Scope of City E-Government Initiative

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ABSTRACT

This paper attempts to outline the optimal scope of a city e-Government initiative. Further, it studies and compares different e-Government elements/services, and their outstanding features, as available on five leading city web sites across the world. The study indicates that, though the elements provided on the Web sites have a number of common features; the scope of services provided by the Web site of each of the different cities studied is unique and it underlines the need for customizing the e-Government initiatives to the local needs of the constituents.

1. Introduction

Electronic government (E-government) is increasingly being seen as an important aspect of government, with potential to enhance efficiency and effectiveness, reduce costs and even transform the government "affecting the management of human, technological, and organizational resources and processes" (Grant & Chau, 2005 p.1). The allure of "transformation", of making the city government agile, efficient, responsive, and of "potential" cost savings, may seem "irresistible" to a new city government that is committed to change the traditional bureaucratic ways of working as well as to reduce taxation. For example, in a 2001 e-Government conference "New York City's then-mayor, Rudolph Giuliani, presented his city's goals to reduce costs, eliminate bureaucracy and become more open, responsive and accountable" (Ballmer, 2002). This trend for e-Government is growing, and 189 countries are online in 2008, as compared to 179 countries in 2005 (United Nations, 2008). Also, it seems that the trend has now shifted from focusing on the "technical issue" of providing a Web site, to having an integrated e-Government solution. Accenture, commenting on its sixth annual global report of 2005, "Leadership in Customer Service: New Expectations, New Experiences," states that "A look at e-Government programs across the globe shows that continued incremental improvements in this area are unlikely to yield significant boosts to maturity. To advance now, governments must focus on a much broader vision" (Accenture, 2005 p.1). This could portend a shift to providing customer service to citizens through multiple channels. It is also suggested "that genuine cost savings and quality improvements will occur only if there is a re-engineering of the internal structures and processes of the administration towards a connected form of governance" (United Nations, 2008). These trends strongly indicate that now is the right time to look at the basics once again. In Ottawa, Canada, the new Mayor has formed a Task Force on e-Government, as an external advisory body, with a mandate to review available IT options; to review requirements and opportunities for all areas of the city and assess an appropriate role for information technology; to solicit input from internal IT providers and users; to examine the City of Ottawa's current Information Technology Plan and all current or proposed projects;

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and to make recommendations (short-, medium-, and long-term) for development of an information technology plan that improves interaction with the public while increasing the effectiveness and efficiency of city operations. We find the global trends and the local development as an adequate motivation to study one of the very basic aspects of a city e-government: the scope of a city e-government.

In this paper we attempt to broadly outline the scope of city e-government, essentially to find the area within which the city e-Government is expected to operate. In the absence of any landmark study on the subject it is interesting to look at the scope *ab initio*. After considering the basic paradigms, we look at some studies which have researched the features of city e-Government Web sites and have set up benchmarks for the same. Then, we study at the city e-Government Web sites of five major cities and try to ascertain the area within which these e-governments are practically operating at the present. This gives the study checkpoints for the scope that has been actually realized, or achieved in practice, by these city e-governments.

2. Synthesis of Literature

E-Government has been defined in various ways, one of the common definitions being: the use of the Internet to deliver services and information to citizens and businesses (Ho & Ni, 2004; Holden, Norris & Fletcher, 2003; Reddick, 2004a). Arguably, this definition needs to encompass other users, other government levels, and also the government employees. A number of studies have looked into the functioning of e-Government at local levels in the U.S. (West, 2001; Kaylor *et al.*, 2001; Edmiston, 2002; Holden, Norris & Fletcher, 2003; Reddick, 2004a; Ho, 2002; Reddick, 2004b; Moon, 2002), in Canada (Charih & Robert, 2004; Kernaghan, 2005; Reddick, 2007), in European Union and in other countries (Torres *et al.*, 2005; Criado & Ramilo, 2003; Archer, 2005). While many studies have focused on the evaluation of features of the city e-Government Web sites, their navigability and content standards; benchmarking studies based on optimal set of functions are relatively less (Stowers, 1999; Johnson & Misic, 1999; West, 2000; Spearman, Welch & Associates, 2000; Norris, Fletcher & Holden, 2001; Kaylor, *et al.*, 2001). However, features and functions on a Web site are the manifestations of the extent of the scope of e-Government that has been realized, or achieved, in practice. The realized extent of the scope may actually be only a fraction of the full scope of city e-government. In the public sector, scope is of critical importance, as its lays down a boundary, beyond which any use of public monies or government budget may neither be advisable, nor legally possible. We have not been able to find any literature dealing with the scope of local e-Government in this context; therefore, we start my study from basics.

