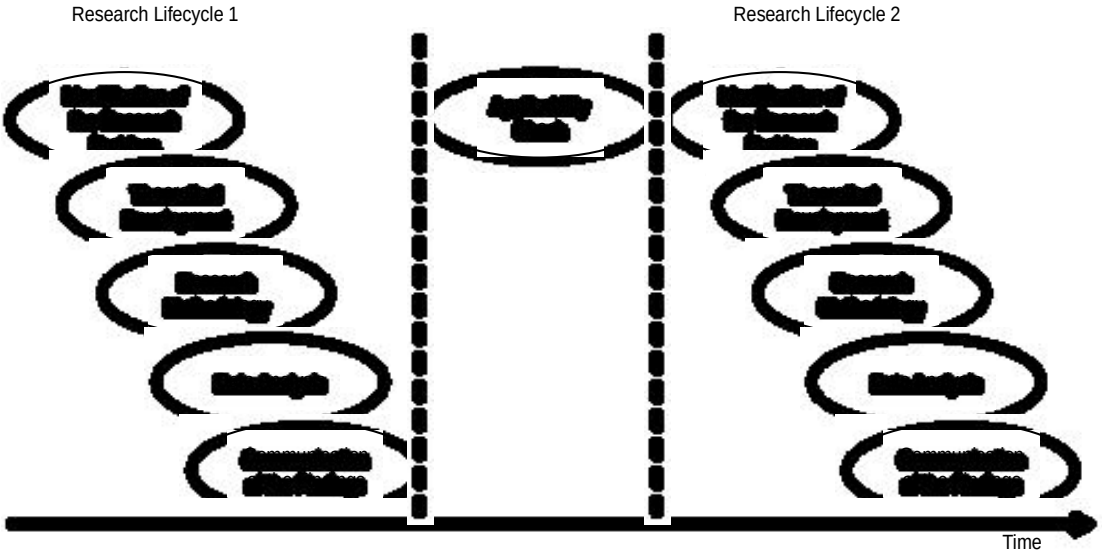
Indeed, the purpose of applicability check is to ensure relevance of the research topic for the practitioner and generate solutions that are better suited and more accessible to practitioners. When taking a closer look at the Rosemann and Vessey model, we note that applicability check should occur between two instantiations of the research life cycle; see figure 1 for the extended research life cycle as presented by Rosemann and Vessey (2008) from a timeline perspective.

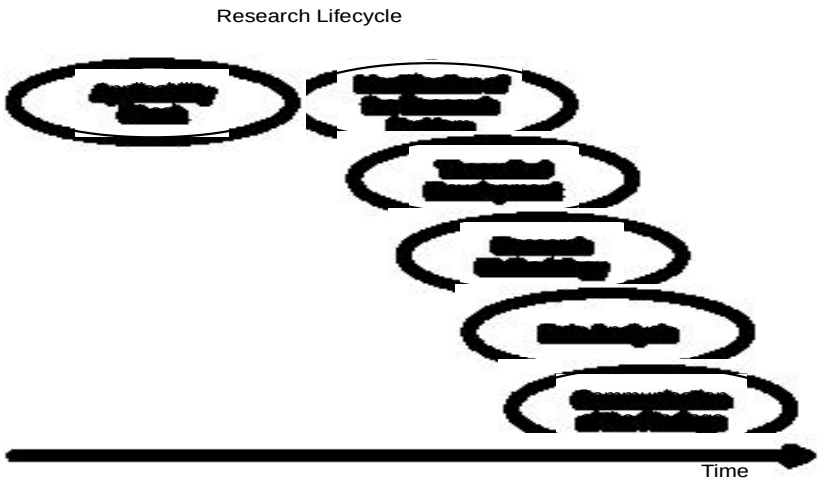
Figure 1: The Extended Research Life Cycle



Source: Rosemann and Vessey, 2008.

More specifically, applicability check could be conducted as (1) the final step in the research life cycle; (2) the first step in the life cycle; or (3) at the end of the first instantiation of the life cycle, leading into the second instantiation. We believe that using the latter approach leads to a research life cycle that is too long and does not provide results that are timely or beneficial for practitioners who work in the face-paced arena of information technology. By targeting an earlier phase of the research life cycle, we provide an example that uses applicability check in a different way. In other words, we propose an extension to this model by integrating applicability check as the first step in the research life cycle, see figure 2.

