

DOI and e-CRM of licensed commercial banks: The literature review and future research propositions

Dilogini K^{*a} and A Pushpanathan^b

^aLecturer, Department of Marketing, University of Jaffna

^bSenior Lecturer, Faculty of Business Studies, Vavuniya Campus, University of Jaffna

*dilo.kuru@yahoo.com

Introduction

In 1962, Everett Rogers, Professor of rural sociology published a theory for the adoption of innovations among individuals and organizations from over 508 diffusion studies. Under this theory of innovation diffusion (DOI), there are four fundamentals: innovation, communication channels, time and a social system. Thus, diffusion is the process by which an innovation is communicated through specific channels over time among the members of a social system. Nowadays customer relationship management (CRM) is concerned with using technology in implementing relationship marketing strategies. Electronic customer relationship management (e – CRM) is the outcome of changes in traditional marketing by integrating technologies of new electronic channels such as web wireless and voice technologies and combines them with e-business application into the overall enterprise customer relationship management strategy. Banks are looking for new ways to increase their customer potentials and service quality via e-CRM (Sue, Fjermestad and Romano, 2004).

Apart from government banks, private owned licensed commercial banks play a significant contribution to the banking service sector. Therefore, they are converting their usual servicing facilities into innovative technology-based services to their customers (Das, 2013). There are a vast amount of banks attractively providing banking services. Hence, they needed to embrace applications of technologies into their activities.

Most of the researches have been conducted to test the technology-based marketing activities in CRM rather than testing what theory says about in the marketing activities in e-CRM. Even though, there is a lack of research or study about innovation diffusion application on e-CRM. At the same time, e-CRM and private banking system related studies are also not an accountable manner. This is the significant “knowledge gap” for this study. Especially, all previous researchers

have done a single area of innovation diffusion theory application studies, e.g., characteristics of innovation (Lee, Hsieh, and Hsu, 2011; Teo, Tan, and Wei, 1995). However, this study was reviewed and suggested future empirical research propositions of a complete theory of innovation diffusion applications in e-CRM in private owned licensed commercial banks. Especially, relationship through the electronic is needed to be considered and evaluated whether innovated or diffused? Because of knowing these aspects can help in finding the appropriate solutions. The problem statement of this study is “To what extent an innovation diffusion theory (DOI) applied on electronic customer relationship management (e-CRM) in private owned licensed commercial banks?” (Cooper and Schindler, 1998). Therefore, the research objectives are to diagnose the literature and establish the future propositions for the relationship between diffusion of innovation theory (DOI) and e-CRM of private owned licensed commercial banks.

Literature review

Rogers’ diffusion theory mostly deals with technology implication in advanced education and environment related to education (Medlin, 2001; Parisot, 1995). “Technology” and “Innovation” are used as synonyms by Rogers as diffusion research includes innovation in terms of technology. There are two parts in technology: Software which is information based tool and Hardware which is visible objects in terms of technology. Communication is defined as it is a set of the process which helps the users to share ideas and information from one person to another for common realization. Channels are used between sources in the communication process (Sahin, 2006). Diffusion is one kind of communication which consists of innovation, two individual or units of adoption and channels as communication elements. Rogers (2003) stated that most behavioral researches do not consider the time aspect and time dimension in diffusion is illustrated as strength. A time dimension is included in the innovation-diffusion process, adopter categorization, and rate of adoptions. Murray (2009) stated that the potential adopters decide to adopt or reject an innovation after analyzing the innovation. However, time, energy, and careful consideration are required to decide on the adoption or rejection of innovation for the potential adopter. Individuals’ innovativeness as the primary criterion for categorizing adopters is affected by the nature of the social system. Rogers defined that categories of adopter are meant as the classification of individuals in a social system in terms of innovation. Rogers (2003) defined that individuals in each category are similar in terms of innovativeness. Innovativeness means to what extent individuals adopt innovation with other groups in the social system.

Summary of the variables of Innovation Diffusion Theory (DOI) and Electronic – Customer Relationship Management (e-CRM) have been shown in the following

tables (Table 1. and Table 2.). From first to last, researchers tried to summarize all the referential sources of the current research topic.

