

## **Business Intelligence**

The Intelligence of E-CRM Applications and  
Approaches on Online Shopping Industry

Sample Proposal for Thesis Research Presented in  
Fulfillment of the Research Requirement for the PhD  
Degree in Computer Information Systems

# The Intelligence of E-CRM Applications and Approaches on Online Shopping Industry

---

## *Introduction*

---

In recent years the researchers started interesting on electronic services specially customer relationship management which pronounced as CRM. Their studies still have been developing until using internet applications and services with CRM to be Electronic Customer Relationship Management which pronounced as E-CRM. According to (Grover, 2011) E-CRM is enterprises using IT to integrate internal organization resources and external marketing strategies to understand and fulfill their customer needs.

## *Definition*

---

Electronic CRM (E-CRM) is the electronically conveyed or supervised subset of customer relationship management. (Romano, Nicholas, Fjermestad, & Jerry, 2009) It concerns all types of supervision relationships with clientele when using information technologies. It takes place from the alliance of the basic CRM with the e-business applications marketplace and covers the huge variety of information technologies that are utilized to assist an organization's CRM plan. The complete objective can be viewed as efficiently managing the various interactions with all the customers and interacting with them individually. As rationally all the CRM packages

use certain IT, the words like CRM and E-CRM are used simultaneously by a lot of people. (Romano, Nicholas, Fjermestad, & Jerry, 2009)

An E-CRM system helps organizations to identify the actual costs of winning and retaining individual customers and increases customer loyalty. This allows the firm to focus its time and resources on its most profitable customers. On the other hand, (Torakh and Mjidi, 2010) discussed that the detailed information obtained from the E-CRM system allows the company to know the customer behavior, in other words; more effective marketing. It also improved customer services, greater efficiency, and cost reduction. Time is considered critical element in online shopping, if we could reduce time of delivery and response from administrator to the customer we will get satisfaction from the customer, this will appears in using the web site of online company.

Our research importance is to put strong strategies for developing customer services online. In this research I want to find the most suitable plan and methodology to manage customer needs based on the applications of E-CRM. It represents new methods to bring customer loyalty by persuasion the customers with online shopping and their items. The using typical application of E-CRM using Intelligent Data Mining techniques to both serve the customers and utilize all possible opportunities that may gain from the customer.

### *Data quality:*

---

Talking about data quality with E-CRM intelligence and their

### *Literature Review*

---

Many studies tried to present new methods in using E-CRM to enhance customer relationships either using traditional ways or technical ways, we focus on those studies that suggest using information technology. According to (Lee-Kelley, 2003) he proposed a study provides evidence of how to improve planning for customer management by Presenting and testing a Conceptual model of the process by which the implementation of electronic relationship marketing (E-CRM), can enhance loyalty. While building their search frame work, price sensitivity was found to be a primary confounding element on loyalty and was included in the study for control. An exploratory study of Internet retailers, e-retailers, and their customers was conducted and the findings revealed that e-retail companies (with CD, DVD, video and book products )should consider customers perceptions of relationship marketing efforts , as they are fundamental to enhance customer loyalty and that an enhancement of customer loyalty reduces price sensitivity.

Furthermore (Kim and Zhao, 2008) suggested study concentrates on customers' cognitive beliefs, affective experiences, and cognitive behaviours in

order to propose an integrated framework for E-CRM that identifies a series of linkages among the psychological variables of perceived value, satisfaction, and trust. In addition, three key exogenous variables affecting shopping experiences are considered for the integrated framework. Trust is regarded as the key factor affecting customer relationship commitment. Perceived value (as a cognitive belief) and satisfaction (as an affective experience) directly and indirectly influence trust (as cognitive behaviours) and commitment.

Referring to (HarkutandSadar, 2010), they proposed building a framework, showing a possibility to personalize e-business processes by adapting the interactive system to customer preferences. The paper has empirically tested the critical factors that influence an individual's decision when buying products or services online. The proposed model applies Adaptive Neuro-Fuzzy model to converging business processes to get the desired results based on the gaps found in the literature. The system is adaptive as it uses a neural network learning ability for its adaptation.

The online customers only have access to the storefront and can seek information on goods and services, order as required, pay and receive their product. Access to the back-office is reserved to the online-shop administrator. On the other hand (Grover, 2011) advanced CRM and customer relationships, and how E-CRM can be added to traditional marketing concept. Also, Grover examined problems that can accompany an E-CRM implementation and how to avoid them, moreover, the researcher advised to use web applications to serve customers online considering these applications as smart systems to gain the customer loyalty.

