

## Implementation of KCRM Methodology in Enterprise

### تنفيذ منهجية KCRM في المؤسسة

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#### مستخلص:

يناقش هذا البحث ويقترح طرائق يمكن أن تطبق في الأعمال التجارية بغرض تحسين بيئة التجارة الحرة الإلكترونية وتطبيقاتها؛ حيث تقوم فكرته على إدارة نظم التصميم ، وتحسين القائم منها لمقابلة متطلبات الأعمال أو الشركات . افترضت الدراسة خطوات تطبيق نظام KCRM وشرحت مايتصل به من قضايا امنية وبنى تحتية. توصل البحث الى أن المنظمة التي تطبق نظام KCRM في شركاتها تستطيع أن تعد خطة حقيقية للتعاون في تحقيق الأهداف كما تستطيع أن تختار فريق عمل يمتاز بالكفاءة حتى يتمكن من إدارة المنظمة بنجاح، ويؤسس علاقات جيدة مع الزبائن. خلص البحث إلى أن نظام KCRM نظام متطور وواعد لاقتصاد العصر الجديد، وقد اوصت الدراسة بضرورة تطبيق النظم الجديدة التي تساعد في تجاوز وتخطي الصعوبات التي تعترض النظم المعقدة.

#### Abstract

This research has been hold to propose methodologies to be applied in business to improve the environments dealing with E-Business applications. The idea is to manage the systems and enhance

the existing architecture and applications to meet business or corporate requirement.

The KCRM implementation steps were proposed and explained. Security issues and infrastructure were also explained. It is found that organization (which) that applied KCRM methodology in their enterprises are able to assess the company infrastructure, make real plan for the corporate to meet its goals, select appropriate team that having skill to manage the corporate successfully, build better relationship with customers, and gain maximum benefit from them.

The research concluded up with the fact that: using KCRM development methods and techniques is the most promising issue for the new-age economy. Measurement systems like QDF and the stages of knowledge growth framework were also discussed.

The final recommendation is that these new tools must be applied to overcome difficulties that help in tracking complex systems.

## **INTRODUCTION**

In response to the evolving industry and corporate needs in the past two decades, there have been considerable advances in E-Business as well as in management field. Researchers had developed different techniques to achieve their objectives and goals. Most of organizations have not been successful in adopting management practices and approaches. That is because; these organizations have no ability to apply these approaches in the right context that suits their goals and needs.

The Web and its E-Business consequence are reshaping the face of the new economy. In E-Business the four Ps (Product, Price, Place, and Promotion) have been replaced by their digital successors respectively:

1. Customer experience, customized products, and individualized service.

2. Vibrant markets and intelligent agent-based dynamic, even individualized, pricing
3. Digital market place that is not associated with any specific physical location
4. Two ways interaction, mass customization, and customer relationship<sup>1</sup>.

To succeed in E-business, firms must build their digital capital by integrating relationships and knowledge into business strategy. In this new economy, knowledge and customers are considered to be the basic elements of the economy. The products and services depend on knowledge for production. For example, news, software, and music which are considered as non-physical goods are knowledge-based products. On the other hand, physical goods like computers, books, and medicine have knowledge embedded in their design, production, and delivery. Corporate success depends on the organization ability to build and maintain loyal and valued customer's relationships by giving each customer a complete view for every information.

### **Problem Definition**

Problems with installation and maintenance of new systems prompted to conduct pilot research in information and management areas. The research aimed at confirming the methodologies strength in business environments and effectiveness in dealing with E-Business applications, because methodologies are largely untested in these areas. The idea is to manage the systems and enhance the existing architecture and applications to meet business or corporate requirement.

### **Study Goals**

In this paper, the goal is to:

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<sup>1</sup> Tiwana, Amrit. The essential Guide to Knowledge Management: E-Business and CRM Application. Upper Saddle River: Prentice Hall PTR, 2001, p21.

- Introduce improved techniques to help in building successful company by using Knowledge-enabled Customer Relationship Management (KCRM) techniques.
- Enhance the process of building successful corporate
- Discuss the problems of implementing E-Business applications and their development.
- Deepening customer loyalty, and maximizing employee's efforts.

## **2.0 IMPLEMENTATION OF KCRM**

The main idea of this paper is to build successful company by implementing specific steps known as KCRM methodology. The steps give the managers and decision makers the ability to manage their corporation and make customers more satisfied. Before implementing KCRM steps, it is better to define and explain the terms used in this paper.

