

# IMPLEMENT OF M-GOVERNMENT TO IMPROVE PUBLIC SERVICES

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## Abstract

The Indonesian population is one of the mobile phone users in the world with large numbers, the use of mobile phones doesn't use as a tool of communication but it can be improved as a liaison between government and citizen, the use of mobile technology is a one of medias to improve government services that has been conducted in various places in the world, as an example for Indonesian to participate in developing mobile-based governance.

The use of mobile technology that is easy and inexpensive to be one of the advantages obtained if we apply the m-government, the line between government and citizen to be more open with the two-way communication with a mobile-based service concept can be done anywhere and anytime. Expected with the implementation of m-government governance more transparent and more effective services can be realized.

*Keywords* : government, m-governmet, technology mobile

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## 1. INTRODUCTION

The latest data from the Association of Indonesian Cellular Telecommunications (ATSI) shows that the number of cellular subscribers in Indonesia as of the year 2011 has reached more than 240 million subscribers at the end of 2011, up 60 million over 2010. This figure approaching the population of Indonesia, which amounted to 258 million people in December 2010. The number of cellular subscribers in Indonesia is very large [1]

Indonesia has the third-ranked mobile phone users most in Asia Pacific, and the fifth largest in the world. Mobile phone users in Indonesia is estimated to reach 250 million customers, research from AC Nielsen recorded 95 institutions Indonesian mobile users utilize the tool to browse the Internet. Even some people who have cell phones, but do not have a computer or laptop.

This phenomenon should be utilized by the government, considering one of the government's vision is to realize the information society and knowledge-based society in the year 2015 and the Indonesia-based knowledge society by 2025. To that end, the government is implementing e-Government by using information technology. The goal is to create a government that is democratic, transparent, clean, fair, accountable, responsible, responsive, effective and efficient in time as soon as possible.[2]

E-government is a generic term for web-based services from agencies of local, state and federal governments. In e-government, the government uses information technology and particularly the Internet to support government operations, engage citizens, and provide government services. The interaction may be in the form of obtaining information, filings, or making payments and a host of other activities via the World Wide Web [3],[4],[5]

The government has a lot to implement e-Gov, starting from the government website, the process of procurement of goods and services in an electronic or known as e-procurement, but the limitations of the use of devices to access the internet and the lack of information lead role in the activities of the e-Government, One ways to reach more people, services that can be accessed anytime and anywhere is to use media mobile phone that has become a daily necessity for many people. As already described in the above phenomenon.

Provider of services to the citizen through mobile phones has become a very attractive alternative and important to study because if the great potential to be applied to the various problems that exist in society. Services via mobile phones is called m-government, **Mobile government**, **m-Government**, is the extension of e-Government to mobile platforms, as well as the strategic use of government services and

applications which are only possible using cellular/mobile telephones, laptop computers, personal digital assistants (PDAs) and wireless internet infrastructure.

## **2. BENEFITS OF M-GOVERNMENT**

M-Government the adoption of mobile technologies to support and enhance government performance and foster a more connected society can help improve government performance and strengthen public good governance provided that the emphasis is not placed on the “m”. Focus should be indeed on the needs of the public sector and of the end-users, be these citizens or businesses, to ensure that technology is exploited to reorganise the way civil servants work and to meet the needs of citizens through improved service delivery”.

Mobile technologies provide government with significant opportunities for achieving greater cost optimisation, improved communications and data co-ordination, expanded service delivery and much progress towards digital equality. [6]

### **Benefis M-Gov for Government**

#### **1. Wider reach**

Mobile phone penetration extends outreach and access to often difficult-to-reach groups, such as seniors, people with disabilities and citizens living in rural areas. Government has tremendous opportunities for community messaging and to capitalise on networks through which people forward information to friends, families and co-workers.

#### **2. Mobility and ubiquity**

Citizens have access to government information and services anytime and anywhere using wireless networks through their mobile and wireless devices. Government employees can work using the exact same type of devices regardless of distance, time, place and diverse natural conditions, especially relevant for public safety and emergency management.

#### **3. More personalisation of services**

Provision of location-based government services: As mobile phones are typically personal, the possibility of locating an individual’s exact physical location ensures that governments can directly provide services to each person. This could accelerate reforming government organisational structures to become more horizontal and more simplified.

