

## MOBILE GOVERNMENT: AN EMERGING DIRECTION

**Mircea GEORGESCU**

Alexandru Ioan Cuza University of Iasi, Faculty of Economics and Business Administration  
Iasi, Romania  
*mirceag@uaic.ro*

### Abstract

*The new developments in ICT along with the growth of mobile communication have developed new ways of interaction between the governments and the citizens. More and more governments are using information and communication technology especially Internet or web-based network, to provide services between government agencies and citizens, businesses, employees and other nongovernmental agencies.*

*The paper try to present an introduction on the characteristics of mobile government and some major issues that justify the necessity of the mobile government and identify the potential that it possesses, but also the problems that concerns such an activity (trust, security risks, privacy risks).*

*Adoption of mobile technologies by government organizations not only benefits the parties who use these services, but also has a positive impact in the productivity and costs of these organizations.*

**Keywords:** e-government, m-government, e-trust, mobile technologies.

**JEL classification:** E42, G18, G28

The waves of e-government are rising through public organizations and public administration across the world. More and more governments are using information and communication technology especially Internet or web-based network, to provide services between government agencies and citizens, businesses, employees and other nongovernmental agencies.

If we want to speak about m-government first of all we must define e-government. It is defined as “the use of information and communication technologies in public administrations combined with organizational change and new skills in order to improve public services and democratic processes and strengthen support to public policies” [COM, 2003]. E-Government does not mean:

- to equal digitalisation with modernisation;
- to replace analogous bureaucracy by digital bureaucracy.

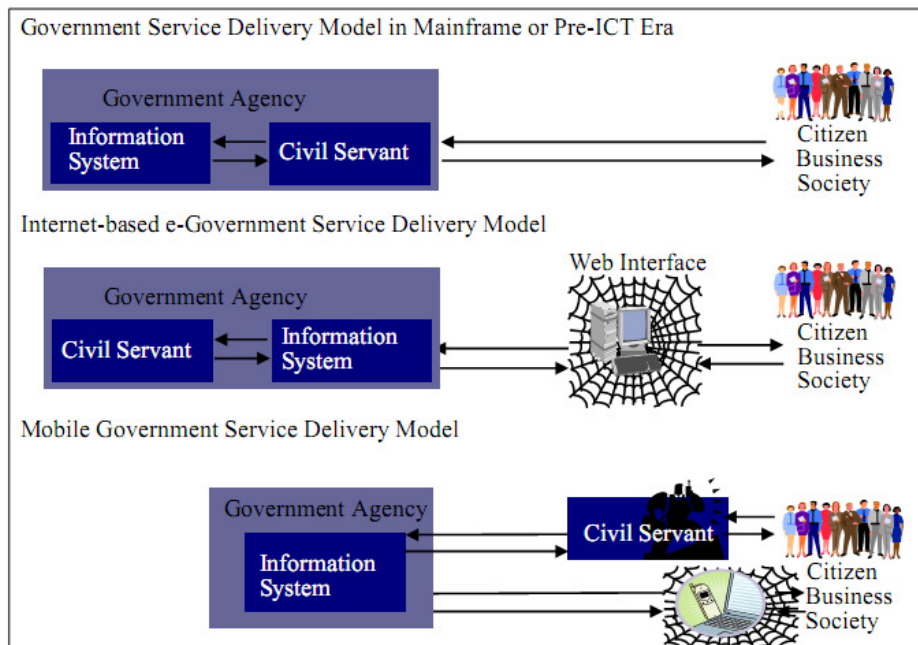
But, how can we define M-government? Mobile government definitions given in the literature vary slightly. Many authors describe m-government as “a functional subset of all inclusive e-government” [Arazyan, 2002], that vision saying also, that technologies used for

m-government “are limited to mobile and/or wireless technologies” [Llallana, 2004]. For others authors, m-government “is a complex strategy for efficient utilization of all wireless devices” [Zalesak, 2003] with the goal of improving benefits to the parties involved in e-government.

In conclusion, m-government may be defined as a strategy and its implementation involving the utilization of all kinds of wireless and mobile technology, services, applications, and devices for improving benefits to the parties involved in the e-government including citizens, businesses, and all government units. M-government is not a replacement for e-government, rather it complements and completes it. As a successful implementation of e-government requires organizational change and new skills, m-government too requires at least the same focus.