Figure 2 An extension of applicability check in the research life cycle



We do not imply that research needs to be carried out in a less rigorous fashion (i.e. Bembasatand Zmud 1999), we simply wish to meet conditions of timeliness (Thomas and Tymon 1982).The use of online services is growing at an increasingly rapid pace. This reality proves highly challenging for practitioners who are trying to understand how best to implement new technological advancements. If we as researchers can shorten the timeframe of the research life cycle when studying rapidly changing phenomena, we should therefore be able to better describe, understand and provide timely solutions to practitioners. Indeed, we aim to do so before the phenomena vanishes and is supplanted by a new one (Thomas and Tymon 1982). Thus, Rosemann and Vessey's (2008) research lifecycle can be shortened by moving applicability check upstream simultaneously as part of the research problem identification so as to minimize the risk of contributing out-dated research outcomes.

Since the publication of Rosemann and Vessey's work, very few IS studies have adopted this approach. We suspect that the procedures length does much to explain this paucity. Therefore, our work aims to show how to shorten the research lifecycle by an example of using applicability check at the beginning of the research life cycle for the identification of relevant managerial problems as identified by practitioners. Our experience with this approach, using the interview method and sense-making analysis, leads us to identify research topics that should prove relevant and important for practitioners. These research topics can then be used as a basis for the remaining research life cycle.

An example of applicability check

The literature confirms that many communities are grappling with unanswered questions regarding how to best manage the development and offering of e-services either 1) internally, within the organization of City Hall, and 2) externally, regarding how to best manage the relationship with the citizen-client (Lagrandeur 2008). Consequently, a review of the literature establishes both the timeliness and the relevance of the impact of e-services by municipal governments (Löfstedt 2005).

Research method

In identifying managerial problems, Tushman and O'Reilly (2007) argue that researchers should test their ideas by interacting with engaged practitioners whereby such interaction can illustrate gaps between phenomena as they exist in practice and the current state of academic knowledge.

Given our quest to understand how to best manage and deliver e-services both within City Hall and with its citizen-clients, we designed a participatory research process involving relevant practitioners; thus, we worked in part with the Intelligent Community Forum (ICF) based in New York City (USA). ICF is a non-profit think tank that studies the economic and social development of the 21st century. Their goal is to assist communities who seek to create prosperity, stability, and cultural meaning in a world where jobs, investment and knowledge depend on advances in communications. ICF believes that information technology can make a significant contribution to the social and economic development of a community:

It emphasizes the essential presence of the traditional community in everyone's life, a physical place where we live and work. At the same time, ICF believes that there is some urgency for communities to fully engage with the emerging Network Society. Those communities who seek to implement the full potential of ICT's, it is argued, become networked communities that are sustainable for the foreseeable future. Communities that fail to engage run the risk of losing jobs and citizens as people and organizations move to communities offering more opportunities.(Albert, Flournoy and LeBrasseur 2009, 21-22).

ICF's contribution was highly valuable both in terms of elaborating research questions and to validate results.

We conducted semi-structured telephone interviews with a purposeful sample of elected officials and city administrators from 13 communities from North America, Europe, and Australia. A purposeful sampling strategy was used with no notion of random sampling to achieve statistical generalizability. Accordingly, the sample was built up to enable the researchers to satisfy the needs of this study; it was required that practitioners meet the following sampling criteria. They had a) to be an administrator in a municipality; b) have authority over people; and c) have the power to make or recommend decisions regarding the adoption and implementation of e-services.

A total of 15 participants who met the sampling criteria were interviewed; table 1 lists the titles of each participant.

Table 1: **Profile of Participants**

Frequency	Participant's title
1	Mayor
4	Chief Information Officer / Executive Director of IT / Manager of IT
1	Electronic Government Services Manager
1	Manager of Special Projects – IT
1	Economic Development Manager
1	Regional Digital Economy Coordinator, Office of Economic Developr
1	Manager of Recreation and Marketing
1	Managing Director of Media
1	General Manager of Corporate Services
1	Director of Customer Services
1	Official – Chief Executive Office
1	Manager of Strategic Initiatives

As listed in table 2, the participants came from 13 municipalities from North America, Europe, and Australia.

