

RADICAL IMPROVEMENT OF GOVERNMENT SERVICES USING TECHNOLOGY: THE CASE OF DUBAI

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Abstract- This paper discusses the stages that Dubai E-Government went through since its inception in 2000. Ranked as the 32nd most advanced e-government system in the world according to the United Nations, the authors highlight the success factors that led to such favorable results. The success factors include excellent ICT infrastructure, government support for innovations, sufficient finances, and high e-participation of individuals and corporations.

Keywords- Dubai E-government, E-participation, E-readiness, UN E-Government Survey, E-Government Success Factors

I. INTRODUCTION

Due to globalization and improved technology, the system of governance is gradually being changed to E-Governance (Milakovich, 2012). E-Government connotes a government that uses information technologies with ability to transform relationships with citizens, businesses and other branches of government (Ojo, Janowski & Awotwi, 2013). E-governance on the other hand means a wide concept which involves the relationship of government employees in various departments, whether elected or appointed, and the society at large. The interrelationship between e-government and e-governance is very important in designing how the system will operate for effective delivery of services. The e-government technology serves a variety of distinct ends such as improved and better service delivery by the government to its citizens, increased interaction and good relationship with business and the industries. These initiatives encourage citizen's empowerment through access to information and enhance efficiency in management.

The journey of E-Governance in Dubai began in 2000 when the then Vice President, Prime Minister and Ruler of Dubai made an official pronouncement (Madichie & Al Althmay, 2013). Before the advent of E-Governance, the Dubai government provided service through traditional means. An individual had to make a manual application by compiling and submitting the document to the relevant government department. This situation occasioned massive delays and frustrations to the citizens. In order to maintain and improve its position as a leading hub of business, the government opted for E-Governance to reduce the losses caused by the manual system (Sahib, 2015). The government set its mission which was aimed at achieving the virtual governance by providing high-quality customer oriented e-services for businesses, individuals and government departments. The Dubai government had a target of providing e Services to 70% of its consumers by 2025 (Kumar & Dash, 2015). In line with Dubai Government's initiative and strategy of being a smart city, Dubai E-Government

was renamed to "Dubai Smart Government", a title proposed by Ruler of Dubai, Sheikh Mohammed bin Rashid Al Maktoum in 2013. (Oxford Business Group, 2013).

For the initiative to be realized, the government commissioned an executive committee with the mandate of conducting strategic audit and carrying out benchmarking activities. The main aim was to study and analyze other existing E-Governments in the world in order to develop a working plan to establish an E-Government in Dubai (Samara & Raven, 2014). Various visits were made to Singapore, Malaysia, Britain and United States of America. After benchmarking and providing their report, the team was tasked with building a Strategy for government departments which included e-Government infrastructure and important e-Services for the departments to begin delivery of services electronically. The team found that certain departments were well equipped with electronic infrastructure which could enable them to proceed with initiatives while others required to be furnished with relevant infrastructure. After furnishing the departments and making relevant networking, the e-government portal (www.dubai.ae) was launched in 2001 (Warf, 2013).

eService	KPI	Year		
		2013	2014	2015
eSurvey	Total Number of completed Surveys	795	1,444	1,306
	Total responses to Surveys	74,338	78,918	189,103
ePay	Total Number of transactions	4,547,360	5,260,677	6,742,722
	Total Amount Collected (AED)	5,585,394,991	7,000,000,000	9,000,000,000
mPay	Total number of transactions	95,535	325,147	660,443
	Total Amount Collected (AED)	31,613,920	163,185,555	338,451,245
SMSDubai	Total Number of Push SMS Messages Sent	97,476	81,927	82,225
	Total Number of Pull Messages	118,917,011	176,114,025	223,041,445
Ask Dubai	Total Number of Inbound Calls	127,222	62,501	34,921
	Total Number of handled E-mails	1973	12,777	
eHost	Total Number of hosted websites	25	36	35
eComplain	Total Number of Complaints	6941	3,997	3,925
eSuggest	Total Number of Suggest	24,808	21,097	30,884

Table 1: Dubai E-Government statistics from 2013 to 2014 (Dubai Smart Government, n.d)

One of the earliest services that were offered on e-government in Dubai platform was the e-pay that was launched to provide a platform for collection of government fees like fines, license fees and fees for general government services. Other services include AskDubai which centralizes all the services in all the departments of the Dubai government and is open 24 hours in a day and all days of the week.