3. Defining Scope

For the purpose of this paper we define scope of e-Government as the extent, range or area in which it can act or operate; or has power to control in order to attain its objectives. In this paper we would like to view the "scope" in its twin aspects. Firstly, in its "limiting" aspect, beyond which the city e-Government is constrained to operate, "scope" serves a useful function of clearly defining the main area of operation, or even the "*raison d'etre*" of the e-government. In its second, the "enabling" aspect, "scope" identifies the boundaries, beyond which the city e-Government may "span" to add value, thereby providing its users and/or citizens with an empowering, integrated and seamless e-Government experience.

4. Implications of Scope

Ab-initio demarcation of the scope of the city e-Government initiative is critical in two ways. Keeping the scope too narrow initially, would lead to a potential waste of an exciting opportunity. On the other hand, focusing on a scope which is too wide to handle, may lead to increased expectations, which may be hard to meet with limited resources. Because of the opening of an additional channel of communication, and possibly because of its 24/7 availability, and its ease of use; a city e-Government initiative may lead to a change in the pattern and/or volume of citizen initiated contacts (CICs) and requests for action (Horrigan,

2004, cited in Reddick, 2007). Whether an increase in CICs, or a lack of increase, is significant is still a subject of debate. Increased CICs maybe the result of enhanced participation of citizens (Thomas & Streib, 2003). This increased participation maybe viewed as benefiting democracy, with increase in service delivery and citizens' confidence in government (Green, 1982); or even as an indicator of functioning of e-Government (Reddick, 2007). Once a new channel becomes available for providing services, increased CICs may arise from awareness about availability of these services and perceived needs for them (Vedlitz, Dyer & Durand, 1980; Hirlinger, 1992; Thomas & Melkers, 1999). These perceived needs maybe for a specific service or its modification (Thomas & Melkers, 2000; Thomas & Streib, 2003). On the other hand, some researchers argue that CICs may actually decrease because of the clogging of bureaucratic machinery with increased workload (Serra, 1995); while still others argue that CICs will increase because of unhappiness of citizens on any delay in response to requests for action (Moon, Serra, & West, 1993; Thomas & Welkers, 2000).

Since the responsiveness of the city bureaucracy is important for the provision of services, for democracy and for political participation, it is critical to understand the interplay between the scope of e-Government and CIC, and the satisfaction and/or the frustration that unmet needs and expectations can generate. Trying to outline and handle a wider scope than what the city is geared to handle within its limited resources, may lead to an undesirable and maybe unexpected increase in dissatisfaction among the users resulting in negative consequences. Thus understanding scope clearly, in advance, may help in accurate forecasting of the change in workload of city employees that may arise from enhanced service expectations of the citizens because of introduction of the new channel of e-Government. Such a forecast then can be used to suitably mobilize and/or enhance the city resources to cater to increased and/or changing demand for information and service.

5. Ascertaining the Scope

5.1 Issues of Jurisdiction

In a democratic setup, the citizens come together to form a government and generally define its role through a constitution, legislations, acts and subsidiary rules and regulations, which define the area, or scope, within which the government operates. Any action outside this defined area, or scope, is held as *ultra-vires*. In a top down or a totalitarian type of government, the legal jurisdictions and functions are assigned from the top down and thereby these jurisdictions form a boundary for city government, within which it operates. In between these two extremes there exist a number of models of city government jurisdiction.

