Factors for Successful e-Government Adoption: a Conceptual Framework

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Abstract – Canada has been the world's leader in e-Government maturity for the last five years. The global average for government website usage by citizens is about 30%. In Canada, this statistic is over 51%. The vast majority of Canadians visit government websites to obtain information, rather than interacting or transacting with the government. It seems that the rate of adoption of e-Government has globally fallen below expectations although some countries are doing better than others. Clearly, a better understanding of why and how citizens use government websites, and their general dispositions towards e-Government is an important research issue. This paper initiates discussion of this issue by proposing a conceptual model of e-Government adoption that places users as the focal point for e-Government adoption strategy.

Keywords: customer orientation, e-Government, adoption, model, Canada

1. Introduction

The phenomenon of the Internet has had a transformational effect on society. It has opened a new medium of communication for individuals and businesses and provided opportunities to communicate and get information in an entirely different way. It has made information and services accessible in ways that could not have been conceived just twenty years ago. The growth of the Internet was initially due to private sector interests but governments are now becoming part of this revolution. Governments worldwide have been making significant attempts to make their services and information available on the Internet. A variety of e-Government initiatives have been undertaken to improve the efficiency and effectiveness of internal government operations, communications with citizens, and transactions with both individuals and organisations (Warkentin et al., 2002). In 1995 there were only 142 government websites; by 1998 this had increased to 2,617 (Muir and Oppenheim, 2002). A UN study in 2001 reported the existence of more than 50,000 government-managed websites, and that almost all developed countries had launched serious and comprehensive e-Government initiatives with firm commitment and big budgets (White Paper, 2006). The government of Canada appears to have a clear vision and goal of customer centricity and a whole-of-government approach. By transforming its service delivery approaches, it will better connect with citizens while attaining operational efficiencies (Accenture, 2004). With a firm recognition of its target customers – Canadian citizens, Canadian businesses, and the international community – the government is striving to satisfy their needs. The government of Canada has been receiving high accolade for its e-Government strategy, and it is considered a world leader in e-Government initiatives. Its progress has been publicly recognised by an Accenture study that has ranked Canada first out of 22 countries for five consecutive years (Accenture, 2005). The United Nations judges Canada's competence in e-Government as "high", stating that "possibly more than any other country it has demonstrated…an intrinsic understanding of e-Government's potential and reality" (Government On-Line, 2003).

First introduced in 1995, the Canadian website began to evolve in 1999 when the Canadian government made an open commitment to be "known around the world as the government most connected to its citizens" (E-Government Case Studies, 2005). The government of Canada allocated $880 million over six years (2000-2005) to support its e-Government program (Government On-Line, 2003). The success of its program, however, extends beyond money, and warrants a retrospective examination. Despite continuously receiving top ranking for its e-Government program, Canada ranks sixth in terms of government website usage globally (Government On-Line, 2004). The Canadian government, therefore, could take some measures to further increase the adoption of its e-Government services. This is in line with the growing interest in e-Government by countries around the world and their interest in increasing citizen adoption and usage of their online government services. This study contributes to the existing knowledge on e-Government in three ways. First, it extends our understanding of e-Government by proposing a centric-centric model that is based on an extended set of variables from the marketing literature. Second, it complements previous research by filling in the need for a theoretical model to inform empirical data collection and analysis. Third, from a

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practical standpoint, after the model has been empirically tested, the results could help other countries, both developing and developed, to make their e-Government strategies more effective. The remainder of this paper is structured into four sections. The following section provides a brief definition of e-Government. In the last three sections we review the relevant literature, provide a description of a conceptual model description, and end with the conclusion.

2. e-Government and its benefits

"e-Government refers to the delivery of [government] information and services online through the Internet or other digital means'' (Muir and Oppenheim, 2002). It is about delivering improved services to citizens, businesses, and other members of the society through drastically changing the way governments manage information (Accenture, 2002). However, the e-Government challenge is not a technological one. Rather, the challenge is to use technologies to improve the capacities of government institutions, while improving the quality of life of citizens by redefining the relationship between citizens and their government (Gautrin, 2004). Initially, e-Government may seem like another option for communication with citizens. But in the face of rising demands from demographic, economic, social, and global trends, e-Government no longer appears to be a matter of choice, but a necessity for any country wishing to enter the 21st century as a competitive nation in the world arena. Governments have been viewed as complex, mammoth bureaucratic establishments with a set of information silos that erect barriers to the access of information and make the provision of services cumbersome and frustrating. With e-Government, the quality of services provided to citizens and businesses can be improved significantly while attaining greater efficiency for all participants. The provision of 24/7 services can improve the level of satisfaction among citizens and enhance their acceptance of the public sector (Stiftung, 2002). E-Government can result in significant cost savings to governments and citizens alike. These potential huge savings are dependent on how quickly adoption rates increase (Eggers, 2004). The services offered by e-Government are categorised into three phases: publishing, interacting, and transacting. Government websites are primarily being used to obtain information; to date limited progress has been made in interacting with citizens and online business transactions (Accenture, 2004).

