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**E-BUSINESS IN SRI LANKA: CUSTOMER PERCEPTION ON VALUE CREATION IN TRADE
SECTOR**

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Abstract

E-business has emerged as a pioneering paradigm of present-day trade, with intense advancement of information and communication technology (ICT). This growth in ICT has used to deliver main activities in trade namely buying or selling, promotion, customer communication, and market studies, using various methods of ICT, which involves simple to very complicated processes. However, all these processes in trading activities has to design to achieve one goal in order to be effective, that is to achieve customer satisfaction (preferably customer loyalty), by creating value to customer. Value creation is producing product or service that meets customer demands, which involves innovation and new product or service or process development intends to create prominence to customers and ultimately stakeholders. These value propositions delivered through internal operations in e-business, namely novelty, lock-in, complementarities, and efficiency, have limitedly researched in Sri Lanka. This research statistically validates a model of e-business value creation, based on data drawn with interviews and structured questionnaire referring to these four tactics. The study, with explanatory purpose and survey strategy was carried out in 2018 covering 183 e-business customers in trade sectors in Sri Lanka to achieve three research objectives: identify sources of value creation, examine customer perception on created value, and identify association between value creation and value drivers. Mix research method was employed for data collection and analysis to ensure achievement of these research objectives. The results demonstrates that characteristics of the core product is more appropriate than complementarities in e-business to create value in trade sector, as customers generally concern on what to purchase in number of viewpoints, and then only they look at combined value of purchasing bundle of goods together against total value of having each of the goods separately. The research also acknowledges interconnectivity of these four perspectives in strengthening value creation in e-business.

Keywords: e-business, drivers of value creation, operations, Sri Lanka trade sector

Introduction

E-business has emerged as a pioneering paradigm of present-day trade, with intense advancement of information and communication technology (ICT). This growth in ICT has used to deliver main activities in trade namely buying or selling, promotion, transportation and storage, customer communication, and market studies, using various methods of ICT, which generally involves simple to very complicated processes (Ark & Jong, 2004). ICT has changed the political, economic, social, and technological environment by bringing intense changes in the way organizations function. In particular, new developments in ICT have contributed to alter organizational structures, business models, operations and performance evaluation, knowledge management, training methods, etc. E-business is one of its business effects, which has arisen with these developments. However, all these processes in trading activities has to design to achieve one goal in order to be effective, that is to achieve customer satisfaction (preferably customer loyalty), by creating value to customer. Value creation is producing product or service that meets customer demands, which involves innovation and new product or service or process development intends to create prominence to customers and ultimately stakeholders.

E-business applications and processes include online buying and selling, business communication, promotion, getting business information, online banking and dealing with the government (such as online tax payment) (E-business Development, 2015), and managing customer and supplier

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relationships, which enables the business to differentiate themselves and compete distinctively by adopting innovative uses of ICT in the business model. The term e-business was initially crafted in a thematic campaign by IBM in (1997) and subsequently defined as ‘a secure, flexible, and integrated approach to delivering differentiated business value by combining the systems and processes that run core business operations with the simplicity and reach made possible by Internet technology’ (<http://www.ibm.com>)

Contemporary Sri Lankan business organizations in trade sector tend to use the concept of e-business to strengthen the businesses’ role, to make operations more effective and effective. E-business leads application of ICT infrastructure to ‘launch’ products and services, which involves a radical redesign of the activity system (Amit & Zott, 2012). It involves principles of wide range of disciplines such as commerce and management, ICT technologies, psychology, knowledge engineering and innovations, which transform e-business among ‘technology-based’, ‘human-based’, and ‘transaction-based’. Therefore, organizations are obviously challenged in implementing and executing e-business, particularly their ability to excel significant technical, managerial, and human or cultural issues (Sato, Hawkins, & Berentsen, 2001). It is quite exciting to determine how these e-businesses deliver value in these combined systems. However, the focus for assessing this value creation in e-business is still rarely done, but much interesting and vital to investigate, as radical changes are occurring in local trade sector. In this context, how e-business creates value is the central focus of this research. This question can be best addressed by considering the nature of the business process, characteristics of the users, and technology aspects in e-businesses. Therefore, the research undertake following objectives supplementary:

1. To identify drivers of value creation in e-business
2. To examine how value is created in e-business in trade sector
3. To identify the association between value creation and value drivers

Literature Review

It is important to review the concept of e-business and concept of value creation to completely understand value creation in e-business. This section review prior researches on e-business in value creation perspective.

E-business

Development and evolution of internet, has arisen as e-business, e-commerce, e-banking, e-procurement, e-government, etc.in business world, which are exceptional channels regarding rich content, unrestricted access, and improved interactivity. E-business keeps on transforming the rules of competition for established businesses and provide opportunities for start-up companies in highly competitive business fields (E-business Development, 2015).

E-business is synonymized as Electronic business, web shop, CBT (computer-based trading), online trading, Internet-based trading, web-based trading, and online business. The concept is termed with various terminologies like e-business, e business, E- Business, and e-Business, which might use interchangeably throughout this research also. E-business can defined as the use of the internet to network and empower business processes, electronic commerce, organizational communication and collaboration within a company and with its customers, suppliers, and other stakeholders (Combe, 2006). E-business utilizes various forms of ICT like the Internet, intranets, extranets, and information systems to support its business processes digitally. Electronic commerce (also termed as e-commerce) is buying and selling, marketing and servicing of products and services via computer networks, which overlap with e-business as it also includes process of transacting with suppliers and customers (Combe, 2006).