### **2.1 Definitions**

#### **2.1.1 Knowledge Management (KM)**

Knowledge Management is the process of managing organization knowledge for creating business value and sustaining competitive advantage through the creation, communication, and applications of knowledge gained from customer interactions to maximize business growth and value. Tom Tobin defined the knowledge as “a truly practice or discipline that involves people, process and technology”<sup>2</sup>. Another definition for KM is that "knowledge management is a framework within which the organization views all its process as a knowledge process. The most important issue for companies is to ensure that they focus on the synergy of data and information

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1. Tobin, Tom. The Case for Knowledge Management in CRM. Gartner Inc., 2003. Accessed 15/6/2011. Available from: [www.serviceware.com](http://www.serviceware.com).

processing capacity of information technologies, and the creative and innovative capacity of their human members"<sup>3</sup>.

### **2.1.2 Customer Relationship Management (CRM)**

CRM is a combination of business process and technology that seeks to understand a customers of a company from multiple perspectives to competitively differentiate a company's products and services. Tom Tobin defines CRM as a concept that combines management though technology and business practice. ... It helps you nurture individual customers, enchant them with quick, efficient and responsive service, and build abiding relationships with each one of them<sup>4</sup>.

### **2.1.3 Electronic Business (E-Business)**

E-Business is defined as business activities carried out over a computer mediated channels. E-Business processes can take place over any computer-mediated network, not just from the Internet as in the case of e-commerce.

Some E-Business process of potential interest to countries has already been identified and some definitions have already been struck: Customer acquisition and retention; E-commerce; Finance, budget and account management; human resources management; Product design and development; Order fulfillment and order tracking; Logistics and inventory control; Products service and support<sup>5</sup>.

Companies typically go through five distinct stages in their E-Business initiatives: Supplying Company and product information (brochure-ware); providing customer support and enabling interactions;

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2. Yogesh, Malhotra. Knowledge Management, Knowledge Organizations & Knowledge Workers: A View from the Front Lines, 1998 . Accessed 12/3/2011. Available from: <http://www.brint.com/interview/maeil.htm> .

<sup>4</sup> Tobin, Tom. Op.Cit.

<sup>5</sup> OECD (2003.A Framework Document for Information Society Measurements and Analysis.. Paris: DSTI/ICCP/IIS, 2003.[WWW document].

supporting electronic transactions; personalizing interactions with customers; Fostering community<sup>6</sup>.

#### **2.1.4 Knowledge-enabled Customer Relationship Management (KCRM)**

Knowledge Management principles applied to E-Business relationship management is described as knowledge-enabled customer relationship management. Integrating knowledge management and CRM gives business the depth of customer information, analysis, and intimacy that they need to truly understand customer's need. KCRM collect the complete customer knowledge, which can be used to make new products and strategies that enable corporation to give efficient and responsive service to clients, and build strong relationships with clients.

#### **2.2 Benefits of using KCRM**

To face this revolution, one needs new methods and techniques to deal with this new situation. This can be done by combining knowledge management and customer's relationship to manage the new-age economy.

Generally using CRM, a business can: Provide better customers service; Increase customer's revenues; Discover new customers; Cross sell/Up. Sell products more effectively; Help sales staff close deals faster; Make call centers more efficient; Simplify marketing and sales processes<sup>7</sup>.

#### **2.3 KCRM Implementation Steps**

Implementing complex system requires a plan that delivers assertive business results. Two decades ago, the system is firstly designed, and then implemented. The term design has different meanings for people with different backgrounds such as engineers, graphics artist, programmers, systems analyst, and database

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<sup>6</sup> Seybold, Patricia B. & Marshak, Ronni T. How to Create a profitable Business Strategy for the Internet and Beyond. New York: Crown Business, 1998. p46

<sup>7</sup> Customer Relationship Management (CRM) Tutorial. Accessed 10\1\2010. Available from: [www.CRMTutorial.com](http://www.CRMTutorial.com).

administrators. In general, design entails planning and the conceiving of the ideas that address specific needs. Looking at design from a system view requires an all-encompassing look at the system input, output, environments, processes and transformation of inputs to outputs. The developers, managers, technical staffs contribute to make the complete design. However system design looks at the existing problems, develops requirements and goals to address those problems, and then proposes various methods to implement solutions, then examines the technical, operational, and economically feasibility of proposed alternative solutions.