M-government is building upon e-government efforts, and there are basically two important issues related to the transition from e-government to m-government [Kuscu, Kushchu, Yu, 2007]:

- M-government is inevitable. The most important reason concern the citizen`s rising expectations for a better and convenient government services;
- M-government is complementary to e-government (some of the m-government services are replications of e-government services on the mobile platforms).



Source: [Gang Song, Tony Cornford, 2006]

**Figure no. 1 Mobile Government as a Service Delivery Paradigm Shift**

According the literature review [Yu, Kushchu, 2004] [Cilingir, Kushchu, 2004] the principles differences between m-government and e-government are:

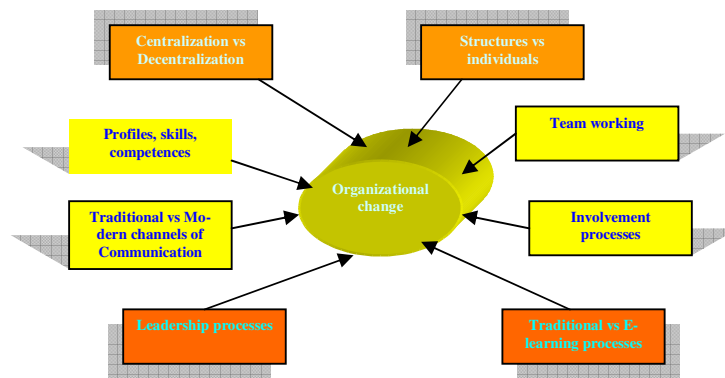
- Convenient accessibility and availability:

- One of the most important characteristic of mobile devices is they are always “on line”;
- Mobile devices are designed to be mobile, that means the user carried them all the time;
- The two characteristics mentioned means that citizens can use the online governmental services not only anytime but also anywhere.
- Precision and personalisation of the delivered content
  - Mobile devices are used generally individual, we do not share this devices like a personal computer – that means we need personalized informations;
  - These type of devices is more friendly and familiar for the users, and the user don` t need specific skills.
- Larger and wider user base
  - Practically the mobile devices offers a bigger potential number of users of m-government comparative to Internet user community.

For developing m-government services a number of conditions are very important:

- critical level of of mobile phone penetration;
- reasonable cost of phone calls and text messages;
- the liberalization of telecommunication sector,
- distributed infrastructure to support mobile technology penetration.

Besides the reengineering of administrative processes to reduce bureaucracy and to improve the quality of government services, the implementation of m-government solutions requires organizational and citizen changes.



**Figure no. 2 Organizational and citizen changes for successful M-Government**

M-Government have the ability to connect previously unconnected areas, information, and services from the government. It extends the benefits of remote delivery of government services and information to those who are unable or unwilling to access public services through the Internet, or who simply prefer to use mobile devices.

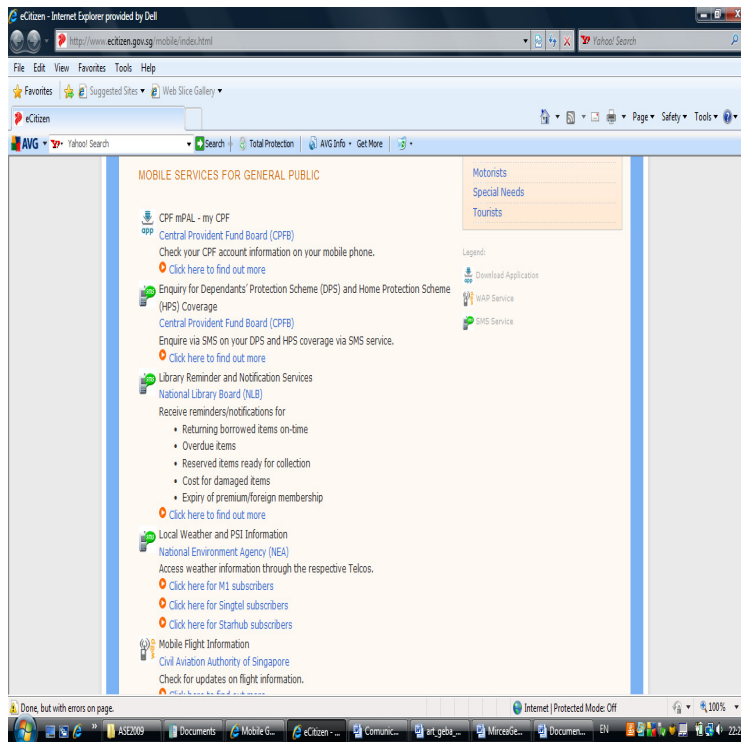
In addition, the relatively lower cost of mobile phone technology versus Internet technology has drastically lowered the entry barriers for citizens in developing countries to be connected to government services. Mobile phones are now key technologies in adapting e-government policies and programs. Mobile phones allow citizens to get access to government services virtually in any place covered by a mobile network. Mobile devices are also easier to learn and to use by all the people. For example, Singapore's mobile penetration rate has reached a high of 98%. Today, the mobile phone can be used to access information and transact with Government while on the move. As part of the Mobile Government strategy, more mobile services (m-services) , Singapore government has made many mobile services available to the citizens so that they can transact with the government while on the move. The government also intends to add many more services to the basket.