The esurvey helps the government track the record of the e-government's performance and note any flows as soon as they happen. These services are categorized according to their nature in that there are transactional, interactive and informative (Salhofer et.al, 2010). Transactional services are those that involve transactions especially financial transactions. Interactive transactions involve filling of forms and giving feedback. Informative services are basically about providing information to the public.

A thorough look at table 1 illustrates the steady growth in the number of transactions and participations conducted through the Dubai E-Government online services. For example, online payments totaling 9 billion AED (2.5 billion USD) in 2015 reflect the high participation of individuals and businesses in Dubai E-Government Services. Mobile payment (mPay) is another indicator of the readiness of Dubai E-Government. The number of transactions and payments using smart applications in mobile phones is steadily growing during the past 3 years as table 1 indicates.

Country	Year						
	2003	2004	2005	2008	2010	2012	2014
United Arab Emirates	38	60	42	32	49	28	32
Bahrain	46	46	53	42	13	36	18
Jordan	63	68	68	50	51	98	79
Turkey	49	57	60	76	69	80	71
Malaysia	43	42	43	34	32	40	52

Table 2: Countries comparison using E-Government Development Index (UN eGovernment Survey 2003-2014)

Internationally, Dubai is the major business city in the United Arab Emirates (UAE). The researchers of this paper refer to the United Nations numerous reports of how electronic governments perform in the world. Using the E-Government Development Index (EGDI), the United Nations EGDI indicator ranks every country's readiness for e-government technology based on "a weighted average of three normalized scores on the most important dimensions of e-government: scope and quality of online services, development status of telecommunication infrastructure, and inherent human capital" (United Nations, 2012). Based on EGDI, table 2 compares UAE to four other countries that ranked closely to each other in the first U.N report in 2003. Out of 193 countries, the UAE has the 32nd most developed e-government system in the world and the 7th best e-government system in Asia. In terms of "Online

Service Delivery" component of e-government technology, the UAE is 12th best country in the world (United Nations, 2014).

What led to the success of Dubai E-Government?

There are numerous factors that led to the success of e-governance system in Dubai. The success of E-Governance in Dubai may be attributed to ICT Infrastructure, the content of information, the e-government information structure and e-government promotion in Dubai (Kumar & Sriram, 2014). Considering ICT infrastructure, there was a centralized Government Information Network (GIN) which was developed by the concerned team at the planning stages (Yokouchi, 2013). Its composition was about thirty members who were government departments. The GIN provided security for government documents, standard connection to the internet, and union of internet connectivity standards as well as removal of burden of network administration for various departments. This function was assigned to the ruler's court which exercises oversight over all government departments. The established network with single central control provided strong and solid infrastructure that laid a strong foundation under which the portal services could be offered (Nunes et al, 2014). Secondly, the information content was vital in promoting the success of the E-Government.

Dubai government adopted the recommendations of the United Nations in establishing the Five Stage E-Government Model (Jain & Akakandelwa, 2014). The stages were: Emerging stage in which the government's online presence could be established. Secondly, the enhancement stage increased the government sites and hence the information became more dynamic. Thirdly, the interactive stage allowed users to download forms, e-mails and interact online. Fourthly, there was transactional stage where users could pay for the services and other transactions. The government established synergetic tools which facilitated operations of the E-Government in Dubai. For instance, the ePay, a centralized form of payment for government services was established. Hosting and publishing of government content was done through eHost.

