Assessing the Readiness for implementing
e-CRM in B2B Markets Using AHP Method

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Abstract:

The potential risk factors in CRM implementation can cause serious failures either in project phase or in go-live phase. To eliminate, prevent or control these risk factors, they have to be identified and classified. The readiness dimensions for CRM are the categorized dimensions that their definitions are based on the problematic nature of the several risk factors.

In this research we classified and explained the most important aspects and factors which affect CRM readiness for B2B markets, according to their complicated network of relationships. Then we suggested the hierarchical model for assessing CRM readiness in organizations based on six main dimensions, seventeen sub-dimensions and forty eight indicators. Furthermore some new aspects of readiness such as cross functionality, competition environment, failure legitimacy and failure learning organization, continuous improvement procedures, and customer adoption have also been considered in order to create a more completed assessment model. The condition of business network market was also considered in both indicators and assessment criterions .Finally we assessed the business cases of the research based on this model and its assessment criterions, and analyzed the data using analytical hierarchy process (AHP) method to gain an overall indication of the readiness in dimensions and in total model.

1 Introduction

In recent years many organizations have identified the need to become more customer-facing with increased global competition. Hence, customer relationship management (CRM) has become an essential for many organizational strategies (Bull, 2003). Fundamentally, CRM systems can be viewed as information systems aimed at enabling organizations to realize a customer focus.

Business-to-business (B2B) e-commerce generally is defined as the network supported buying, selling, marketing and supporting of products/services by businesses. Electronic networks such as intranets, extranets and the Internet support communications and transactions among trading partners (McGaughey, 2002). The success of many B2B companies with business models based on the integration of value networks, has called attention to business models based on relationship concepts, such as CRM or relationship marketing (Ehret, 2004).

In business markets, the complex dynamics of networks (Christensen, 1997), shifting from product focus to customer focus (Lin et al 2005), radical changes in industrial marketing environment (Deeter Schmelz & Kennedy, 2002) causes that managers find that the enhancement of existing customer relations brings the benefit of profitable and sustainable revenue growth. CRM enables a business to understand better the stated, and especially the implied, requirements of its customers.

While the environmental forces that lead the firm to adopt e-CRM are increasing, the risks of failed e-CRM are major issues that have been considered by many researchers, according to the large scales of monetary and strategic defects of these risks.

In 1998 global corporate expenditure on CRM was estimated to be in the region of US$1.9 billion (IDC and AMR Research, 2001) and at that time it was predicted that by 2004, it would reach approximately US$23.5 billion (Datamonitor, 2001). Clearly, an increasing number of diverse organizations are adopting CRM yet surveys are beginning to highlight the potential risks. Even though CRM systems are proving an incredibly popular choice for implementation, success is proving illusive. One study of 202 CRM projects found that only 30.7 per cent of the organizations said that they had achieved improvements (Dickie, 2000). Moreover, a recent and broader survey estimates that 70 per cent of companies will ultimately fail (Giga, 2001). The Giga survey revealed that: companies generally *underestimate the complexities of CRM*, *lack of clear business objectives* and *tend to invest inadequately in the provision of CRM software*.

In addition to the introduced failure factors in Giga's survey, the low quality data and low performance of data integration (Missi, Alshawi & Fitzgerald, 2005), underestimating the complexity of the CRM and improper business processes and integration systems (Bull, 2003), distrust (McKnight & Chervany, 2001), and the lack of proper knowledge (Parr et al., 1999) prove that the firms need to perform a deep analysis of readiness for adopting CRM (Ocker & Mudambi, 2002).

Adopting e-commerce by businesses can face some advantages and disadvantages. Pires and Aisbett (2003) addressed a classification of internal factors, market factors and competitive factors of this advantages and disadvantages and developed a decision making framework for adopting e-commerce by businesses. In their framework that has been derived from the previous literatures and their classification structure of the advantages and disadvantages of e-commerce, a dual informational and marketing perspective to e-commerce adoption was conducted.

According to Chen and Popovich (2003) an e-CRM implementation model depends on three major factors including people, process and technology. "It is becoming increasingly clear that stalled or failed CRM projects are often the result of companies lacking a thorough understanding of what CRM initiatives entail." (Chen & Popovich, 2003)

The first step towards achieving CRM success is to specify a relationship management strategy and successful relationship management requires firms to prioritize relationships and allocate resources intended for relationship building and maintenance based on customers' value to the firm. (Zablah et al., 2004). According to Zablah et al. (2004) the firm should assign the CRM process by providing a detailed mapping and description of the relevant processes (knowledge and interaction management) and sub-processes, as well as an allocation of responsibilities for process activities among individuals and groups and the last step in the framework involves the continual monitoring, evaluation, and improvement of the process and individual sub-processes with significant focus that should be on ensuring that the process is delivering the desired outcomes and finding new ways to enhance the productivity of the process.

Lindgreen et al. (2005) reports the result of the research on Key elements of CRM which play the main role in the business relationships between two organizations. In their research ten relationship management elements are classified, including customer strategy, customer interaction strategy, brand strategy, value-creation strategy, culture, people, organization, IT, relationship management process, and knowledge management and learning. Lindgreen et al. (2005) stated that their study contributes to understanding the concept by providing a framework that makes CRM a more "tangible currency".

Ocker and Mudambi (2002) introduced their model of CRM readiness assessment based on the three dimensions including intellectual dimensions, social dimensions and technological dimensions that each dimension includes elements and sub-elements to develop a more detailed model and explain practical aspects that affect in each dimension. Considering the most important parameters in CRM implementation success, Ocker and Mudambi (2002) justified that organizations pursuing a CRM strategy for the purpose of increasing business performance and value face a multitude of organizational challenges associated with this endeavor. In order to reduce their risk of failure, they suggested that firms undertake a deep analysis of organizational readiness prior to committing to a CRM initiative. A model to assess readiness was developed based upon the premise that business value is enhanced through the alignment of complementary factors occurring along three dimensions (intellectual, social, and technological). Throughout this discussion of complementary factors, states of being (i.e. properties) have been proposed as favorable, benefiting or enhancing organizational CRM readiness.

