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# A SYSTEM DEVELOPER'S PERSPECTIVE OF MANAGING CIRM IMPLEMENTATION IN LOCAL GOVERNMENTS: LESSONS FROM MALAYSIA

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## Abstract

This paper proposes a system developer's perspective of the Citizen Relationship Management (CiRM) system implementation framework in the Malaysian local governments. The framework was developed based upon two in-depth cross-case studies which were conducted in two leading local governments in Malaysia. In addition to confirming the familiar determinants found in the literature, the paper also suggests the significance of "publicity" as a factor which should not be overlooked when CiRM implementation initiative is considered.

Keywords: Citizen Relationship Management (CiRM); implementation; implementation process; local government; grounded theory case study.

# 1 INTRODUCTION

Many governments have implemented e-Government initiatives (e.g., Roberts, 2007). For instance, the Australia Government has coordinated all online services into a single platform and electronic delivery that will underpin all other delivery means. These Citizen Relationship Management (CiRM) systems are not only implemented at the national level, but also at the state and local government levels, leading to a creation of a more citizen-centric government (Chen, 2010; Reddick, 2010). The potential of CiRM system is to create a more citizen-centric government.

The implementation of a CiRM system can bring people, technology and business processes together (Teo et al., 2006) with many types of applications (Reddick, 2010). For instance, the London Borough of Haringey in the UK, has created a multi-channel and multi-agency systems that allow the council's staff to maintain a seamless, uninterrupted dialogue with the public (Batista and Kawalek, 2004). When a member of the public has an enquiry about a particular service, they can either visit the local service centre in person or communicate with the call centre by telephone or e-Mail. Besides these Internet based systems, non-Internet based CRM systems, such as interactive voice response and public information kiosks have also been implemented by local governments in delivering public services (e.g., Ni and Ho, 2005; Kavanagh, 2007). The employment of CiRM systems has increased the operational day-to-day and strategic long-term effectiveness of local governments, particularly in relation to the intimacy of their relationship with the public (King and Cotterill, 2007). This comes at a time when the public are demanding for the public services to be equally accessible as those offered by the private sector (Richter, Cornford and McLoughlin, 2004). Some initial studies (e.g., Richter and Cornford, 2007; Schellong and Langenberg, 2007) have indicated that CiRM implementation has delivered some impressive benefits.

Meanwhile, the Malaysian Government has started to implement CiRM systems at the local government level (Kaliannan, Abdullah, and Raman, 2009). These initiatives have enabled some traditional services (e.g., taxes, compounds, complaints) to be delivered online and offline (e.g., in-person). Electronic submission of forms, e-payments of taxes, fees and fines, e-complaints are some of the services that are available to the public through the Internet. While the services provided through the Internet are the governments proactive way to enhance its service delivery, the services offered through public kiosks or in-person are the exemplary practices to enable access and to stimulate the use of CiRM systems. As some Malaysians still do not have Internet access, the non-Internet based CiRM solutions are a way to make local governments remain close to the public. In this regard, the Malaysian public are provided with a choice of multiple channel delivery that they can access from anywhere at their convenience, which Reddick (2010) refers to as a common feature used in CiRM systems.

It was also reported that the Malaysian Government is still ranked below average for service deliveries (e.g., compared to the developed countries in delivering citizen-centric services (Roberts, 2007). The performance of the Malaysian Government, especially at the local government level has been subjected to various criticisms, i.e., based upon increasing number of complaints from the public regarding provision of good and poor services rendered to the public (Hashim, 2010). The criticisms can be seen through a number of negative newspaper articles on public services delivery by local governments. In fact, Siddique (2008) has argued that the implementation of e-Government in Malaysia has not been able to deliver many of the benefits other countries offer elsewhere.

The purpose of this study is to explore the characteristics of successful (or failed) on CiRM implementation process as experienced by system developers in the Malaysian Government. Two primary case studies at the local government level were developed through the utilisation of a grounded theory case study approach. The paper is thus structured as follows: the following section presents the present state of CiRM implementation literature; the third section describes the research

methodology employed by this studies; the fourth section describes the in-depth cross-case studies of two local governments in Malaysia. The final section concludes the study and provides some possible future research directions.