Also, proposed a life-cycle that considers a customer as a centre point, it includes Marketing Management, Sales Force Automation, E-Commerce, Customer Support Services and Back Office Analysis. (Tarokhand, 2010) discussed the effect of

customer relationships on the airlines industry and in which areas can CRM support the airlines, they also tried to suggest a suitable technology to support CRM in airlines. To find the best strategy they built a CRM architecture from a major schedule airline, the processing required to capture data from operational systems, building the data warehouse and adding value to that data through business intelligence; and the transaction system processing appropriate to the business function. This process can enhance the airline passenger services and bring the customer or passenger loyalty. In order to accomplish the online customer acquisition and sustainability, the E-CRM uses standard techniques. As Tarokh, 2010, stated that such techniques consist of four steps: (1) amuse new and present customers to site (2a) give rewards to arouse action (2b) get the customer information to maintain relationship and (3) preserve dialogue using online interaction (4) sustain dialogue via offline communication

Tarokh, 2010 claimed that the plan of accomplishing the online customer relation management should initiation keeping in mind how to acquire customers who want to interact in such way. It should be known if the customer is new or the present one. The objective is to fascinate the new customers the site using all the traditional techniques of site promotion like search engines, portals and banner ads, as well as to amuse the present customers the plan is to very actively motivate them to visit the website via marketing communications.

According to Liljefors, 2011 the usage and ease of online shopping followed by the decreased economic costs, consisting of time and effort present in recognizing the right thing, price, handling the expenses and service quality are the aspect that impact a customer's contentment and as a result find out their priorities. Kelley, Gilbert, Mannicom, 2003, said that the significance of service quality as a fore runner of the customer contentment. According to Kelley, Gilbert, Mannicom, 2003, about 67% of the customers

do not go back to an organization due to “poor service experience” with other aspect like price as well as product problems being less important. The information about the basic motivational E-CRM aspects at every step of the transaction cycle that impact the consumer’s online shopping attitude recognized from this analysis would be to increase and gain our potential to comprehend the complicated process of doing business online. This is not important just for the organizations selling goods and services on the Internet, it is also significant for the software and Web developers expecting to develop a consistent consumer base for the e-commerce in the near future. (Reichheld, Markey & Hopton, 2000)

The major functions among many of the eCRM tools is to gather information about the customers, hence an organization must take into account the wish for confidentiality and data protection, along with legislative and cultural traditions. A lot of clients priorities the assurances that their data will not be provided to the third parties without their consent and information and that the protection will be there to prevent any unlawful access by the third parties. According to (Reichheld, Markey & Hopton, 2000) they highlight that the four major dimensions: trustworthiness, website plan, and customer service and security concerns. Though the past studies on the E-CRM drivers has not been able to identify the two major dimensions, it tells us that reliability is positively impacted by: confidentiality, navigation and presentation, suggestion, order acceptance, community aspects, absence of mistakes and protection transaction security, website assets and navigation operations reputation, information choice strategy and privacy concerns (Reichheld, Markey & Hopton, 2000) assumed communication and contact knowledge plan, visual plan as well as navigation plan; order completeness, website plan as well as confidentiality usage of website, protection and confidentiality, rate of download, product knowledge quality, as well as aesthetics characteristics.

## *Problem Statement*

---

All previous studies discussed the customer loyalty; how to bring customer loyalty for buying from the shopping company or any other company in general, these studies also tried to present the most suitable strategy for increasing the quantity of selling in any marketing line, there were several problems in a management and technical management to bring trust from the customer and fulfil the customer needs. A customer is the last user of a company's goods or service. The Consumer behaviour consists of the procedures that consumers experience to recognize their requirements. As a consequence when trying to resolve such requirements, there is a requirement for making a buying-decision, evaluate the information, makes the plans and incorporate the plans by comparing some of the variety of products or buying a product. There is a shortage of theoretical models for those E-CRM aspects that may impact the online loyalty. In addition there is a shortage of analysis that emphasis on the E-CRM aspects linked with various s steps of the transaction cycle. It is a fact that the major online higher reward, compensate and expedite the cross-selling and customers concern is how secure and having control of also rescue organizations of the huge expense linked with security of their data in online shopping. (Sirdeshmukh, Singh & Sabol, 2002)