Jutla, Craig and Bodorick (2001) presented their research on enabling and measuring of e-CRM readiness with the focal point of the performance of stakeholder interaction in an e-business stakeholder model described by the definition of the effects of governance, online community, enablers and metrics.

As it declared by Jutla et al., trust in all its many definitions, is a necessary enabler to e-CRM and indeed e-Business. Lewicki and Bunker in 1995 (Lewicki and Bunker, 1995a and 1995b) discusses three different forms of trust: (1) personality's theorists view of trust as an individual difference, (2) economists' and sociologists' view of trust as an institutional notion, and (3) psychologists' view of trust as an expected behavior and outcomes of another party in a transaction. All these definitions apply to e-CRM. Many studies have shown that trust is an integral part of the selling equation to customers (Goodwin, 1991 and Hoffman, 1999). Customers need to trust the business before they will open-up their purse. Furthermore, the more trust they put in the business, the easier it is for the business to retain them as customers.

Huang et al in 2004 used the analytical hierarchy process (AHP) for measuring e-readiness (Huang et. al., 2004).

According to many common risks for implementation of CRM and ERP in companies, the readiness dimensions for ERP are also compatible for CRM. Organizational culture can take many forms. Hodges and Hernandez (1999), state that, "Culture in organizations can be thought of as the beliefs, values, and meanings shared by members of an organization." Bliss (1999) agrees with this view and goes on to state that the 'desired' organization culture and the 'actual' organization culture are often worlds apart. It is important to understand how these variations affect the CRM or ERP implementation process.

The most important dimensions in ERP organizational readiness are (Stewart et al, 2000) risk orientation (or legitimacy of failure), user involvement and empowerment and leadership. As Stewart explained, the wide

time bound of implementation project, the extremely high costs, and radical changes in processes and practices cause the risk of failures that could occur in the implementation project phase or even after go-live stage. So the most important parameter in the organizational readiness is risk orientation, while the other important ones are the role of employees as participants in the leadership to support the project.

Mehrtens et al. (2001) published their research on internet adoption by SMEs, that suggests some important indicators such as external pressure, perceived benefits and IT use and IT knowledge among the IT and non-IT professionals, that some are strongly interpreted by Jelassi (2005) for developing an e-business strategy.

The impact of e-readiness on e-commerce success is also a point of view for readiness assessment (Molla, 2004). Organizational e-readiness becomes operational using six variables, including awareness, commitment, human resources, business resources, technological resources, and governance. External e-readiness is evaluated as managers' perception of market forces e-readiness, supporting industries' e-readiness, and government's e-readiness. E-commerce success, on the other hand, is measured in terms of the success of the development process (that is whether e-commerce projects are completed on time and within budget), benefits from e-commerce implementation, and overall satisfaction with e-commerce implementation.

Even an e-CRM tool allows any company to be more customer caring (Michel, Naude, Salle & Valla, 2003) and business marketing has been a key driver in the development of relationship-based concepts, such as relationship marketing or customer relationship management (Ehret, 2004) concepts such as relationship marketing or CRM are used with a variety of sometimes contradictory connotations. For instance, a higher degree of interconnectedness is not necessarily best addressed by an exclusive focus on buyer–seller relationships, which was traditionally suggested by relationship marketing concepts. Given the current market situation, even the most brilliantly managed buyer–seller relationships can be and, often are, undermined by the complex dynamics of networks (Christensen, 1997). As Parvatiyar and Sheth (1999) argued, relationship marketing has not developed to a discipline yet. This issue further explores the current challenges for relationship concepts posed for buyers and sellers in a value network context.

2   Frame of References - Developing the Measures and Levels of e-CRM Readiness:

With reference to Chen and Popovich (2003), we can develop our model for e-CRM readiness. According to the three major factors there can be major dimensions of readiness which depend on each factor.

The two main questions by Ocker and Mudambi (2002) were:
- *What is a firm's current CRM capability?*
- *What changes must be in place before embarking on a CRM initiative?*

Accordingly, our research problem is *to contribute to the understanding the major factors that affect the e-CRM capabilities by describing how this factors become categorized and measured*. With reference to the main purpose of this research the following research questions can be developed:
- **_RQ1:_** What are the measures and levels of a firm's readiness for adoption of e-CRM?
- **_RQ2:_** How the measures and levels of a firm's readiness for adoption of e-CRM vary according to the expected objectives?
- **_RQ3:_** What are the differences in readiness measures and levels among firms?

When we ask these questions from the people factor's aspect, we consider two dimension of readiness in this factor. Current capabilities that refers to the cultural readiness and changes that must be in place that refers to the readiness for change.

In case of process the "as is" and "to be" conditions of the process and organizational structure are referred while here the readiness for accepting the changes need to consider combined business process reengineering and business process continuous improvement (Jelassi & Enders, 2005), where the ability for improvement is an essential for *the changes that must be in place* for processes.

The technology as the third factor can be assessed according to this two questions based on the availability and affordability, where these two parameters are also considered in Harvard readiness assessment model (2001).

There are two major dimensions that basically cannot be referred to one single factor. The strategic readiness deals with all the three factors, because the core idea of customer relationship management is based on the strategic orientation of the firm (Zablah, 2004). Also the customer related aspects are very important while we know that the motivating advantage of the organization to increase the interactivity of the customer is one of the CRM elements (Lindgreen et al. 2005). Accordingly, we defined our model based on six dimensions including:
1- Marketing and Strategic Factors
2- Corporate Culture
3- Change Management of Sales Force

    4- Customer Interactivity and Knowledge
    5- Technological Readiness
    6- Business Structure

With reference to the literatures of CRM and e-Business readiness and the major success factors of implementation projects and go-live stage, we classified the major factors that can affect the readiness of the companies in order to control taxonomically the risks of failure throughout the different phases of implementation of CRM.

2.1 Marketing and Strategic Factors:

One of the most important steps for pre-implementation considerations of any information technology solution, like ERP, CRM or other integrated system, is the definition of long term strategies (Jelassi & Enders 2005, Ocker & Mudambi 2002). Ocker & Mudambi stated that the major strategic aspects of readiness are orientation as customer centric business strategy, leadership, management support and champion.

Zablah et al (2004) and Lindgreen et al (2005) showed that the first step in the implementation of a successful CRM is "specifying relationship management strategy" based on two major aspects including customer value and firm profitability.

