A Framework for Perception of Citizen Demand in E-government Services

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Abstract—The provision of E-government service has proposed a user-oriented approach. The user demand has been placed at the center of electronic public services. Nonetheless, the demand side research has not received adequate attention in the e-government literature. This paper proposes a framework for perception of citizen demand which posits that, given a lack of first-hand information on user responses, government tend to adopt an approach integrating using process and satisfaction to find citizen demand. This analysis may give a certain degree of reference to the e-government service development.

Keywords—e-government services; citizen demand; perception of demands

I. INTRODUCTION

The rapid development of information and communication technologies (ICT) has had an enormous impact on our society. New possibilities offered by ICT give organizations a chance to rethink the ways of working and operating. E-government is increasingly becoming an important public service means around the world. Despite many governments strive for e-government services, the actual e-government services that government agencies have provided in the last few years have fallen short of their potential. The creation of e-government web sits alone does not guarantee their usage by citizens. Therefore, technological complexity and incompatibility are not the only, nor the most difficult challenges to overcome in the development of E-government. Nowadays fulfilling the needs and expectations of citizens has been identified as the main challenge that government authorities face [1]. The new service delivery must provide greater satisfaction with higher efficiency in e-government [2].

Although many research has been done to examine adoption and success of e-government, which primarily guided by supply side factors or technological possibilities, relatively little is known about citizen demand in e-government services [3, 4]. With the widespread ineffective services in e-government concerned, such traditional e-government strategy which is out of step with the principles of user-centered has been increasingly questioned [5]. In reaction to this, the plea for user-centered e-government strategies becomes more prominent. In order to design and provide high quality e-government services that comply with the demands of citizens, a demand-oriented approach needs to be developed. Therefore, an extensive study of the demands of citizens is essential [6].

However, most government organizations cannot afford to carry out any form of extensive surveys of citizen demands. In addition, there are some demands that were explored and induced by advanced service technology, such as SMS (short message service) with the development of communication technology. In the absence of actual survey data of citizen demands collected directly from users, how does government perceive what is the citizen really want?

The purpose of this paper is to develop a framework for perception of citizen demand in e-government services. We start our analysis by discussing characteristics of the citizen demand in e-government services. Then we propose a conceptual framework which is based on the literature review. Moreover, we highlight future directions for research and offer practical recommendations for management.

II. CHARACTERISTICS FOR CITIZEN DEMANDS IN E-GOVERNMENT SERVICE

A. Heterogeneous user groups

The target group of e-government services is highly heterogeneous as it comprises the entire population of a region or country. Government agencies must take all the members of a population into account, which should result in a service system design that caters to different cultures, skill and political opinions. In order to coordinate differences from user groups, the demand in e-government services must be public demands in the society.

B. No competition

E-government services are usually provided by one single body and the citizen is obliged to make use of each particular services (e.g. to acquire a driver’s license). Therefore, e-government services do not need to make any effort to seduce the visitor into using them as much as commercial services do.

C. Interoperability

E-government services often span several government departments. It can be offered to the citizen via one single website, supported by an interoperable system. This website should present the service as a coherent and logical whole for the user.

D. Incidental use

E-government service presently has evolved into two parts of identifiable content. The first is the information dissemination in which government catalogue information for public use. The second part is transaction-based e-
government services in which citizens can transact with the service system such as paying taxes online. For the transaction-based services, most services are used only once or rarely. As a result, clients do not have a mental model of the service they are about to apply for and must be guided through the service process by the system.

E. Non-economic returns

E-government services are provided with public money. The return on investment is difficult to assess for government as it often manifests itself as a reduced burden for the citizen. Therefore, the returns on e-government service should be assessed using subjective user-satisfaction criteria, rather than by means of a strict economic analysis [7].

III. THEORY DEVELOPMENT

The theme of our paper demand is a concept that has been explored quite extensively in psychology, economics and marketing literature. Demand is very important because the requirements is the foundation on which system development rests [8] and the demands can serve as the basis for a return on investment evaluation [9]. In e-government services, the popularity and use of Internet is limited by the number of users with Internet access. So our analysis of the concept of citizen demand is user requirement, where users can get access to e-government service with internet and computers.