Table 1. Innovation Diffusion Theory

Variables	Dimensions	Sources
Innovation	1. Relative advantage 2. Simplicity 3. Compatibility 4. Trialability 5. Observability	(Everett Rogers, 2003; Teo, Tan and Wei, 1995; Murray, 2009)
Communication channels	1. Mass media channels 2. Interpersonal channels	(Everett Rogers, 2003; Murray, 2009)
Time	1. Knowledge 2. Persuasion 3. Decision 4. Implementation 5. Confirmation	(Everett Rogers, 2003; Murray, 2009)
Social system	1. Innovators 2. Early adopters 3. Early majority 4. Late majority 5. Laggards	(Everett Rogers, 2003; Murray, 2009)

Table 2. Electronic-customer relationship management

Variables	Dimensions	Sources
Pre-purchase e-CRM features	1. Site customization	Khalifa and Shen (2005)
	2. Membership	(Khalifa and Shen, 2005; Pan and Lee, 2003)
	3. Site information	Khalifa and Shen (2005)
At-purchase e-CRM features	1. Privacy/Security	(Khalifa and Shen, 2005; Theron and Terblanche, 2010)
	2. Payment methods	(Khalifa and Shen, 2005; Das, 2013)
	3. Product or service customization	(Khalifa and Shen, 2005; Jutla, Craig and Bodorik, 2001)
Post-purchase e-CRM features	1. FAQs	(Khalifa and Shen, 2005; Sheth and Solomon, 2014)
	2. Problem-solving	(Khalifa and Shen, 2005; Pan and Lee, 2003)
	3. Online feedback	(Khalifa and Shen, 2005; Romano and Fjermestad, 2003)

Methodology

Robust theoretical and conceptual frameworks can be developed by incorporation of constructs from different research traditions and disciplines (Douglas et al.,1994). Researchers have reviewed the past literature on Innovation diffusion theory associated with electronic customer relationship management along with underpinning aspects. Webster and Watson (2002) stated that an adequate review facilitates theory development, closes areas where a plethora of research exists, and uncovers areas where research is needed. They strongly suggested a systematic and structured approach in search and review in writing sound information system literature reviews. Therefore, researchers have conducted an exhaustive and systematic electronic search using bibliographic sources with keywords such as “Innovation diffusion theory in online banking”, “Innovation diffusion theory in e-banking”, “Innovation diffusion theory in electronic customer relationship management” and “Electronic customer relationship management in banks” in our literature search and analysis. A total of 150 electronic copies of articles were identified from 1962 to 2018 from digital libraries and online databases also, more or less 30 articles in the area of DOI in e-CRM were concerned in this current study.

Results and Discussions

Early in 1995, Teo, Tan, and Wei have studied that the innovation diffusion theory provides a basis on which factors promoting electronic financial data interchange (EDI) adoption could be identified. However, they have suggested that financial EDI being an inter-organizational system; its potential benefits can only materialize if it is widely accepted by organizations. In 2016 Buc and Divjak have done a study on environmental factors in the diffusion of innovation model: diffusion of e-learning in a higher education institution and they indicated the time required for the initial part of the process, before making a decision on the adoption of innovations depends on the potential absorption capacity of the organization to accept innovation. Moreover, also another study had done by Cheng, Kao, and Lin (2004) on the topic of an investigation of the diffusion of online games in Taiwan: An application of Rogers’ diffusion of innovation theory. They recommended that the future research should concentrate on the perceived attributes of the innovativeness of online games as a modern entrainment device, such as their relative advantages, compatibility, trialability, observability, and complexity. Same like, Diffusion of innovation theory is modified and applied in the study on 3G services adoption among university students to achieve the objective (Ong, Poong and Ng, 2008). The relationship between innovation and performance has been identified by Ferreira, Lusía and Dodinho and Manuel (2005). As per Roberts and Raphael (2007), Innovation is quickly adopted among the competitive banks.

Most of the innovation activity is created in related to ideas from outside the crucial firm. This study gives more importance on the relationship between innovation and competitive advantage. The effectiveness of Information technology in Indian banking sector has been analyzed by Jha, Gupta, and Yadav (2008). This study reveals that Indian banking sectors are vastly adopting the technology access, Upgradations, and innovation in its different functions. For these reasons, the following propositions were formulated:

Proposition 1: *There is a significant relationship between diffusion of innovation and e-CRM of private owned licensed commercial banks.*

Proposition 2: *Innovation has a significant impact on e-CRM of private owned licensed commercial banks*

Zhang, Yu, Yan, and Spil (2015) have done a case study in a primary care clinic using diffusion of innovation theory to understand the factors impacting patient acceptance and use of consumer e-health innovations. That study has been concerned about e-health innovation and e-appointment scheduling services. Finally, researchers have listed out the factors which contribute to the low the adoption rate. They are insufficient communication about the e-appointment service to the patients, lack of value of the e-appointment service for the majority of patients who could easily make phone call-based appointment. There are limitation of the functionality of the e-appointment service, incompatibility of the new service with the patients' preference for oral communication with receptionists and the limitation of the characteristics of the patients (low level of Internet literacy, lack of access to a computer or the Internet at home and a lack of experience with online health services).