Scope of e-Government is legally delimited by the legal jurisdiction of the government. Ideally the e-Government solution should integrate the functions of all the levels of government, i.e. the city, state and federal. In this paper we call such a seamless solution an "integrated e-Government solution". The overlap of jurisdictions and the position of the integrated e-Government solution across the jurisdictions, and even outside the jurisdictions, is depicted in Figure 1.

Here it is seen that area covered by an ideal integrated e-Government solution can be quite large; it covers individual jurisdictions of the city, state and federal governments; also, it covers the areas of their overlapping jurisdictions; though not completely. Thus, there maybe specific areas, which are not amenable to an optimal e-Government solution, and these specific areas may be more amenable to the traditional ways of governance, and therefore may lie outside the scope of an integrated e-Government solution. Some areas covered by the integrated e-Government solution ellipse can be seen spanning the strict boundaries of legal jurisdiction. These areas may be interpreted as covering the additional services provided by the e-governments in a commercial domain, and/or covering the seamless services provided by the

e-Government to the users in collaboration with private players, for example a page with city tourist information may provide seamless links to the reservation portal serving the hotels in the city.
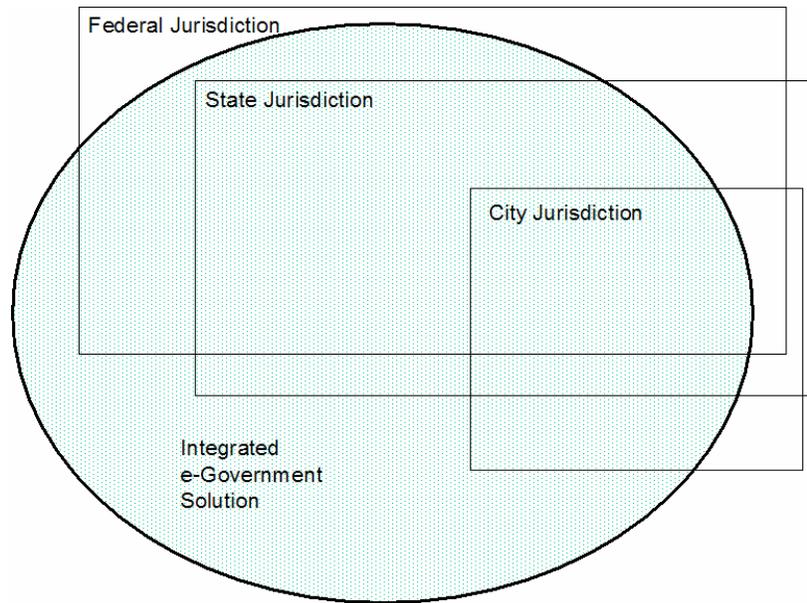

Figure 1: Scope of e-government and Legal Jurisdiction Boundaries

6. Realization of Scope: Practical Limitations

However, when we try to operationalize this schematic, the scope of an e-Government solution project is further constrained by the shifting boundaries formed by practical limitations. Some of the practical limitations maybe imposed by vision, strategy, technology and budget at the time of implementation. After first implementation, the legacy systems may, in turn, also have a role to play in imposing practical limitations. When we consider of the theoretically possible extent of integrated e-Government solution as depicted in Figure 1, we find that external environment and other factors impose practical limitations on it, as shown in Figure 2 below, which in effect make the actual city e-Government project much smaller than the optimal solution.
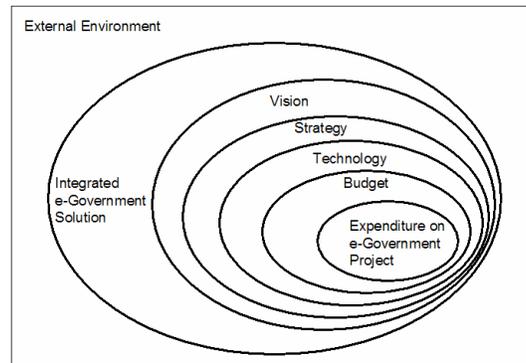