Organizational perception is how organizational leaders perceive the opportunities and risks in the internal and external environments of their organizations [10]. It represents the degree to which these leaders share many beliefs, values, and assumptions that encourage them to make mutually reinforcing interpretations of their own acts and the acts of others [11]. It is closely related to an organization’s ability to formulate its strategies to meet societal demands and depends on how it recognizes and accurately interprets the opportunities and risks of the framework in which it operates [12]. In our study, perception of citizen demands is defined as how government departments perceive the citizen demands.

In the past, some demands engineering activities of e-government projects have been reported. Haraldsen, Stray, Paivarinta & Sein discussed an approach to demands engineering for e-government portals that facilitates the citizen via life-events [13]. Other citizen-centric demands requirements studies have applied methods such as a literature review [14], a combination of interviews with experts, surveys and focus groups [15] and a combination of interviews with users and thinking-aloud sessions [16]. Although these studies report useful demands, they do not describe a general approach for perceiving user requirements for e-government services.

Usually organizations need quality information to understand the responses of their accurately. Unfortunately, useful and accurate information about demands is not always available to government during the interview. Environmental uncertainty and a lack of relevant organizational resources will make the information collection and processing capability of government departments very difficult. Based on the deficit, we will analyze perception of citizen demands in e-governments with reference to two theories, expectancy disconfirmation theory and efficacy theory.

A. Expectancy Disconfirmation Theory

Expectancy disconfirmation theory is widely used in the service marketing in general. The theory holds that consumers form expectations of products or service performance prior to purchasing or use. Consumer satisfaction is seen as the outcome of this comparison between consumer’s per-consumption expectation and post-consumption disconfirmation. Confirmed expectations lead to moderate satisfaction; positively disconfirmed, or exceeded, expectations lead to high satisfaction; and negatively disconfirmed, or unmet expectations lead to dissatisfaction [17]. The expectation in service management refers to the customer demand [18].

Citizen demands are formulated and the possible evaluation criteria of user-satisfaction in e-government service. Based on expectancy disconfirmation theory, a way to know citizen demands can be done by recording complaints, which are the consequences of e-government services.

B. Self-efficacy Theory

The Self-efficacy theory believes that a person has the capability to execute the courses of actions required to manage prospective situations to achieve a particular objective. Self-efficacy is affected by four things, namely experience, modeling, social persuasions, and physiological factors. Experience is related to prior exposure to similar situations in dealing with the action. Modeling is the process of cognitive comparison between a person and others in respect of behavior. Social persuasions relate to encouragements given by other people. Physiological factors include various signs or responses of potential action.

According to self-efficacy theory, user of e-government service are viewed as proactive, self-reflecting and self-organizing, they can actively adapt to and manipulate their environment and seek to meet their demands actively.

IV. THE FRAMEWORK

Before you begin to format your paper, first write and save the content as a separate text file. Keep your text and graphic files separate until after the text has been formatted and styled. Do not use hard tabs, and limit use of hard returns to only one return at the end of a paragraph. Do not add any kind of pagination anywhere in the paper. Do not number text heads-the template will do that for you.

Based on self-efficacy theory and expectancy disconfirmation theory, we posit that citizen’s self-efficacy beliefs may not necessarily be consistent with the consequences that their behavior. So we develop an instrumental framework to perceive the citizen demands in e-government services by analyzing the antecedents and consequences of user demand. Fig. I depicts the framework. Then we will discuss the independent factors in the framework and their relationship.
From the framework, we posit that the antecedents of citizen demand in e-government services is citizen self-efficacy, which is influenced by experience, modeling, social persuasions and psychological factors. In the process of e-government services, production and consumption are carried out concurrently, and it is a self-service, which means citizen ability affects the service effect and efficiency. When people overestimate their ability to meet to some demands, they have a high level of self-efficacy, and then they will break the satisfaction, speak out and take action to seek the meet to the high level demands.

Based on expectancy disconfirmation theory, the level of customer satisfaction is determined by the comparison between customer expectation and the extent of their post-purchase disconfirmation. In e-government services, service expectation is citizen demands and the consequences of citizen satisfaction are the course of action pursued by citizen and government. This could be either a positive one, which can be show by their continued usage, or a negative one, which can be shown by the extent of customer complaints and the action to revert to traditional ways for acquiring information and services.