Previous studies have emphasised website navigability and aesthetics (Reichheld et al., 2000), personalisation and customisation (Thorbjornsen et al., 2002), customer loyalty programs (Sharp and Sharp, 1997), promotions (Kendrick, 1998), and permission marketing (Seth, 1999) as key strategies for attracting customers to frequently visit a website. The results of these studies can be effectively used in building government websites to increase the adoption of e-Government. So far two models have been proposed in the literature that address e-Government adoption. Warkentin et al. (2002) propose a conceptual model with citizen trust as the underlying catalyst for e-Government adoption. Gilbert and Balestrini (2004) propose and test a model that combines attitude-based and service quality-based approaches. Additionally, a number of frameworks based on the Technology Acceptance Model and the Theory of Reasoned Action have been proposed to explain the consumer adoption of Internet. These frameworks relate adoption to innovation and behaviour. The literature on consumer adoption of e-Government seems to be, at best, fragmented; little effort has been made to develop an integrative framework that identifies the appropriate nature of relationships among key drivers of adoption. The objective of this paper is to propose a conceptual model of e-Government adoption using the vast marketing and information systems literature on the adoption of the Internet by individuals. Given the parallels of Internet adoption in the private corporate sector to e-Government adoption, such an approach could enhance our insights into the key drivers of e-Government adoption. Canada's e-Government initiative is used as a backdrop to elucidate the conceptual model.

In the business world, the Internet has changed the way that marketers foster relationships with their customers and also the way customers participate in the marketing process. Wind *et al*. (2002) observe that the Internet makes it possible for the customer, not the technology or the company, to be at the centre of all marketing and business strategy. Moreover, Wind and Rangaswamy (2001) argue that a customer-centric online marketing strategy goes well beyond providing a functional and aesthetically pleasing website and personalised products, to fully engaging individual customers in all facets of marketing activities. The digital marketplace is infinitely re-configurable to accommodate such an approach. Engaging customers in the marketing process from product design to pricing, distribution, and communication is crucial to building strong, loyal, and profitable customer relationships that could ultimately result in competitive advantage for the firm. This concept of user involvement is also used effectively by the Canadian government to promote e-Government. The Canadian government site continuously evolves based on regular feedback from its users. In fact, the Accenture study applauds Canada's program of receiving feedback about their needs and satisfaction from its citizens and businesses through the leadership survey; the study calls this process the most extensive of any country (Accenture, 2004). Their research includes usability studies, focus groups,

and interviews with users from various age groups across Canada who have different levels of computer expertise. Online feedback is also sought from users (E-Government Case Studies, 2005). Results from the user surveys are incorporated into website enhancements and are used to launch newer versions of the site. More than 10,000 Canadians participated in surveys and focus groups conducted on e-Government and service transformation from 2002 to 2003 (Accenture, 2004).

e-Government offers a number of potential benefits to citizens. It gives citizens more control on how and when they interact with the government. Instead of visiting a department at a particular location or calling the government personnel at a particular time specified by the government, citizens can choose to receive these services at the time and place of their choice. The accessibility of government services also increases since, despite government's mammoth infrastructure, there are always a limited number of personnel interacting directly with the citizens and waiting times, even on the phone, can be long. The electronic delivery of government services, especially the availability of different forms and the option of electronically submitting them, provides a considerable saving of time and money for individuals. Technology now makes it possible to personalise a website to a point where delivery of services could be tailored to meet the specific needs of an individual, thereby increasing the satisfaction of citizens from government services (Gilber and Balestrini, 2004). The adoption and usage of online government services has a special significance for developing countries. Unlike developed countries, the governments of developing countries have an incessant shortage of resources. They are always short of skilled personnel and facilities to provide adequate services to their citizens. The concept of information and service provision by telephone is non-existent in most of the developing countries. A personal visit to the department and face-to-face interaction with government personnel is mandatory to receive any type of service. Getting a form from a government department, so conveniently available online in a number of developed countries and taken for granted, costs citizens of developing countries significant time, effort, money, and frustration. The online delivery of government services could, therefore, tremendously increase accessibility and bring significant time and cost savings to citizens in developing countries. The element of transparency built in the online channel could also alleviate corruption, a serious problem in a number of developing countries. Therefore, e-Government could virtually revolutionise the provision of government services in developing countries. Access to the Internet by citizens is a serious issue but it could be dealt with by providing public access terminals. Canada's effort to provide Internet access through public terminals is regarded as an important step in encouraging e-Government adoption (Government On-Line, 2004).

3. Literature review

The literature in academic journals on the adoption of e-Government in academic journals is, understandably, almost non-existent since this is a very young field of research. Due to the nature of the academic publication process, there is also a time lag between the time when the studies are written and when they are published. Since it could be argued that e-Government adoption not only derives from, but is also a subset of Internet adoption, it is imperative to examine how the subject of adoption of Internet services has been addressed in the marketing and information systems literature. In this section we look first at the studies about e-Government adoption and then we examine the subject of adoption of Internet services.