Table 2: Participating Communities

Community	Population (2011)
Golden (Canada)	4,200
Hinton (Canada)	9,738
Stratford (Canada)	30,461
Lakeshore (Canada)	34,000
Issy-les-Moulineaux (France)	64,448
Helmond (Netherlands)	88,766
Chattanooga (USA)	167,674
Ipswich (Australia)	168,131
Windsor (Canada)	210,891
Geelong (Australia)	223,047
Riverside (USA)	311,575
Arlington (USA)	365,438
Vienna (Austria)	1,730,000

Similarly to Albert et al. (2009), this sampling approach allowed the authors to highlight best practices from each community story with the aim of letting the problems and challenges for e-services adoption and implementation emerge from the data. Accordingly, the goal of the interviews was to ask subject-matter experts (SME), namely elected officials and city administrators, to discuss their motivation for introducing e-services and joining the information highway as well as the problems and challenges they face regarding the internal and external forces associated with providing e-services. In order to do so, questions ranged from identifying 1) Reasons for cities to undertake e-service initiatives, 2) Reasons for using the information highway, 3) The resulting internal impacts within their communities, and 4) The resulting external impacts on their communities. Data that resulted from interviews were recorded, transcribed, coded and analyzed based on the guidelines of content analysis, a qualitative data reduction and sense-making effort that take a volume of data and attempts to identify core consistencies and meaning (Patton 2002).

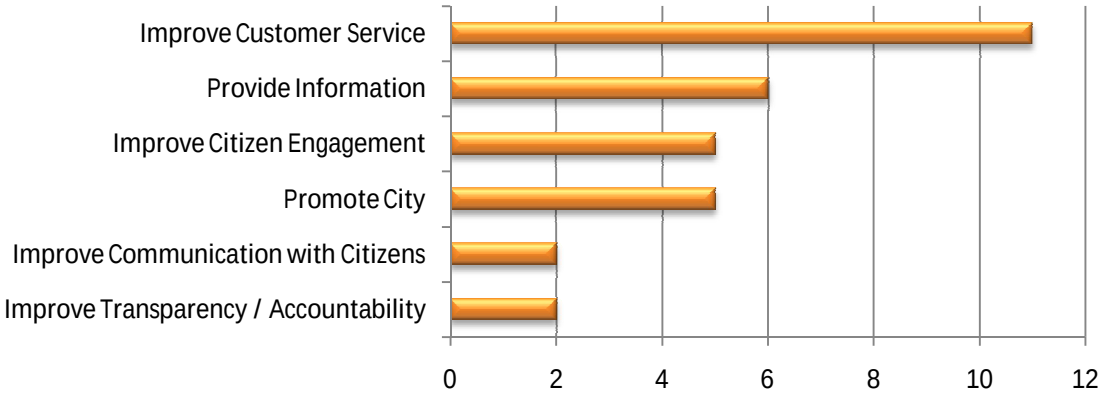
We thus proceeded by first analyzing each transcript, identifying relevant responses. We then looked for commonalities between participants' responses. All the similar responses were grouped together. Given that we started with a blank slate, we needed to perform several such iterations in order to create categories.

More specifically, data coding focused on descriptive codes that entail little interpretation, where a class of phenomena is attributed to a segment of text (i.e., Miles and Huberman 1994). In other words, "In our IS department, we have set up an e-services unit to provide support" is an example of this type of code. Once the list was completed, we then assigned labels to identify each category (e.g., cost reduction).

Results

For the participating communities, we found a wide variety of reasons for undertaking e-service initiatives and using the information highway. Moreover, these initiatives result in several key internal and external forces. Research participants explained that their reasons for offering e-services to citizens cover many angles. Figure 3 illustrates the external reasons; these range from improving customer service, to providing information, improving citizen engagement, promoting the city, improving communications with citizens, and improving transparency and accountability.