In the old economy, designers of information systems applications have models that help them to design and implement systems. These models are sets of steps that help to prevent some mistakes in building information system and facilitate the design process. Developers spoke about well-managed in the sense that the process can be controlled and measured, yet to not so rigid that it fails to provide sufficient degrees of freedom to encourage creativity and innovation. Development process is divided into micro, and macro elements. The micro process is more closely related to spiral model of development, and serves as the framework for an iterative and incremental approach to development. The macro process is more closely related to the traditional waterfall life cycle, and serves as the controlling framework for the micro process. The system is partitioned to phases known as system development lifecycle. Paul and Peter divided the phases to strategy, pre-analysis, analysis, pre-design, build, document, test, impediment, and maintain<sup>8</sup>. Most of developers neglect the strategy phase and talk about analysis, design, implement, test, and maintenance. In fact, these phases are the most precise for all, and others are embedded under other phases. Phases mentioned above such as pre-analysis and pre-design are clearly a subset of these phases.

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<sup>8</sup> Dorsey, Paul and Peter Koletzke. Oracle Designer 2000 Hand Book. Tata McGraw Hill, 1997, pp4-22.

The major phases for computer information system are requirements specification; System development; Designed; Implementation and Maintenance<sup>9</sup>.

Millington prolonged these phases to eight main types of tasks that are project definition, investigation, analysis, design, implementation, evaluation, monitoring, and maintenance<sup>10</sup>. Software life cycle model envisions software development as an essentially sequential process in which distinct stages lead one to another. E-Business companies must use more flexible development techniques to introduce their new products faster than companies with more stable technology, established customer's needs, and longer product cycles. Companies like Microsoft and Netscape used different development practices to adapt to the rapid change in the Internet market. They used methods known as synchronized and stabilized in which the specification, development, and testing is done in parallel. The difference between these methodologies is not enormous, but flexibility is needed to follow this fast-paced market, otherwise the product under the development will be obsolete. Tom Tobin reported that there is a systematic approach to successfully implementing knowledge management, and if you analyze what you are trying to accomplish, map out strategy, garner support from the organization and have a way to measure it, then you much more likely to be successful<sup>11</sup>. That means Tobin believed that KCRM is implemented through four phases: Analyze what you tried to accomplish; Map out the strategy; Garner support from the organization; having a way to measure the progress of organization.

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<sup>9</sup>Powers, Michael J., Adams, David R., and Mills, Harlan D. Computer Information Systems Developments: Analysis and Design. (Riyadh) :Research Administration, Saudi Arabia, 1988, pp.66..

<sup>10</sup> Millington, D. System Analysis and Design for Computer Applications. India: EWP , 1988, pp14-15.

<sup>11</sup> Tobin, Tom .Op.Cit.

In general, there are seven steps to implement KCRM in a successful corporation. The steps are not considered to be sequential, or linear activities, but parallel areas that can be addressed as roadmap.

### 2.3.1 Strategic alignment

The first step in implementing KCRM is to align business and technology strategies. KCRM strategic framework is used to analyze customer's knowledge and relationship management. The framework has four dimensions:

- **Business Environment**, in which market trends, competitive threats and regulatory controls can be analyzed.
- **Strategic context**, in which products and services, market opportunities customer segments, value proposition, and alliances are analyzed
- **Strategy**, in which E-Business strategy, competitive differentiation knowledge, digital capital, and adaptability were analyzed, and
- **Technology**, in which the E-Business infrastructure, KCRM architecture interaction channels and integration problems were, analyzed<sup>12</sup>.

These dimensions are surrounded by barriers. The environment is surrounded by interpretation, and the context is impeded by an expression barrier. Similarly, strategy is slowed by a specification barrier. Finally KCRM Technology deployment is inhibited by an implementation barrier.

### 2.3.2 Auditing and Analyzing

The second step on the KCRM road map involves auditing and analyzing of existing customer's knowledge. It provides a snapshot of the present state. The resulting audit information is used to prioritize investments and to classify customers into clusters and segments based on their perceived lifetime value.

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<sup>12</sup> Tiwana, Amrit .Op.Cit P.21.

### **2.3.3 Building an Implementation Team**

The third step in implementing a KCRM is building an implementation team. To design a successful E-Business, a collaborative effort from different disciplines is required. Personnel with backgrounds that could contribute to the system design are required. The amount of personnel resources depend on the size of the site and the roles every member can play during the development cycle.