In addition, Jelassi and Enders (2005) considered three major aspects of e-business strategies including external environment and market, value creation and strategy option and firm structure and organization.

Pires and Aisbett (2003) also demonstrated the advantages and disadvantages of e-commerce adoption within competitive factors. They refer to the strategic consideration in internal, customer and competitive areas. While there are different definitions and discussions about strategic sub-dimensions we eliminated some of these sub-dimensions because of their stronger presence in other categories like change readiness and business structure readiness. Accordingly, here we develop the sub-dimensions of the strategic readiness category as customer orientation of the business, perceived financial and commercial benefits of e-CRM adoptions and competition advantages of e-CRM adoption. Accordingly the indicators for each sub-dimension are as follow:

o Customer orientation of the business:
    o Customer compliant
    o Customer satisfaction measurement
    o Understanding and fulfilling of customer requirements
o Perceived financial and commercial benefits of e-CRM:
    o Company tendency for making profits from customer loyalty
    o Company tendency for making profits from customer wider range of requirements
o Competition advantages of e-CRM adoption:
    o The effect of after sales services and customer services quality on competition
    o The effect of customer information on competition
    o Competitor's CRM

2.2 Corporate Culture:

Ocker and Mudambi (2002) define the aspects of culture as a subdimension of social dimensions of CRM readiness as perspective, attitudes and empowerment. The Social dimension also included the stakeholder interaction and domain knowledge. We define corporate culture as the combination of organizational culture and investors cultural approaches with regard to the standpoint shown in the research of Ocker and Mudambi (2002). Thus the sub-dimensions for corporate cultural readiness are organizational readiness for adopting e-CRM and investors' acceptance. The indicators are also defined as follow:

o Organizational Culture:
    o The average age of the organization employees
    o The level of education in the organization
    o The level of trust of the employees to the e-CRM
    o The level of domain knowledge in the organization
o Acceptance of Investors:
    o Investors' previous supports of new technologies
    o Investors' awareness and perception of information technology

2.3 Change Management in the Sales Force:

Talking about CRM is interlocked with front office environment conditioning, due to the nature of marginal interfaces of relationships between company and its costumers; so that the highlighted change management of the sales force can make this readiness model more detailed and deeper (Chen & Popovich - 2003, Avlonitis &Panagopoulos - 2005). Ocker and Mudambi (2002) indicated some aspects of change management in their

research including leadership, management support, champion and incentives and rewards in intellectual dimension and empowerment and sharing the knowledge in social dimensions. In addition to the organizational learning and leadership, Lindgreen et al. (2005) refer to the organizational effort in order to realize more customer satisfaction and quality services to its cross functionality.

Sales organizations are continuously developing new ideas and approaches to be more competitive. One of the approaches taken by most successful organizations is to shift from individuals to boundary-spanning, cross-functional teams. Sales teams are being employed to counter efforts by buying organizations to form buying centers. Organizations that are ready for change are conducive to enhancement of sales team learning. Organization readiness for change is a condition impacted by a variety of organizational antecedent variables such as culture and climate. Sales team learning is impacted by team members' perceptions of the organization's readiness for change. In addition, we also posit the moderating influence of two environmental variables: turbulence and competitive intensity on the relationship between readiness for change and sales team learning. Sales team learning is then proposed to be related to a variety of sales outcomes. Rangarajan presents a conceptual framework for understanding the contexts in which team learning occurs and the impact of team learning on team effectiveness. He presents research propositions that provide opportunities for future examinations of team learning (Rangarajan et al, 2004).

While there isn't any practical method for evaluation the participation and empowerment before the actual running of the change project, we have to understand the secondary factors that can be measured as the pre-requirements for preventing resistances. These factors are leadership, structure for change management and learning capacities through the organization. Leadership of the sales force is the fundamental factor because the other would be under its influence. Leader of the sales force should declare his/her commitment to change and improvement and be aware of his/her role as the supporter and sponsor of the implementation project. The readiness of leader depends on his/her knowledge about the importance of the change and the preventive actions with regard to the resistances which may occur during the implementation of go-live phases. The more the leader shows his/her sympathy for the changes the more the organization perceives the importance of the change project.

Leadership can form and develop the structure of the sales force for a better flexibility under the stress of change with making the team more authorized focusing on their common objectives and missions.

Accordingly, the sub-dimensions of the change management readiness dimension in our research included leadership for change management, the level of cross functionality for change management and the level of organizational learning.

o Leadership of Sales Force:
  o Level of actual commitment of the leader to the changes
  o Sufficiency of the leader's plans for motivating the organization for the changes
  o Level of the leader communication with the employees to transfer the importance of the changes
o Cross Functionality of the Sales Force:
  o The skills variety
  o The work interdependency
  o The common organizational objectives
o Sales Force Learning:
  o The sufficiency of the training process and procedure
  o The level of organizational tendency to learn
  o The level of failure learning or failure legitimacy in the organization

2.4 Customer Interactive Relationship and Customer Knowledge Factors:

The motivating advantage of the organization to increase the interactivity of the customer is one of the CRM elements (Lindgreen et al. 2005). Considering the complexity of relationship in B2B environment comparing the B2C models the CRM adopting company should be assessed with more detailed factors and criterions that mainly are focus on the relationship interactivity and knowledge (Campbell, 2003). Also the other point of view is the website and the usage of internet as a promotion and information provider for the customers of the company. The customers, as the organizations, themselves are also the adopters of e-CRM as their new way of continuing relationships with the supplier company. Thus, we can define the sub-dimensions of customer related aspects of readiness as the sufficiency and effectiveness of customer information process, the sufficiency and effectiveness of customer relationship interface through internet and the adoption of e-CRM from buyer-side.

o Customer Information Process:

- o Sufficiency of the existing process
- o The knowledge of customer organization and relationship network
- o The usage of customer information in decision making
- o IT and Marketing Interfaces:
  - o The usage of internet and the website as a promotion media
  - o The equipping level of the website with customer assisting information and tools
  - o The supervision of the website and updates
  - o The interactivity of the internet relationship between company and its customers.
- o Customers Organizational Adoption:
  - o The customer adoption of information technology
  - o The acceptance of customers for replacing the new way of relationship
  - o The resources and infrastructures of information technology in the customers' area

2.5 Technological Readiness Factors:

The technological readiness is basically defined by Ocker and Mudambi (2002) based on three factors which are CRM application including the scope, complexity and the customization, IT capability including project management, skilled team and similar implementation and knowledge management including integration, data warehouse and infrastructure. Actually the terms like complexity, customization or integration are not quantifiable so they don't give us a practical tool for assessing the readiness, while they cannot be correctly classified as readiness factors. In this research we divide the technology readiness in three major parts which are technological readiness of the company, technological readiness of the state and the level of in-house IT skills and experiences.