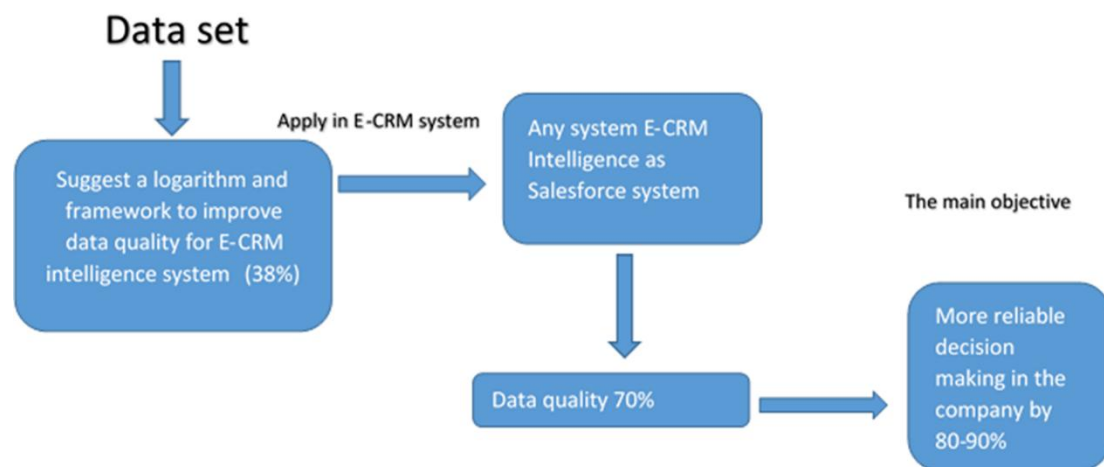
The purchasers expect identifying the buyers. Due to these various advantages that organization's website which they do online shopping linked with customer relationship management, CRM will provide few of the ways for security of the financial data exchange. This consists of one of the major aims of the present day of organizations. According to (Sirdeshmukh, Singh & Sabol, 2002) mostly the customer concern about the protection is leading think to website users to decision



that E-CRM potentials provide an account of utilization of the ICT during online shopping.

**NB:** Although businesses understand the need for greater intelligence powered by analytics, they are often not able to achieve their goals within the e-CRM application.

**NB:** A recent study says Salesforce.com customers see CRM systems as boosting customer experience, but data quality and predictive analytics still loom large.



### *Research Questions*

---

This research will answer the following main question: "*Does E-CRM application enhance the positive customer relationship and online shopping and provide data quality to companies?*" During answering this main question the following sub questions will be answered which will be reflected on the revenue and behaviour development:

- Does E-CRM intelligence system provide a reliable data quality to Companies and the online shoppers?
- Does Information Technology especially the Web Applications improve data quality from the E-CRM intelligence system ?

### ***Research Motivation***

---

Many of online shopping companies suffer from lack in the annual revenue and no confidence between those companies and the customers. Customers want a trusted online shopping and good services especially in data mining process and retrieve the data in/from the database. Build a smart web based e-commerce platforms are important by using E-CRM application to find out the solutions of the online shopping. All these because lack data quality from E-CRM intelligence system

### ***Research aims***

---

This research aims to describe Intelligence of E-CRM Applications and Approaches on Online Shopping Industry. The research provide a better understanding of their customers and assist them in developing excellent E-CR M strategies which can best serve customers on the internet. The research also aims to improve data quality from E-CRM intelligence system and develop a conceptual framework to that and explains how pre purchase, at-purchase, and post-purchase E-CRM features influence the E-Satisfaction of customers when buying online. And how design and applied it to help Companies can more reliable decision-making

### ***Research Objectives***

---

The objectives of the study are:

- To explain how Improve data quality in The Intelligence of E-CRM

Applications

- To explain the impact of electronic customer relationship management

Intelligence on consumer's behaviour

- The Effectiveness Of The Intelligence E-CRM Application In Enhancing Positive Customer Relationships

- To suggest for successfully developing and implementing a Rules for E-CRM Application

### *Significance of the Study*

---

This study can add a new value to online marketing using Intelligence of E-CRM and proposed framework, this compatibility between them should cause comfort and secret shopping for the online customer and good management for the online company. The main focus of this research was to realize a better interaction experience between the companies and the e-CRM system. The proposed framework and improve algorithm are aimed at enhancing data quality for e-CRM systems. This research will add new value in the academic researches

### *Scope of The research*

---

This research will take all the online shopping companies and services companies to provide information and data to customer. And other online websites and online companies can benefit from our system strategy that uses E-CRM in new for more reliability decision-making

