



A Roadmap for a Higher Learning Institution based m-Governance Framework in the Grey Revolution

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Abstract— People are not only using mobile devices to access websites and applications—whenever they want, wherever they want—but they are using them to produce media-rich content, make, and interact with virtual environments through alternatives to pointing and clicking: touch gestures, location-based data, and voice commands. As mobile technologies expand and grow, so do the expectations and needs of web users. As most institutions differ by population size, technical expertise, and budgets, the spectrum of mobile methodologies, strategies, and frameworks used from one Department to another can be vast. For some institutions, “having an app” might be the perfect mobile platform to engage students and alumni; for other departments, an easy-to-build mobile website might make more sense from budgeting and maintenance reasons, while others may focus on a crowdsourcing effort by deploying a campus toolkit that enables campus developers to leverage a mobile web framework for distributed websites. In that way, m-Governance is being well taken cognizance for the efficient and effective governance of a higher learning institution. It is in this line of thinking the paper explores its potentials to prepare a Roadmap for a Higher learning Institution based M-Governance framework in the Grey revolution

Keywords— Roadmap, m-Governance framework, virtual environment, crowdsourcing, Grey revolution.

I. INTRODUCTION

The basic and universal cornerstones of good governance are quality of service, quick response mechanisms and above all accountable and transparent process mechanism. The first generation e-governance initiatives resulted in computerization of the legacy systems/practices in government with limited ability to internalize the advances in information and communication technologies (ICT). The paradigm shift from e-governance to m-governance which leverages the convergence of mobile and communication technologies results in radical differences in the key processes of creating, maintenance and usage of knowledge, creation of secure mobile transaction & delivery system, establishment of the appropriate infrastructural support for multi-mode direct citizen interface and delivery mechanisms.

Globalization and technological changes have triggered the transformation in education sector. The higher education sector has seen an enormous growth in recent years and continues to expand. To sustain in the global competitive environment and to withstand the prolific growth of higher education sector a good technology based administration is very much needed.

Due to the boom of mobile network & portable device, the administration process (Governance) is evolved from desktop computer to mobile devices. Mobile governance is the use of mobile wireless device for administration while the learner is on the move. Just like the link between e-administration & general administration, the development of mobile governance is not intended to substitute the existing administration system, but to enhance the reach of facilities to the target users. The mobile governance presents the alternate means to provide 24X7 services. Hence the primary idea of Mobile governance is not to convert all computer based tasks to mobile depended, but to consider how best the mobile phone can be used to strengthen overall administration policy. The concept of effective governance is not new. The new generation innovative findings are required to face the challenges. In this aspect, the M-governance can facilitate in enhancing the lucidity, participation providing speedy information, distribution, improving administrative efficiency in all the aspects of education. M-Governance is the need of hour for the soft functioning of the system.

Mobile governance is an umbrella term that covers a number of initiatives involving the use of mobile technologies (i.e. SMS, USSD, geolocation, etc.) in the domains of citizens’ participation, public awareness, management of emergencies and crisis, provision of public services, information, etc. to reach wider population segments (as compared to those currently accessing the Internet). It is well known that mobile phones have become in recent years the most ubiquitous communication device world wide, with higher penetration rates than the Internet. In 2010, the number of mobile cellular subscriptions globally is expected to reach five billion [ITU, 10]. Mobile technologies provide therefore greater opportunities for social impact than any other ICT, while being more affordable and, also, less demanding in the skills and training required [Kinkade et al., 08].