What are the services that government could delivered via mobile phone? Are they traditional services or new services? We can include in m-government services relating to:

- health,
- education,
- employment,
- police,
- tax,
- judicial and legal systems, etc.

In the last years, payments and financial services are also possible through mobile phones, which drastically expands the opportunities to incorporate m-services into the everyday lives of citizens.

Another important sector that mobile phone technology can also considerably expand is e-democracy and e-participation, engaging citizens in democratic decision-making through various polls, m-voting, and other forms of communication between citizens and the government. The UK and Switzerland have pioneered m-voting in local elections. Estonia has already prepared legislation to allow m-voting. In Asia, Korea leads the way in m-voting through its use in the selection of Presidential candidates.

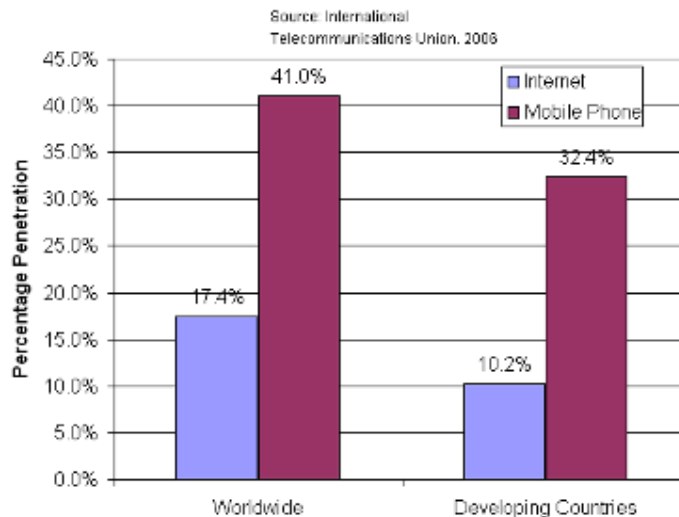


Source: [http://www.ecitizen.gov.sg/mobile/index.html]

**Figure no. 3** Examples of Mobile services for General Public in Singapore

It is now estimated that 94% of countries in the world have some form of online services. The degree of e-government programs varies greatly from country to country but is continuing growing, like the Mobile connectivity versus Internet connectivity varies also with advantage for Mobile connectivity.

### Internet Connectivity vs. Mobile Connectivity



**Figure no. 4 Internet connectivity vs. Mobile connectivity**

Why is increasing the demand for mobile services? There are several factors that year by year are vectors in this area [Riley, 2008]:

- the convergence of wired internet and telecommunication networks, allowing information once only available on a computer to be received through mobile phones;
- the penetration of mobile technology and the relative low cost of entry into mobile connectivity;
- the shift towards higher data transfer rates and 3G services which promises to make more information available at faster speeds.

Carrying around a mobile has its advantages and its risks. One of the most enduring policy issues is privacy. In the development of e-government practices and principles over the years, privacy and security have become key factors to ensure success of online programs. Beyond privacy there are the security issues on a broader scale, where we are seeing the rise in spam, spyware, ad-aware, phishing, identity fraud and a host of other hacker activities (good or bad) that make people uneasy when going online.

