

# EXPLORING THE DETERMINANTS OF CIRM SYSTEMS IMPLEMENTATION IN LOCAL GOVERNMENTS IN LABUAN, MALAYSIA: PERSPECTIVE OF SYSTEM DEVELOPERS

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**Accepted date:** 8 December 2018

**Published date:** 1 April 2019

**To cite this document:** WenYing, Nasirin & Rizal (2018). Title. *International Journal of Modern Trends in Business Research (IJMTBR)*, 2 (7), 28 - 36.

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**Abstract:** *Citizen Relationship Management (CiRM) systems have been an essential information systems (IS) strategy in building a relationship between the government and the public. This is particularly in developing nations, where successful implementation of CiRM systems offer vast benefits, such as improving quality service delivery, sharing information effectively, easing operation procedure, and providing long-term cost-effectiveness. In order to determine the vital factors for the development in East Malaysia, evaluation of several organisational determinants that may affect the implementation of CiRM system was carried out from the stance of the system developers. In precise, this paper presents the pilot study conducted in Labuan Corporation. In-depth interviews with two system developers in the organisation provides the insights to identify the determinants to success the CiRM systems in local government Sabah before the actual case studies analysis conducted with the Sabah local government.*

**Keywords:** *Citizen Relationship Management (CiRM), CiRM Systems, Developing Countries, Local Government, System Developer.*

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## Introduction

The global digital technology is seamlessly integrated into the daily lives of the public, especially amidst developed nations. The United States (US), the United Kingdom (UK), and the Republic of Korea have implemented e-governance initiatives such as Citizen Relationship Management (CiRM) systems and have been recorded to attain a level of maturity in their e-government transactional phase (Al-Khouri, 2011). CiRM is a customer-centric approach that has often been employed in non-profitable organisations. The surging concern amidst the government towards enhancing positive citizen relationship via systems implementation to

satisfy its citizens is prevalent (Collins & Kim, 2009). Malaysia is not exceptional in this scenario. In particular, satisfying the citizens is the main reason for implementing CiRM systems amongst the local governments. For instance, electronic submission of taxes, complaints, and fines is just a few clicks away without the limitation of geographical locations. Some studies on CiRM systems that have been conducted within the Malaysian context mainly focused on Peninsular Malaysia. Nonetheless, the determinants for successful implementation of the system in the eastern states may differ from those identified in the peninsular. Shedding light upon the importance of implementing CiRM systems amongst the local governance of Malaysia is also deemed to benefit the local governments in Borneo through its related guidelines. Thus, this pilot studies looked into the determinants of successful CiRM systems implementation, as well as the glitches within the systems.

### ***The Significance of Looking through the Lens of System Developers***

It is significant to incorporate the system developers' perspective they have deeper understanding and more familiarity with the system they have built, thus possessing the capability of applying adequate domain knowledge in the processes. Two system developers in the ICT department holding the highest and second highest position were selected as the informants. Furthermore, they are well in-advanced in their field and directly involved in the CiRM systems implementation in Labuan Corporation. As a result, they would be able to assist in data collection. Upon assist in data collection, system developers also have vital roles in guiding project managers and convincing the higher management to implement the CiRM systems.

### ***Objective of the Study***

To explore the determinants of implementation the CiRM systems in the local government Labuan, Malaysia from the perspective of system developers.

## **Literature Review**

### ***The Present State of CiRM Implementation in Local Governments at Developed and Developing Countries***

Developed nations, such as the United States, the United Kingdom, and Singapore, have implemented CiRM systems to support their daily Government-to-Citizen (G2C) activities (Al-Khouri, 2011). In the USA, CiRM system 311 has archived success by providing a wide range of government services using multi-channel communication systems (Hartmann, Mainka, & Stock, 2017). Apart from the US, the Australian government has reinforced an electronic platform with online services (Grönlund, 2010). Meanwhile, the government of Wales and England website has provided the public services and information with the digital access (Strielkowski, Gryshova, & Kalyugina, 2017). However, many developing nations have devised their e-government strategy based on successful cases of developed countries as the model. For instance, Tehran in Iran has recently begun applying data mining tools to determine the needs of their citizens (Bakırlı et al., 2012). India has adopted the ICT in its governmental organisation. Focusing on CiRM systems in management not only helps a nation in growing its market, but also enhances service delivery by the local governments.