Since the team is working together to fulfill corporation goals, members are selected carefully to form homogeneous, and collaborative team. They must include a wide variety of department that represents the activities of the corporation. Managerial and technological skills must be well balanced within the team. By understanding the tasks areas within which expertise is needed, the team can be easily composed. The various people involved in E-Business implementation team are: Leader for the project at management and operational levels; Technology designer and developer; Officer for training and educating of employees and end users; Managers for implementing cultural enhancements, rewards tied to performance and incentives for employees, partners, and customers; Sales and marketing managers for process, procedures, and mechanisms; Experts for measuring the performance, results, and return in investments.

KCRM systems are becoming increasingly complex and are subjected to various risks. Risks cannot be avoided altogether but they can be managed in such a way that they are recognized and their impacts are either avoided or mitigated. There are number of areas where project risk can arise, from business, commercial and contractual risks to technical risks. The basic sequence for risk-management is identification, assessment, and the formulation and implementation of risk-reduction actions.

Risk assessment framework is used to determine threats and risks that are within the team control and those that are not. Once the controllable risks are being well managed, address the less-controllable

one by selling the project to front-line staff and being attuned to external business changes.

#### **2.3.4 Blueprinting Technology Infrastructure**

The fourth step on the KCRM roadmap is blueprinting the technology infrastructure. Blueprinting the ideal technology infrastructure guarantees real-time, seamless integration of E-Business process and activities.

The objective of any business is to acquire, retain, enhance, and maximize its relationship with customers. An evaluation is first made to the existing system to identify the actual system capabilities and the business' needs and identify existing infrastructure that can (or cannot) meet those needs. KCRM technology framework is used to make judgments about what infrastructural components are accepted, and what else needs to be added.

Various components of the framework support one or more of the five keys or objectives of creating, packaging and assembling, retrieving, validating, and applying knowledge.

#### **KCRM Architecture**

Architecture examines how products are built, how they are deployed, how they can be customized, and how they can be integrated with external applications. It consists of 3 levels, these are:

1. E-Business systems. These include business to business (B2B), front Office Systems, back Office Systems, and external system.
2. System-level front end through which customers, employees, and partners interact. The front end can be divided into three segments, all of which are Web-enabled.
  - i. -Internet segment - which connect customers to business though the Web
  - ii. -Intranet segment- which connects the firms own employee
  - iii. -Extranet segment - which connects both external systems and individuals to the internal ones.

3. The middle layer (KM activities occur) like real-time decision support, content customer merchandise analysis, and channel analysis.

Legacy systems, computer telephony and voice, data warehouses, and decision support systems need to be seamlessly integrated. The integration can be made in two directions to improve adaptability between systems: Data and information integration; Channel integration

#### **Security Issues:**

When connecting a site or network to the Internet, this network is connected physically to hundred thousands of unknown networks and all their users. Although such connections open the door to many useful applications and provide great opportunities for information sharing, most private networks contain some information that should not be shared with outside users on the Internet. In Addition, not all Internet users are involved in lawful activities. The key questions behind most security issues on the Internet are:

- How do you protect your network and its resources from malicious users and accidents that originate outside your network?
- How do you protect confidential information from those who do not explicitly need to access it?

Kimberly and James reported that " you made systems security a priority before game pirates hacked your FTP site of writing gigs of that with their "wares" software "<sup>13</sup>.

There are five common methods of attack that present opportunities to hackers, these are: Network IP packet sniffers; IP spoofing; Password attacks; Distribution of sensitive intake and information to extension of sources; Man-in-the-middle attack<sup>14</sup>.

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<sup>13</sup>Caplan, Kimberly and Sanders, James L. . Building International Security Standard. IEEE IT Pro, Vol.1 No.2, 1999, pp17.

<sup>14</sup>Humphrey. Managing the software process. Wesley: Addison, 1989, p5.

### **2.3.5 Results-Driven Development and Deployment**

The objectives and goals of E-Business are different from that of old economy. They are moving targets because of the rapid and unpredictable change nature of the market needs. Traditional approaches that well applied in information systems do not hold up in E- Business environments. The waterfall method is one of the earliest and popular approaches to systems development. The method depicts the natural order of events that occur in the process, and is a useful tool for gaining a conceptual understanding of systems development. It assumes that requirements between analysis and development phases remain stable and that the system can be delivered in one large chunk at the end of the process. The horizontal spacing between the steps implies that any stage can be begun only after the preceding stage has been completed. If an error occurs at one stage, it is carried over to the next stage. If such an error is not caught at the right stage, it propagates until the last stage. The V model is principally the same as the waterfall model, but reveals more level of detail.