- o Technological Readiness of the Company:
  - o Availability of the software and hardware
  - o Availability of the financial resources
- o Technological Readiness of the State:
  - o State infrastructure
  - o Affordability
- o In-house IT Skills and Experiences
  - o Previous experiences of implementation of information technologies
  - o The employees with professional position and skills in IT or IT related fields.

2.6 Business Structural Factors:

Ocker and Mudambi defined the aspects of business structural factors as organizational structure, business processes and incentives and rewards, while the third item "incentive and rewards" is more compatible with the change management dimension.

"Monitoring of relationship-management processes like complaint management or service management is an important activity to meet the objectives of the organization and improve relationships. Processes should be built, mapped, and understood to realize process improvements." (Lindgreen et al. 2005)

One of the major strategic parameters in success of an e-business is the business model alignment that includes the whole value chain of the company; profit making model, the organizational structure and the improvement strategies of the company (Jelassi & Enders, 2005).

Accordingly, in our research the three sub-dimensions for business structure readiness dimension included organizational structure, business processes and continuous improvement.

- o Organizational Structure:
  - o The level of organizational structure flatness
  - o The level of smoothness of relationship among the levels of organization according to the elimination of non-value controls
  - o The sufficiency and effectiveness of defined and documented responsibilities and authorities
- o Business Process:
  - o The sufficiency of the process planning
  - o The realizing of process approach business according to the actual presence of process owner
  - o The level of process monitoring

6

o Continuous Improvement:
  o The methodology of improvement
  o Usage of customer feedback in improvement
  o The evidence of successful previous improvement plans, especially in the field of processes and practices

3   Research Methodology:

3.1   Assessment Instrument and Procedure

Deep analysis of a firm readiness to compete based on e-CRM is critical (Ocker and Mudambi, 2002) where Instrumentation of e-CRM initiatives to measure performance allows understanding of strengths and weaknesses and detection of emerging trends that contribute to effective management (Jutla et al., 2001).

To quantify every indicator, so that they can be measured, firstly we consider the realistic maximum and minimum for every indicator as it was also done by Lindgreen et al. (2005) and Huang et al. (2004). Basically the minimum level for every indicator represents the absence of the essential evidence of the indicator where it can be interpreted that the indicator *is absolutely not* satisfied.

The maximum level for the indicator, according to the framework of references, is interpreted through the reference literatures, considering a realistic satisfying presence of evidences. It means that in the maximum level the indicator *is absolutely* satisfied.

Then we give rank 1 to the minimum level and 5 to the maximum level, so that there would be three other medial ranks, 2, 3, and 4. To position the medial ranks we use the suggestion of Huang et al (2004).

To calibrate the assessments among the cases of the research we had to use a reference guide for all the 48 indicators, so that we could reflect the equality in our results. In this case, to prevent any misalignment among the assessments, we describe verbally and - in possible terms – numerically the conditions and controls of our assessment indicators levels.

Procedure of executing the assessments are based on the deep observation and interview, that systematically can be conducted by means of searching the case for evidence of conformity instead of evidence of non-conformity. Basically we planned our assessment based on auditing standards, and our major reference for best practice of auditing was based on ISO 19011:2002 as the "Guidelines for quality and/or environmental management systems auditing".

To validate the dimensions, sub-dimensions and indicators we conduct a verification action by means of questionnaires that have been distributed in among the interviewed persons in the case companies. The questionnaires have been designed to evaluate the importance of every dimension, sub-dimensions or indicators individually and according to their effects on the higher levels in the hierarchy. The scores were from 1 to 9 according to selection of the ranks between "without effects" to "essential determining factor". The average of 22 surveys shows that all dimensions are in a more than high level effect. The most important dimension is the strategic dimension that scored 8.7273 and the least important dimension is change management dimension with score of 6.0909. The sub-dimensions as the enablers or elements of dimensions are ranked in questionnaires too. The averages of the scores show that the effects all the sub-dimensions on enabling the dimensions for CRM readiness are more than moderate. The calculated percentiles according to the AHP effects of dimensions' percentiles, show that the higher overall rank is for "organizational culture", while the "customer orientated business" ranked more than all other sub-dimensions.

In case of the indicators, the highest score belongs to the "customer retention indicator in commercial/financial benefit". The results are different in global percentiles, where the highest effect is for the "investors' support of new technologies" as indicators for investors' acceptance in cultural dimension. All ranks are over moderate except the "previous experience in information technologies implementation". Accordingly this indicator is derived from literatures that previously introduced, so we didn't eliminate it although the ranking result is not very satisfactory.

3.2   Research Cases

Part of our research concentrates on a group of companies with same customer specifications and market environment, namely three competitors. Those are three representatives of certification bodies in Iran which are involved with official auditing and certification for some system and managerial standards such as ISO9001:2000 and ISO14000. These three companies are the official Iranian representative of European certification bodies. We call them CB1, CB2 and CB3.

The other group includes two companies, one of them Rams Asa Co. Ltd. the market leader of EMS devices and equipping of ambulances in Iran and the other one is Sugar Cane Development & By-Products

Commercial Co. (SUDCCO) a commercial company involved in marketing, sales and distribution of sugar and its subsidiary products.

3.3 The Analysis Method for Calculation of the e-CRM Readiness Measures

To reach the measures of e-CRM readiness we used the analytical hierarchy process (AHP) method. What we mostly consider is to clarify the differentiation of the effect of every aspects and dimensions in a readiness assessment result according to their level of necessity, so our analysis on the units of case studies will be conducted after an observational study of each unit in order to understand their network of relationship with their customers and the processes and procedures of customer relationship systems. The weighting of the indicators and sub-dimensions are developed from the averaging the experts' judgment procedure that has been derived from the results of model verification.

