Assessing the Company’s E-Readiness for implementing Mobile-CRM System: Case A Nationwide Distribution Company

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Abstract

In today’s world, most of companies are trying to survive in a competitive environment which has been increased in recent years. This competition has raised the customer power to select desired products and services among different suppliers and providers. So the importance of customer satisfaction and loyalty has been increased dramatically for companies and businesses. This is more important for distributor companies which deal with a lot of customers in a B2B market. Mobile-CRM has emerged new opportunities on customer satisfaction and loyalty. However, implementing a Mobile-CRM system is a complicated large project that affects all aspects of an organization and needs a huge investment which increases the risk of failure. To avoid this risk, the assessing of company’s E-Readiness before starting main project is necessary but the vital question is how companies can assess their E-Readiness level for implementing a M-CRM system and improve it. Since there was not introduced before a suitable model to help companies for achieving this, in this research we have investigated different models and selected VERDICT as a suitable model for assessing the E-Readiness of a company willing to implement a Mobile-CRM system. A large distributor company is the case study of this research. The research is conducted based on a descriptive-survey method using questionnaire tools for extracting the experts’ opinion and determining the company’s E-Readiness level. The results show that the level of E-Readiness of the case company for implementing Mobile-CRM, is in an acceptable situation based on all four main factors including Management, Information Technology, People, and Process. Additionally, the VERDICT model is recommended to those distribution companies that are planning to implement Mobile-CRM system to help them to prevent the risk of project failure.

Keywords: M-CRM, Mobile-CRM; E-Readiness; Distribution Companies.

1. Introduction

In today’s world, most of companies are trying to survive in a competitive environment which has been increased in recent years. This competitive environment has affected also the distributor companies who play an important role in supply chain networks. The diversity of goods and quality of their distribution services has increased significantly the selection power of customers for select desired products and services among different distributors. In this situation, CRM should be considered by distribution companies as one of the most important key success factors for survival in competitive market. The CRM concept has evolved in such a way to maintain a long-term relationship with the customers. The use of CRM systems is becoming increasingly important to improve customer life time value [1] and is more important in such companies that have a wide relationship with customers and deal with a large number of customers especially in a B2B market such as wholesale distribution companies. By leveraging the internet for customer management we get the new structure of CRM known as E-CRM [2]. Then many organizations have identified the need to become more customer-facing with increased global competition. So E-CRM has become an essential for many organizational strategies [3]. In recent years, mobile technology has evolved drastically over the years and mobile phones have become the essential part of customer’s life style. In the quest to retain existing customers as well as attracting new, companies are developing innovative mobile customer relationship management (M-CRM) strategies [4]. But the implementation of E-CRM projects (including M-CRM systems) which have a major and key role in the organization is highly risky [5]. The potential risk factors in implementation this kind of project can cause serious failures either in project phase or in go-live phase. To

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eliminate, prevent or control this risk, companies have to assess their E-Readiness and prepare required infrastructure[3].

E-Readiness is a relatively new concept that has been given impetus by the rapid rate of internet penetration throughout the world, and the dramatic advance in the use of IT (Information Technology) in business and industry[6]. E-Readiness is a measure of the degree to which a country, nation or economy may be ready, willing or prepared to obtain benefits which arise from information and communication technologies [7].

There are some efforts that have carried out in the field of assessing the E-Readiness of industries and organizations, but we couldn’t find a special and proper model for Mobile-CRM implementation readiness assessment in an organization. This research aims to propose a suitable model for assessing the E-Readiness to those distributor companies willing to implement Mobile-CRM system. The case study of this research is one of the largest distribution companies of Iran which is among the national top 100 companies ranked by IMI100. Mobile-CRM implementation is one of the main strategies of this company which deals with about Seventy thousand B2B customers across the country. Obviously, the implementation of such a big project in such a large and complex organization is too costly and risky. So before spending, an assessment should be made to ensure that the organization is ready to implement the project.

The main research questions are “which is the suitable E-Readiness assessment model for distribution companies to implement a Mobile-CRM system?” And “what is the E-Readiness level of the case company for implementing Mobile-CRM system based on the selected model?”

2. Literature Review

2.1 Customer Relationship Management (CRM)

CRM which has introduced in recent years and got attention strongly by companies is a comprehensive approach for creating, maintaining and expanding customer relationships [8]. CRM aims at developing sustainable, long lasting affiliations between companies and customers [2].