### ***The Present State of CiRM Implementation in Malaysian Local Governments***

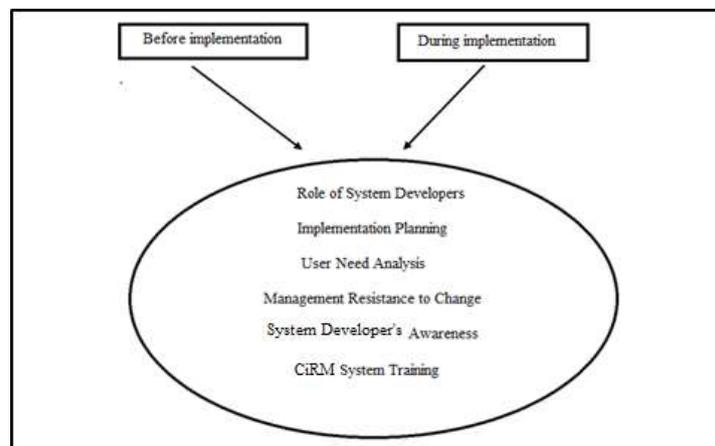
Malaysia is a developing nation that has positioned itself towards attaining the status of a developed nation in its Vision 2020. CiRM systems in Malaysia have been implemented at the local government level as a part of e-government initiative (Bahar et al., 2015). Critiques and complaints have escalated due to the poor services provided by local governments to the public

(Kaliannan et al., 2009; Hashim, 2010). As a result, the general public has lost confidence in the government when a gap exists between ‘demand’ and ‘supply’ for local government service delivery. Several studies associated to CRM and CiRM in local governments have been carried out within the context of Malaysia, for example, cases at Kuala Lumpur City Hall (DBKL) and Petaling Jaya City Council (MBPJH). However, local governments in Sabah are in the midst of changing their system from manual to CiRM systems. Sabah is one the state in Malaysia, with a 3.86 million population. In Borneo Malaysia, none of the prior studies in implementing CiRM systems have incorporated the context of East Malaysia. Although Malaysia has been ranked as the top 20 out of 144 countries for IT readiness (Siddiquee, 2013), it is divided into West and East Malaysia. As mentioned earlier, the environment factor is accountable as a factor in determining network readiness. The environment and network readiness in Sabah is varied compared to the peninsular. Hence, it is emphasised here that the successful determinants in implementing CiRM systems at the peninsular may differ from those required in Sabah.

***Proposed Theoretical Model***

Based upon the literature, several determinants have evolved and is believed to have influenced the implementation. The determinants are implementation planning, user needs analysis, system developers’ resistance to change, management, user awareness, and system training.

Figure 1 illustrates the proposed theoretical model of the studies, followed by a description of the determinants that are interrelated to one another.



**Figure 1: The Proposed Theoretical Framework**

***Implementation Planning***

Implementation planning involves a huge investment of time. Effective implementation planning is vital as this phase includes technology, design planning, and strategic use in system implementation. However, some issues such as consistency of application, security of online transaction, and integration of functional departments must be addressed prior to implementation (Tan, Benbasat, & Cenfetelli, 2013).

***User Needs Analysis***

Understanding both internal and external demands of a user is vital to offer fulfilling and satisfying services to the public. Observing the environment, as well as understanding the demands and needs of the citizens, can be useful for system developers in building a better

functioning system (Bahari, 2012). It tends to serve as a guideline for the system developers in designing an effective system (Law, van Schaik, & Roto, 2014). Identifying the public needs and interests determines the most sought services. Thus, the processes of planning, developing, and testing are important in meeting user needs and demands.