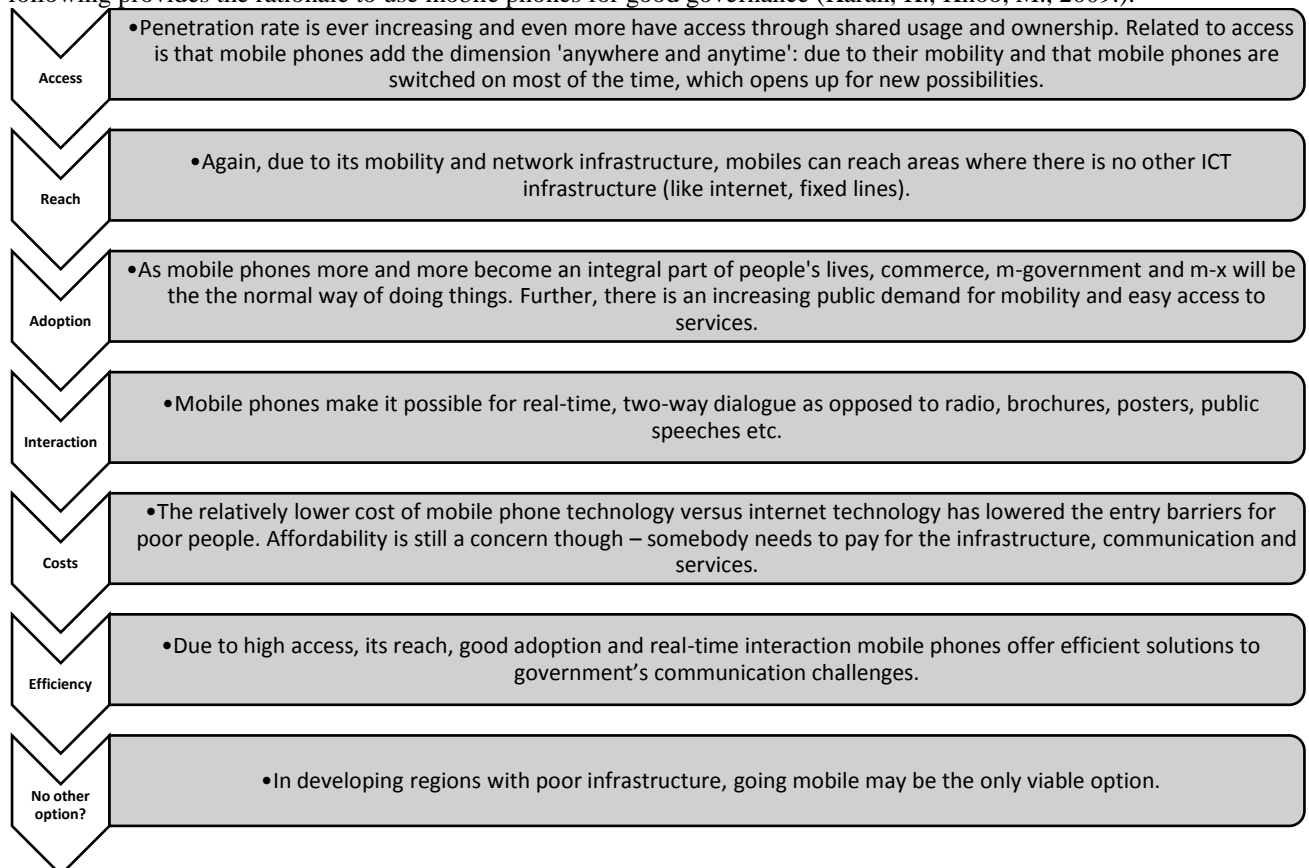
Despite the variety of approaches, the notion of good governance is generally related to the principles of rule of law [Kaufmann, 08], transparency, accountability, and public participation [Sasaki, 10]. The use of the Internet and other information technologies (IT) to support governance mechanisms has lead to the new paradigm of e-governance. This

paradigm is broad enough to include (i) IT supported governance—where IT support the provision of conventional, offline public services, (ii) IT enhanced governance— where IT provide a complementary online channel to facilitate the relationship between government agencies and citizens, companies, organizations, etc., and (iii) IT enabled governance— where IT open unprecedented venues to empower citizens with improved access to government information and data (i.e. the movement of Open Data in different countries). While these different uses of IT for governance usually coexist in many countries, their effective impact on making governments more transparent and accountable, or making citizens more participant should be analyzed separately. Recent case studies show that while more and more government agents publish information on their activities and budgets, they may do so “in ways that are not easily accessible or comprehensible” [Sasaki, 10]. Similarly, recent empirical research provides contradictory results on the impact of the Internet on public participation and on the forms it adopts. Main debates focus on whether the Internet and other information technologies are valid sources of the skills, resources, and mobilization needed for participation—according to the “civic voluntarism” model [Verba, 95]