3.1 Adoption of e-Government

We have found two academic studies that specifically deal with the topic of e-Government adoption. In the first, Warkentin et al. (2002) propose a conceptual model of e-Government adoption with citizen trust as the underlying catalyst for adoption. By examining online tax services, one of the most widely used of the online services in various countries, the authors propose a number of ways to enhance citizen trust in these e-Government services. Institution -based trust, such as on fair and independent judicial systems, is considered to be a major factor in building trust in e-Government. For new users of online government services, a lifelong social disposition to believe in the system and to trust others, along with the same set of expectations for all parties, can institute trust. The nature of previous experiences with e-Government will also be a major source of trust for experienced users. Other variables in the conceptual model that Warkentin et al. (2002) propose are perceived risk, perceived behavioural control, perceived usefulness, and perceived ease of use. Cultural variables such as power distance and uncertainty avoidance make up other variables in the model. In the study, perceived risk is defined as a fear of losing personal information and fear of being monitored on the Internet. Perceived risk is negatively related to adoption. The authors posit that the perception that an individual has of control over how personal information will be used, and control over how and when information can be acquired, could encourage adoption. Perceived usefulness is simply defined in terms of a system's utility to the user, and perceived ease of use is termed as a system that is easy to use, especially for individuals who do not have great computer skills.

Power distance is a somewhat more complicated factor. It is defined as the distance between the lower and upper castes of the society. Citizens in higher power distance countries, where there is more distance between the upper and lower castes, are more likely to carry out the tasks specified by the higher echelon of the society. Therefore, the authors propose that citizens in countries with a higher power distance are more likely to adopt e-Government than are citizens in countries with a lower power distance. The variable of uncertainty avoidance is defined as the tendency to be risk aversive. The authors argue that individuals in cultures that have higher uncertainty avoidance will be more dependent on trust for e-Government adoption. Despite the inclusion of a number of variables, the main thrust of this study is that trust is the most important underlying mechanism for e-Government adoption. The model proposed by Gilbert and Balestrini (2004) combines attitude -based and service -quality -based approaches. A dependent variable to this model is a willingness to use e-Government services. Independent variables are perceived barriers and perceived relative benefits. Perceived barriers consist of confidentiality, ease of use, safety, reliability, visual appeal, and enjoyment. Perceived relative benefits include time, cost, personalisation, convenience, control, and avoidance of personal interaction. Another factor that is shown to influence the adoption of e-Government is age. Gilbert and Balestrini note that previous research on Internet adoption has used three theoretical approaches to explain and understand this phenomenon. First, the diffusion of innovation theory seeks to understand the process through which innovations such as the Internet are disseminated over a matter of time in the society. Second, the Technology Acceptance Model, which has roots in information systems theory, shows how users accept and use a new technology like the Internet. Third, the service-quality-based approach seeks to understand the antecedents that affect user behaviour.

3.2 Adoption of Internet

This section provides a comprehensive review of the literature on Internet adoption. A survey of the literature makes it obvious that the topic has received considerable attention in the literature, but the literature deals primarily with the topic from the organisation's perspective. The two most researched areas are the adoption of the Internet by small and medium enterprises and Internet banking. The other business domains include the retail industry, the semiconductor Industry, agricultural firms, the tourism industry, manufacturers, public sector and other organisations. Only a handful of studies look at the consumer adoption of the Internet. Table 1 given below provides references of all the studies.

Table 1 - Literature on adoption of internet

Industrial Adoption of Internet	Academic literature
Small and medium enterprises	Pontikakis et al., 2006 Dholakia and Kshetri, 2004 Karakaya and Khalil, 2004 Lee, 2004 Levy and Powell, 2003 Mehrtens et al., 2001 Walczuch and Braven, 2000 Kling et al., 1997
Internet banking	Chiemeke et al., 2006 Bauer and Hein, 2006 Durkin and O'Donnell, 2005 Chan and Lu, 2004 Akinci et al., 2004 Irwin et al., 2004 Gopalakrishnan et al., 2003 Rotchanakitumnuai and Speece, 2003 Mattila et al., 2003 Sathye, 1999
Others	Doherty et al., 2000 Hart et al., 2000 Martin and Sellitto, 2004 Peng et al., 2005 Henderson et al., 2004 Ma et al., 2003 Vlosky et al., 2002 Napoli et al., 2000
Consumer adoption of the	Lin and Yu, 2006

Industrial Adoption of Internet	Academic literature
Internet	Yoh et al., 2003 O'Cass and Fenech, 2003 Fornerino, 2003 Zhu and He, 2002 Black et al., 2001 Citrin et al., 2000 Atkin and Jeffres, 1998

