# Graduate School of Global Information and Telecommunication Studies, Waseda University

# Abstract of Doctoral Dissertation

Research on Methodology for
Assessment of User Preferences
toward m-Government services
- Case Study of m-Campus Services

Candidate's name

| Name | Diana | Ishmatova |
|------|-------|-----------|
|      |       |           |

Date February 2010

# ABSTRACT

Emergence of m-Government has been triggered by the high acceptance rate of mobile technologies converged with ongoing modernization of public administration based on capabilities of information communication technologies. Widespread acceptance of mobile phones is often seen as a key factor for reaching citizens and providing services in the last mile that, in many cases, e-Government has failed to accomplish. At the same time the risks of ignoring adoption mechanisms and undervaluing preferences of potential users don't allow to presumptuously conclude that high levels of adoption inherent to current usage of mobile services in the world will assure the same level of adoption for m-Government services. Though m-Government is a relatively new phenomenon whose potential is still largely unknown and unexplored, the experiences with implementation of digital services the last decade had made clear that in order to achieve citizen acceptance and widespread use of digital services, the choice of both technology and services should correspond to the real needs of the people.

In spite of growing recognition of user needs having a determinative power in m-Government success, only a small portion of research to date has been concentrated on the user. Much of the user research on m-Government has been dealing with user profiling and service quality requirements. Yet, not much attention has been given to the evaluation of potential demand for service content. The importance of exploring this dimension of user needs is recognized and supported by empirical research indicating a strong will from the side of users to control the traffic on their devices and limit incoming information to meet their local, real-time needs.

Nevertheless, it is hard to find studies focused on evaluation of demand for m-Government services. Apart from requiring huge investments, user studies also face methodological problems where they are expected to reveal preferences for services that users haven't yet experienced. Identification and quantification of consumer preferences is the fundamental problem in economics. The spectrum of possible methods of demand evaluation is wide; however, absence of previous experience with m-Government services limits the use of statistical methods for the investigation of user preferences for new, yet-to-be-implemented services. Given that many countries just started incorporating mobile dimension into their digital government frameworks; more comprehensive work is needed to inform approaches and methodologies for preferences assessment that would be possible to be applied on *a priori* basis, before implementing the services.

Therefore, the main goal of this study was to develop and test a novel solution for assessment of user preferences towards m-Government services that embraces uncertainty as result of absence of previous experience with a service.

The thesis is arranged following the logic of the constructive research approach.

**Chapter 1** introduces the field of research and provides background information on the emergence of m-Government. Thereafter, the m-Government services implementation modes are classified and

analyzed complementing to the understanding of the peculiarities of m-Government service provisioning. The problem of studying user preferences is set out and grounded in relation to practical needs and resulting research problems. Also, the corresponding research questions and objective are formulated and the appropriate research approach and methodologies are elaborated and explained. Thereafter, the structure of the thesis is presented.

**Chapter 2** sets the boundaries to the research. The chapter first provides an overview and categorization of the m-Government services and deduces the definition of m-Government services to set the boundaries for the research and to clarify the phenomenon. Second, the chapter deduces key dimensions of the user value for m-Government services. The chapter first starts with an overview of specific features of m-Government services pointed out in respective literature, analyzing strengths and weaknesses of using mobile technologies in public services provisioning and their influence to the value and adoption. Thereafter, the key dimensions of user value are outlined and the latest publications specifically addressing the existing approaches to assessment of user value for m-Government services are discussed. The chapter concludes with a discussion of the existing gaps in assessment of different dimensions of user value for m-Government services.

**Chapter 3** presents available methodological background on methods for deriving of user preferences. The chapter starts with outlining of the main challenges of studying user preferences. Literature research was done to build forward on existing knowledge, with the aim to develop a solution for assessment of user preferences for m-Government services under uncertainty. Therefore, different marketing techniques used to derive users' valuations on new products that are not yet on the market are presented and analyzed in respect to their ability to overcome the main problems in studying user preferences for m-Government services. The chapter concludes with a framework for the constructive case study.

**Chapter 4** introduces the developed solution for the assessment of students` preferences for mobile campus services at the Graduate School of Management of St. Petersburg State University. Thereafter, the results of the study are presented and discussed.

**Chapter 5** presents the theoretical and practical contributions of this research. Thereafter, the chapter evaluates the validity and reliability of the study. Finally, recommendations for future research are presented.

The research methods used in the dissertation include inductive method which is applied by analyzing existing relevant literature and then arriving at the conclusion through a process of building up from the analyses. Case-method was used as means of getting the data, designing and testing the construction. Both qualitative and quantitative data collection combined with literature review of articles, books, and other materials in relation to the case and user-centered research have been used at this phase.

The quantitative methodology approach has been deployed in relation to conducting a survey using a questionnaire for revealing the preferences for potential m-Government services.

The specification of the m-Government services establishes domain to which a study's outcome can be generalized. To set boundaries for the research, we have sharpened the definition of m-Government services and their categorizations, and developed the assessment framework for the specified domain. Next, the developed measurement framework was applied to the particular category of established domain.

Scientific novelty and originality of the conducted research consist in the following contributions:

1. Provision a definition for m-Government service. The m-Government literature avoids the definitions of m-Government services, while providing their comprehensive examples and categorizations. Besides establishing domain of the current research, the proposed definition adds a general conceptual understanding about the m-Government concept and its divergence from other developments in public sector such as e-Government.

2. Development and test of the novel solution for the measurement of user preferences for m-Government services that embraces uncertainty as result of absence of previous experience with the service. Following the analysis of microeconomic models of choice under uncertainty and stated preference techniques, the study and proposes a four-stage methodological framework by which to measure the preferences for m-Government services. The developed novel solution was tested using a case of mobile campus services, corresponding to the service group "m-Government for education" in m-Government service categorization.

3. Construction of utility functions for different alternatives and combinations of m-campus services and consequently detection of preference systems of a population surveyed regarding different varieties of services;

4. Obtaining of results that provide valuable information about normative structure of the m-campus service package and priorities of service development for a given user group.

The conducted research has important implications for countries that are just starting incorporating mobile dimension into their digital government frameworks based on user-centric strategy and need to prioritize the services for implementation based on *a priori* revealed user preference. Practical contribution of the conducted research consists in introducing a tested methodological framework for preferences assessment that would be possible to be applied on *a priori* basis and allow:

1) the design of a package of m-Government services that would reflect the highest volume services required by the users;

2) the increase of efficiency of  financial resource allocation by setting priorities in service design and implementation in accordance with the interests of the users;

3) the definition of the types of services the users are interested the most and the concentration of