Figure 2: Limitation of Scope of e-government Project by External Factors

External environment may have a substantial effect, limiting the scope of integrated city e-Government solutions, as changing political and economic scenarios may force the setting of priorities other than launching of e-Government initiatives. For example, a general meltdown of the dot-com industry may have caused hesitancy among many municipal governments while allocating substantial money to e-Government projects in the ensuing years (Roy, 2003). The scope is, evidently, limited by the vision of the city government, as one can generally achieve only what one can envision. Creation of an effective and efficient strategy and its implementation is the next limitation; which in turn has to be supported by the available technology. Budget is the next limitation in realization of the full city e-Government scope because not all technology that is available on a given date maybe affordable or cost effective. This is evidenced by a recent survey, which reported that 55% of surveyed municipal (city) governments in Ontario, Canada, planned a budget of CAD $10,000 or less in a fiscal year for e-government; and only 21% budgeted more than CAD $100,000 (Reddick, 2007). One cannot hope to achieve much in less than $1000 per month, even in terms of stand-alone systems, let alone the supporting manpower. Even the budget, once allocated, has to be expended wisely.

7. Value Creation Process

Once the city e-Government project is budgeted and the implementation phase is rolled out, the scope is affected by the intermediate processes. In any technology project the results may turn out to be different from what is planned initially (Ciborra, 1997). While results in some areas maybe sub-optimal, in the other areas they may surprise even the most optimist proponents of the project. Despite its unpredictable elements, the attainment of the full scope of city e-Government project resulting in a positive e-Government performance, is a goal worth striving for. Thus value creation, in an information technology (IT) project, like e-government, is not a simple process (Ackoff, 1967; Delone, & McLean, 1992; Barua, Kriebel, & Mukhopadhyay, 1995; Hitt & Brynjolfsson, 1996; Delone & McLean, 2003; Melville, Kraemer, & Gurbaxani, 2004). Adapting the model described by Soh & Markus (1995). The multi-step process of value creation in an city e-Government Project is depicted in Figure 3 below, showing the relationship between the expenditure on e-Government project (see Figure 1 above) and creation of value as e-Government performance.
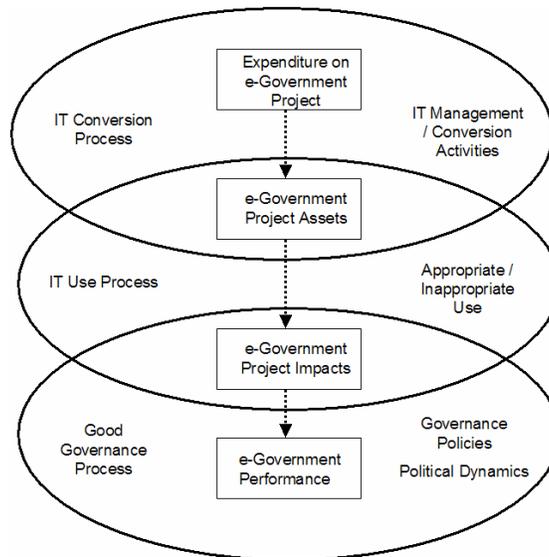
(Adapted from Soh & Markus, 1995)
Figure 3: How e-government Project Creates Value: A Process Theory

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From a city e-Government investment perspective, the value creation process starts from city e-Government investment in IT; which in turn goes through the IT conversion process; which though proper IT management and conversion activities results in city e-Government project assets. Contrary to the seemingly popular belief, the assets themselves do not translate into city e-Government performance (Soh & Markus,1995). The next step is "IT use process", where the process can succeed or fail, by appropriate or inappropriate use of the e-Government assets. An "appropriate-use process" is likely to lead to positive city e-Government project "impacts". In the next step these "impacts" may lead to city e-Government "performance" through good governance processes that are supported by good governance policies and actual political dynamics, which involves the participation of citizens and other users of city e-government. As is evident, the value creation in city e-Government is a complex process, and depends on many critical intervening processes. Failure to understand the complex process may lead to unrealistic expectations and/or inadequate focus on critical intervening processes. This can result in the potential scope of the initiative not being realized and failure to achieve the desired city e-Government performance end results.