Integration of government departments for purposes of coordinating service delivery was recommended. In 2006 for instance, the Dubai Department of Health and Medical Services developed network connectivity with the Police department (Al Kaabi, Debbage & Touq, 2013). This led to the increased benefits for both departments while placing orders, purchasing and testing medications and supplies for the police department. The ePermit enabled the launch of partnership between Dubai e-government and Dubai Customs, municipality and the police to facilitate faster issuance of permits.

The E-government information structure contributed to a great extent to the success of Dubai e-

government (Samara & Raven, 2014). The government established e-government portal that was used as the e-government information structure, which was the pivot of all departments and their services. Its designation was informed by the outcomes of a consultative committee which was represented by various heads of departments. It was implemented by specialists in accordance to World Wide Consortium. For purposes of efficiency, the portal was revamped in 2002 and a decentralized management system added. Due to decentralization, each department had its own freedom of managing its content and information while remaining an integral part of the portal. In 2005, it again changed with better features. It was divided into residents, citizens, visitors, local business, foreign companies and investors in Dubai. The most relevant eServices were listed under each category of people.

The continuous changing of the portal to suit the current needs of users was a remarkable contributor to the success of e-governance in Dubai (Neuvo & Karvonen, 2012). The government was able cite the need for more reorganization after establishing the first portal to suit the needs of the people and offer better services. The government developed four contact channels that could be used by the people to make complains or make queries.

These included the AskDubai, Mobile channels, SMS and Gitex 2005. They allowed public interaction between the government and boosted the confidence of the people in e-governance. Currently, there are more than 2500 services that are available through e-government portals that are categorized as residents, visitors, business and citizens (Ayish & Mellor, 2015). The homepage provides information relating to the latest happenings, most used services, general information services and how to section which is vital for the government to know the areas to improve on. It also allows the users to get to understand what is going on without moving and making queries from one place to another.

Another factor was the massive promotion of e-government in Dubai which popularized the initiative and gained favor of the public (Morabito, 2015). In the promotion, the government conducted awareness, assistance and assurance as the only way to go was e-government. The promotion of e-governance was done through the media such as television and social media. The government assured the people that it was heavily committed to ensuring an efficient e-government. For awareness purposes, the government undertook various publicity activities which were meant to raise the awareness and adoption of eServices. The activities included online marketing, competitions, promotions and road shows.

Competition was created as rewards were made to the most users of electronic transacting, Epay services and other groups of users. The government devised programs to improve computer literacy rates as a form of assisting its citizens to get used to e-

governance. The e4All initiative was so instrumental in ensuring that people use e-governance in Dubai (Anderson et al, 2015).

Dubai's population has greatly increased to an extent that using manual service delivery would lead to extensive bureaucracy (Eid & Alshareif, 2013). In order to solve this problem, the government floated the concept of e-governance. The government sought to foster growth in services, strengthening the education and training systems and encouraging good management practices. Furthermore, the government wanted to create a business environment that promotes productive economy.

The perception of the Dubai government at the international level in terms of business values that it has established and implemented e-government remains a strong factor as to why it succeeded in e-governance (Rodriguez Bolivar et al., 2014). The world is undergoing globalization and the more a country may up its game, the more it may improve its economy through trade. The desire to enhance the business value of Dubai at the international level motivated the government to promote e-governance.

The citizens of Dubai promoted the success of e-government by their e-readiness (Alomari, Sandu & Woods, 2014). In countries where citizens are not ready for using electronic governance systems, such a system cannot be employed. Majority of citizens in UAE are computer literate. The e-governance system can only be applied in a society that is information and technology literate (Nelson & Staggers, 2013) and they need the general desire to use information and communication technology in various aspects of their lives. E-readiness was indicated by the Dubai Citizenry through their knowledge, skills, digital infrastructure, and ability and will to use e-governance systems. The government took advantage of computer literacy of its people to promote e-governance which actually worked.