Citizens have a great concern about the privacy and security in m-government. The general issue is the convincement that their mobile phone numbers might be traced, when they send their opinions and inquiries to the government.

The government must overcome the mistrust, and assure mobile users that people's privacy is protected and the information will not be sold to third parties. Wireless networks are still considered vulnerable because they use public airwaves to send signals.

For the success of M-Government strategy there are important barriers that are the key policy and technical issues that must be addressed in order to successfully implement the e-government initiative.

- Technical Barriers:

- Security;
- Digital Signatures;
- System Maintenance & Integration;
- Transition & Systems Interface;
- Online Payment Setup.
- Financial/Economic Barriers:
  - Start Up Costs;
  - Transaction Costs.
- Other Barriers:
  - Customer Expectations;
  - Staff Availability, Training, Expertise;
  - Language Barriers;
  - Universal Access.

Also, lack of standards and optimized data exchange protocols in mobile and wireless environments inhibit the potential of m-government. In this regard, developing a coherent m-government framework in the public sector is an important factor. Most of the European countries placed e-government services development high on their agenda. But even though the initiative is in its peek, the recent survey shows lack of awareness about m-government among the citizens. In this fashion, the development of m-government standard unites innovation of architecture, technology, feasibility and citizen’s education and awareness.

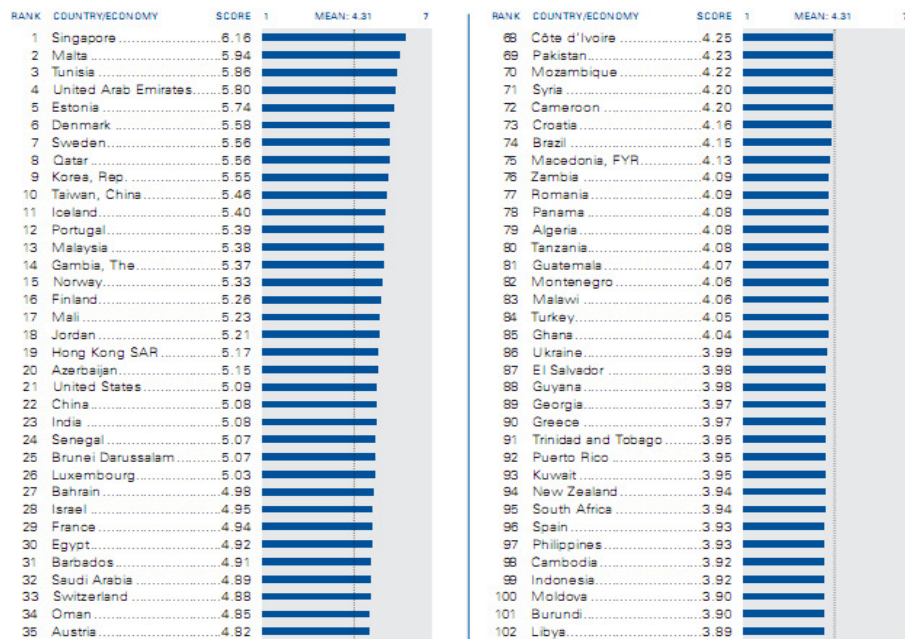


Figure no. 5 Government success in ICT promotion

A common mobile public services framework must first and foremost incorporate the following five principles [Antovski, Lj. & Gusev M.,2003]:

- Interoperability;
- Security;
- Openness;
- Flexibility;
- Scalability

Interoperability is based on bilateral agreements in which the rules for communication are defined for each new system that is connected. The core of interoperability is the stipulation of common data models and common protocols for exchanging data.

The openness of the system is considered on several levels: open standards, open interfaces, open specifications and open source codes. Scalability should be built into a system from the start. It is important to be able to maintain both the functionality and efficiency of the solution if the need changes, for example in respect of user numbers, transaction volume or data quantity. Modularity and scalability must also relate to the nature and scope of the work. The data exchange format is based on the existing XML standard.

In conclusion, when implementing new technologies, governments should not force citizens to upgrade their current devices, but rather smart small with applications using current technologies and current bandwidth for data transfers or services. Starting small, but thinking big – basic m-government applications should be cornerstones of wireless strategies for governments worldwide.

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