## **2 THE PRESENT STATE OF THE LITERATURE**

CiRM implementation studies have only been recently studied (King and Cotterill, 2007). The CiRM implementation phenomenon, which is capable of establishing relationships with the public more effectively, began to grow in the early 2000s. As it is still within the growing stage, the majority of these studies were focusing upon the applications, benefits, adoption and implementation of the systems. The adoption literature has the highest amount of studies (e.g., Schellong and Langenberg, 2007; Ong and Wang, 2009; Reyes et al., 2011).

Most of these studies have been conducted by using exemplary practices in developed countries. Some have modelled the relationships of both the government and their public. On the other hand, drawing upon the success of a government agencies in Singapore, Tan and Pan (2003) have developed a relationship model for an understanding of how a Singaporean government-public relationship can be efficiently managed to achieve an effective business process. Although the nature of the CiRM models discussed above is slightly different, the studies have agreed as to the significance of information system (IS) utilisation in enabling a closer relationship between the governments and their public for the delivery of high service quality. Therefore, CiRM can be treated as an IS enabled strategy with a focus on the public. Through a CiRM system, government organisations not only have an opportunity to access and manipulate public data to gain an accurate picture of their behaviour and demands, but also have a strong tool to connect to the public.

Some literatures on CiRM adoption briefly addressed the needs of integrating the CiRM system with back-office systems through channel led interaction. For instance, Larsen and Milakovich (2005) recommended that all possible services that are needed by the public should be provided in an integrated solution, such as websites, call-centres, or one-stop shops. In another study, Reyes et al. (2010) has suggested a concentration towards the integration at the back-office first before moving to its front applications. Nevertheless, the integration is supposed to represent a successful combination of technologies that provide the basis for governments to engage intimately with their public (Batista and Kawalek, 2004).

Another perspective of the CiRM implementation studies was focusing upon the system's application. For instance, Teo et al. (2006) divided CiRM systems into three types– operational, collaborative and analytical. While the operational CiRM includes all applications that are aimed to accomplish day-to-day tasks in serving the public, the collaborative CiRM system comprises applications that support the public through a single service path (such as a call centre and integrated CiRM portal). The analytical CiRM contains an application that is capable of mining public data (such as data warehouse and data mining tools).

There are also many cited studies on the benefits from the CiRM deployment as the system has achieved numerous benefits in terms of:

- Improving citizen orientation (Chu, Yeh and Chuang; 2008; Reddick, 2009), e.g., public experience when contacting government can be increased through holistic approach
- Improving customer service (Chu et al., 2008; Reddick, 2009; 2011), e.g., CiRM system will allow government agencies to better understand public needs, preferences and expectations
- Producing better government accountability and its operation (Pollard et al., 2006; Schellong and Langenberg, 2007; Reddick, 2009; 2011), e.g., the multi-channels offered by the government will promote a more open and transparent government

- Providing information sharing (Reddick, 2009), e.g., increases the government and public's knowledge by providing access to reliable and detailed information
- Reducing cost of service delivery (Themistocleous and Irani, 2005; Teo et al., 2006; Reddick, 2009), e.g., a single view of CiRM system will reduce overhead costs as public are more interested in using self-service facilities and improving operational efficiency (Teo et al., 2006; Chu et al., 2008), e.g., the integrated multi-channels operation contribute greatly towards reducing the overall workload of customer service staff.

In short, the CiRM implementation initiative is becoming increasingly important due to the public demand for improvement in the services offered by governments (King, 2007). Reddick (2009) argued that large local governments are more likely to implement CiRM systems because they are under greater pressure to find alternative ways of providing public service delivery at reduced cost. Nonetheless, although there has been significant amount of CiRM studies in developed countries, many developing countries have been left behind with a long way to catch-up. Malaysia, for instance, is ranking below average for CiRM measures, especially when compared to developed countries (United Nations, 2008). Hashim (2010) reported that local governments in Malaysia have been criticised for its poor services. As a result, successful of CiRM implementation has become a great challenge to the Malaysian local governments.