In addition, the use of e-governance by other states induced Dubai to adopt the system (Suri, 2016). Being the center of business in the world, a lack of e-governance system was a great drawback. Availability of other nations such as Australia that use the e-governance system enabled Dubai to conduct benchmarking and to learn how to craft a system that was unique to them. The support obtained from the United Nations was a result of the recommendations of states that were using e-governance. Dubai had a rich source of information to use and learn from mistakes of states that were using the e-governance (Alenezi, Tarhini & Sharma, 2015). It can be argued that if it was a pioneer of e-governance, they could not have had the success that they are enjoying despite the current challenges.

The UAE has Vision 2021. It desires to be among the best countries in the world by 2021. It believes that a strong and safe union, knowledge and innovation, Emiratis can confidently construct a competitive resilient economy. E-government is just one of the

innovations that are promoting the 2021 agenda of the UAE (Abdullahi & Hussain, 2016). One of its main objectives is to nurture a high quality life which is based on world-class public infrastructure, quality services from the government and a rich recreational environment that citizens can enjoy fulfilling lives. Dubai's vision is to provide customer-focused government services that are properly monitored and constantly improved to guarantee quality (Evans & Lindsay, 2012). Furthermore, the government shall establish an interactive eGovernment which will provide citizens with an especially responsive and efficient channel of services from public authorities. This shows that initiative e-government systems are one of the measures that the government has put in place to realize vision 2021.

Political goodwill and support of e-government in Dubai cannot be overemphasized (Ng, 2013). The Government enjoyed massive political support from various leaders who expressed their confidence in supporting the initiative. If the leaders had shown lack of confidence in the project, the citizens could not have had any interest whatsoever in the project. The government through its leadership was able to get support to use resources at various stages of the initiative to ensure that it worked properly. It is the political goodwill that convinces the citizens that a certain government project is likely to succeed and serve them well (Giddens, 2013).

Prioritization of e-government contributed to its success. The government showed a lot of commitment and invested sufficient resources to ensure that e-government was established (Forti et al., 2014). By making it one of the best initiatives for realization of vision 2021, the government prioritized the initiative and embarked on massive campaign to promote it locally and internationally. Locally, the government engaged in extensive training of people on how they can use various services. Self-sustainable revenue was the main driving factor for establishing e-government. Dubai had enough resources for initiating and implementing the e-government through supervision and monitoring programs (Kumar, 2015). E-government requires a lot of resources to establish. Without enough financial muscle, it is not possible to develop e-governance programs and maintain them.

External pressure and high demand from citizens to establish the e-government prompted the government to kick start the initiative. Dubai was one of the states that had numerous international relations with other countries (Cohn, 2015) and people from different countries by virtue of being a hub of business. Since some countries were using e-government systems to run their businesses which was faster, time saving and cost effective (Stair & Reynolds, 2013), the government was under pressure from other governments and foreign stakeholders to establish e-governance. Furthermore, the local people were ready for e-governance and advocated for it.

How did Dubai Succeed?

The success of Dubai is based on the steps that have been described above. Above all, the success is attributed to commitment by the government. The government was committed and devoted its time towards ensuring that the E-Government is established in Dubai (Alenezi, Tarhini & Sharma, 2015). By Involving expertise from various departments, the government made the right decisions at the right time. The government believed in its agenda and promoted and oversaw its implementation. The government conducted a viable research on how e-government should be established. It went for benchmarking in various countries that have put e-government in place to ensure that they learn from mistakes.

Participation of people in the whole process from consultation to implementation boosted the prospects of success. The training that the government provided to the locals actually opened their minds to realize the benefits of establishing e-government (Sun, Ku & Shih, 2015). They won the favor of their citizens who strongly supported the implementation of e-government. The government has enabled significant shifts in e-government. For instance, the e-government has shifted from being supply-centric to citizen-centric (Zhao, Jose Scavarda & Waxin, 2012). The shifts have improved the quality of services and facilitated e-government. The government allowed privatization of some departments to enhance e-government with the private sector.

E-government is based on the trust between the government and the citizens. The UAE government expressed confidence and trust to its citizens by assuring them that the e-government system will not be detrimental to them in any manner (Kettani & Moulin, 2015). By fostering this trust and confidence, the citizens were encouraged in participating in government processes.