In our framework, we posit that both the antecedents and consequences of the process e-government services will probably have some correlations with the citizen demands in e-government services. There are two major types of factors that are related to perception of citizen demands in e-government services. One is related to the process of generation of citizen self-efficacy to use e-government services; the other is related to the outcomes of e-government services.

A. Outcomes of E-government Services

There are two types of outcomes of user satisfaction, positive and negative. In our study, we intend to use continued usage as the indicator of the positive side of citizen satisfaction. For the negative outcomes, we consider that it can be reflected by the level and frequency of customer complaints and initial user loss. Then we develop the proposition:

P1 Government perception of demands in e-government services is positively related to the actual outcome of consequences of citizen services.

B. Generation of Self-efficacy

Based on efficacy theory, citizen demands are affected by customer efficiency which will expressed in the process of e-government services. As an alternative to P1, we develop P2, which posits that Perception of demands in e-government services is related to the process of the generation of citizen self-efficacy.

P2 Government perception of demands in e-government services is positively associated with the process of generation of citizen self-efficacy.

In the process of generation of citizen self-efficacy, we posit the an citizen demands in e-government are formed by experience, modeling, social persuasions and physiological state at the time of service delivery.

A customer's previous exposure to service that is relevant to the focal service, is a force in shaping prediction and desires. The demands in e-government services are definitely influenced by user past experience, which depends on the skills of computer operating, perceived risk, trust to the government and so on. The more years you spend in this business the more you want because the more you learn and know. This leads to our first proposition:

P3 A positive relationship exists between levels of past experience with e-service or public service and demands in e-government services.

E-government services are based on the principle of equity between rights and obligations. As a quasi-public demands, when a service is accepted by some leader users, other citizen will follow them and take similar actions to obtain their rights. So a sense of fairness generated by comparing with others can influence citizen demands. We can propose that:

P4 Modeling among citizens elevates the demands in e-government services positively.

If customers have several service providers to choose from, or if they can provide the services for themselves, their levels of adequate service may be higher than those of customers who believe it is not possible to get sufficiently better service elsewhere. In e-government, most services can only be supplied by government and citizens have no choice, but to some extent, e-government provides a way of self-service. With the government promoting and encouraging, more and more people will accept e-government services. This leads us to propose that:

P5 E-government services as a public service alternatives raises citizen demands, with the promotion and encouragement of government.
The provision of the service depends critically on customer’s participation, and their demands are partly shaped by how well they believe they are performing their own roles. When customers believe they are doing their part in delivery, their demands are heightened. For e-government services, citizens’ self-perceived service role has improved, where self-perceived service role refers to customers’ perceptions of the degree to which they themselves influence the level of service they receive. This leads us to propose that:

P6 The higher the level of user’s self-perceived service role in e-government services, the more citizen demands.

In conclusion, figure 2 shows two sets of independent variables of perception of citizen demand in e-government services.

![Figure 2: The perception factors of citizen demands in e-government](image)

**V. CONCLUSION AND IMPLICATIONS**

The movement to e-government, at its heart, is about changing the way people and businesses interact with government. It only makes sense to find out what they want, expect, don’t want, and worry about. We contribute to present a framework of perception of citizen demands in e-government services by analyzing the relationship between citizen demands and the outcomes and processes of the provision of e-government services. Our proposed framework has three major theoretical implications. For one thing, our analysis of relationship between citizen demands and actual outcomes in e-government service implies that the success of e-government service depends on perception of citizen demands and provision of demands engineering services. For another, we pave the way for future research which can explore various methods and factors through which the process of e-government services in relation to perception of citizen demands.

Our research provides direction for several areas of e-government building practice. First, our findings recommend refinements in the way government perceive citizen demand. Government should focus on both the process and the outcomes of e-government services to form a view about citizen demands. Second, the effectiveness of e-government can be mainly assessed by its capability to provide quality service to its users and user continued usage. Third, citizen will adapted to new technology-induced changes, so government should develop more e-services relying on IT/IS.

**REFERENCES**