Results-driven instrumentalism (RDI) is the single most promising method for development and deployment of KCRM system, and one that overcomes the limitations of the above mentioned methods.

### **2.3.6 Leadership, Change Management, and Corporate Culture**

Success of KCRM systems requires fundamental readjustment of corporate culture, strong leadership, and reward structures that together gain the hearts and minds of employees, and motivate them to share knowledge. Fear from their job security is a single dominant inhibitor that can keep employees from sharing valuable knowledge to them. Strong leadership means a champion and a capable leader are needed. He has to know how to discipline and redirect employees in a constructive, non-threatening way.

Cultural change is neither automatic, nor mandated. Strong leader and customer relationship visionary (CRV) are responsible for spanning

technology and the organization culture issues. Five fundamental touchstones to enhance the corporate culture are:

1. Setting reasonable expectations.
2. Using these expectations to fulfill the requirements.
3. Stabilize procedure and then moved onto processes.
4. Accuracy in assessing resources, cost, and time frames.
5. Alignment of reward systems and economic incentives.

Encouraging employees to think like their customers by encouraging the identification among customers, and viewing complaints and problems as learning opportunities.

### **2.3.7 Evaluation, Measurement, and Refinement**

The final step on the KCRM roadmap determines how the success is measured, how metrics are devised, and how this information is used to refine KCRM strategy and technology. Although traditional metrics mentioned in section 2.3.5 are useful for measuring IT return, they are not enough to measure and analyze KCRM investments and have drawbacks in analyzing KCRM investments. Therefore metrics with capability to address basic area that corporate want to improve are needed.

Two basic KCRM measurement systems are: The stages of knowledge growth framework and Quality function deployment (QFD).

The first system was developed for knowledge that is used for delivering goals and services, so, it readily translates over to the E-Business KCRM domain. The latter, is used to facilitate translation of high level goals to discrete actions and integrates inputs into decomposable, measurable, and more manageable actions by using balanced scorecards. The main problem of QFD is that it doesn't distinguish between financial and non-financial outcomes.

## **3.0 OTHER BUSINESS DRIVERS**

Although KCRM system is effective and powerful, project managers need to be aware of areas closely related to management for

two reasons: firstly the managers need to have appreciation of the different models used in developing system, and secondly the project managers need to have knowledge of the problems pitfalls and good points of managing in a private using each of the approaches.

There are many system development models, but the most recently used are:

### **3.1 Total Quality Management (TQM)**

Total quality management is a model that provides a means for qualitative evaluation of the key criteria for a total quality Business. James Kadle and Donald's list the visible effect of TQM as:

1. the removal of hierarchical differentiators in the work place
2. the commitment of all staff to the organization missions
3. the application of the appropriate resources
4. the continual striving for improvement

In essence, this tells us that customer's satisfaction, people employee's satisfaction and impact on society are achieved through leadership driving policy and strategy, people management resources and process, leading ultimately to excellence in business results<sup>15</sup>.

### **3.2 Projects IN Controlled Environment (PRINCE)**

Prince is structured method for project management consisting of a set of procedures designed specifically for managing and controlling the planning, progress and quality of IS Projects. However, three of its constituents contribute to a significant part of such a system. These are:

- Quality controls which are clearly defines as technical and management procedures.
- -Product, TQM planning and the product descriptions which define the product quality criteria.
- The PRINCE organization<sup>16</sup>.

## **4.0 Result**

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<sup>15</sup> Seybold, Patricia B. & Marshak, Ronni T.Op.Cit. p46.

<sup>16</sup>Kadle, James & Yeates, Donald. Project Management for Information Systems. (Malaysia):Prentice Hall, 2001, pp.205-206.

It is found that organization who applied KCRM methodology in their enterprises are able to assess the company infrastructure, make real plan for the corporate to meet its goals, select appropriate team that having skill to manage the corporate successfully, build better relationship with customers, and gain maximum benefit from them.

## 5.0 CONCLUSION

Using KCRM development methods and techniques is the most promising issue for the new-age economy. Traditional methods are not suitable for these applications because of their complexity and instability. The implementation of KCRM is considered as a three phases or in more details seven steps. In each steps, the vital issues were discussed. The new tools were applied to overcome difficulties that track complex systems. Methods like RDI for deployment and development were introduced. Measurement systems like QDF and the stages of knowledge growth framework were also discussed. The problems of security and disciplining and redirecting employees as important issues for managers were also discussed.

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