#### **4. Cost-effectiveness**

Cost-saving results include m-government streamlined processes, shared and co-ordinated data access, embedded mapping, and electronic processes, communications and transactions. Empowerment of field workers and cross-agency interactions can reduce requirements and costs for time, travel and staffing, as well as eliminate redundant data entry. Mobile crews with mobile devices can increase unit availability.

#### **5. Faster information flow**

Real-time and location-based processes result in quick and easily accessible data and communications, information consistency, responsive case management and seamless information exchanges. Information and actions can be co-ordinated in any location and with other agencies, improving collaboration among government authorities. Mobile technologies can be valuable assets in emergency response through instant information access and release, and shared access to mapping data.

#### **6. Better management**

Mobile technology has the potential to help government officials to better manage allocated financial and human resources. Satellite or rural offices and operations can communicate needs and situations as they occur. Current and accurate data improves knowledge-based decision making and responsiveness.

#### **7. Increased democracy**

Public officials can stay current on public opinion and priorities from a larger group of citizens. Extended outreach also expands government accountability and transparency to more citizens and empowers greater citizen participation in policy development and democratic decision making.

#### **8. Enabled green government**

This is the result of the environmental friendliness and paper-use reduction achieved thanks to the increased use of the mobile services. Mobile phones batteries are not very green so the proliferation of cell phones and their batteries will have an environmental cost. It would therefore be good to start working a greener solution to this, at least to ensure proper disposal.

## **Benefits M-Gov for Citizen**

### **1. Convenience and access**

Mobile technologies enable convenient access to government information, forms and business processes. Mobile devices are a common part of most citizens' daily life. Since 2005, mobile phone penetration in some developed countries has exceeded 100%.

### **2. Health and public safety**

Citizens in previously unreachable areas can receive m-health assistance, monitoring, notifications and emergency medical alerts. For example, handheld devices were distributed to public health and other health workers in developing countries, providing real-time information on infectious diseases.

### **3. Financial management**

M-Government mobile payment applications are widespread in both developed and developing countries. Multiple applications are available for banking and financial services, money transfers, remittances, emergency aid, grants, loans and social cash transfers.

### **4. Education**

Teachers are now delivering content to students in primary schools and entering student grades through mobile technologies. Students are able to access exam scores and scholarship decisions, and parents can receive notifications if a child is absent from school.

## **M-Government in Developing Countries**

### **1. M-Government in Bangladesh**

Public service delivery in Bangladesh is leveraging growing mobile access 80 million subscriptions at August 2011 according to the Bangladesh Telecommunication Regulatory Commission and according to the Bureau of Statistics, a household penetration rate of 64% in 2010 (up from just 11% in 2005) compared to home PC penetration of just 3%. Examples of these innovative m-services which cover various domains such as health, agriculture, education, public transport and disaster warning include:

e-Purjee aimed at the agricultural sector. Purjee refers to the pink sheet of onionskin paper used for the last 200 years to inform sugar cane farmers of when to bring their product to the mill. The paper purjee often got lost or found its way to rent seeking middlemen.

e-Purjee is an SMS-based system informing farmers to bring in their cane. Farmers can either register their mobile phone number—increasingly widespread in rural areas—or that of a relative or friend. After a successful trial, e-Purjee was extended to some 200,000 farmers and all 15 of the country's state-owned sugar cane mills and a feature was added alerting farmers when their payment was ready. Sugar production rose 62% percent following the introduction of e-Purjee and farmers are benefitting from a more transparent system.

With the Bangladesh Railways Passengers Information System (launched September 2009), citizens can review schedules, book and purchase train tickets through their mobile phone. Most railway passengers are low and middle-income groups who are victims of harassment at railway station counters and faced illegal ticket sales at higher prices not to mention long lines. Around 45,000 tickets were sold within 8 months of introduction.

The Disaster Management Bureau has the “Early Warning Dissemination through Cell Broadcasting System (CBS)” application. It has been implemented in cyclone prone Coxsbazar and flood prone Sirajgonj with plans to expand to 14 coastal districts. The application uses CBS to send alerts to mobile phones when waters or cyclones exceed certain limits covering areas with a population of five million citizens.