Despite the interest shown by many governments in implementing the CiRM system, not many studies have been done to investigate the process of CiRM implementation. Although a number of prior implementation determinants have been identified from these studies, such as senior management support (Chu, 2010; Reddick, 2010; Kamal et al., 2011), system champion (Fleming, 2008; Chen et al., 2009), implementation planning (Fleming, 2008; Rose and Grant, 2010), user requirements (Fleming, 2008; Velsen et al., 2009; Rose and Grant, 2010), and resistance to change (Rose and Grant, 2010; Reddick, 2011), a description of how they fit together and occur throughout the whole implementation life cycle is still lacking. There is little guidance concerning how local governments should actually implement a CiRM system successfully. This calls for more studies to understand the process of implementation in e-Government initiatives (Yildiz, 2007; Tsai et al., 2009). The studies argue that if the CiRM system is to live up to its full potential, system developers in Malaysian local governments will require an understanding of how to develop successful implementation. The lack of understanding the issues therefore may affect the success in implementing CiRM.

In addition, to encapsulate the implementation process, the three stages of Lewin's model of change – *unfreezing*, *moving* and *refreezing* were chosen (Zand and Sorensen, 1975). Consequently, the study has viewed Lewin's change model as follows. In the *unfreezing* stage, the study will identify how the system developer creates responsiveness to the need to implement CiRM and creates an accessible ambience to the system implementation. In the *moving* stage, the implementation of the CiRM system will be thoroughly investigated. In this stage, the study will identify how system developers develop the CiRM and how they learn to accommodate the system. Whilst in the *refreezing* stage, the way in which system developers stabilize and maintain the CiRM system will be identified. Through these views, it will assist the study to better understand the system developers' phenomenon in implementing a CiRM system.

### **3 RESEARCH METHODOLOGY**

To encapsulate the true picture of the CiRM implementation process, multiple data collection methods (i.e., in-depth face-to-face interviews and archives) were employed. The interviews were conducted on a one-to-one basis and lasted, on average, about 45-60 minutes, although some of the interviews lasted a lot longer. Prior to the interview, the respondents (system developers) involved were sent a brief introductory e-mail on the research topic to allow them to prepare for the interview. Each unexpected answer from the earlier sessions were noted and included as a new question for the next interview. The

interview session was conducted on-site at the local governments' office. There is much debate about recording interviews in grounded theory case study research, mainly, whether or not interviews should be tape-recorded. Relying on note taking after conducting an interview might lead to missing data that were either not clearly heard or subsequently forgotten. For this reason, tape-recording the system developers' experience was selected over taking notes. Although the technique chosen was time consuming, it provided a full description of the conversation between the researcher and the informants (Walsham, 2006). Referring to the CiRM implementation determinants (based upon the review of the literature) and in vivo codes which were used by the interviewees, eight main categories were proposed for the individual and cross case analyses (see Table 1).

Categories	The Johor Bahru Tengah Municipal Council (JBTMC)	Kulai Municipal Council (KuMC)
System lifecycle	Prior to implementation, current system	Prior to implementation, current system
Forces of the system implementation	Improving data management, departmental usage, better services to public, competition from other councils	Senior managers under pressure, high expectation from public, direction from the state government
Role of the system developers (1)	Lead the project, managing the project, working closely in a team, communicating effectively at all levels, knowledge sharing with other councils	Generated the idea of implementation, intermediary between internal and external stakeholders
Senior management support (2)	Senior managers awareness, funding available, hiring more system developers, continuous support	Persuading senior managers, securing the support
Implementation objectives and planning (3)	Setting the implementation objective, identifying the implementation approach, appointing consultant, seeking help from vendor	Approach for implementation, setting the implementation objectives
Analysis of users' requirements (4)	Departmental requests, obtaining public complaints, merging all end-user requirements	Discussing the key requirement
CiRM sub-implementation (5)	Method in developing the system, building a series of prototypes, getting feedback from the end-users, modules of the system, integrating all data in one database, data conversion, installation activity, installation approach, system testing	Building prototypes, configuration works
Managing resistance (6)	Users reluctant to change, leader enforcement, presentations by system developers, training sessions	No discussion
CiRM publicity (7)	Communicating with citizens, getting feedback	Communicating with citizens, getting feedback