CRM systems help organizations interact effectively with customers enabling the creation of customer profiles, analyzing customer data and understanding customers' needs. This leads to improved customer loyalty and enhanced customer experience [9]. The purpose of CRM is to identify, acquire, serve, and retain profitable customers by interacting with them in an integrated way across a range of communication channels [10]. CRM is touted as an imperative strategy to enhance a firm’s competitive advantage [11]. Various authors have proposed diverse conceptualizations of CRM, taking the basic premise that companies should develop customer management practices to maximize their value during the relationship’s entire lifecycle. Recent literature explained CRM conceptualizations according to specific implementation dimensions with each dimension representing a set of business activities [12].

It seems that the internet is creating tremendous impact on businesses also in interacting, nurturing, maintaining their customer bases. The impact of the process of managing and interacting customers via the internet has affected CRM too. By Leveraging, the internet for customer management we get the new structure of CRM known as E-CRM. E-CRM is all about managing customers online using internet as the primary channel of interaction [2]. E-CRM refers to CRM using internet technology plus a database, OLAP, data warehouse, data mining, etc. [13]. E-CRM is a dominant paradigm in the world of customer relationship management [14]. So more and more businesses begin to attach great importance to electronic customer relationship management, which focuses on customers instead of products or services, that is, considering customer’s needs in all aspects of a business, ensuring customers’ satisfaction [1].

2.2 Mobile Computing Technology and Mobile-CRM

Mobile Computing is a technology that allows transmission of data, via a computer, without having to be connected to a fixed physical link [15]. It is a computing paradigm designed for workers who travel outside the boundaries of their organizations such as salespeople who were able to make proposals at customers’ offices. This, enables a real-time connection between a mobile device and other computing environments, such as the Internet or an intranet. This innovation is creating a revolution in the manner in which people use computers [16]. Nowadays, smartphones have numerous information and communication technology functions (or apps) that are comparable to those of old computers. It is estimated that the global revenues from apps will reach US$80 billion in 2020, indicating abundant business opportunities [17]. Current smartphones and tablets contain more computing power than many of the formerly known supercomputers, which used to fill an entire room [18]. As technology is progressing to miniaturize devices, increase computing power and, especially, decrease the price of electronics, smartphone adoption will only accelerate [19]. In 1985, the Cray-2 supercomputer was the fastest machine in the world. The iPhone 4, released in June 2010, had the power equivalent to the Cray-2; now, the Apple Watch has the equivalent speed of two iPhone 4s just five years later. With the consumer retail price of smartphones tumbling to below $50, processing power skyrocketing and adoption in emerging markets accelerating, nearly everyone will soon have a literal supercomputer in their pocket [18].

With the development of wireless technology, mobile devices, such as smartphones and smart watches, are
becoming the most effective tools for communication in human’s daily life. The popularity and availability of mobile devices can help mobile users enrich experience of various services provided by mobile applications without the constrain of time and place [20]. One primordial capacity needed for implementing a CRM strategy is the ability to communicate with customers on an individual basis. For that reason, mobile technologies represent an appealing additional channel which can complement the existing channels. Among the advantages of the mobile channel which are highly relevant to CRM are the personal character of mobile devices which allows an individual customer reach, the interactivity brought by its quick message delivery and response, its reachability and ubiquity. It is the only medium enabling a spontaneous, interactive, direct and targeted interaction with customers, anytime, anywhere. For that reason, the future CRM solutions is envisaged to combine traditional, Internet and mobile channels [21]. Mobile Customer Relationship Management (Mobile-CRM) system is one of the recent advancements in CRM systems [22]. M-CRM has been defined as the communication, bilateral or unilateral, that is related to marketing activities via mobile phone in order to build and maintain relationships between the consumer and the company [23]. The ubiquity of mobile computing devices, such as smartphones and tablets, and the proliferation of mobile customer relationship management applications, may lead to increased CRM adoption and higher returns on CRM technology investments [24]. With the popularity of smart phones and other mobile handheld devices, various vendors have introduced mobile CRM applications that provide a high level of portability. Implementing these applications involves huge investments and additional applications escalate costs but the additional expense is negligible compared to benefits it provides to any organization [9].