As it is evident from table 1, there are only a small number of studies on consumer adoption of Internet. All the studies given in the above table are discussed briefly to provide an understanding of the scope and breadth of issues addressed in the literature. Atkin and Jeffers (1998) compared Internet adopters and non-adopters on a number of factors: social locators, communication needs, media use habits, and relationships with technology. They hypothesised that Internet adopters will differ from non-adopters in demographic terms as they will be younger, more educated, and have higher incomes. Additionally, Internet adopters will be more cosmopolitan, will have a greater desire to satisfy various communication needs, and will be more interested in experimenting with new technologies. Early adopter profiles that they adopted from the diffusion theory were supported in terms of demographic and technology uses, but no significant differences were found between adopters and non-adopters on communication needs. Citrin et al. (2000) investigate why some Internet shoppers are more likely to shop on the Internet than others. They examine two factors – level of prior Internet usage and consumer innovativeness – that lead to high propensity for shopping on the Internet. Consumer innovativeness is defined as consumer acceptance of new ideas. The findings of the empirical study supported the notion that higher Internet usage leads to Internet shopping. Domain-specific innovativeness, innovation more of product or domain specific rather than personality characteristics, was found to influence Internet shopping.

Black et al. (2001) examine the consumer adoption of financial services through the Internet. They call it innovation in retail service delivery. Bauer's concept of perceived risk, in conjunction with Roger's model of perceived innovation attributes are explored in a qualitative study. They found that consumer adoption decisions were influenced by perceived innovation attributes. However, two additional dimensions – societal issues and the sense of fatalism – were also found to influence people's adoption decisions. Societal issues included job loss, lack of opportunities to socialise, and the development of a lazy society. A sense of fatalism was defined as concerted efforts by the financial institution to move customers away from traditional channels and lure them towards high-tech channels. The Internet was considered a natural and unavoidable step towards that effort. While the societal issues could have a negative effect on adoption, the sense of fatalism seems to have a positive effect. The Internet adoption in China is examined by Zhu and He (2002) with the aid of a theoretical framework proposed by the authors. Adoption of the Internet is posited to be influenced by three variables in the diffusion process. Perception, or a perceived characteristic of the Internet, consists of compatibility, ease of use, results demonstrability, and image. Motivation, or a perceived need for the Internet, consists of need for news, entertainment, personal relations, and work related and personal information. The social context, defined as the perceived popularity of the Internet, means popularity among family members, primary group members, and in the occupation and general population. Individual demographic characteristics are also deemed to influence adoption of the Internet. A survey of 2,500 residents in Beijing and Guangzhou supported the hypotheses of the model. Fornerino (2003) uses the Bass model of diffusion of innovation to examine Internet adoption in France. Behaviour is classified into two categories: innovator behaviour and imitator behaviour. Innovator adoption is due to the influence of external actions on the social system, whereas imitator is strongly influenced by those who have already adopted the innovation. Using panel data of 24,000 households from 1996 to 2000, which provides information on how many people connect regularly or occasionally to the Internet, a forecast using the Bass model is obtained that goes to the year 2012. This study demonstrates the use of the innovation diffusion model to predict Internet adoption.

O'Cass and Fenech (2003) investigate the Internet user's adoption of the web for retail shopping. The study primarily uses the Technology Acceptance Model (TAM) as theoretical basis. TAM, influenced by the theory of reasoned action, is widely used in information technology and information systems research to evaluate user acceptance of a system and to understand determinants of individual behaviour towards system usage. The other variables included in the study consist of personal characteristics such as opinion leadership, impulsiveness, web shopping compatibility, Internet self-efficacy, perceived web security, satisfaction with websites, and shopping orientation. A web-based survey of 392 respondents confirmed that TAM is a suitable theoretical framework to understand Internet adoption for retail purposes. For Internet users the perceived usefulness and perceived ease of use were influenced by opinion leadership, web shopping

compatibility, Internet self-efficacy, perceived web security, impulsiveness, satisfaction with websites, and shopping orientation. Yoh et al. (2003) integrated the theories of reasoned action and innovation adoption into one model to explain consumer adoption of the Internet for apparel shopping. Psychological factors, defined as beliefs and attitude, and social factors such as social support and social acceptance were the major variables. The user's prior experience with the Internet was also used to justify adoption. A survey of 355 consumers in the U.S. confirmed the significance of all the variables. Prior experience with the Internet turned out to be the strongest influence on intention to purchase apparel through the Internet. Consumer adoption of Internet as a channel for information searching and ordering was examined by Lin and Yu (2006). The authors propose that three factors – perceived usefulness, anxiety and playfulness directly influence consumer attitude towards information searching and ordering. Novelty seeking, they contend, acts as a moderator. Perceived usefulness and playfulness are considered driving factors to the adoption on Internet while anxiety acts as a prohibiting force.