### ***Management Resistance to Change***

The resistance usually happens at the early stages of the lifecycle and during the transitional period. Senior managers who are unfamiliar with the system have caused the funding for CiRM project implementation to be rejected (Bahar et al., 2015). As a consequence, the system developer has an important role to bring about awareness of the CiRM system by explaining its vast benefits. Management seemed reluctant to learn new technologies due to the false perception of their jobs being cut back (Bahari, 2012). Implementation activities with involvement of staff during the implementation phase can reduce the level of management resistance to change (Rose & Gerald, 2010).

### ***System Developer's Awareness***

Awareness can be described as an individual's consciousness, alertness, and attention on the issue subjected (NIST, 2013). In the early phase of implementation, system developer's awareness and support is important (Kendall & Kendall, 2014). According to Bahari (2012), the positive force come from them when they are aware of and understands the benefits of the CiRM systems. Only then the project is given top priority.

### ***CiRM Systems Training***

System training is useful and important for successful CiRM systems implementation. System developers have to ensure that a proper training process is in place to educate the user with the implementation of the system. This refers to specific knowledge, skills, and attitudes that encompass a level of training for users (Buckley & Caple, 2009). Systems training is useful to overcome the limitation of knowledge and skills during the CiRM system implementation (Schoenfeld et al., 2014). Thus, failure in planning the training and education programmes can critically affect the implementation of CiRM system.

## **Research Methodology**

The research design follows the case study research design as suggested by Yin (2013), along with content analysis to improve the validity and evaluate the determinants from a different stance. This research design was selected because it helps in identifying the determinants by providing in-depth understanding regarding CiRM systems implementation process. The in-depth interview sessions allowed the system developers to share their knowledge and experiences, which appeared to be a great opportunity to discuss the present IS implementation in East Malaysia. The interview sessions were recorded and transcribed. After that, the data were categorised and compared via content analysis. The sampling design used was the purposive sampling technique. The reason for using this technique was due to the study's targeted local government with implemented CiRM systems. However, not all fulfilled the required criteria. Hence, the available samples were rather limited for investigation.

## **Pilot Study**

A pilot study provides valuable insights for researchers. It also helped in predicting the successful determinants of the CiRM systems and in further understanding them within the context of Sabah based on prior determinants, besides refining the proposed theoretical framework derived from the literature review. Data gathered from the selected informants regarding the present CiRM systems can lead to improvisation or understanding of the CiRM

systems. A pilot study is a small-scale research that examines the feasibility of the full-scale research in terms of time, cost, adverse events, effectiveness, and appropriateness of the preliminary steps prior to the real research (Hulley, Cummings, Browner, Grady, & Newman, 2013).

**Case: Labuan Corporation (*Perbadanan Labuan*)**

The case study research design (Yin, 2013) was employed in Labuan Corporation as the case for the pilot study to gather valuable insights. Labuan Corporation is located at the town of Labuan FT (see Table 4.1). The selection of informants was based on non-probability sampling technique. Content Analysis was applied in the in-depth face-to-face interview sessions to encapsulate the provided responses.

**Table 4.1 Pilot Study Informants**

Place	System Developer Position
Labuan Corporation	Director of ICT (System developer)
	Assistant Director of ICT (System developer)

The Department of IT of the Labuan Corporation (*Perbadanan Labuan*) has implemented the CiRM systems since five years ago. Presently, they are involved in an upgrading process to enhance the functionality of the systems. The CiRM systems have been implemented under e-services for compound payments, and complaints making. The successful determinants in implementing the CiRM systems in Labuan Corporation were determined after interviewing the two main system developers.

The successful implementation of CiRM systems are listed in Table 4.2. The symbol “√” indicates crucial determinants, while “x” denotes those that were irrelevant.