8. Leadership

Despite the challenges in realization of scope, outstanding leadership may have a substantial influence on any city e-Government initiative (Ho & Ni, 2003) and thereby on its scope. This effect maybe more critical at the time of initial phase and at the implementation of a city e-Government initiative. The influence may start from the stage of creating a long-term and all-encompassing vision; devising and putting into action an effective and efficient strategy and setting up a dynamic independent team or department to implement the same, which is important (Reddick, 2007); effectively harnessing the available technology; being successful in getting adequate budget allocated, again a critical "*sine qua non*" (Reddick, 2007); and ensuring appropriate expenditure on the project. In value creation process (Soh & Markus, 1995) strong leadership may positively catalyze information technology (IT) conversion process, lead the "appropriate use process", ensure implementation of good governance policies and play a crucial role in political dynamic process leading to superior city e-Government performance. Thus a strong leadership may play a critical role in successful realization of scope of city e-Government initiative (Ho & Ni, 2003).

8.1 Fuzzy boundaries of scope: integrated city e-Government and the governance junction

When envisaging an integrated e-Government initiative across different levels of government; i.e. the city, state and federal levels; the scope of the city e-Government solution can have fuzzy boundaries. This can translate into a complex integrated structure, forming a "governance junction" at the web-portal, which to an user may look like a simple web-page. A generic view of a city e-Government governance junction is given in Figure 4 below:
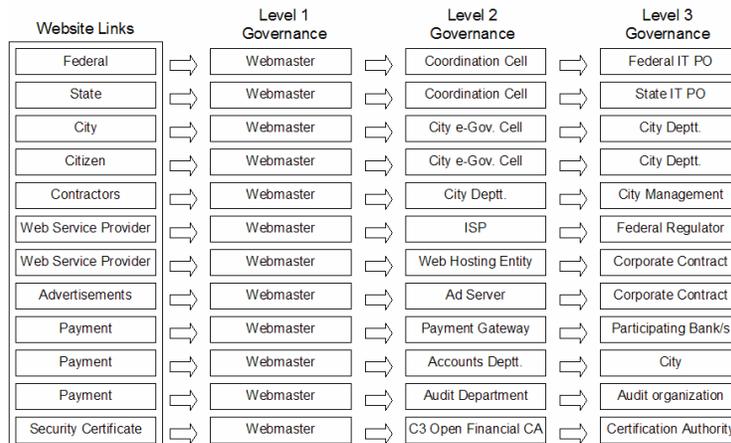
Website Links		Level 1 Governance		Level 2 Governance		Level 3 Governance
Federal	⇨	Webmaster	⇨	Coordination Cell	⇨	Federal IT PO
State	⇨	Webmaster	⇨	Coordination Cell	⇨	State IT PO
City	⇨	Webmaster	⇨	City e-Gov. Cell	⇨	City Deptt.
Citizen	⇨	Webmaster	⇨	City e-Gov. Cell	⇨	City Deptt.
Contractors	⇨	Webmaster	⇨	City Deptt.	⇨	City Management
Web Service Provider	⇨	Webmaster	⇨	ISP	⇨	Federal Regulator
Web Service Provider	⇨	Webmaster	⇨	Web Hosting Entity	⇨	Corporate Contract
Advertisements	⇨	Webmaster	⇨	Ad Server	⇨	Corporate Contract
Payment	⇨	Webmaster	⇨	Payment Gateway	⇨	Participating Bank/s
Payment	⇨	Webmaster	⇨	Accounts Deptt.	⇨	City
Payment	⇨	Webmaster	⇨	Audit Department	⇨	Audit organization
Security Certificate	⇨	Webmaster	⇨	C3 Open Financial CA	⇨	Certification Authority