4. Conceptual model

The ultimate objective of e-Government programs ought to be the frequent and recurring use of online services by citizens not only for obtaining information but also for interacting and transacting with the government. The Canadian government website, with its proclaimed excellence, attracts a majority of Canadians for the purpose of obtaining information (Government On-Line, 2004). The government of Canada measures the usage in terms of people who have visited the website at least once (Government On-Line, 2004). If governments wish to accurately measure the impact of e-Government on society, it is important for them to measure citizen usage beyond a one time surfing of the website for information seeking purposes. In order to increase the frequency of usage, as well as moving citizens up the level of hierarchy of services, governments must measure and monitor the satisfaction of citizens with existing services. This variable of satisfaction has been missing from the e-Government models proposed in the literature so far. The Warkentin et al. (2002) model with four dimensions of trust suffers from measurement problems. The dependent variable of intention to engage in e-Government does not capture the full spirit of adoption. The inclusion of cultural variables, though making the model comprehensive, violates the principle of parsimony, a criterion that is used to judge the quality of a model. On the other hand, Gilbert et al. (2004) measure potential willingness to use e-Government services in terms of perceived benefits and perceived barriers. Their model is useful in terms of understanding what it would take to entice users to the website for the first time, but it falls short of measuring frequent usage of government services. The conceptual model proposed in this study, therefore, seeks to rectify the shortcomings of the previous models and add a new dimension of satisfaction. Some of the variables used in this model are culled from the studies on Internet adoption and e-Government adoption. User characteristics and website design are considered to have a direct influence on e-Government adoption, while service quality affects citizen satisfaction, which leads to recurring use of e-Government services and contributes to adoption. This model is premised on the belief that e-Government adoption is largely shaped by the extent to which the government can provide a rich, engaging, and hassle-free experience that is reliable and can provide higher levels of satisfaction.

Figure 1 shows the relationship between the five dimensions of the study. Each dimension and its relationship with other variables, as depicted in the model, are discussed further in the remainder of the paper.

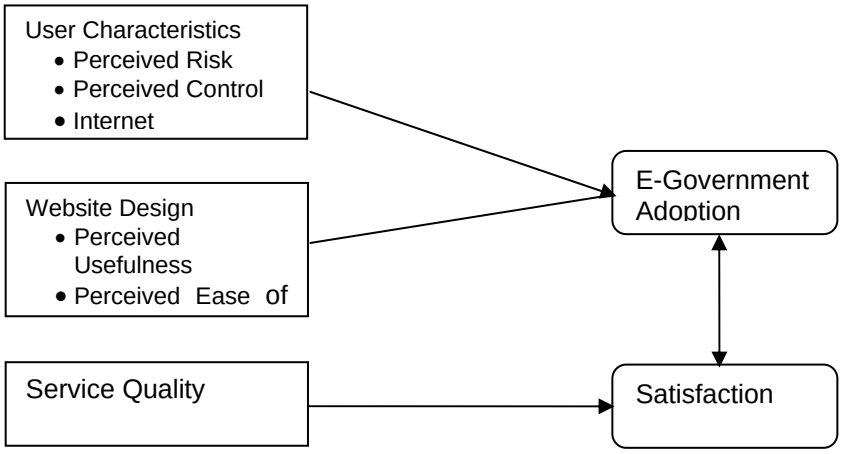

Figure 1- Conceptual Model of E-Government Adoption

4.1 e-Government adoption

The prior models on e-Government adoption have not clearly defined adoption. Warkentin et al. (2002) describe adoption as the intention of citizens to engage in e-Government to receive information and request services from the government. Carter and Belanger (2005) measure it as intent to use, while Gilbert *and* Balestrini (2004) measure it as willingness to use e-Government services. Both willingness and intention to use could be considered as unidimensional measures of adoption. However, e-Government adoption is a multi-dimensional construct. At the outset, adoption is a simple decision of using, or not using, online services. The next stage of adoption would be how frequently services are actually used. One usage per year, which may be considered as adoption by some, would not translate into meaningful usage by governments or citizens. Scope of usage – whether the government website is used for acquiring information, interacting with, or transacting with government – is another very important dimension of adoption. The other dimensions include preference of the government website over other websites and preference of the online medium over other mediums of transactions with government. For example, when looking for information about government services, do citizens initiate their search from the government website or is it the last in priority in terms of online search? Do citizens prefer to go to the government website to interact with the government, or do they prefer to do that by telephone or by an in-person visit? All of these dimensions mentioned above make up the e-Government adoption. In our model given in Fig. 1, we suggest that e-Government adoption is affected by website design elements that provide perceived ease of use and perceived usefulness, by user characteristics – sense of perceived risk, feeling of perceived control and prior Internet experience – and by citizen satisfaction with the quality of its services. The relationship of these variables with adoption will be presented in the form of the following propositions.