### ***Research Methodology***

---

The research method is regarded to as the theory of the research and the purposes for the way the research has been planned. The methodology clarifies the research question and the reasons why the question is significant. It demonstrated the initiation of the research, the directions of the research and the general implications of the research when it is fully done. As methodology demonstrates the literature the researcher is utilizing, the language or the terms, the linked theories and details that are being used, the techniques and kinds of study that will be used to evaluate the data and information gathered. (Franklin, 2012)

### ***Research design***

---

The research design is the basis of the whole research procedure. As the research issue was well explained and the all the measures linked to the study are very well developed, the research fits very well as an explanatory research design. The study tries to explain the Intelligence of E-CRM Applications and Approaches on Online Shopping Industry by improve data quality and used software or design Framework to make assignment new for example

### ***Methodology and Design***

---

A qualitative method will be employed for the purpose of this research. The qualitative research was the suitable technique, so as to gather the needed data, as the specific research characterizes a full and detailed view as well as comprehending the process in the research. (Franklin, 2012)

### *Justification of Paradigm and Methodology*

---

Selecting the most suitable research method is the most significant initial research plan. This chapter will see and assess the research paradigms to recognize the most appropriate paradigm of this research. A traditional method tells about the philosophy of the information whereas the methodology emphasizes on the rationalism of how we come to know. (Berg, 2009)

### *Interpretivism*

---

According to (Berg, 2009) the hermeneutics and phenomenology are the philosophical foundations of the evaluative research. As (Berg, 2009) recommended that the interpretive researchers initiate with the belief that the access to actuality is not such via social development like language, consciousness, as well as shared meanings. In comparison with the positivist research, the emphasis suggested that interpretive researchers start out with the belief that access to reality is only through social constructions such as language, consciousness and shared meanings. In comparison with the positivist research the interpretive research is completely complicated about the human sense or human meanings that make of events. As

suggested by Franklin, 2012 the laboratory tests, formal theorem proof, and case situations, are few of the research techniques that are used within the positivist basis however the action research, grounded theory, ethnographic studies, case studies as well as Meta studies are used within the interpretive research.

### *Data collection*

---

The data will be gathered by the means of secondary data sources such as online sources, books, the updated journals, magazine, business reports as well as newspapers. Dataset from company to analysis it ....etc.

### *Qualitative research*

---

This study's objective is to understand customer reactions upon interacting with the E-CRM application. Through this methodology, the system static processes can be and corrected with an aim of making it flexible (Dyché, 2002). The study will be objective to the reactions of the customer after using E-CRM application. Under this realization, the qualitative approach thus allows the possibility of developing flexibility (Dyché, 2002). Through the utilization of the integrated approach, scientific method complements the qualitative approach. The scientific method acts as a bridge between the qualitative and quantitative designs. The qualitative design helps in developing a research question that will enable the researcher to design and test the hypothesis (icets&Kachidze, 2012). The rationale for our research is the effect of intelligent E-CRM applications on customer feedback.

The qualitative research is the technique that is actually linked with the social constructivist method that focuses on the socially developed nature of the reality. It is all about recording, studying and trying to uncover the more in depth meaning and importance of the human attitude and experience, consisting of the contradictory attitudes as well as the emotions. (Franklin, 2012)

### *Quantitative research*

---

### *The process*

---

The technique by the qualitative researchers seems to be inductive that is that they create a theory or tend to see for a sequence of meaning based on the data that they have gathered. This consists of a move from the particular to the general and is usually termed to be a bottom-up technique. But most the research projects also consist of a particular extent of deductive justification. (Berg 2009)

### *Secondary research*

---

The secondary data is termed to the data that is gathered by someone other than the user. The common resources of the secondary data for the social science consists of the census, the company records as well as the data that is gathered with the assistance of qualitative techniques or the qualitative research. The basic data in comparison is gathered by the investigator who is performing the research. The

secondary data study helps in saving time as well as money for the researcher (Berg 2009)

### *What level of risk is your research?*

---

There is no harmful thing or danger when doing the secondary research. The one thing that the researcher has to be cautious is with respect to being prejudiced. The researcher must be objective with the secondary stated things and should abstain from being non-partial in any situation.

### *What are the ethical implications of proposed research?*

---

The research will be done in such a way that the researcher complies with the ethical guidelines of the University. The research shall not may any harm to the respondents of the research or any other person that assist in the research. For example, any knowledge that is taken from this research shall be considered as confidentially and not to be provided for usage to any state of affairs.