**Table 4.2: Determinants that influence successful CiRM systems implemented in Labuan Corporation.**

No.	Determinants	
1.	Implementation planning	√
2.	User needs analysis (user and citizen)	√
3.	The role of the system developers	√
4.	Resistance to change (management and user)	√
	Resistance to change (user)	x
5.	CiRM systems training	√
6.	Awareness (system developer, management and users)	√
	Awareness (citizen)	x
7.	Resources sustainability	x

**Case Data Analyses and Confirmation**

The data were analysed within case studies as the preliminary framework development, as Labuan Corporation was the only local government in the area. The analysis started by developed the similarities and differences based on the constant comparative methods in identify the core and sub-theme. Upon the data were analysed, the core and sub-theme were re-organised. The determinants of the successful CiRM systems implementation in Labuan Corporation were then developed.

### ***The Roles of the System Developers***

The roles of the system developers in Labuan Corporation (LC) included monitoring the system implementation from the beginning until the CiRM systems run correctly. They were directly involved in the implementation planning and deal with all the uncertainties (i.e.: arranging tasks from the beginning until the end to ensure the system functions well). The system developers in LC were highly aware of the system implementation and always encourage their staffs in adapting the CiRM systems. Overall, the system developer was the mastermind of the CiRM implementation initiative.

### ***Implementation Planning***

Implementation planning was essential as it serves as a proper planning to ensure that the new features of the systems can deliver better services to the Labuan citizens. In Labuan Corporation, system developers were concerned in choosing the service delivery channel, as the result of R&D shows that citizens still prefer the conventional approach face-to-face dealing, i.e.: The citizens in rural areas and senior citizens prefer going to the counter, while the citizens in town and youngsters prefer to use this system. Hence, to stay connected with the citizens, Labuan Corporation has implemented multi-channel delivery systems. In this scenario, Labuan Corporation has to plan their budget accordingly to ensure that all the systems were improved. The features of the CiRM systems were determined during implementation planning. This was done after weighing in the benefits for the future generation.

### ***CiRM Systems Training (staff and citizen)***

System training was integral in developing the systems, inadequate staff and incompetent knowledge were the issues faced by the Labuan Corporation. The system developers claimed that they have troubles with staff who lack of knowledge, especially when it came to technical expertise. Well-trained or experienced staff can help to resolve glitches that may occur in the CiRM systems. One who was well-trained can operate the systems perfectly and offer effective suggestions to the citizens. Presently, training programmes were limited at the Labuan Corporation. There are no specific training programmes provided by the LC, as they need to apply for a training approval. Indirectly, it has limits the information from reaching the citizens and hampers awareness among the citizens. Besides, none of the CiRM system training has been carried out for citizens.

### ***Resistance to Change (citizen)***

Resistance to change amongst system developers and at the management level were unfelt. On the contrary, LC seldom received feedback requested for the system. As for complaints, the citizens preferred calling or dealing face-to-face. Several determinants seemed to lie at the root of the resistance to change. This may also be associated with the distance to the corporation, which is located in the heart of Labuan and easily accessed. As for making complaints, the Labuan citizens preferred to call in than submitting via online. This portrayed that the level of acceptance amongst its citizens was low.

### ***User Needs Analysis***

At Labuan Corporation, the system developers have analysed the needs and demands of its citizens in a timely manner by going through the complaints and feedback. The federal government required a system update at least once in less than five years. The system developers in LC are concerned on the changes taking place in the IT environment. Although the citizens in Labuan seemed to lack awareness regarding CiRM systems, the local government has continued to implement the systems to ease those who preferred online transactions.

### ***Management and Public Awareness***

High awareness was noted amongst the management because the research mostly involved the ICT team. The management has been introduced to the system and significance. Besides, in Labuan Corporation, the system developers were highly aware about the importance of CiRM systems. Regardless of the resistance to change among the citizens, system developers strongly thought that improvement was needed to ensure competitiveness. They always kept track of the emerging trends. Other than that, awareness amongst citizens was crucial for the success of the CiRM systems. However, the citizens appeared to be lack of awareness regarding CiRM systems. Therefore, awareness must be raised by employing several methods (such as roadshows, advertisements on LED boards, family day, or customer day, etc.) to promote the CiRM systems and ensure vast exposure to the Labuan citizens.