II. RATIONALE – WHY MOBILE GOVERNANCE IN HIGHER LEARNING INSTITUTIONS?

There is no need to re-emphasize just how appropriate information and communication technology (ICT) systems (here computers and internet) are for the capture, processing, storage, organization and presentation of data and information. ICT used as a tool to improve good governance, ie. e-governance, facilitates openness and transparency and creates a freer flow of information between departments, institutions and layers within an Higher learning Institution or an University . ICT, as seen in many developed institutions, also facilitates a freer flow of information between institutions and stakeholders and opens up for opportunities for stakeholders to participate more directly in influencing decisions that affect them. From student populations to faculty and staff, nearly every user interaction that is taking place from a desktop browser is also occurring through smaller-screen phones and tablets. From visiting websites, to registering for classes, to checking final grades, people interact daily with educational institutions through mobile devices—whether anyone wants them to or not. For higher education, the time to develop a mobile strategy has never been more critical. However, not all higher education institutions are the same. As most institutions differ by population size, technical expertise, and budgets, the spectrum of mobile methodologies, strategies, and frameworks used from one school to another can be vast. For some institutions, “having an app” might be the perfect mobile platform to engage students and alumni; for other schools, an easy-to-build mobile website might make more sense from budgeting and maintenance reasons, while others may focus on a crowdsourcing effort by deploying a campus toolkit that enables campus developers to leverage a mobile web framework for distributed websites.

The current mobile development landscape is not only incredibly complex, but it changes dynamically with every season of new devices and updated operating systems. For higher education institutions, understanding the pros and cons of various mobile frameworks and methodologies can be challenging enough. However, navigating a course toward an effective mobile governance framework may be warranted for the efficient functions of institutions. The following provides the rationale to use mobile phones for good governance (Karan, K., Khoo, M., 2009.):



III. DEVELOPING A HEI BASED MOBILE GOVERNANCE FRAMEWORK

The first step in developing a HEI based Mobile governance framework is determining and listing the primary audience the institutions are trying to serve. Higher education institutions have a difficult communications task because they are serving many audiences. If an institution cannot make a single group its primary audience, then it may want to prioritize some audiences into different phases. For example, the University of XYZ’s website aims to serve these audiences in Figure 1:

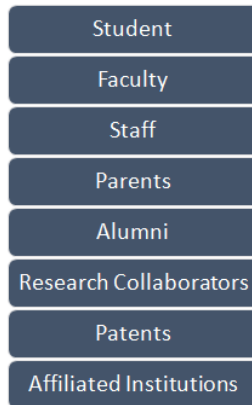
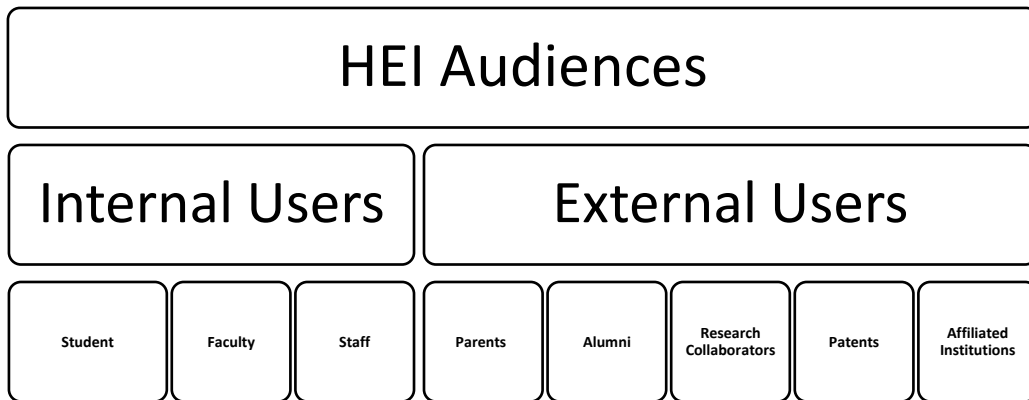


Figure 1: Higher Educational Institution Audiences

It is an understatement to declare that developing a university communications strategy is a complex task. Therefore, a first step toward developing a mobile governance framework is grouping the audiences into a smaller set of manageable categories. For example, it is suggested the model of examining the needs, wants, and desires of two categories of audiences:



Combining the audiences into two categories is useful in formulating the framework because each grouping has particular characteristics. The first audience identifies internal users, a group that is more predictive—the institution knows them well and already have many websites and data feeds set up to serve them. If authentication is needed, then it can be sure that it is dealing with the internal audience. In fact, it may already provide them with a specific device or family of devices with which to access its web-based resources. The institution probably knows less about the second audience, external users, and certainly cannot possibly ensure a homogenous set of devices. These users will want mobile access to institutional resources and will undoubtedly expect the institution to support the trend.