Figure 4: Governance Junction: Interplay in an integrated e-government Model

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Evidently the governance junction shown above is a complex construct needing efficient and effective coordination between different levels of governments, appropriate management of website and the supporting functions at various levels of governance. In addition to the existing governance structures, a suitably empowered coordination cell comprising of members from all concerned government levels, departments and IT experts is a highly useful unit in managing the day to day operations of the "governance junction". Here, clearly demarcating the roles and responsibilities between the domain experts (belonging to different government levels) and the IT professionals can smoothen the implementation and operation of the "governance junction" functionalities. This can become an effective tool to handle the fuzzy boundaries of scope of the city e-Government.

9. Methodology
9.1 A Search for Functional Areas in City e-Government
To scope out a new project or an expansion project on city e-government, it would be beneficial to look at the functional areas being covered by comparative city e-governments at other places. This would enable us to understand what scope has been actually realized in practice, by the respective city e-Government initiatives.

In their proposed taxonomy of services/functions offerings by e-governments, Charalabidis *et al.* (2006) do not incorporate the level, maturity or sophistication of services provided. They, however, provide a basic classification or taxonomy, which can be a good basis when a city wishes to start the e-Government initiative *ab-initio*. The authors discuss the European Union's eEurope+ initiative, which lays down a short-list of "20 Basic Public Services" (Charalabidis *et al.*, 2006 p.197). The list specifies the service, service-orientation, providing administration, cluster and target level. In listing the 'Basic Public Services', the 'Target Sophistication Level' is based on the work of Layne & Lee (2001), which has been adopted by the European Commission. Briefly, Layne & Lee (2001) describe the stages of sophistication as follows:

Level 1: Information only / static content: This includes contact information.
Level 2: One-way Interaction / dynamic content: Frequent updates, links to other   pages, downloadable documents.
Level 3: Two-way Interaction: Submission of request form, a maximum target level for a service where personal presence is required.
Level 4: Full Case Handling.

Torres *et al.* (2005) analyze the municipal e-Government Web sites measuring two different variables: service maturity (SM) and delivery maturity (DM). Service maturity is handled in two dimensions: SM breadth, i.e. number of services offered; and SM depth, i.e. level of interactivity (whether it is possible to "publish", "interact" and/or "transact"). On the other hand, DM deals with the aspects covering 'sophistication' of Web sites to provide benefits to users, viz. error identification feature, search engine, Web site map, use-promotion, availability of email addresses, public events, online access to plenary sessions, online application filling simplicity, multi-lingual access, user-friendly street map, level of comprehensiveness, seamless navigation, e-democracy features etc.

Kaylor *et al.* (2001) create a rubric for benchmarking the city e-governments in the United States of America (US) using 51 different functional dimensions, under 12 classes. The authors do not evaluate the aesthetics or ease of use, organization or navigability of the e-Government Web sites. However, if the authors do not find a feature in their search, they do not give points for it. By this method itself, the "ease of use", "organization" and "navigability" may have impacted the study. The authors assign an "e-score" to the Web sites on the basis of following rubric used by Kaylor *et al.* (2001 p.306):
- information about a given topic exists at the Web site
- link to relevant contact with a phone number or email address exists at the Web site

- downloadable forms available online on a given topic
- transactions or other interaction can take place completely online."

West (2001) studies the features available on city e-Government Web sites in the US to find how urban e-Government can be improved. After studying 1056 Web sites in the largest 70 metropolitan areas of the US, the author lists top ten online services as: payment of parking tickets or traffic violations, filing of complaints, service request, permit application, job applications, request for documents, payment of utility bills, requests for police documents, payment of taxes and reporting of crimes; in the above mentioned order. The author also finds differences, (on the basis of which 25 short-listed features are offered), between the Web sites of city's executive branch, the legislative branch and its portal site.