*Table 1: Proposed key categories for the individual and cross case analyses.*

## 4 CASE DESCRIPTION

### 4.1 Case 1: The Johor Bahru Tengah Municipal Council (JBTMC)

The Johor Bahru Tengah Municipal Council (JBTMC) is located in the State of Johor. With a total area of approximately 130 square miles, the council is divided into two main zones: the east and west zones. It was estimated that, in 2008, more than 700,000 residents were living within these areas. JBTMC has been proactive in managing public services that are important to its local citizens. One of its aims was to become the leading local government in the state. As a result, various CiRM systems were implemented by the council. These included the development of e-services applications public complaints (2005) and tax review system (2008). The council entered the second stage of the CiRM

implementation in 2009 with the development of its new Webportal. This portal serves as a single access to the integrated public service delivery. The council also implemented a non-Internet-based CiRM solution (a kiosk payment machine). Two machines were installed in the council's headquarters in Skudai. The CiRM kiosk payment system has provided alternative channels to the local public for the payment of council taxes. In addition, the evolution of the CiRM technologies was supported by traditional channels, such as face-to-face interactions.

#### **4.2 Case 2: Kulai Municipal Council (KuMC)**

Kulai Municipal Council (KuMC) is located near Johor Bahru in the State of Johor. With a total area of approximately 285 square miles, the population in the council was estimated to be more than 130,000 people in 2008. The rapid development and population increase led to municipal status being accorded to the council in 2004. The status not only created a paradigm shift in the overall administrative management of the council, but also provided an opportunity to devise the best public delivery system. Various forms of development had been planned in the council through strategic partnerships with federal or state governments or private (vendor) entities, especially for the CiRM system. The e-services (e.g., complaints system, downloadable form, online payment), web portal and kiosk payment (i.e., Express Micro Bill Payment) were among the CiRM solutions developed with vendor assistance. For instance, the CiRM kiosk system was implemented to provide the public with the ability to review information and make payments for the council's taxes.

## **5 CROSS-CASE ANALYSES**

### **5.1 Role of the System Developers**

At KuMC, the experience gained by the system developers while they were visiting several neighbouring local governments was employed to enhance their knowledge of adopting a similar system. Meeting a vendor, who is experienced in implementing the corresponding CiRM system in another council, was also held at KuMC. When they had gained adequate knowledge, the system developers then moved forward with other tasks. The system developers at both the local councils continued to play their roles by selling the idea of the implementation within the entire organisation. Various mediums of communication, verbal (e.g., meetings, briefings) and nonverbal (e.g., e-mail, bulletins, and internal portals) were employed to keep the senior managers and end-users well informed of the system's benefits. In addition, the Head of the System Analysts at JBTMC (who was also acting as the project manager) and the senior managers from the IT Department contributed to the wide acceptance of the implementation initiative. As the implementation progressed, the system developers at JBTMC acted as 'intermediaries' between the end-users, senior managers and vendor. Several end-users were also invited to participate in the implementation activities (e.g., user acceptance testing).

### **5.2 Senior Management Support**

Senior managers were influenced by the system developers to accept the idea of CiRM implementation through a concrete business case. At JBTMC, the Head of the System Analysts were convinced that the system will offer more benefits by preparing and presenting a RFP (i.e., Request for Proposal). Nonetheless, unlike JBTMC there was no continuous commitment and support from the senior managers at KuMC. The senior manager's support was very minimal as the budget was limited.

### **5.3 Implementation Objectives and Planning**

. Apart from the PGMC case, most of the implementation activities at other local governments were usually initiated and developed by the Head of the System Analysts with assistance by other system developers. A few senior managers and end-users from the participating departments (i.e., one or more departments that may have requested or needed the system) were also invited to participate in the implementation tasks. The CiRM implementation at JBTMC and KuMC which was planned on an incremental basic, had given ample time for system developers to adjust the complexities of the system in accordance to the needs of the users and the public. For instance, at JBTMC, at least two months were spent for preliminary study and process definition.