There were different studies about customers' online banking technology acceptances and the significant part of the relevant information offerings (Pikkarainen, Pikkarainen, Karjaluo and Pahnla, 2004). According to Abu-Shanab and Anagreh (2015), e-CRM is the latest important exhortation within the business domain and is perceived as one of the effective tools in the banking sector. Reaching out to the right customer with a right service at the right time through the right means is the only way to beat out the competitors and to survive these days. Through the study on the impact of technology on competitive marketing by banks: A case study approach, Masocha, Chilya and Zindiye (2011) suggested that the personal contact which has been eroded by the arrival of technological marketing can be fully replaced by the use of such methods and the result is long-term customer relationships. Without sidelining the traditional communication methods such as the radio and TV, these only need to be massively used, and the effects are also substantive. The study on information and communication technology and banks profitability in Nigeria recommended that more attention has to be directed

towards the use of Information and Communication Technology in banking operations. Because the industry serve as a wheel of the Nation's economy while appropriate policies must be put in place to ensure proper monitoring and the determination of the optimum size required to attain organizational efficiency (Agbolade, 2011).

Sue Scullin, Fjermestad and Romano (2004) have done a study on the topic of e-relationship marketing: changes in traditional marketing as an outcome of electronic customer relationship management and they indicated that Call centers are evolving into e-contact centers with the help of eCRM. Marketing managers have a wealth of eCRM tools available to them to help them achieve their goals and objectives. Together eCRM and marketing managers can successfully implement new products, launch new marketing campaigns, and satisfy customer needs and wants. There were some studies regarding e-CRM in banks and its importance on survival in the technology era. Mishra and Dey (2013) have discussed customer-centric banking services, and they have indicated that marketing of banking services includes organizing the right activities related to right services to the right people at the right time at the right place and with right communication and promotion. Therefore, communication and time concern are positively influenced on the betterment of customer relationship management, especially in e-CRM. In the circumstances of the proliferation of electronic devices, consumers are adopting electronic banking technologies. Kolodinsky, Hogarth, and Hilgert (2004) have done a study about US consumers' e-banking adoption. Researchers discussed the differences in individual's characteristics influence on measures regarding adoption of diffusion of innovation. Therefore, the social system of a specific context categorically influences on adoption of electronic banking activities. From the above discussions, the following propositions were developed:

Proposition 3: *Communication channels have a significant impact on e-CRM of private owned licensed commercial banks*

Proposition 4: *Time has a significant impact on e-CRM of private owned licensed commercial banks.*

Proposition 5: *the Social system has a significant impact on e-CRM of private owned licensed commercial banks.*

Therefore, the proposed model is presented here below:

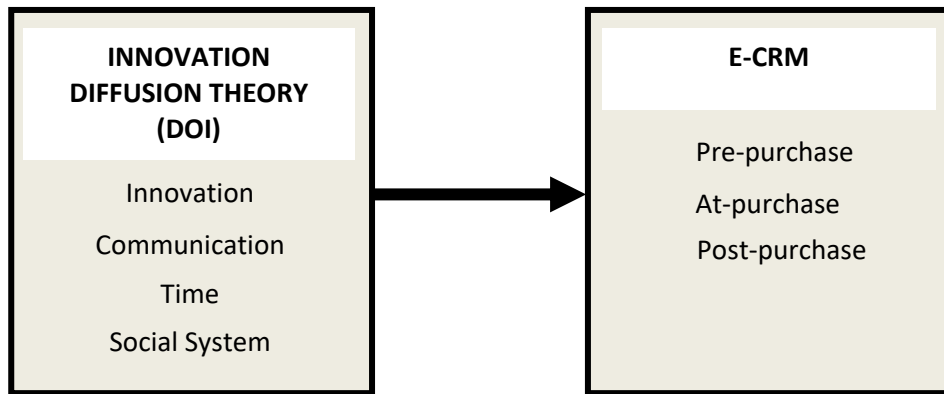


Fig. 1. Proposed model for the relationship between DOI and e-CRM

Conclusions

Based on the literature, five propositions are concluded and waiting to be tested. We can gain a stronger empirical foundation of application of innovation diffusion theory in e-CRM and may answer the propositions summarized in the paper, which therefore contribute to better understanding of DOI in e-CRM practice. The research framework is one of the very first studies which incorporates direct variables from the literature of DOI and e-CRM. The dimensions of the critical drivers are carefully identified and analyzed. Indeed, this integrative framework advances electronic banking research. Also, this research suggested that theory proposed by Everett Roger can be integrated into one framework so that the understanding and prediction of diffusion of innovation (DOI) with e-CRM is far more comprehensively grounded than by using only one line of research. This can move us towards a more wide-ranging understanding of the diffusion of innovation with e-CRM.

Recommendations

To conclude, these future propositions provide integration of existing research and a springboard for future systematic research in the area of innovative e-CRM. Next, empirical testing is needed to validate the proposed research model and to examine the relative importance of dimensions and antecedents. The relative importance of dimensions of DOI with e-CRM could be an exciting area worthy of further investigations.

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