2.3 E-Readiness Concept and Models

The first efforts in defining E-Readiness were undertaken in 1998 by the Computer Systems Policy Project (CSPP) when it developed the first E-Readiness assessment tool known as Readiness Guide for Living in the Networked World [25]. There are several definitions for E-Readiness. The CSPP model defines an ‘e-ready’ community as one that has high-speed access in a competitive market; with constant access and application of ICT in schools, government offices, businesses, healthcare facilities and homes; user privacy and online security; and government policies which are favorable to promoting connectedness and use of the network. The Asian Pacific Economic Cooperation (APEC) group defines a country as e-ready that is ‘ready’ for e-commerce, has free trade, industry self-regulation, ease of exports, and compliance with international standards and trade agreements. McConnell International defines E-Readiness as the capacity of nations to participate in the digital economy [26] and finally Readiness, as the Economist Intelligence Unit (EIU) defines it, is the measure of a country’s ability to leverage digital channels for communication, commerce and government in order to further economic and social development [27].

Over the last years, a number of models and tools for E-Readiness assessment of countries on the macro level have been developed by different organizations [26] including third-party reports, position papers and survey results [28]. On the surface, each model gauges how ready a society or economy is to benefit from information technology and electronic commerce [26]. There has been a proliferation of E-Readiness assessment measures in recent years that each one has a certain objective [6]. Largely, all the E-Readiness tools measure the E-Readiness phenomena at national level across key sectors of the economy. Diverted from global perspective, a second wave of E-Readiness studies has been introduced to specific ICT-related areas. Thus, in the context of electronic banking, E-Readiness is conceived as the function of the ability to pursue value creation opportunities and within electronic trade, E-Readiness is presented as a resource to be implemented in any organization. The choice of E-Readiness tool largely depends on the purpose and goals for which a particular assessment is meant to achieve. In a general classification, E-Readiness assessment tools and models can be divided into two main categories: those that focus on basic infrastructure or a nation’s readiness for business or economic growth, and those that focus on the ability of the overall society to benefit from ICT [29]. In another classification, E-Readiness assessment tools can be divided into two categories. While some of tools focus on assessing readiness of countries, governments and policies for adopting Internet technologies (such as CSPP, APEC, McConnell, Mosaic, WITSA), some others e.g. SCALES (Supply Chain Assessment and Lean Evaluation System) assess the readiness to adopt different concepts or approaches for engineering and was developed for a specific industry sector [30]. In The following, it has mentioned to some of tools and models that was designed to assess a company’s readiness.

Mutula and Brakel Model: This tool is designed around five major segments, namely: information readiness, enterprise readiness, human resources readiness, ICT readiness and external environment readiness.
Fig. 1 An integrated information rich E-Readiness assessment tool [21]

Around each of these segments there are a set of variables to measure the degree of E-Readiness within organizations, communities or countries. This information rich E-Readiness tool is premised on the fact that information and digital literacy competencies are needed for an individual to effectively partake in an information society [25]. The Mutula and Brakel model is illustrated in fig. 1.

**STOPE Model:** Past studies have considered "technology: T", with "organization: O" and "people: P" as main domains to investigate technology in society. Bakry considered the "TOP" domains, and added two complementary domains that is "strategy: S", and "environment: E". The result was the STOPE framework that was used by Bakry and his colleagues for various studies including: E-business, e-government, ERP, applications of information services and security management standards [31]. The STOPE model is illustrated in fig. 2.

**SCALES:** Supply Chain Assessment and Lean Evaluation System assess the readiness to adopt different concepts or approaches for engineering (e.g. readiness assessment tools for concurrent engineering). SCALES was developed for a specific industry sector—the manufacturing industry. It was designed to assess a company’s (especially SMEs) readiness for adopting Lean Manufacturing techniques [30].

**RACE:** This is a Readiness Assessment tool for Concurrent Engineering (CE) and is widely used in the software engineering, automotive and electronic industries.

**BEACON Model:** Benchmarking and Readiness Assessment for Concurrent Engineering in Construction, assesses the readiness of construction companies to improve their project delivery processes through the implementation of concurrent engineering. It consists of four elements, which are Process, People, Project and Technology. A commercial software tool has been developed to automate the process of CE readiness assessment for construction organizations [30].

**IQ Net Readiness Scorecard:** This was developed by CISCO and is a Web-based application that assesses an organization’s ability to migrate to an Internet Business model. It is based on the book Net Ready, which gauges the readiness of IT service providers. Similar to the BEACON model, companies are required to respond to the statements and on completion; they are presented with an IQ Net Readiness Profile [30].

