

# Development of a Cross-Platform Mobile eGovernment system for suppliers (A case study from UAE)

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*Abstract— Many terms were used over the past on the automated government services and one of which is the electronic government that genuinely emerged to public in the early 1990s as developed and used by the US, however the E-government on the other hand found its way towards prominence in 1997. The e-government or e-governance uses its core Information and communication Technologies (ICT) to leverage services rendered by public sector. The e-government is looked upon as a very rich resource that can provide organizations with a competitive cutting edge value if it's well managed and improved. The rapid growth of computing and ICT had encouraged governments to encompass the technological changes and advances into their policies, forward looking and strategic development processes. The UAE government has promoted the e-government initiatives to improve system of governance in place to provide and make the business of governance more efficient, effective, qualitatively responsive, transparent and accountable to the society.*

*Currently the Smartphone have become an alternative tool for traditional desktop machines that can also provide feasibility to browse and get services easily anytime and anywhere. However, those services might be offered on various operating systems which requires specific platform to run on which become a burden to end-users. In this research paper we discuss about the design and implementation of a cross-platform mobile eGovernment system for suppliers.*

**Keywords-** eGovernance, e-government, ICT, Geolocation, Suppliers, PhoneGap

## I. INTRODUCTION

The Conducting research and studies related to companies' performance is mandatory required especially in the primary stages of development and dissemination of the quality culture while taking in mind that Middle East and Gulf region in particular lack for the critical information to determine the extent of the various issues concerning the company's

performance and overall method and techniques used to overcome them.

Furthermore, there is a lack of availability of data that can be done thru analyzing the general traditions and patterns of suppliers and service providers and the affect on the qualities of rendered services and as result of unavailability of actual information it become really hard to establish a usable and effective program to enhance the performance and quality of services conducted by suppliers.

The process of expansion and development requires utilizing and filling up possible opportunities in UAE for the sake of achieving the largest amount of economic surplus and ensure using it according to an addressed plan that the government puts directly thru public sector and indirectly thru private sector. We appreciate the important role played by each sector that contribute in areas like the trade, agriculture and industry along with many other areas.

eGovernment enables citizens to be seamlessly connected to all the services that government has to offer without traditional waiting queues and over the counter services. Most of the government services go online for the purpose of cutting cost, reformation of the services rendered, reduction of resource management, reduce tangible overheads, achieve sustainable growth and improved performance. The government invests an enormous budgets on the ICT as it plays a central role that would help on cost-cutting, leverage government performance and increase productivity, however no attention is paid to build and implement integrated oriented systems that can be commonly used across the government entities for managing the services offered to business partners such as suppliers in particular.

## II. JUSTIFICATION OF THE PROPOSED RESEARCH

As any new emerged science in the business field, the science of suppliers' performance and quality encountered slowness on dissemination and step thru its implementation where it has to be first applied in the developed and advanced countries. Once the rebound of success finds its way to approach a large-scale of the community, the extent of its input and contribution when implemented towards supporting the companies to succeed, then starts to spread and eventually get adopted and implemented by the rest of countries across the world. The necessity to highlight the role played by e-government solutions as basic foundation of managerial, administrative and organization blend in achieving the objectives of leveraging the companies' services, performance and quality.

The stereotype across all the governmental entities on trusting the power of establishing a centralized solution that can be widely used to prequalify the companies thru specific approved criteria and using a e-government tool with all required features is unfortunately still not yet adopted. Some may think that there is no need to track and measure performance of suppliers as it's entirely up to the company itself to promote itself and enhance the quality of services. This might be attributed to being unaware of how effective and practical the implementation of an advanced e-government system that is based on using the state-of-the art technologies such as mobile systems

## III. EGOVERNMENT-BASED INITIATIVES

Encourage UAE eGovernment-based initiatives to be more feasible and successful and allow government entities to provide a controlled access to suppliers' data or other resources, open potentials to enable new levels of collaboration between the different entities. Furthermore, a design and implementation of an advanced system is proposed for suppliers' management with purposes of Centralization of e-government systems, unification of systems implemented for the suppliers' management processes. Reduce the cost used on developing new systems for the existing and newly established UAE government entities. Leverage the performance of suppliers by addressing a system that will be used across all UAE entities.

## IV. LITERATURE REVIEW

In order to widen our comprehension of the research topic and be able to map the past researches, a comprehensive literature review must be carried out. This thesis starts with a literature review to give an insight into the background of the subject. The literature stated in the review is collected from various sources including academic journals, books, articles, scientific journals, e-government documentations and supply chain management.

The rapid diffusion of the Internet, mobile telephony and broadband networks demonstrate how pervasive this technology has become. Today, ICT is considered as one of the fundamental building blocks of modern societies and digital economies (Castells, 2009; Varian et al., 2005).

The ultimate goal of eGovernment is to be able to offer an increased portfolio of public services to citizens in an efficient and cost effective manner. Anticipated benefits of eGovernment include efficiency, improved services, better accessibility of public services, and more transparency and accountability (Atkinson & Castro, 2008),

To achieve and retain this competitive advantage, a performance measurement system has now become a required necessity for the companies that aim to implement strategies and

Correctly focus improvements to their activities. (Ip et al. 2011, Lee 2004, Cassivi 2006,

Rivera et al. 2007, Giannakis 2007, Gunasekaran et al. 2004)

Primary data is collected for a particular case can be gathered through experiments, observations, surveys and interviews (Ghuri & Grønhaug, 2005).