For weighting of the dimensions we use two different approaches:
   o Averaging the experts' judgment procedure that has been derived from the results of model verification,
   o Using the expected advantages and disadvantages view

To understand the differentiation of the weighting for different conditions and point of views with reference to the Shang and Seddon (2003), the success of an enterprise system implementation has different meanings based on the managers' point of views. In this research we established a part of the interview to understand the meaning of readiness for CRM success based on the views of managing directors, IT managers, marketing managers and sales managers. In this case we define four categories for readiness as:
   o **Cost**: The cost of the implementation project and infrastructures.
   o **Time**: The elapsed time from beginning to the go-live stage of e-CRM
   o **Effectiveness**: The relative strategic gains with implemented CRM
   o **Efficiency**: The relative commercial and financial returns and gains with implemented e-CRM

We considered three different examples and compared the result of the analysis. In the first example the preferences of the importance categories rank as first level for effectiveness, the second level for efficiency, the third level for cost and the forth level for time. It means that there is no pressure of time limit because of competition environment or customers' compliments. The effectiveness is the first objective of CRM implementation as the company's goal was to develop its business and market share. The formation of readiness weighting model is almost a reasoning process with detailed knowledge about the company and its purposes.

In the second example we consider that the first priority for the managers is the cost of the implementation project. Also it is very important for them to prove their new implemented CRM has a proper ROI. Time is also another important item, due to the forecasted pressure of investors for time consuming projects. Even the effectiveness is also very important while they are in the beginning of their project; they focus on the monetary terms.

Another scenario is a critically time bounded CRM implementation plan. In this case the time is the most preferable category. The next one is effectiveness while we assume that due to a live stage CRM of the competitor we are planning to have ours in the minimum time and with the most effectiveness. Money is the least important category while the investors force the company to surpass the competitors.

In this case the structural dimension is the most important dimension, because the more a business model is ready (aligned with the IT capabilities) the less the time for transformations will be.

Based on the three scenarios we conduct our analysis of the cases that have been assessed according to our indicators. Then we compare the effects of each scenario on the result and compare the cases results. With regard to this weighting system we can compare the values of the weights for the dimensions as follow.

Regarding to the lower levels weighting in the expected advantages and disadvantages approach, we choose the following procedure. Our criterion for weighting the sub-dimensions and indicators are based on their importance according to their effects on the upper level dimension. The effects will be classified as essential, absolute, basic and advantageous. Every sub-dimension or indicator can receive a rank from 1 to 4 based on its importance and effect that are derived from our expert judgment reasoning. Thus, with an interpretational analysis we can give to each indicator and sub-dimension a weight. The hierarchical influence of the dimensions and sub-dimensions on the indicators, give us the globally calculated weights for the indicators.

4 Analysis

4.1 The Differentiation of the Overall Measure of e-CRM Readiness

The differentiations regarding the scenarios can be analyzed according to the graph (Figure 1). As we see the result of analysis with the weightings based on the averages of questionnaires, is the highest readiness indicator that is naturally closer to the result of second scenario.

As we see, in the cases of system certification business all the three companies show almost a similar pattern. It means that the logical reasoning based on the purpose orientation of the assessment for cases with similar business nature, causes interpretable results for benchmarking and comparisons.
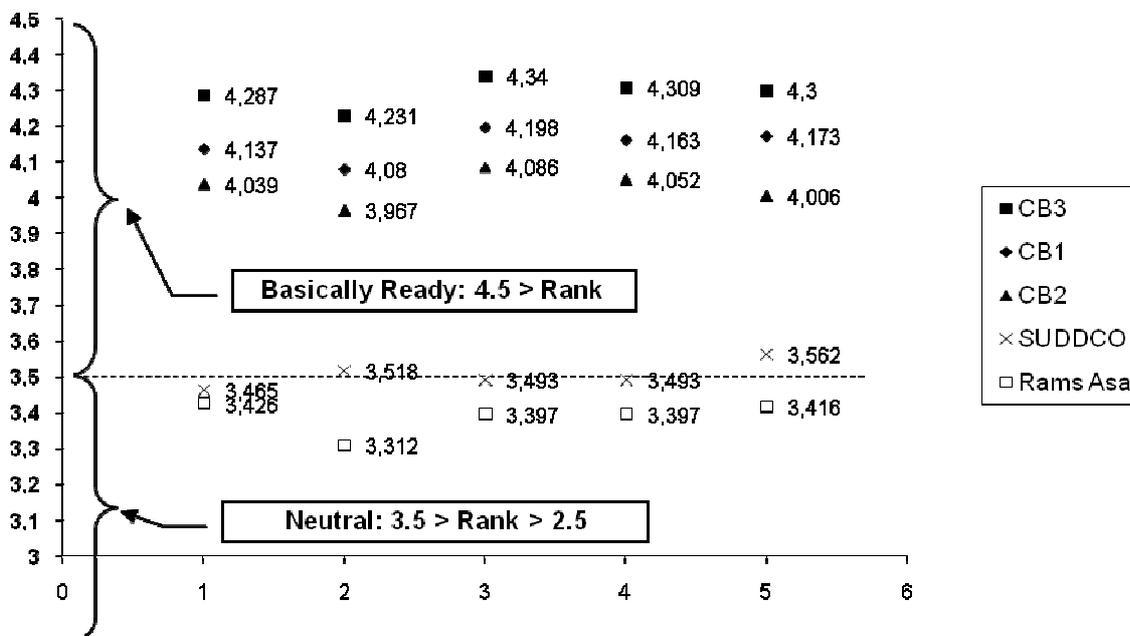

Figure 1 – The Differentiation of the Assessment Result Analysis Based on the Three Scenarios and the Average Weighting Factors

4.2 Comparison of the Dimensional Readiness in the System Certification Industry

Comparing three cases in system certification business shows very tight ranks in dimensional readiness that can be justified according to their highly standardized business model and business goals. The readiness of CB3, as it is mentioned previously, gained the best ranks, followed by CB1.