**VERDICT Model:** VERDICT is an Internet-based prototype application that assesses the overall E-Readiness of end-user companies and profiles the companies in this regard, based on their responses. VERDICT was developed to aid construction sector end-users to gauge their E-Readiness for using e-commerce technologies such as Web-based collaboration tools. It can be used to assess the E-Readiness of construction companies, departments within a company, or even individual work groups within a department. Several research publications and articles indicate that people, processes and technology are the three key aspects that need to be considered for successful implementation of technologies. It has mentioned in this model that the people, processes, and technology need a leader - just as a Fan orchestra needs a conductor. The Conductor in this case is the management. To successfully implement and use any new technology it requires management in order to plan and drive policies and strategies. Thus a fourth category, management is necessary.
The VERDICT Model has been so structured that for an organization to be e-ready it must have: Management that believes in the technology and takes strategic measures to drive its adoption, implementation and usage in order to derive business benefits from the technology; Processes that enable and support the successful adoption of the technology; People who have adequate skills, understanding of, and belief in the technology; and finally technology tools and infrastructure necessary to support the business functions [30]. Fig. 3 shows the four key elements of VERDICT model.

For selecting the most suitable model to conduct this research, two points were considered. Firstly, the goal of this research is to assess the E-Readiness of a company rather than a country or society. Secondly, considering the key success factors of CRM implementation is very important in selecting proper model process. After studding on various E-Readiness assessment tools and models, the VERDICT model selected as a compatible model with research goals. There are some reasons for this selection. The VERDICT is one of tools that has designed to assess E-Readiness in organizational level which harmonize with the research subject. Furthermore, based on many studies, managing a successful CRM implementation requires an integrated and balanced approach to key dimensions of “technology”, “process”, and “people” [32]. These three key dimensions are completely harmonized with VERDICT’s main dimensions. Based on VERDICT model we evaluate the level of a company in these three dimensions plus another dimension which holds a coordination role and supplement the other three dimensions. This fourth dimension is “management”.

3. Research Methodology

A survey research method was applied to drive this study. For collecting primary data, the questionnaire method was used in this research. To answer the main research questions, two questionnaires were designed based on VERDICT model. In this way, 44 questions were included in the first questionnaire to elicit the expert's opinions on the importance of each of indicators and categories of selected model for assessing E-Readiness of the case company and the second questionnaire based on a five-point Likert scale (1-"strongly disagree" and 5-"strongly agree") was designed to measure the level of every indicator of categories in that case company. The group of experts relating to indicators importance subject were among decision makers and directors of sales, distribution and IT department of the case company. Similarly, the research population relating to indicators evaluation were head-office managers, branch managers and all operational department supervisors of the company. Since the number of respondents was limited and all of them were accessible, the census method was used. The survey questionnaires were answered by 77 responders including senior managers, supervisors and ICT experts.

4. Data Analysis

Based on VERDICT model as the proper model for doing this research which includes four categories like Management, Information Technology (IT), People and Process, the questionnaires were designed, distributed, coded and analyzed by statistical features of MS-Excel software. In the first step, all answers to the first questionnaire were entered to theExcel software and then analyzed by statistical features of MS-Excel software. In the first step, all answers to the first questionnaire were entered to the Excel software and then weighted average of each indicator (relative importance of each indicator) was calculated by using the Sumproduct and Sum function of Excel. Subsequently the weighted average of related category of the model were determined using the Excel statistical functions. The results are summarized in the tables below.

<table>
<thead>
<tr>
<th>No. Rep.</th>
<th>Indicators of Management</th>
<th>Weighted Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>M1 The recognition of the benefits of using mobile-commerce tools</td>
<td>3.90</td>
</tr>
<tr>
<td>2</td>
<td>M2 The senior management awareness of the potential rewards and risks of using mobile-commerce tools</td>
<td>4.273</td>
</tr>
<tr>
<td>3</td>
<td>M3 Having a well-defined strategy for adopting Mobile-CRM tools</td>
<td>4.455</td>
</tr>
<tr>
<td>4</td>
<td>M4 Developing strategies to migrate users of existing services to mobile-based applications</td>
<td>4.091</td>
</tr>
<tr>
<td>5</td>
<td>M5 Generalizing our Mobile-CRM strategy at all levels within the organization</td>
<td>3.819</td>
</tr>
<tr>
<td>6</td>
<td>M6 Existence of e-business mind approach in all levels of management in organization</td>
<td>4</td>
</tr>
</tbody>
</table>

Table 1 -Importance of each indicator of management category
Having a well-defined strategy for adopting Mobile-CRM tools.

Table Two shows that in Information Technology category, the most important indicator is "Having adequate IT support (in house or external)".