### **2. M-Government in Turkey**

In Turkey mobile phones have penetrated 23.3 Million (34%) of 69.6 Million populations compared to 4.3 Million (6%) internet users. The mobile phone penetration rate is high and this rate is increasing yearly. Even though mobile phone penetration rate is increasing the mobile internet penetration rate remains low. Due to this fact, most of the mobile government applications are confined to G2G or basic G2C applications based on SMS and GPRS technologies. These applications are still in their early stages so they still need further improvements but still they are considered to be effective compared to the traditional way of providing the services. The major mobile government applications in Turkey are briefly discussed below (Cillingir, 2004).

### ***MOBESE***

Mobese (Mobil Elektronik Sistem Entegrasyon) or Mobile Electronic System Integration is one of the pioneer mobile government applications in Turkey. This application is a G2G mobile government application for law enforcement agency. This project is mainly an infrastructure enabling the law enforcement units to be more efficient and effective. It connects the law enforcement units to their respective police stations via a GPRS internet connection allowing the mobile law enforcement units to query citizens regarding validation of their identity, checking their record history. This service allows the mobile law enforcement units to be more efficient in their job.

### ***TBS***

TBM (Trafik Bilgi Sistemi) or Traffic Information System is another major mobile government application in Turkey. Mobile traffic units are equipped with tablet PCs to quickly conduct queries regarding offending drivers' license and vehicle information. This increases the efficiency of the mobile traffic units. In addition, location of each mobile traffic unit can also be located and dispatched to a particular locations such as a traffic incident instantly

### **3. Czech Republic**

In Czech Republic, mobile phones have penetrated in 95% of the 10 million populations, one of the highest in Europe and probably in the world. Currently there are 3 major mobile phone operators namely Eurotel (44%), T-Mobile (42%) and Oskar (14%). Since the mobile phones have penetrated the majority of populations, mobile government applications will prove to be more effective and quick in reaching majority of citizens. Many m-government applications are launched and being tested especially for informing citizens' of crisis and natural disasters.

Natural disasters such as floods, earthquakes and man made hazards such as toxic leakages can cause risk to human lives. Protecting citizens of these hazards is the main duty of the government. In early days (70s and 80s), municipalities used to maintain a network of loudspeakers and their operation and maintenance cost a lot to the government. Those loudspeakers were used to inform critical news and alerts to the public. This system was not merely welcomed by the citizens. SMS has replaced the ageing street loudspeakers' network proving to be more convenient, efficient and reliable.

### **4. Philippines**

The mobile phone penetration in Philippines is 23.8% which accounts to 20 million mobile phone users out of 84 million populations. This number is a 3.4% increase from 2002. The mobile government applications range from simple G2C applications to more interactive C2G applications. Use of SMS technology is popular in enabling these applications.

TXT CSC is an SMS service launched by Civil Service Commission (CSC) in Philippines. Its aim is to increase the efficiency and speed of service delivery. Citizens use this service as a weapon to pressure the government agencies to move towards this goal (Lallana 2004).

#### *Reporting Criminal Offence*

A text messaging system was introduced in 2002 by the Philippines National Police enabling the citizens to report criminal offences by criminals as well as police officers to relevant authorities to take action. The service was made available to 16 million mobile phone users country wide. The purpose of this service is to allow more transparency in the government offices. The SMS service can also be used by citizens to seek emergency assistance. The complaint is sent by the mobile phone user through a text message to a specified number. The message is then routed by the mobile operator to Complaints Referral Action Center (CRAC) which records the complaint. The message is then delivered to the responsible authority to take action. The SMS sender's information is also recorded and is informed of the status of the case as well as any action taken.

### **3. M-GOVERNMENT MODEL AND SERVICES**

M-Government affords a powerful and transformational capacity to both extend access to existing services, and expand the delivery of new services and to increase active citizen participation in government operations.