### *Summary*

---

This proposal suggests different way in using E-CRM to enhance performance of the online companies in presenting services to the customers, special the online shopping companies. Here the proposed research could find new methods in managing the shopping web sites using technical management instead the traditional methods. Moreover, this proposal increases the confidence between the company and



the customers to get the customer loyalty and therefore increase the quantity of selling. (Grover 2011)

Knowing the customer's requirements at every stage of the purchase would assist the organizations to tailor their E-CRM aspects in respect to the requirements and enhance the customer purchase intention when purchasing the services or products online. Surely, on the Internet, clientele who are displeased may easily move to any other service provider, therefore customers have to at least be pleased with the service previous to making a choice to revisit. Afterward, better service quality and confidence will impact his/her intent to revisit and/or to stay loyal. (Grover 2011)

## References

---

- Berg, Bruce L., 2009, *Qualitative Research Methods for the Social Sciences*. Seventh Edition. Boston MA: Pearson Education Inc.
- Franklin, M.I. (2012). *Understanding Research: Coping with the Quantitative-Qualitative Divide*. London and New York: Routledge.
- Grover L., (2011), "Effective Customer Relationship Management through E-CRM", IILM Institute for Higher Education, pp. 2-8.
- Harkut, Sadar, (2010), "E-CRM – in the Insurance Industry using Adaptive Neuro Fuzzy model", INDIA: S.G.B A. University, pp.3-5.
- Kelley, Gilbert, Mannicom, (2003), "How E-CRM can enhance customer loyalty", United Kingdom: University of Surrey, Guild ford, Surrey, pp3-7.
- Kim, Zhao, Ycmg, (2008) "An Empirical Study on the Integrated Framework of E-CRM in Online Shopping: Evaluating the Relationships Among Perceived Value, Satisfaction, and Trust Based on Customers' Perspectives", Korea: eonguin University, china: jiangxi Normal University, pp.5-9.
- Liljefors, (2011), "The Use of eCRM to Enhance Customer Relationship: The Case of Toyota mahanakkorn", Sweden: Malardalen University, pp4-7.
- Pierre Hadaya and Luc Cassivi (2009) Collaborative e-product development and product innovation in a demand-driven network: the moderating role of eCRM. *Electronic Markets* 19(2-3) 71-87.
- Pitta, D., Franzak, F., Fowler, D., 2006. A strategic approach to building online customer loyalty. *UK Journal of Consumer Marketing* 23 (7): 421-429.
- Reichheld, F.F., Schefter, P. 2000. "E-loyalty: Your secret weapon on the web", *Harvard Business Review*, p 105-113.

Romano, Nicholas C. and Fjermestad, Jerry L. (2009) Preface to the focus theme on eCRM. UK Electronic Markets 19(2-3) 69-70.

Reichheld, F.F., Markey, R.G., Hopton, C., 2000. E-customer loyalty-applying the traditional rules of business for online success. European Business Journal, 12 (4): 173–180.

Sirdeshmukh, D., Singh, J., Sabol, B. 2002. "Consumer trust, value, and loyalty in relational exchanges," London Journal of Marketing, 66 (1): 15-37.

Tarokh, Majidi, (2010), "Application of Customer Relationship Management in Airline Industry" , Iran: University of Technology, pp1-6.

Yujong Hwang (2009) The impact of uncertainty avoidance, social norms and innovativeness on trust and ease of use in electronic customer relationship management. Electronic Markets 19 (2-3) 89-98

### Online Resources

- Hoque, T. "*Novotel Hotel World Trade Centre, Dubai, UAE*" <<http://www.wbiconpro.com/14.Harkut>>, [Accessed online]: 7 February 2013.
- TeerthankerMahveer University, <[http://www.tmu.ac.in/pdf/final\\_inner\\_07](http://www.tmu.ac.in/pdf/final_inner_07)>, [Accessed online]: 7 February 2013.
- University of Wisconsin La Crosse, <<http://www.uwlax.edu/is/Yang/research/E-CRM>>, [Accessed online]: 8 February 2013.
- Kelley L., <<http://colinwatsonleeds.co.uk/RMarticles/LEEKeeley>>, [Accessed online]: 10 February 2013.
- <<http://www.iriboffice.ir/LinkClick.aspx?fileticket=Mf6hQTv0bzw=>>>,[Accessed online]: 10 February 2013.
- <<http://www.wbiconpro.com/>>, [Accessed online]: 11 February 2013.

- <<http://academic-conferences.org/ecrm/ecrm2013/ecrm13-call-papers.htm>>,[Accessed online]: 11 February 2013.