4.2 Customer satisfaction

Oliver (1999) defined satisfaction as the perception of a pleasurable fulfilment of a service. For analytical purposes, customer satisfaction is measured by disaggregating it into two constituent parts: transactional satisfaction and overall satisfaction (Shanker et al., 2003). Transactional satisfaction refers to customer satisfaction derived from specific individual transactions; the quality of these may vary from one transaction to the other. However, a series of previous uses that resulted in very positive transaction-specific satisfaction could lead to overall satisfaction, which could potentially induce adoption (Bloemer and Kasper, 1995; Shanker et al., 2003). Thus, e-Government adoption requires that citizens show higher levels of satisfaction with the online service provided by the government. Proposition 1: A higher level of customer satisfaction will increase the rate of e-Government adoption.

4.3 Service quality

Exemplary service quality impacts satisfaction and, ultimately, adoption (Reichheld and Markey Jr., 2000). Empirical evidence suggests that the quality of service generally plays a very important role in online business environments (Reichheld and Schefter, 2000). It is extremely crucial to understand the needs of the customer and tailor service to cater to those needs. The Canadian government's e-strategy is based on a user-perspective approach that determines the online offering and how information is organised and delivered to citizens (Stiftung, 2002). The needs of the citizens, rather than those of the government organisation, take precedence in planning. Therefore, services are provided based on user needs, not on departmental structures. Parasuraman et al. (1988) have developed a scale (SERVQUAL) that measures the service quality in five dimensions – tangibles, reliability, responsiveness, assurance, and empathy. Sureschander et al. (2002) have identified five critical factors that are essential in measuring service quality: core service or service product, human element of service delivery, systemisation of service delivery, tangibles of service, and social responsibility. The service quality measures used by Cronin and Taylor (1992) are expectation, performance, and importance. However, Dabholkar (1996) has operationalised the quality of technology based self service using the following measures: expected speed of delivery, expected ease of use, expected reliability, expected enjoyment, expected control, prior experience, need for interaction with the service employee, and expected service quality. Online service quality for e-Government could be measured in terms of quality of content provided on the website, the speed of the response to the citizens concerns with problem solving approach, and the availability of names. Other important measurement factors are telephone and fax numbers of personnel with whom citizens might need to get in touch, and the integration of an offline channel with online channel so that citizens could interact with government departments through other means if necessary. The Canadian government has classified the e-Government services into three areas: Canadians, non-Canadians, and Canadian businesses. The objective is to provide a high level of service by catering to the specific needs of people in these three categories and ensuring availability of relevant and reliable information that is highly correlated with satisfaction. The

Canadian government provides the most frequently used 130 services online (Government On-Line, 2004). Proposition 2: Higher quality of service will lead to higher levels of customer satisfaction.

4.4 Website design

A website is a key component of the online marketing strategy; this means that great care is required in designing it to serve the target market effectively and efficiently. This requires consideration of elements such as ease of navigation, aesthetics, content, accessibility, and features such as personalisation, customisation, customer self-care, and communities. All of these elements in combination will directly influence users' experience with the site and, ultimately, their satisfaction and adoption. For instance, Reichheld *et al*. (2000) suggest that in the business world the failure of Boo.com, a multi-million dollar fashion website, was because the site was overly complex, slow, not easily accessible, and hard to navigate. The effectiveness of website design from a citizen's perspective can be measured in terms of perceived usefulness and perceived ease of use. Davis (1989) has defined perceived usefulness, as "the degree to which a person believes that using a particular system would enhance his or her performance." Perceived usefulness of a website is measured in the business literature by:

- The extent to which the person believes that extracting information online will save his time, and
- The extent to which the person believes that extracting information online will reduce the cost (Shih, 2004).

In the context of Davis's (1989) definition, perceived usefulness is defined as the degree to which the citizen believes that the website would provide all the required information. He has operationalised perceived usefulness as the extent to which the work can be done more quickly, an enhancement in job performance, and an increase in productivity and effectiveness. The level of perceived usefulness directly affects e-Government adoption. The website content could also add to the perceived usefulness. Glazer (1991) suggested that the content of the website plays an important role in the satisfaction of the visitor, because if visitors fail to find what they are looking for they may not revisit the site. An integrated e-Government portal could be one major vehicle for achieving perceived usefulness. Instead of going to different government departmental websites for distinct tasks and services, citizens, without having the need to know which department is responsible for what service, could go to one point of access for all government services. This particular element could significantly reduce the time and effort invested in receiving information and services from the government (Government On-Line, 2003). There are primarily two levels of integration. The first, horizontal integration (Accenture, 2004), is the integration across different departments within each level of government – federal, provincial, and municipal. The second, vertical integration (Accenture, 2004), is the integration across different jurisdictions of the government. This means that the clearly distinguishable lines between federal, provincial, and municipal governments in the real world ought to disappear in the cyber world. Horizontal integration across departments within the same government type is not fully achieved yet due to either technical or organisational reasons (Accenture, 2004); it is relatively less challenging to attain. Vertical integration across governments requires strong political will and commitment for breaking down barriers. Different controlling authorities, and differences in legislation and organisational cultures, lead to lack of cooperation and serve as very strong barriers (Accenture, 2004). Nevertheless, vertical integration is the only a truly seamless approach to e-Government.