The realized scope of the city e-Government can be assessed from the functions, features and services available on its Web site. For example, Reddick (2007) found in his survey that the state of Ontario lags behind in its city e-Government initiatives. As reported, only about 12% of the surveyed municipal governments provided online tax payments as an option; 20% offered option for online registration of recreational facilities; and 68% offered electronic form downloads for manual completion and submission; also implying that the services available on e-Government Web sites are not uniform even within one state. In practice, the features available on a city's e-Government Web site may vary substantially. This is specially so when the Web site is designed, based on the differences in, and the varying perceptions of, the local needs. Therefore, to arrive at a framework to study the "realized scope", we mapped the taxonomy given by Charalabidis *et al*. (2006); and the features listed in the papers of Torres *et al.* (2005); Kaylor *et al*. (2001); and West (2001); arriving at a short-list of 172 features. The services offered, features or the functional areas being addressed by city e-governments, were mapped from the above studies.

Five cities were selected for study and for the comparison of the different services / features available on their e-Government web sites. The city of Ottawa was included because it was the main motivation for this study. It was considered optimal to select one more city from Canada for comparison within the country. Toronto was selected because it is the most populous city in the country, and because Ottawa is also on a growth path, the comparison might be useful for the future. New York was selected from the US, it being the city with the highest population and with a cosmopolitan makeup, which might be interesting to study from an e-Government perspective. Singapore was selected to represent one of the leading city-states, where all the levels of governments co-exist, and therefore it can potentially be a model of an integrated e-government. Finally, Auckland, New Zealand, was selected to represent a modern developed city from across the globe, with a population size similar to that of Ottawa. The population estimates and Web site addresses of the selected cities are given in Table 1.

Table 1: Cities and their populations

Sr.	City	Country	Estimated Population	Date of Population Estimate	Web site
1	New York	United States of America	8,214,426	01/07/2006	www.nyc.gov
2	Toronto	Canada	5,113,149	16/05/2006	www.toronto.ca
3	Singapore	Singapore	3,608,500	30/06/2006	www.sg
4	Auckland	New Zealand	1,208,091	07/03/2006	www.aucklandcity.govt.nz
5	Ottawa	Canada	1,130,761	16/05/2006	www.ottawa.ca

(Source: Brinkhoff, 2008)

We searched for the short listed 172 features and, if offered, assessed the service maturity level by using a rubric based on the one used by Kaylor *et al.* (2001 p.306), to calculate an "e-score". Absent features were assigned a score of zero. (The detailed score allocation table is available in the complete paper). However, there were a number of features available in the city e-Government Web-sites, that did not figure in the mapped shortlist, and thus were not taken into account in this study. This fact does not undermine the importance of these features, or their local relevance. This bypassing of "additional" features is a bias intrinsic to this framework. However, since a large set of important features have been covered, the "e-scores" can be seen as a dependable measure to find, even if in relative terms, to what extent the scope of the city e-Governments have been realized, at least in providing these services/features. In essence, these services/features, as they exist on a city e-Government Web site, can still be viewed at an "e-Government project asset" stage (Figure 3 above). How, and to what extent, these available services/features are used; and how, (through an "appropriate use process"), they lead to "e-Government impacts"; and how these impacts, (through a "good governance process") lead to "e-Government performance" (Soh & Markus, 1995); are questions for further research.

10. Findings and Discussion

From the comparison of the features it is seen that all the cities have most of the requisite features on their Web sites. The total e-scores of the five cities were as computed, were: New York 305, Toronto 273, Singapore 300, Auckland 258, Ottawa 269. (The comparative table is given at Annexure A of the complete paper). Thus, it is seen that all the five cities have scores that range from 258 to 305, with a mean of 281 and a standard deviation of 20.46. In view of the fact that the Web sites contain a number of features and which are in addition to the target list, this difference in e-scores in these five cities does not seem to be significant. Also, there is substantial variance in the focus of the features and functions, which is probably linked to variations in the local needs. For example, in Singapore, local e-payment system terminals, known as AXS Stations (pronounce as "Access Stations") are widely available on the island 24/7, and can be used for a large number of e-Government payments. And as these systems can be used for payment of traffic fines or court fines, only Level 3 functionality is provided on the e-Government Web site for some services.