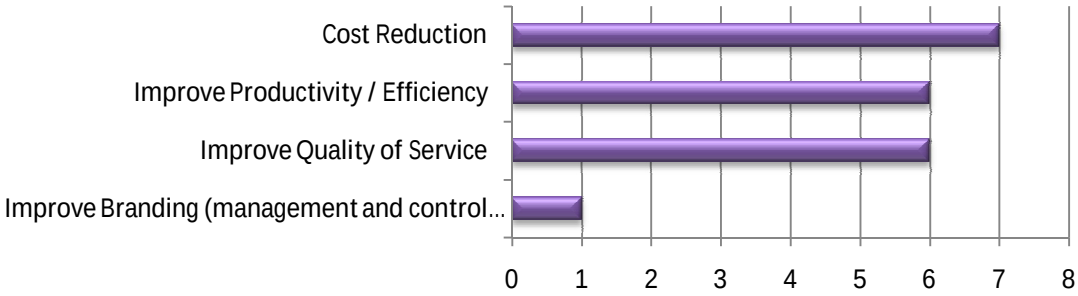
Figure 3 External reasons to undertake e-services initiatives



For example, the city of Windsor wanted to improve services to citizens by providing "at home service" instead of having them drive down to City Hall. Hinton wanted to provide information about the community for residents or businesses looking to relocate to the area. The motivation for the city of Ipswich was to help address community expectations for government to be more transparent, accountable and to engage more frequently the citizens on key issues.

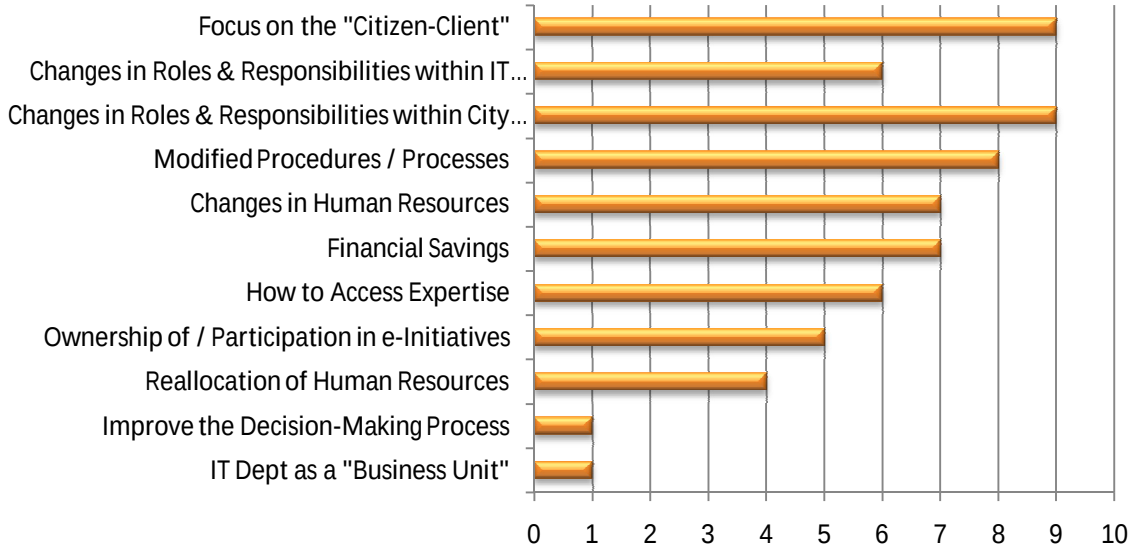
When asked about their reasons for joining the information highway, as presented in figure 4, participants claimed that they do so to reduce costs, to improve the productivity or efficiency of the organization, to improve the quality of service to citizens, and to improve branding by managing and controlling their web presence.

Figure 4 Internal reasons for using e-services



For example, the city of Helmond wanted to increase efficiency by integrating the front and back office systems. E-services reduced the high cost of service provisions to customers via manual methods for the city of Ipswich. Some officials in Stratford wanted to control the look and feel of their department and control access to the backend of their database. According to participants, the resulting internal impacts cover a variety of contexts as presented in figure 5. These range from a focus on the citizen-client, a reallocation of human resources, changes in procedures and processes, in human resources and financial savings. There has also been a shift in participation in e-initiatives, in the decision-making process, in roles and responsibilities within the city and the IT department, and in access to technical expertise. These have sometimes transformed the IT department's strategic positioning as a business unit.