The cultural, strategic and structural dimensions of readiness for all companies are almost the same and the main differentiations occur in the technological and customer related dimensions of readiness. The change management dimension is specifically a point of notice for CB2, while the other two competitors have almost a similar higher rank than CB2's rank.

The business of system certification according to its nature of discipline and systematic management is a good example for the B2B businesses that are planning for their pre-implementation actions of e-CRM. These companies are young and knowledgeable and the work practices in them are procedurally documented, which makes them primarily ready for adoption of information technology solutions and e-CRM.

4.3 Comparison of the Dimensional Readiness in all of the Units of Case Studies

Two other companies; Rams Asa and SUDDCO, are in a weaker position of dimensional readiness measures of e-CRM readiness comparing to the three system certification companies (Figure 2).

Accordingly, the differences of the dimensional measures between Rams Asa and SUDDCO are noticeable. While Rams Asa is readier in strategic, cultural and customer related aspect dimensions, SUDCCO has a better position in case of technological, change management and business structure.
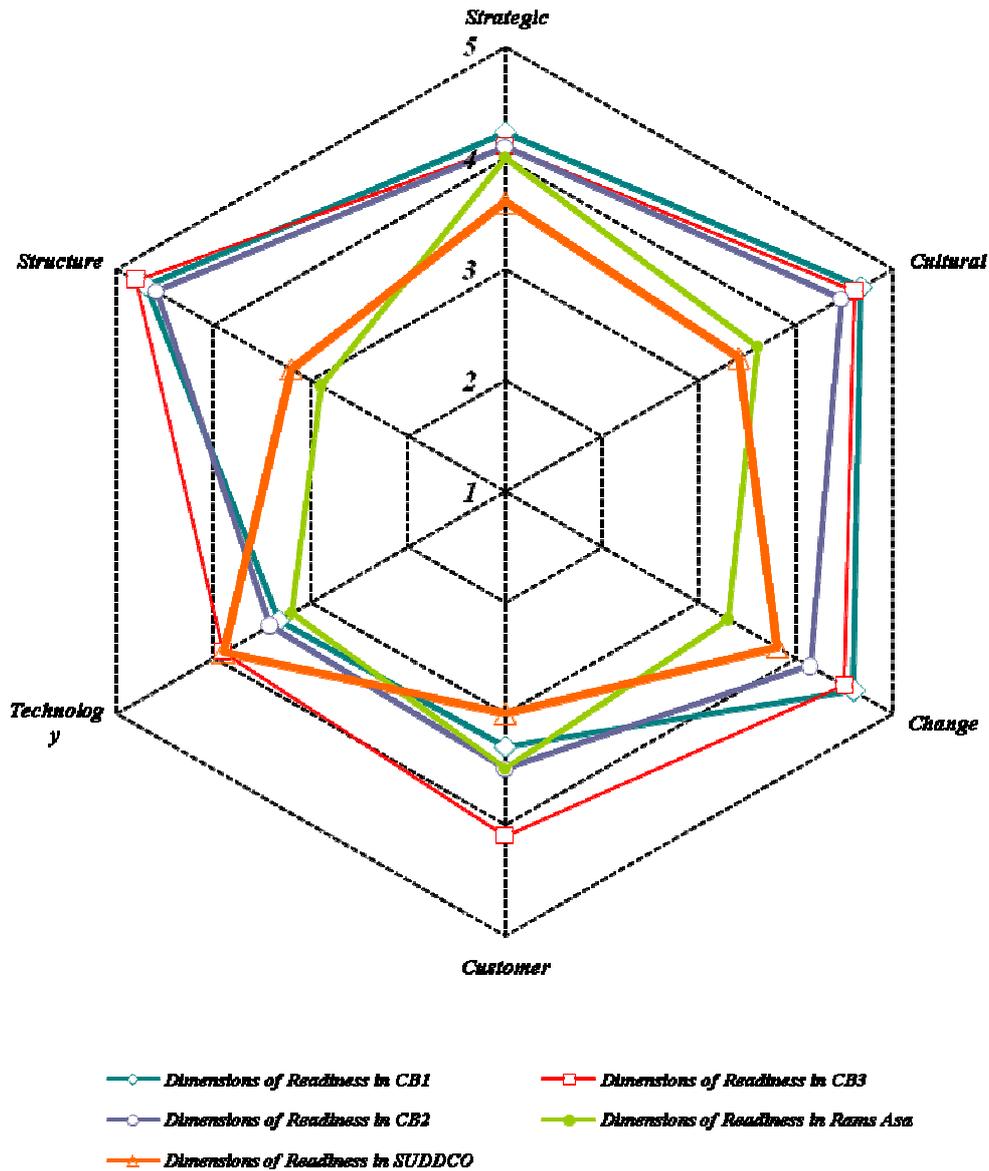
Figure 2 - The Dimensional Readiness of All Research Cases

5   Discussions & Conclusions

5.1   Discussions

5.1.1   Findings on the Measures and Levels of Readiness for e-CRM Adoption and Implementation

As it was described in chapter 4 the levels and measures of e-CRM readiness for a firm (the units of case studies), are quantified and interpretable. We saw that it is possible to recognize the points of strength and weakness of readiness and capabilities by means of our hierarchical model of e-CRM readiness, based on the six main dimensions of readiness, 17 sub-dimensions and 48 indicators. The indicators were our base point for assessment where we design our questions and criterions derived from the indicators. However, the final output of analyzing the assessment data provided the numerical measures for the dimensional e-CRM readiness and overall ranking. These numerical ranks, as we saw, can be proper references for cross-case study and benchmarking among the firms with similar or different industrial environments. Moreover, the application of some new parameters in the readiness indication helped us to provide a wider view for the research, across the risks of different phases of implementation or application.

Using AHP method for analysis, we were able to put weights on the indicators, sub-dimensions and dimensions independently, while the effect of the hierarchical design of the model generates the global weights for the indicators. Comparing the overall measures of the readiness derived from a the weighting

system, and by means of the indicators ranks, showed us that the measure of the e-CRM with or without weighting may vary, even up to ±10%.

We also compared the median of the indicators and with the overall measures of e-CRM readiness in SUDDCO case. It shows us that the majority of a rank in the indicators cannot be a suitable reference for forecasting the readiness measures, while the median in the SUDDCO case was 4 or in basically ready position but the analysis shows us that its readiness is less than 3.5 or in neutral position.