### **5.4 Analysis of User's Requirements**

As it was impossible to engage all the public in the system implementation initiative, most of the local governments preferred to use the focus group approach. Through the community events (e.g., *Gerak Tumpu*, *Hari Bertemu Pelanggan* or *Gotong Royong* programmes), the public needs were gathered directly from their complaints. In addition, at KuMC, observation of the inefficiency of the counter systems was made in determining the public needs. The data collected through these strategies were combined and become the diverse requirements of the CiRM system. As the public requirements were collected, the system developers at JBTMC and KuMC moved on to analyse the internal requirements. The main purpose of this exercise was not only to get their ideas, but also to clearly understand their daily routine. The most common approach, which was found to be similar across these local governments, was the in-person interview. A continuous discussion with the end-users was occasionally held at this stage.



## **5.5 CiRM Sub-Implementation**

There were several ‘pressuring issues’ faced by the local governments in facilitating the development of the system. At JBTMC, system developers paid careful attention to the user needs. All comments from the users were taken into account until they were satisfied with the prototypes. Furthermore, at KuMC, vendor’s who were experienced in implementing similar systems were brought into the council as they can provide the basic work process for the intended system.

The sub-implementation component of system development may require transferring the data from the old into the CiRM system. It was the responsibility of the system developers to provide a proper migration plan, especially when the structure and the data format seem to be different between those two systems. This was seen at JBTMC, where the developers have made an effort to properly integrate the scattered data into a single database. In addition, testing the CiRM system for acceptance was also another important component of the sub-implementation issue. Most of the end-users were invited to be part of the testing exercise. At JBTMC, testing for data input (i.e., using business case setting) and technical aspects (e.g., protocol setting, system turnaround time, etc) were conducted to confirm that the system have lived up to the user’s expectations. In contrast, at KuMC, the CiRM system was tested by using different staff who acted as the public. They were asked to use the system without any guidance, to determine whether or not the CiRM had met the needs of the public.

## **5.6 Managing Resistance**

At JBTMC, the resistance occurred during the initial stage of the implementation. It was mainly due to the unfamiliarity faced by the end-users. In addition, at KuMC, the level of resistance at this stage was also strong from the senior managers. The senior managers were reluctant to change because they did not have any idea about the concept of the CiRM system. Managing resistance was even more crucial during the transitional period from the old to the new system. In addition, at JBTMC and KuMC, the resistance to change from the public was found to be essential. It was basically due to the CiRM system being developed far behind its full capability (e.g., limited functions) or located at a non-strategic location (i.e., CiRM kiosk was located in the council premises). The continuous CiRM promotion activities also reduce public’s resistance to change.

## **5.7 Publicity**

Both the local governments undertook promotional activities to boost the use of CiRM systems by the public (joint effort between the system developers). Continuous promotional activities were conducted by the promotional team (i.e., collaboration between the departments) at a later stage. The most common promotional strategy that was similar between the local governments was the printing of the system’s information, which included leaflets, posters, magazines or bulletins. On a periodic basis, the printed information was distributed during promotional activities such as in road shows and community events. Such activities will increase the awareness of the public and encourage them to use the CiRM system when available. Other promotional strategies, such as staff assistance, attractive incentives scheme and a combination of these, were rarely used by the local governments. Both JBTMC and KuMC were actively used these types of publicity approaches. For instance, once no staff was assigned after the end of the ‘staff assistance’ period, there were some leaflets at the information counter desk. A banner was also hung behind the kiosk of the CiRM system for the public to look at.

# **6 DISCUSSION**

System developers have benefited significantly from the lessons learned by other councils that had already implemented similar system. These lessons have enabled them to move forward easily with the challenges during the implementation process, such as determining the users’ requirements. The JBTMC case also reveals that system developers paid some attention to strengthening the

communications among the end-users, vendors, and members of the public. Effective communication methods were needed between all the stakeholders in identifying, negotiating and developing a common understanding of the CiRM system.