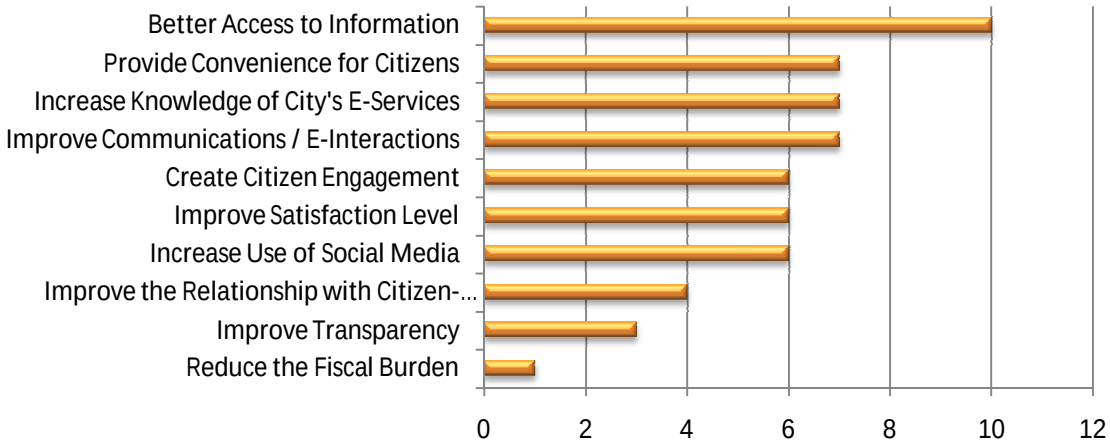
Figure 5 Internal impacts of e-services within the organization



Research participants in Ipswich claimed that they had increased their abilities to provide personalized and flexible customer service. The city of Geelong improved set up and review procedures for everything that was on the Web using signoff forms. The city of Helmond partnered with 25 other cities (for a total of 1.2 million citizens) to create a joint corporation, Dimpact, to develop standard product/e-services on one platform. All participating cities have the same 'look and feel 'but their content is different. The city of Chattanooga changed from the 'glass house' mentality of the IT department to a 'business entity'; the IT department is not just a support function, it must plan funding, prepare strategies, leverage all the business units of the City together to come to a common goal.

As illustrated in figure 6, the following external changes were observed for the participating communities: citizens have improved access to information and e-services are more convenient for them. Citizens therefore have increased knowledge of city's e-services and there are more communications or e-interactions between citizens and the city with an increased use of social media. Some participants even observed a change in the relationship with the citizen-client, noting improvements in their citizen engagement level and their satisfaction level. In many cases, it was explained that the city's web presence improved transparency in the operations of the city and changes in the fiscal burden of citizens.

Figure 6 External impacts on the community



For example, the city of Riverside has improved efficiency because citizens can do most of their business over the Internet without having to wait in line at City Hall. Convinced of the impact of technologies on their everyday life, the city of Issy-Les-Moulineaux introduced tools to reinforce citizen participation in local democratic life. Since 1997, the Interactive City Council has allowed inhabitants to take part in live sessions, thanks to cable and the Internet, and to ask their representatives questions.

The above-indicated results are comparable with research findings (i.e., Norris 2005; Norris and Reddick 2013). Based on four focus groups involving a total of 37 IT and other local U.S. government officials, Norris (2005) found that local governments adopted and implemented online services mostly to provide information and e-services and also to provide citizen access to government officials. Moreover, based on a nationwide survey of U.S. local governments in 2011, Norris and Reddick (2013) found the following top six reasons for local governments to provide e-government services: 1) citizen access to local government information, 2) citizen access to the local government, 3) citizen access to elected officials, 4) to save money, 5) citizen access to appointed officials, and 6) citizen participation in government/e-democracy. Furthermore, Norris and Reddick (2013) identified the top 12 impacts or changes felt by local governments, namely improved customer service, improved local government communication with the public, increased efficiency of business processes, increased time demands on IT staff, increased citizen contact with elected and appointed officials, changes in the role of department staff, decreased transaction times, changes in the role of IT staff, re-engineering of business processes, and reduction or increase in time demands on departmental staff and reduced administrative costs.

The identification of managerial problems

Throughout the course of the interviews, respondents freely expressed challenges or problems, either internally or externally, with regards to offering e-services. Respondents from eight communities presented different managerial problems that can be categorized as external and internal challenges or issues. A list of the type of challenges or managerial problems faced by the communities is presented in table 3.