The Accenture Study (2002) acknowledges that little progress has been made in this area. It is considered as a huge barrier to progress by most governments, but not many have developed the plans and strategies to address and manage the issue. The government of Canada is again one of the few countries that are pursing the integration of services across federal and other jurisdictions. One of the initial steps taken by the government is to give a common look and feel for all federal sites (Government On-Line, 2004). Davis (1989) has defined perceived ease of use as "the degree to which a person believes that using a particular system would be free of effort" and has measured it as:

- How easy it is to learn the system
- To what extent the system is clear and controllable
- To what extent the system is understandable
- To what extent the system is flexible
- How easy it is for individuals to become skilful in using the new system.

A study by Venkatesh and Davis (2000) has found a positive correlation between perceived ease of use and system adoption. Perceived ease of use positively affects adoption if the website is visited only to get information, but if the website is used for transaction purposes then the perceived ease of use might not affect the rate of adoption (Gefan, 2000). Personalisation of websites, customisation of product offerings,

and self-care are the three key features that could be used not only to build relationship with the visitors, but also to enhance their experience (Roehm and Haugtvedt, 1999). These features give visitors a sense of control and participation and could potentially enhance their adoption.

Proposition 3: Higher level of perceived usefulness is positively related to the rate of e-Government adoption.
Proposition 4: Higher level of perceived ease of use is positively related to the rate of e-Government adoption.

4.5 User characteristics

User characteristics such as perceived risk, perceived control, and Internet experience can have a direct impact on Internet adoption. A number of recent studies (Holland and Baker, 2001; Wind et al., 2002; Shanker et al., 2003; Wind and Rangaswamy, 2001) have found significant interaction effects between certain characteristics of online users (e.g., Internet experience) and various online strategies (e.g., personalisation, customisation, and community). Warkentin et al. (2002) argue that experience influences a citizen's trust of e-Government. Users with prior experience, especially if satisfied, would be more likely to return to use e-Government services. The variables used to measure Internet experience include duration of experience (Miyazaki and Fernandez, 2001; Cho, 2004), frequency of use (Miyazaki and Fernandez, 2001; Cho, 2004; Kolsaker et al., 2004), and usage pattern (Cho, 2004; Kolsaker et al. (2004). Perceived risk could be defined as the risk of exposing and losing personal information through online interaction. The various dimensions of perceived risk, as empirically tested by various authors (Pires et al., 2004, Ueltschy et al., 2004), are financial risk, performance risk, psychological risk, social risk, convenience risk, and overall risk. Perceived risk leads to security and privacy issues that could discourage the use of online services. Miyazaki and Fernandez (2001) have broken down perceived risk into privacy concerns and system security concerns. It is important to ensure that citizens can transact on-line securely and their personal information will be kept confidential to increase the level of trust and the e-Government adoption rate.

The government of Canada, recognising that e-Government adoption could depend on user perceptions of how securely they can transact online and whether their personal information is protected, has introduced state-of-the-art security infrastructure (Government On-Line, 2004). The government has introduced a secure electronic credential (username/password) system called ePass to facilitate communication with online government services. In addition to entering username and password, users are prompted to input an activation code, which is sent by ground mail to the user to ensure privacy and authenticate user identity. According to a recent EKOS survey (2005), 74% of Canadians are somewhat to extremely confident that the Canadian government protects the personal and confidential information that they have provided online. The number of federal clients who have conducted transactions with the government online has increased over the years. Another study by Ipsos-Reid (Treasury Board of Canada Secretariat, 2005) found that 70% of Canadians are still hesitant to conduct on-line transactions with the government if the transactions require them to submit personal and confidential information. Addressing these concerns, the Government of Canada in the year 2002 became the first country to introduce a Privacy Impact Assessment (PIA) Policy. This policy outlines an assessment process for any new or redesigned service raising privacy issues (Stiftung, 2002). One of the major deterrents of using online services is the lack of control over where the information is going, who is using it, and for what purpose it is being used. If citizens have more control over how their personal information is retrieved, stored, and shared by the government, it could enhance their trust as well as give them a feeling of more control. A citizen survey of e-Government programs conduced in 22 leading countries found that people continue to rely on more traditional, offline channels (Accenture, 2005). Despite a high level of Internet and e-Government familiarity in some countries, and despite the fact that the telephone is ranked as the most difficult form of communication, telephone continues to be the predominant communication medium with the government (Accenture, 2005). It is, therefore, proposed that government should be more transparent in terms of the flow of information once it leaves user's system. Also more stringent controls should be placed on the access of information by government personnel. Three dimensions of perceived control identified by Wu (2006) are perceived control over the site navigation, the pace or rhythm of the interaction, and the content being accessed.