In view of the local variations, the e-scores may generally be deemed at a similar level. Though it would be hard to infer from this small study that the e-Government e-scores in all the five cities were generally equivalent because they have hit a service "plateau"; but the results seem to tally with the findings in the Accenture's sixth annual global report on government service delivery, "Leadership in Customer Service: New Expectations, New Experiences," which finds that "all countries experienced a drop from previous years' overall e-Government maturity scores, which measured the level to which a government has developed an online presence" (Accenture, 2005 p.1). This has probably happened because continued incremental improvements in this area do not produce commensurate results. So incremental addition of features may average out the target maturity levels. *United Nations e-Government Survey 2008: From e-Government to Connected Governance* finds that "governments around the world are realizing that continued expansion in e-services is not possible without some kind of integration of back-end government systems… The new approach maintains that genuine cost savings and quality improvements will occur only if there is a re-engineering of the internal structures and processes of the administration towards a connected form of governance" (United Nations, 2008 p. xv). All this indicates the need for a fresh look at the e-Government, starting from the basics, and providing a solution that grows from infrastructure, to integration to transformation. This transformation; "in management of human, technological, and organizational resources and processes"; is the monumental change, which is the objective of e-Government (Grant & Chau, 2005), and not mere technological change. The study of the scope realized in practice by these five cities indicates a high level of advancement, and all the five cities seem to have crossed over from the infrastructure phase into an integrative phase. Even though the Web sites may seem to be similar, they are merely e-Government assets. It cannot be directly inferred whether they will lead to

equivalent e-Government impacts and a superior e-Government performance. It would depend on the (process of) proper use of these assets; and a subsequent good governance process, to produce superior e-Government performance (Soh & Markus, 1995), which would be the ultimate realization of scope in practice. Also, even though the five cities studied have most of the target features/functions, the scope of services provided by the e-Government Web site of each of these cities is unique and it underlines the need for customizing the e-Government initiatives to the local needs of the constituents.

11. Concluding Remarks

This paper outlines the scope of a city e-Government initiative. The limitations posed by city e-Governmental jurisdiction and external factors are brought out. Realization of the scope of city e-Government is discussed from the perspective of process theory. The issue of fuzziness of boundaries of scope in an integrated city e-Government initiative is discussed. The construct of "governance junction" is introduced to handle the fuzzy boundary issue. Further, to assess the realization of scope; salient services, functions and features are mapped from different studies. A study is conducted for services/features offered by five city e-Government initiatives across the globe to compare and contrast the degree to which they realize the scope, by assigning "e-scores" to their Web sites. It is seen that almost all the five cities are at a relatively high level of maturity in service offerings/features. However this may not necessarily correspond to the city "e-Government impacts" and the results leading to superior city "e-Government performance". That would require optimal use and good governance processes to be in place and successful. This paper has contributed to literature by outlining the concept of scope of city e-governments, external factors limiting the realization of scope, the progression from scope to city e-Government investments, city e-Government assets, city e-Government impacts, and then to city e-Government performance. This paper has mapped the important city e-Government features in web sites and provided a study comparing five city e-Government initiatives. It finds that, though the elements provided on the Web sites have a number of common features, the scope of services provided by Web site of each of the five cities studied is unique, and it emphasizes the need for customizing the initiatives to the local needs of the constituents.

12. Limitations and Future Research

The study is limited by the fact that it has explored what already exists, and has considered a limited number of representative studies and five important city e-Government Web sites. Study of five city Web sites is limited by the features / functions considered, which in turn are limited by their dependence on a previous model. An actual survey of users/citizens of the target city and its officials would be invaluable to identify their perceived needs and expectations from the city e-government; such a survey may even throw up new features or areas, which have not been hitherto considered for implementation or research.

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