Table 3: **List of Managerial Problems**

External challenges	Internal challenges
Improve engagement level	Adoption of e-services
Branding of the city	Access to expertise
Accessibility	Systems integration (back-office)
Increased demand by citizens	Transparency
Improve customer experience	

To derive the managerial problems, a case was prepared for each of the eight(8) communities whenever respondents expressed them during the interview. Based on the cases, the categorized challenges have been turned into managerial problem questions:

The external managerial problems / challenges faced by the communities are:

1. How can a community improve the engagement level of its citizens in the affairs of the city and the likes?
2. How can a community promote a single brand when "internal" organizations develop their own web presence?
3. How can community increase accessibility for its citizens?
4. How should a city cope with the increased demands from its citizens in e-services and new technology such as social media and mobile applications?
5. How can a city improve the citizen-client (customer) experience?

The internal managerial problems / challenges faced by the communities are:

1. How can adoption of e-services by city departments be improved?
2. How can a city develop e-services when access to expertise is unavailable within the community?
3. How best to integrate e-services with back-office systems?
4. How best to provide transparency on city's operations with the use of e-services?

The purpose of this study was to identify the managerial problems and "real-world" issues that are relevant to elected officials and city administrators. Indeed, we know that municipalities that have a web presence are faced with complex challenges.

Interviews results not only confirmed this reality, but participants also provided detailed lists of issues related to the following: 1) reasons for cities to undertake e-service initiatives, 2) reasons for using the information highway, 3) the resulting internal impacts within their communities, and 4) the resulting external impacts on their communities.

We then asked the *Intelligent Community Forum* to further identify which of the nine (9) managerial problems should be further studied for research purposes. The three (3) challenges that they thought are of greatest importance and relevance is the following:

1. How can a community improve the engagement level of its citizens in the affairs of the city and the likes?
2. How can adoption of e-services by city departments be improved?
3. How can a city develop e-services when access to expertise is unavailable within the community?

As pragmatic IS researchers, this knowledge enables us to pursue the next steps of the research life cycle, beginning with problem identification, in order to bridge a gap not only in the academic literature but also provide relevant solutions for practitioners.

The identification of research problems

In his evaluation of current e-government research, Löfstedt (2005) finds deficiencies and some directions for future research. His findings show that research at the local government level is in its infancy; more research is required. He proceeds to suggest an empirical study to investigate the state of development, e-services provided and e-strategies of local government to identify good and bad practices. Moreover, Lenk and Traunmüller (2000) propose that e-government be studied under four angles: the point of view of the citizen, the process (or reorganization) angle, the cooperation perspective, and the knowledge angle. The direction for future research is proposed to be from the citizen perspective. By placing the individual user, i.e., the citizen, in focus the general perspective will be more of 'Citizen Systems' and less of 'Governmental Systems'. (Löfstedt 2005, 48)

There is a lack of information of the impact of municipal online services on the municipality (the organization) and the relationship with citizens. To provide research directions, Löfstedt (2005) suggests these research questions: How should e-Services be developed from a citizen perspective? What contribution can the citizens make in this development process? Is there any common strategy for the development of local e-Government and e-Services? How should such a strategy be developed and what should it comprise? What are the current perspectives and in what way do they take citizens into consideration?(*Ibid,* 49).

Conclusion

Managerial problems are not only relevant to practitioners but also to academics; where there is a knowledge deficit there is an opportunity to fill a gap and explore questions in greater depth by identifying research problems and questions. We suggest for new ways to address the first two research phases with applicability check. In other words, once practitioners identify relevant and important issues, it becomes the researchers' responsibility to engage in the research life cycle. Their role then becomes one of tackling problems that have not been discussed in the academic literature. Ultimately, the researchers' role is to identify knowledge deficiencies that then become relevant research problems. As supported by Benbasat and Zmud (1999), "IS researchers should look to practice to identify research topics and look to the IS literature only after a commitment has been made to a specific topic" (*Ibid,* 8). As indicated by Norris and Moon (2005), "[…] research needs to keep pace with the practice and to gauge impacts of this dynamic, innovative, and relatively new IT, which, according to many, has such great potential to transform government service delivery and the very face of government itself."

In sum, knowledge that results from this study is twofold. First, results offer a wide view of the managerial problems faced by municipal governments offering online services. Second, it shows that the scope of the Rosemann and Vessey's (2008) research lifecycle can be shortened by moving applicability check upstream simultaneously as part of the research problem identification. Thus, in the face-paced world of technology, we suggest that applicability check be performed with practitioners to identify "real-world" issues that are important for them before engaging in the research life cycle. In so doing, this paper paves the way for academic research in an area that is relevant and timely to practice.

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