Data Planning

Mobile applications typically involve at least two components: the application code itself (which may be programming code, HTML, CSS, or any combination of these and other elements) and the data that the application displays or gathers. While issues arise in association with the planning and design of the programming component, in many cases the implementation of the data component may be as or more challenging. Mobile applications present a set of data challenges and issues that may be less prominent or acute for traditional “fixed place” applications.

Exploring the challenges for the use of “apps” by clients

The app is a prototype now, but the team hopes to develop further and build partnerships with the potential for making it available to the stakeholders of a higher learning institution. In fact the Mobile App Challenge offers an opportunity for faculty members and students to pitch their big ideas. Identifying wayfinding apps that help clients of Higher learning institutions navigate and react to the communications is essential without any hurdle. Perhaps the identification of apps shall be done on the basis of nature of communication, cost, speed, accuracy and efficiency, for which a *content mapping mechanism* should be developed to find out the suitability of types of apps services for the communication services of a Higher learning institution for creating a good interface between stakeholders and the institution.

Checking up the validity of the app services

Any communication service to be utilized by institutions through Mobile apps is to be involved with Server, producer, Clients and Moderator. There are many group messaging services available such as GroupMe, iMessage, Facebook Messenger, Beluga, Google+, Google Voice, BlackBerry Messenger, Disco, Fast Society, Kik Messenger, PingChat, textPlus, Grouped{in }, Glassboard, Jumvo, Katango and WhatsApp Messenger. The institution as producer of communication sends communication to stakeholders as consumers and they are connected to admn. Server. The moderator shall be created for proper monitoring of communication services through apps and it is set to prevent irrelevant text, image, animation or video in the communication sent to the stakeholder's by institutions.

Potential Strategic Directions

In this next section, the developer of the framework will have to explore four very different directions that a higher education institution may take when developing a mobile strategy. Identifying a technology strategy is always a challenge because it requires trade-offs between resources, timelines, and control. Establishing an institution's mobility priorities along with an understanding of its IT capabilities allows for the development of an optimal mobility strategic plan.

Gathering Requirements

Every institution has different characteristics, needs, and priorities. Needs, have course, are influenced by factors such as primary audience, resource availability, and institutional mobility goals. Once the overall institutional needs and goals are determined, then it is critical to define a more detailed and prioritized list of requirements in order to analyse, review, and select the end product or option. The requirements, priorities, and resources available will ultimately drive the framework selection. Start with the "must haves". For example, if an institution lacks the resources to build or maintain such a system, then the product "must" be a hosted solution. If your institution mandates a specific campus branding, then the product must be easily "skinned" or customizable.

IV. DEVELOPING A HIGHER EDUCATION MOBILE WEB FRAMEWORK

Universities' needs are often diverse, encompassing a wide range of areas, from academia to administrative, medical, research, financial, and personnel. The primary target audience will differ from one department to the next, which will have an impact on many of the strategic decisions that are made. Because of these unique needs, institutions of higher education often build their own solutions with a very specific focus. In addition, other institutions leverage these solutions to address similar needs. Sometimes sharing occurs informally, and sometimes solutions are packaged formally and licensed as finished products.

The mobile arena is no exception. A framework may be built out of higher education collaborative efforts to address the overall mobility needs of a university. The products are mainly open-source efforts and emphasize integration into current campus systems. Their installations must typically include common university mobile tools like maps, directories, news, calendars, and courses but can often be extended to support standard data feeds. The advantage to this approach is that you can leapfrog the design and development of many of the common functionality by simply plugging standard data feeds into an existing infrastructure.

V. CONCLUSION

An effective framework takes advantage of a university's strengths—through variables such as in-house development expertise, data infrastructures, and finances—and leverages them to form a sensible mobile framework. This framework should not only build community but also effectively engage user groups while ultimately allowing users to personally communicate and connect with an institution on a variety of platforms accurately and efficiently. As mobile becomes the part and parcel of administrative activities of a Higher Learning institution, a wide variety of options in the mobile landscape and taking the time to walk through each of the necessary steps to build the campus's mobile initiative is imperative in the grey revolution.

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