We saw that readiness indicators like those in Jutla et al. (2001) or as Ocker and Mudambi (2002) represented, can become more completed so that they can measure risk and reward in the organizations more accurately, because in the business market companies the real condition of relationship networks in compare of B2C models faces a significantly more complicated situation. Furthermore, the business field itself is definitive while in strategic and customer related dimensions business field can limit the higher available rank.

The readiness assessment models that are generalized for a wide range of application, mainly in Ocker and Mudambi model, even the consequent ideal interpretation can derive a methodological suggestion, the lack of detailed indicators disable any further practical approach to develop an assessment transversal.

5.1.2 Findings on the Variation of the Measures of e-CRM Readiness According to the Expected Advantages and Disadvantages of e-CRM Adoption

We find that the variation of the measures for the firms can show their orientation according to the expected advantages and disadvantages of e-CRM.

The three system certification companies were more ready based on the third scenario, which was derived from a competition force. It shows us that the competitive factors in advantages and disadvantages of adopting e-CRM are more perceived by these companies. It also makes sense according to the competition environment in the industry of system certification. With regard to the high ranks of these three companies in business structure dimension (in range of absolutely ready), we can justify that a well organized company with a process approach model of work flow and excellent capabilities in continuous improvement can be more ready for attaining the e-CRM competitive advantages.

In Rams Asa, the better rank is gained through the first scenario, based on the market factors in e-CRM advantages and disadvantages and development of marketing capabilities. As we mentioned before, the medical device market is very competitive environment and the companies in this market tend to attract and retain customers for more sales and more revenue.

SUDDCO is more ready by second scenario that is for conservative orientation of cost reduction and more revenue. The conservative forming of the sales team and work instruction in this company cause the expected advantages and disadvantages of adopting e-CRM become more concerning in case of internal factors.

In general, the variation of the measures can be used to interpret the orientation of the business and the objective of the e-CRM implementation.

Also in Huang's AHP based analysis we saw that the indicators are even more generalized, while it advanced the readiness assessment by means of AHP method. The way of weighting the indicators by averaging 15 professionals' approach in Huang's research cannot follow a specific vision, while we saw that based on three defined scenarios the readiness rank can differ.

The rank of readiness for a company can be described by more scenarios, but it should be considered that any scenario of readiness assessment cannot be absolutely purified. For example, it is not realistic to consider a scenario with an excessive categorization of cost, so that the other categories like time, effectiveness and efficiency become eliminated. In this research we considered four categories to magnify the main areas of implementation projects. Those were time, cost, effectiveness and efficiency. By this method, the concept of importance in our AHP analysis strongly tends to the purpose of assessment and the stage of the implementation or pre-implementation project.

It should be considered that the improvement of the state readiness is an essential factor for the technological readiness in Iranian companies.

5.1.3 Findings on the Differences in Measures and Levels of e-CRM Readiness among the Firms

The dimensional comparisons (Figure 2) show how the companies are more or less ready comparing each other. We saw that the three system certification companies obey a similar profile **Error! Reference source not found.**and in the strategic, business structure, change management and cultural aspects are very close to each other. The differentiation in the overall measure in these three system certification companies are caused by differentiations in technological readiness and readiness of customer related aspects.

We saw that the three system certification companies are in the absolutely ready level for business structure dimension. Judging the structural readiness of Rams Asa and SUDDCO against the structural readiness of these three companies, shows us a difference more than 1.5 that with reference to the reports of session 6 in all the case studies we can recognize the major steps for the Rams Asa and SUDDCO to reach to the absolutely ready point for business structure readiness, including:

- o Re-engineering the form of organization from hierarchical to a flat organization
- o Elimination of the non-value controls
- o Documentation of the work instructions and employees' responsibilities and authorities
- o Identification, mapping and planning the business processes
- o Implementation of process monitoring protocols
- o Establishment of advanced continuous improvement methods
- o Gathering, processing and using the customers feedbacks in improvement plans of processes and products

Also in case of cultural readiness, Rams Asa and SUDCCO face a major lack (about 1.1) comparing the three system certification companies. It is obviously critical for these companies to improve their cultural readiness by:

- o Increasing trust
- o Enhancing the domain knowledge among the employees by systematic training programs
- o Increasing the knowledge of IT and e-CRM advantages among the investors

By the way, improvement of the terms of age and education may be optimistic; meanwhile it requires hiring of new employees.

We also see that the customer related aspects in CB3 is noticeable. According to the design of the website, the perception of the customer information processes and its advantages and the information of customers' organizations are the major requirement for improving the readiness in this dimension.

Monetary and budget problems for the companies were claimed during the assessment meetings, and it also shows its effect in technological readiness. As it is illustrated, the technological readiness for CB3 and SUDDCO are evidently better than the other three companies. In case of CB3 the supports from headquarter and for SUDDCO the wealth and size of the company are the major factors of this situation.

In the strategic readiness dimension, it is obvious that Rams Asa reached to the point of the three system certification companies. According to the report of session 1 in Rams Asa assessment meeting, the force of the competitive market enhanced Rams Asa's readiness in the strategic dimension according to its tendency to capture more competitive advantages. Accordingly, the companies under the pressure of competition force are more ready for change (Rangarajan et al., 2004).

In the dimensions of change management readiness, Rams Asa is in the worst position, comparing other companies. It should be noticed that the readiness for change management and readiness for change are not the same. Actually, the readiness for change management is a part of readiness for change. The parameters that play role in change management readiness are various. As a matter of fact, the lack of cross functionality in Rams Asa causes the considerable shortage in change management readiness.

5.2 Conclusions

The purpose of this research was to expand the idea of the readiness assessment to more interpretable areas by using a framework of several dimensions and indicators and to regenerate meaningful measures that can be explained by vitrified managerial and business information technologies concepts.

This effort on definition of a new methodology in assessment of CRM readiness for the business market companies results a systematic approach in modeling, classifying, and indicating the major factors affecting the success of a CRM project.