### ***Resource Constraints***

The limited budget adds a constraint on the implementation of CiRM systems. As a result, the project was implemented in phrases or postponed to the following year. Full support given by the senior management also would not guarantee the required financial aid needed to upgrade the CiRM systems. Labuan Corporation was not dependent on government financial aids, as it has its internal funds from taxation. However, reduction in budget has indirectly affected the systems' quality. Several programmes have been planned by the Labuan Corporation, but the ICT department was waiting for the budget to implement them. However, human resources constraint was part of the glitches in CiRM system implementation. The user in LC is inadequate to support the CiRM systems.

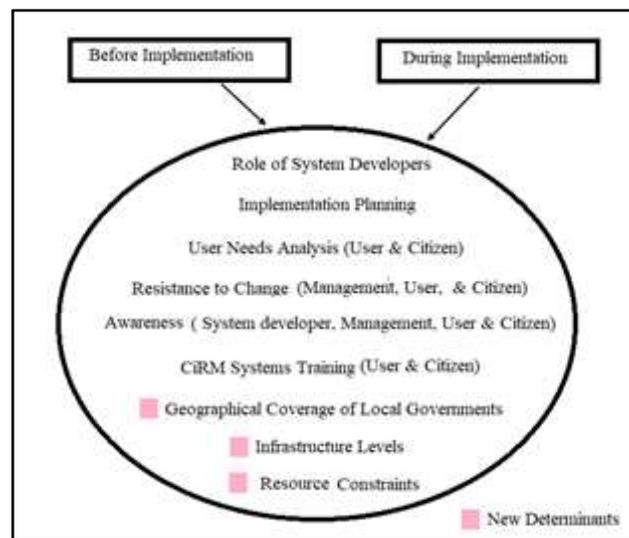
### ***Priority of the State Government (Infrastructure)***

In comparison to Peninsular Malaysia, Labuan was still in its early phase of Unifi installation. However, Labuan is different mainly because Labuan was a duty-free island and was controlled by the Ministry of Federal Territories. Thus, its infrastructure was better upgraded than those found in the rural areas of Sabah. In addition, the priority that Labuan Corporation has given to the ICT department was as essential as other departments.

### ***Geographical and Environment Coverage by the Local Governments***

The small geographic coverage was one of the determinants that made the citizen reluctant to use the CiRM systems. The strategic location of Labuan Corporation office has eased the public in dealing with them. The citizen preferred to manually deal with the local government because its location was accessible. Besides that, the traffic congestion was not like in West Malaysia.

## *New Theoretical Underpinning*



**Figure 4.1 The redefined theoretical underpin of successful implementation of CiRM systems in local government at Sabah**

### **Discussion and Conclusion**

This pilot studies had further identified the determinants for successful implementation of the CiRM systems. The newly found determinants of successful implementation the role of system developers, implementation planning, CiRM systems training (user and citizen), user needs analysis (user and citizen), and awareness among the system developer, management, user, and citizen. The challenges such as infrastructure levels, resource constraints, and resistance to change among citizen need to be overcome.

Geographical coverage of local government in Labuan was part of the outcome that influences the usage of CiRM systems. Multi-channel CiRM systems were employed in Labuan Corporation based on citizens' preferences. This was because the Labuan people are more familiar and comfortable with the conventional way in dealing with the government (face-to-face). Besides, the resistance can be related to computer and Internet adoption in every household. Some households do not have access to the Internet. Additionally, the UTC that was located at the centre of the market eases its citizens to gain services from the local government (e.g.: pay compound, tax, and other applications). Hence, awareness amongst the citizens was way more important. System training and awareness should be brought to the level of the citizens via training classes in using the system. They may be clueless about its functions and the benefits. The system has already been implemented, many do not utilise it. Multi-channel CiRM systems were employed in Labuan Corporation based on citizens' preferences. Although there were some limitations in this paper, it has given the researcher insight regarding the determinants of success for the CiRM systems in Sabah, Malaysia. Therefore, the redefined theoretical framework will be used as the guideline for actual case studies in Sabah.

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