Proposition 5: Higher and satisfactory level of Internet experience increases the rate of e-Government adoption.
Proposition 6: Lower level of perceived risk increases the rate of e-Government adoption.
Proposition 7: Higher level of perceived control increases the rate of e-Government adoption.

5. Operationalisation of constructs

The objective of this paper was to propose a centric-centric conceptual model of e-Government adoption. This study provides an understanding of issues involved in e-Government adoption and lays groundwork for empirical studies. However, operationalisation of constructs and identification of measures is the first step towards empirical studies. Therefore, the literature was thoroughly examined to discern specific measures for the constructs proposed in the conceptual model. The constructs proposed in the model, along with underlying measures culled from various studies in the literature, are summarised in Table 2.

Table 2 - Measures of the constructs

Construct	Author	Measures
User Characteristics		
Perceived Risk	Pires *et al*. (2004), Ueltschy *et al*. (2004)	Financial risk, performance risk, psychological risk, social risk, convenience risk, and overall risk
	Miyazaki and Fernandez (2001)	Privacy concerns and system security concerns
Perceived Control	Wu (2006)	Perceived control over the site navigation, the pace or rhythm of the interaction, and the content being accessed
Internet Experience	Miyazaki and Fernandez (2001)	Duration of experience and frequency of use
	Cho (2004)	Frequency of use, duration of experience, approximate time spent per week, and average time spent per visit
	Kolsaker *et al*. (2004)	Frequency of use and usage pattern
Website Design		
Perceived Usefulness	Davis (1989)	Work more quickly, job performance, increase in productivity, effectiveness, and makes job easier
Perceived Ease of Use	Davis (1989)	Easy to learn, controllable, clear and understandable, flexible, and easy to become skilful
Service Quality	Parasuraman *et al*. (1985)	Tangibles, reliability, responsiveness, assurance, and empathy
	Cronin and Taylor (1992)	Expectation, performance, and importance
	Dabholkar (1996)	Expected speed of delivery, expected ease of use, expected reliability, expected enjoyment, expected control, prior experience, need for interaction with the service employee, and expected service quality
	Sureschander *et al*. (2002)	Core service or service product, human element of service delivery, systemisation of service delivery, tangibles of service, and social responsibility
E-Government Adoption	Gilbert and Balestrini (2004)	Willingness to use
	Carter and Bélanger (2005)	Intent to use
Satisfaction	Shanker *et al*. (2003)	Service encounter satisfaction, overall satisfaction

6. Conclusion

The delivery of information and services by the government online through the Internet or other digital means is referred to as e-Government. Governments all over the world, especially those in the developed countries, have been making significant strides in making their services and information available to the public through the Internet. However, the success of e-Government efforts depends, to a great extent, on how well the targeted users for such services, citizens in general, make use of them. The issue of e-Government adoption, therefore, warrants a significant research. The two models and various frameworks proposed in the literature that address e-Government adoption primarily relate adoption to innovation and behavioural aspects. The literature on consumer adoption of e-Government appears fragmented and is devoid of an integrative framework that identifies the appropriate nature of relationships among the key drivers of

adoption. This paper proposes a conceptual model of e-Government adoption by drawing on the vast marketing and information systems literature on the adoption of the Internet by individuals. Further, this paper addresses a need in the literature for more rigorous conceptual frameworks to better understand the drivers of e-Government adoption. The models consider citizens to be the focal point of e-Government services. The proposed model underscores the fact that citizen characteristics need to be properly understood, along with other factors that generate satisfaction, before developing an effective e-Government adoption strategy. This model is premised on the belief that a higher level of satisfaction – shaped largely by the extent to which government can provide a rich, engaging, hassle-free, secure, and reliable experience – leads to a higher level of adoption.

User characteristics and website design directly influence e-Government adoption. User characteristics consist of perceived risks associated with using services such as financial and performance risk as well as data security and privacy. Also important are perceived control over the process, as consumer are unaware how their personal information is being used, and the extent of Internet experience, such as the length of time users have been exposed to the Internet, the frequency of usage, and the time spent on each visit. Website design variables, based on the technology acceptance model, are perceived usefulness and perceived ease of use. User perception as to the usefulness of the online information or services provided by the government could significantly increase the adoption rate. However, the perceived usefulness goes hand in hand with perceived ease of use, i.e., how easy it is for users to access, navigate, and consume the information. Service quality has a direct bearing on user satisfaction, which in turns influences the adoption of e-Government. Online satisfaction has primarily been measured in the literature as overall satisfaction spanning a long period of time and satisfaction with the most recent service encounter. Various authors have used varied means to assess online service quality. However, the use of appropriate measures to gauge e-Government service quality for a citizen centric model would require fulfilling user-defined expectations of service quality. The model proposed in this paper is based on existing theories but needs to be empirically tested to determine its validity and reliability. The next phase in the current stream of study would be to operationalise the constructs based on the measures identified in this paper and propose refinements in the model, if any, on the basis of empirical findings.

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