We established a model of readiness assessment including six major dimensions that were strategic dimension, cultural dimension, change management dimension, customer related dimension, technological dimension, and business structure dimension. In the next step the sub-dimensions and indicators describe the motifs of the readiness dimensions in the certain field of research of B2B markets.

We expand the cultural considerations from organizational culture to the corporate culture to cover both employees and investors from a third party point of view, whereas we believe that the cultural situation of the investors can play an effective role in the success of a CRM system.

The model with more detailed indicators and widely coverage of the affecting factors on CRM readiness provides more possibilities to dig inside the causes of the risks and rewards. Also the dimensional readiness radar graphs are proper facilities to give a benchmarking analysis of the separated dimensions of readiness without prioritizing the categories and scenarios of readiness orientation.

The most significant part concludes from our research on the readiness for e-CRM implementation with reference to the comparisons of the analysis results are classified in three major parts.

5.2.1 Structured Business

According to the cases, the more structured business form has the more possibility of enablement for CRM. It is shown in the cases of system certification companies; concentration on a process approach model with a documented management discipline causes a procedural frame and a more adoptive firm in case of CRM. It is also very important for the companies to assess their customers to estimate their response quality to the new tools and models of relationship management.

We saw that even in some dimensions the readiness of three certification bodies are lower than the other two cases but in overall results they show higher readiness for CRM implementation.

The certification bodies are the companies whose business processes and management models are designed by headquarters according to the standardized systems of documentation and procedures. In addition to the more directly enabled dimensions like business structure dimension and strategic dimension, the advantage of structured business causes a powerful ability for change management through the systematic leadership and cross-functionality of the firm.

5.2.2 The Force of Highly Competitive Environment

Even in Rams Asa case, the total indicator is very low, but according to the highly competitive market of this company (medical devices market), the strategic dimension and the customer related dimension are almost like the ones of certification bodies.

This shows that the highly competitive market forces the company to increase its customer orientation and enablers of customer information systems. The competition force plus the structured business in certification bodies' cases can be also a partial enabler for higher readiness in strategic and customer related dimensions.

By the way, in SUDDCO case the conditions are reverse, while the higher demand of the market causes the company's tendency to a price leading oriented business or a benefit oriented business rather than a customer oriented business.

5.2.3 Technological Ready Company

It has been determined that the size and wealth of the corporate cannot be the guarantee for the success of the CRM system, according to the SUDDCO dimensional assessment result that illustrates the significant lacks in the strategic and structural dimensions.

But in SUDDCO we see that the technological readiness dimension is its highest dimension of readiness and almost equal to the one of CB3. This two companies, from two different business areas are enabled in technological dimensions from two different ways, while in SUDDCO case the monetary power of the company enables it to establish its intranet facilities, in CB3 case the headquarter support is the major factor for technological readiness. With regard to the cultural readiness of these two cases, we can find that even the technological readiness measures for both of them are almost equal, but the cultural readiness in SUDDCO is meaningfully low, where the cultural readiness of the corporate includes the investors' support that is another important part of financial power for CRM readiness.

Generally speaking, one of the main aspects of the technological readiness is the financial power of the company but it should be considered that the cultural condition of the investors is an important part of this power.

5.2.4 Change Management Issues

Underestimation of the learning and cross functionality of the organization and lack of the effective leadership can also essentially empower the risks of failed CRM during the implementation phases or in the first step of go-live stage.

In Rams Asa case the low measure in change management dimension, caused by the low rate of cross functionality of the firm and low learning capacity of the organization, significantly reduce the readiness in change management dimensions.

Accordingly, in three certification bodies' cases, the structured business model causes a more cross functional firm through the process approach system. Also the nature of qualifications in this type of business makes the indicators of learning tendency and systematic training more enhanced.

5.3 Limitations

To evaluate the results of the readiness assessment, the units of case studies should be followed until they implement the e-CRM, so that we can discover the weakness and strength of our approach in methodology and framework of references. As a time bounded thesis, we are only able to work on the first step of the readiness to be timely.

Iranian managers are not very familiar with the management sciences and information technologies, so we had to select the units of case studies among those companies that their managers are more involved with new topics in management and business.

5.4 Management Implications

Managers should be aware of the risks of failed e-CRM projects. But the more significant requirement is to know the capabilities and gaps of the company before implementation of e-CRM. A framework for actions in pre-implementation stage can help the managers to overcome the complexity of this part of project.

The ability of the readiness assessment for e-CRM can be generated in the companies that have an implemented internal audit procedure for quality systems. Internal auditors, who are responsible for quality management systems and are well-trained for process management and process improvement, can assess the company for e-CRM readiness and analyze the assessment outputs for the measures of readiness.

The continuous improvement cycle, can be a proper model for increasing the capabilities of e-CRM readiness and reduce the risks of failure.

It is worth to know that the readiness assessment requires a deep analysis which can be done for separate units in the company in order to understand the weakness and strength of each unit independently. The action planning based on the developed report of the readiness assessment, helps the company to choose the best way of improvement actions and provides the ability of monitoring the outputs of improvement actions.

After the corrective action, the best reference for evaluating the results of the actions is the assessment. Thereby, the company is also able to compare its improvements after the corrective actions. The assessment guideline itself is a suitable guide for the managers to learn where they should be and which practical steps they need to take in order to reach the ideal point.

5.5 Implications for Prospective Researchers

During conducting this research, we faced many ideas for further topics of future researches in the related fields or alongside the main subjects.

Particularly, one of the main achievements of this research which has been in establishing meaningful measures for readiness assessment based on the ideal scenarios can be developed by using real scenarios based on the different opinions of managers, investors, CIOs or process owners.

To improve the dimensional readiness indicators, for future researcher it can be also suggested to completely concentrate on one of the dimensions or sub-dimensions to evaluate its parametric measures.

This method can provide interesting results in readiness assessment for other enterprise software systems like ERP or SCM, E-Government, internet marketing and other web based applications and other fields of information technology.

We know that this model can be more detailed and specific, it can be a path for the next research but it should be considered that the more detailed models need more detailed indicators and it will conceptually move the "Uncertainty Principle" of Mr. Heisenberg right from the modern chemistry into our e-commerce and IT lab. It means that more indicators might give us more accurate results on sub-dimensions, but in weighting part we will lose the ability of interpretable analysis.

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