In general, there are four primary delivery models of m-government:

1. government-to-citizens (G2C)
2. government-to-government (G2G)
3. government-to-business (G2B)
4. government-to-employees (G2E)

Mobile applications and services are to a large extent Government-to-Citizens (G2C) services. However, G2G, G2B and G2E m-government services also exist. [6]

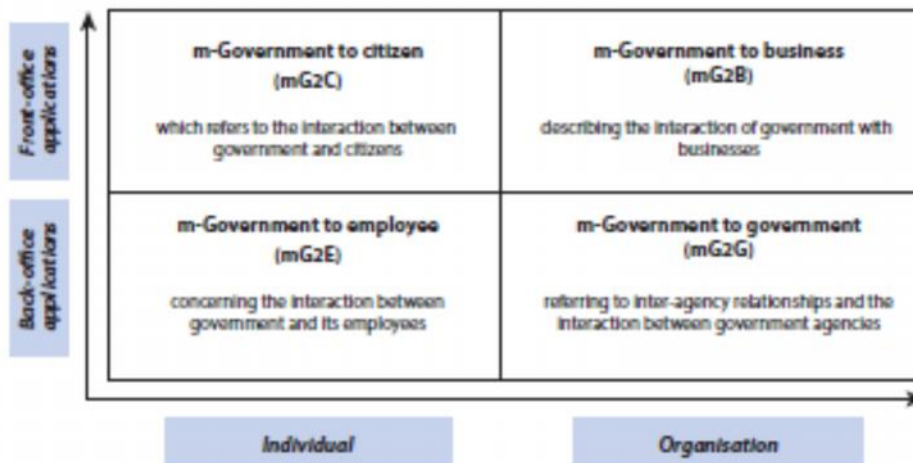


Figure 1. Primary delivery models of m-government

#### 4. DESIGN OF M-GOVERNMENT IN INDONESIA

##### G2C applications and services

Government-to-Citizens services enable citizens to interact with government in a way that is responsive to citizen needs and communication preferences. G2C services allow citizens to stay current on government information, ask questions, request services, complete transactions, submit comments, report problems, request emergency assistance and access data.

Possibility Services in Indonesia

1. The government can implement sms broadcast for the dissemination of information relating to it to the public interests. Implementation of these services can work together with the existing cellular service provider in Indonesia, the spread of information can be.
  - Natural disaster early warning system
  - Weather forecasts and temperature
  - Power outages by PLN
  - Information missing persons
2. Portal service complaints via mobile phone or sms, which allows residents to communicate directly with the Government.
3. Service information for billing, taxes, electricity, water etc.

##### G2G applications and services

With G2G services, governments transform themselves into a connected entity that more effectively and efficiently responds to the needs of its citizens by developing an integrated back-office infrastructure. Connections can be:

1. horizontal connections (among government agencies)
  2. vertical connections (between central and local government agencies)
- Services can be related to:
1. co-ordination of government activities for inspections, controls and supervisions
  2. security services (law enforcement, citizens' security)
  3. emergency management
  4. access to knowledge bases and records (public safety, health, education, etc.).

Possibility Services in Indonesia

G2G mobile-based applications can be a traffic system, traffic violations are fairly common and fraud committed by unscrupulous often happens, it can be implemented for a system that can be accessed by using a tablet pc, tablet pc taken by the traffic unit, each violations can be reported to the relevant agencies, such as traffic violations, expired vehicle tax, crime and theft, so that each report can be accepted by the parties concerned.

### **G2B applications and services**

Government to Business (G2B) services include providing information regarding policies, regulations, forms, and applications related to procurement, licensing, permitting and payment of taxes, as well as support of small and medium enterprises and business development.

#### Posibility Services in indonesia

M-procurement can be an alternative to the development of e-procurement in Indonesia, the procurement of goods and services can be done with mobile media to disseminate information on the auction-related providers.

Development business based sms services can also be developed, such as the spread of commodity prices to the farmers, as well as other business information.

### **G2E applications and services**

With Government to Employees (G2E) services, governments provide tools, training, and data access to their employees that not only assist those employees in their daily operations, but also improve organisational efficiencies and accountability, maximise limited resources and enhance the quality of service to citizens

#### Posibility Services in indonesia

Ministries in the Indonesia can provide various mobile intra-governmental administrative services, including emails, notices, personal appointments, press releases, and contact information.

M-education in Indonesia can also be developed better than it already is, by setting education as a primary companion learning in school, it is to increase the intensity of learning.

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