Table 3- Importance of each indicator of People category

Table Four shows that in Process category, the most important indicators are two items including "Previous attempts to design new technologies-enabled processes" and "Having well-defined current business processes".

Additionally, by calculating the average of each category's importance, the "Management" is the most
important category in E-Readiness assessment of the case company for Mobile–CRM implementation.

In the second step, we multiplied each indicator’s weight to its average score gathered from second questionnaire in order to obtain final scores. The final results of indicators are summarized in table 5. The higher the average score the more likely it is that the company is "e-ready".

The minimum score that can be obtained for each category equals ‘zero’ where the respondents ‘don’t know’ the answers to any of the questions, and are therefore not ‘e-ready’. The scores are averaged, and depending on the average score, the respondents are presented with “traffic light” indicators i.e. red, green and amber lights, to visually indicate their e-readiness in each category, where:

- An average score greater than or equal to zero and less than 2.5 is red. Red indicates that several aspects (within a category) need urgent attention to achieve E-Readiness;
- An average score greater than or equal to 2.5 and less than 3.5 is amber. Amber indicates that certain aspects (within a category) need attention to achieve E-Readiness; and
- An average score greater than or equal to 3.5 is green. This indicates that the case company has adequate capability and maturity in these aspects and therefore is e-ready [30].

The results of each category’s final score has been summarized in fig. 4.

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<td>1</td>
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<td>M11</td>
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<td>0.060</td>
<td>1</td>
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### Table 5: Final results of indicators of assessing E-Readiness of the company for implementing Mobile-CRM

**Management Average Score** 3.90

**Information Technology Average Score** 3.74

**Process Average Score** 3.14

Fig. 4 Average score of each category with traffic light indicators
It can be found from analyzed data that the case company is in high level of E-Readiness in two categories of the VERDICT model including Management and Information Technology because the score of these categories are greater than 3. Also the company is in moderate level of E-Readiness in other two categories including People and Process because the score of these categories are between 2.5 and 3.5 whilst the People category is in lowest level of E-Readiness.

Based on each category's score, the overall level of E-Readiness assessment of the case study company for implementing a Mobile-CRM system extracted. This has been illustrated in Radar diagram format in fig 5.

![Fig. 5 Final E-Readiness level of the company in Radar diagram format](image)

### 5. Conclusion

The findings of this research are briefly summarized as follows: 

a. along with the various tools and models for assessing E-Readiness of organizations, the VERDICT model is recommended to those distribution companies that are planning to implement Mobile-CRM system. 

b. The level of E-Readiness of the case study organization for implementing Mobile-CRM, generally is in an acceptable situation based on all four main factors: Management, Information Technology, People, and Process. Since People factor has got the lowest score in comparison with other factors, this factor should be considered more important for this organization to absorb most attention, investment and improvement. 

c. Based on assessing the E-Readiness assessment of this company, the Management factors has got the highest score but some efforts for improve to desired level is still necessary. 

d. There is more than 1.2 score between the two factors that have the highest and lowest scores which means a considerable gap between various aspects of E-Readiness in this company.

Research findings indicate that E-Readiness of the company for implementing Mobile-CRM is in good condition in terms of Management and IT factors but it is strongly suggested that prior to start a Mobile-CRM implementation project in this company, the decision makers prepare some plans and perform some basic actions for increasing the E-Readiness level of the company especially in People and then Process category. Firstly, by the fact that the lowest score belongs to People factor, they should prepare a comprehensive plan for their employees to develop their knowledge of information technology and provide continuing education, training courses, incentive plans, culture development of using electronic tools, motivators, etc. Secondly, from Business Process perspective the company should carry out several organizational improvement projects to raise its E-Readiness level. A business process reengineering (BPR) approach is recommended in this regard. Then a full review of company's information systems and IT infrastructure is needed to analyze gaps and achieve a suitable compatibility with M-Commerce tools. Additionally, we suggest the VERDICT model for assessing the E-Readiness of the firm to those distribution companies that are willing to implement Mobile-CRM project. E-Readiness is a relatively new concept and most of E-Readiness assessment models that have been introduced so far, are suitable for national level assessment. Corporate level assessment models are few and their abilities are limited to cover many domains. There are many opportunities for further studies to design and propose suitable models for assessing the E-Readiness of companies in different types of businesses and industries. Other fields of further study would be the E-Readiness assessment models for implementing ERP projects, E-Commerce Projects, E-SCM projects and etc.

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