Along with the JBTMC, KuMC was a recent implementer of a CiRM system in Malaysia. The lessons that had been learned have enabled the KuMC system developers to quickly make a good decision by choosing the right. The vendor relationship held many potential advantages and permitted the system developers to develop a greater understanding and a collective plan for the CiRM implementation. The findings also suggest that the system developers' anxiety regarding the success of the CiRM implementation was not enough to counter the threats to implementation. In the years since the system was launched, the system developers have only been engaged with the implementation process at a minimal level and have been focused on maintaining the system.

A system developer's perspective of the Citizen Relationship Management (CiRM) system implementation framework is proposed based upon the cross-case studies. The framework contains the main implementation activities identified in leading Malaysian local governments. These activities were influenced by internal and external forces that instigated the system developer to proceed with the system implementation.

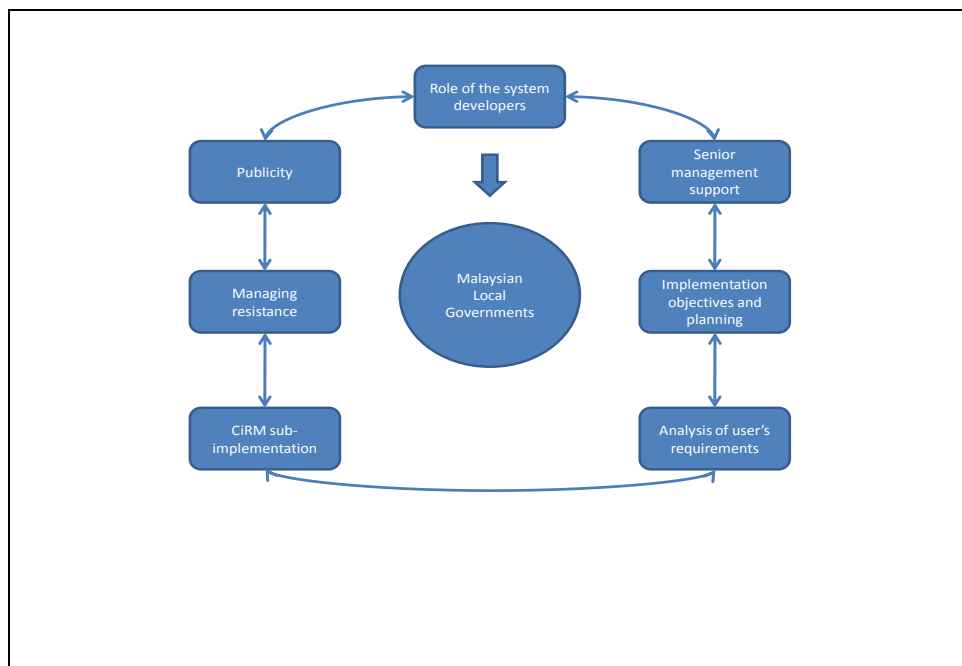


Figure 1: A framework of the CiRM implementation process in local government

## 7 CONCLUSIONS

The paper presents the system developer's experience in implementing the CiRM system in two local governments in Malaysia. Seven key organisational issues have been identified from the cases after three rounds of iterations, i.e., producing a list of CiRM implementation determinants which can be utilised in future research work. These issues formed the CiRM implementation process model that can offer guidance to the existing and potential system developers in local governments. The characteristics of the CiRM implementation process depend heavily on how effectively they deal with the implementation issues. The decision to focus on the system developers' perspective was justified as the findings have suggested that the responsibilities of the system developers in successfully managing the implementation process are considerable (i.e., as they were instrumental in establishing

the idea for the CiRM implementation, convinced senior managers and carried out the projects until the CiRM system was implemented in their organisations).

Given the fact that system developers' experiences will change over time, replication of this study will thus be potentially beneficial. Future studies shall extend the proposed framework in different settings. Future studies can also revisit the CiRM implementation process (Kim and Pan, 2006), which examines the behavior of each of the seven emerging determinants (i.e., relationships among the determinants and their consequences in the implementation process).

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