The factors that have inspired the trust of e-government systems amongst the citizens may be attributed to individual citizen, institution, technology and information features (Roy et al., 2015). With regards to individual, there are factors such as the norms, demographics, and their culture, past experiences, competency, fairness, honesty and integrity. Furthermore, there is openness and the general intention to trust. The features that have led to institutional trust in Dubai include organizational reputation, innovativeness, and the institutions in Dubai have proved that they can be trusted, a fact that has led to increased confidence in e-governance system (Gekko & Street, 2014). Considering technology, the trust was developed by using high security applications in e-governance. Trust was also built with regards to the quality, usability, privacy, interactivity and security of services and information provided to citizens and businesses.

While developing e-government, the Dubai government had its strategic goals in place (Ibrahim

et al., 2015). The government identified more than thirty eight initiatives which were used to promote its strategic goals in e-governance. The government sought to strengthen the regulatory framework and governance mechanisms of e-Government (Janssen & Estevez, 2013). In order to achieve this goal, the government established legal and regulatory environments under which the e-government system would be established. The legal framework was and is mainly used to regulate the acquisition and dissemination of information (Beschel & Yousef, 2016).

Another factor that provided success was the availability of infrastructure in support of information systems. At the initial stages of planning for the e-government, an assessment of the available infrastructure to support e-governance was conducted. The result was positive in that some departments already had requisite infrastructure. The government had the responsibility of improving on what was available. For information system to be effective, it must be supported by appropriate infrastructure. Information system facilitates the exchange of information between the stakeholders.

The act of launching and providing e-government applications and services to governmental departments was a good signal that the government was ready to implement e-government (Anthropoulos et al., 2015). Mechanisms for performance management were put in place for various departments. The mechanisms were used to measure and monitor performance of e-governance system. This act of supervising the system's performance meant that departments had to get it right in using the e-government systems for purposes of service delivery.

Furthermore, the government employed measures for effective change management. Due to the introduction of e-governance in Dubai, there was a legitimate expectation of the change in the society and the government affair (Jain & Akakandelwa, 2014). Successful management of the transition from the old order to the new order was necessary. The government effectively managed the process of transition by proving to its citizens the reasons for adopting the new order and dropping the old way of operations. Since people are always resistant to change, the only way was to effectively manage the process of change to win the people's support. Furthermore, effective design of the e-government system provided a boost to its success.

CONCLUSION

There are various factors that led to the success of e-government system in Dubai. The factors include but not limited to, the prioritization of the project, effective design, extensive research on how e-government operates, availability of finances to support the project and public good will

(Ahimbisibwe, Cavana & Daellenbach, 2015). Additionally, factors such as external pressure, availability of technology, technology infrastructure, and the e-readiness of the people, the political good will and presence of professional expertise contributed to the success of Dubai e-governance. The government formed a strategy for realization of Vision 2021 and of the projects was to establish e-government (Salem, 2016). The desire to remain a major player at the international level and provide effective services to international stakeholders enabled its success.

The success of E-Governance in Dubai is attributed to ICT Infrastructure, the content of information, the e-government info structure and e-government promotion in Dubai (Kumar & Sriram, 2014). In terms of how the government achieved it, it can safely be said that the government involved the people through various training programs and created awareness of the project so that every citizen could access the services. It integrated various departments to ensure that they exchange vital information. There were measures for effective change management which prepared the government for any negative eventualities. The act of launching the initiative publicly instilled confidence in the locals and the international community who were ready to support it. There was need to develop a legal framework under which the e-government system in Dubai operates to avoid legal battles on the authenticity of the project (Blythe, 2012). Although the implementation faced various challenges, they did not lead to failure of the project. They only served to increase the innovation and creativity which is necessary in any electronic system due to changing technology. Today, Dubai continues to enjoy e-government services and is focused on improving the system to achieve the highest level of satisfaction for its users (Manoharan, Fudge & Zheng, 2015).

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