The management and governance capabilities could be of interest to the buying organizations who wishes to work closely together with the supplier (Leenders et al., 2002: 259)

A well-designed supplier management system can support professional purchasing and increase conformity and a systematic way of purchasing. It also has an effect on risk. Risk management is in close contact with supplier management because suppliers are also a source of risk. (string, 2004: 21).

## V. THE PROPOSED SYSTEM

In this paper we propose a design and implementation of a cross-platform mobile eGovernment system that allow UAE government-based entities to manage strategic partners including suppliers. This system provides governmental organizations with all supported information for managing their suppliers in terms of measuring performance, quality of services, responsiveness, effective communications along with supplier registration and prequalifications. This system help organization to find the nearest suppliers thru using the technology of HTML5 Geolocation API. This system shall support all various smartphone/ mobile operating systems namely, Apple iOS, Blackberry, Android. The development languages proposed for building the system that will run as single source code for a variety of mobile platforms shall be HTML 5, CSS, JQuery Mobile and JavaScript using one of the mobile development framework such as PhoneGap architecture.

The genuine reason behind proposing the cross-platform mobile eGovernment system for suppliers is to support the UAE governmental entities to heavily facilitate their information, operations, management of their suppliers and

services rendered and demonstrating how powerful and rewarding this technology can provide when adopted.

In this project we will be developing a cross-platform mobile eGovernment system for supplier which will provide UAE public entity with information of suppliers listed within commercial directory database. The system shall have two main modules with other sub-modules, one is the registration of suppliers and second is the prequalification of suppliers. In the registration module, the company has to complete all the registration requirements such as provision of all needed details such as company license, profile, power of attorney, agencies of the brands they trade, etc. and on the prequalification module where an organization shall be given the access to request suppliers to prequalify their products/ services as per the evaluation criteria process and procedure.

## **VI. DESCRIPTION OF THE MODULES**

### **i. Suppliers Registration Management**

This module allows all sort of suppliers to register to a public organization by filling up supplier information such as name, primary contact address, legal status, documents attachments, certificates, Emirates ID and company profile. Following the registration process and once the registration steps are completed, the system shall generate a unique supplier ID for further follow-up. The system shall also send an email notification to the supplier informing the state of registration (under review, approved, rejected, returned, requested for a prequalification).

### **ii. SUPPLIER PREQUALIFICATION MANAGEMENT**

This module responds to the suppliers prequalification requisitions as they need to prequalify their products/ services by submitting the prequalification request thru the system. The system is very flexible and can allow the organization's management to notify their supplier to prequalify themselves by accessing this module that would require filling up a checklist data appears on the mobile device's screen and once completed the system will then notify the approvers thru email notifications of supplier's prequalification completion state so they take necessary actions by evaluating them as per entered details.

### **iii. SEARCH A SUPPLIER**

This module allows organization's management to find suppliers who have initiated registrations requisitions and can use searching parameters such as search by supplier name, registration ID/number, location, area of operation, brands, products, services, contact details.

### **iv. LOCATE A SUPPLIER**

This module shows the location of a supplier thru incorporated geolocation architecture that shows map location with coordinate details (Longitude & Latitude) and high level information of supplier details namely name, contact, website, contact address and scope of operations.

### **v. DOCUMENTS UPLOAD & DOWNLOAD**

This module provides suppliers with all documentation requirements that organization would need from suppliers to fill such as prequalification, checklists and questionnaires. Suppliers can also upload back these documents once completed. Suppliers who wish to orientate themselves on better use of the system can download the system's user manual along with flyers that would clearly highlight some information about the company and system respectively.

## **VII. EVALUATING THE SYSTEM**

Choosing an evaluation method for the system is mandatory required and hence we will be using a combination of the most common evaluation methods such as qualitative and quantitative approaches. The quantitative data collection method includes case studies, experiments, surveys, questionnaires, suppliers performance tests, archival records and observations checklists. The quantitative will help to determine the rates, frequencies of use, percentages, counts and statistics which will support on documenting the real technical issues and enhancements aspects of the system accurately.

The qualitative data collection method includes open-ended questions, questionnaires, general articles, scientific papers, focused groups, participants notes, communications and correspondence document reviews.

## **VIII. CONCLUSION AND FUTURE WORK**

In conclusion, we would say that developing a cross-platform mobile eGovernment system for suppliers is needed to be utilized across all the governmental entities situated in UAE and this is one of the latest technologies that have emerged and considered new in this era due to its powerful capabilities and technical features. Having a single source code for multiple mobile operating system can be a strategic decision as it aligns with the UAE eGovernment framework that encourages the electronic transformations of all UAE public and private organizations and multiplatform framework for eGovernment can be an added value that should be considered. This multiplatform development can incorporate further system's features namely the SMS service notifications to inform suppliers on the state of their application and financial service management for payments on tenders registrations. A consensus agreement has to be reached on highlighted benefits of adopting such an eGovernment system for suppliers management as it's newly introduced and may require some further investigations and experiments to assure prospective results needed.

As for future work, there are many other aspects which can be implemented such as targeting mobile devices like windows, web applications and symbian operating systems.

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