The internal and external connectivity of e-business enables companies to become more efficient with low costs, productivity increase, faster accomplishment of business goals (E-business Development, 2015), improvement of responsiveness to customer needs, businesses communication, and customer and supplier relation (Beheshti & Salehi-Sangari, 2007), time-shifting, space-shifting,

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off-shore operations, and conducting stress-free market researches (Laudon & Laudon, 2014). These have been discussed under benefits, advantages, drivers, and motives for e-business.

There are different e-business models like storefront model, auction model, portal model, dynamic pricing model, B2B exchange, B2B service providers, online trading and lending models, recruiting on the web, online news services, online travel services (Beheshti & Salehi-Sangari, 2007), and its further evolving. These e-business business models use ICT to ensure flexibility and efficiency, improve operations, improve resource usage (labor, paper, data entry, communications by using voice over internet protocol), improve deliveries by reducing lead times and cost, improve business relations with stakeholders, improve cooperation with business partners, easier business research, analysis and forecasting, and home and international market development (Beheshti & Salehi-Sangari, 2007; E-business Development, 2015), that are challenging to achieve with conventional business models.

Therefore, it is obvious that e-business is not just technology; it combines technology, business processes, and organizational aspects in an innovative way to operate and reach the customers (E-business Development, 2015). This in a way attractive to the both businesses and customers due to the benefits that can gain; and challenging for businesses to maintain and sustain due to complexity and propagation.

Value drivers of e-business

E-business has the potential of transforming the operations and rules of competition even for an established business in unique ways. It revolves around impacts on business performance with the concepts of source of superior performance and innovation, hence value creation. Value is created through efficiency of internal operations and ultimately determined by the beneficiary, the customer. Value is now seen as a multidisciplinary approach required to satisfy customer requirements (Vargo, 2009). For many years, researchers in e-business have investigated drivers for value creation. Amit and Zott (2001) discuss drivers of value creation based on four interrelated value drivers namely novelty, lock-in, complementarity, and efficiency (Figure 1). They further suggested that using digital platform to conduct business could enhance value creation in these four drivers. However, these value propositions delivered through internal operations in e-business, have limitedly researched in Sri Lanka.

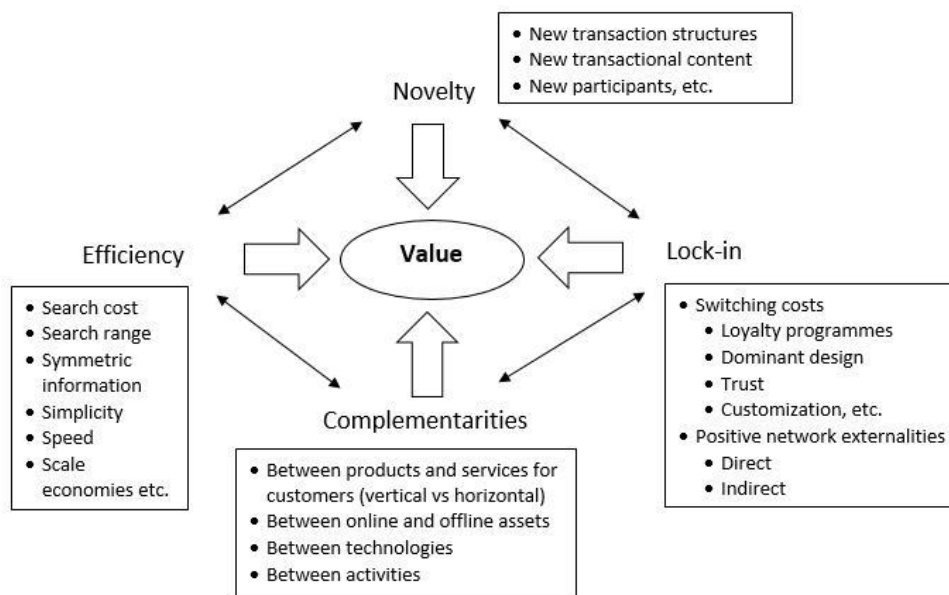


Figure 1: Drivers of value creation in e-business (Amit & Zott, 2001)

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According to Amit and Zott (2001), novelty can define as fulfilment of existing or new customer needs by combining existing techniques, tools or knowledge in a new way. ICT can hence combine with existing business processes to create value, through either new business models or new use of existing models. E-business create opportunities for innovation (novelty) in terms of new products and services, new product features, customer driven pricing, first mover advantages, new transaction mechanisms, customized information directly to customers, and interactive dialogue with the customer (Alawneh, & Hanna, 2014). Examples of e-business adding value through novelty in trade sector includes introducing innovative product or service features, business model innovation, customized communication with customers, etc.

Lock-in driver of e-business value creation is defined as allowing providers to create a competitive advantage through actual and/or perceived user switching costs, hence enhancing the attractiveness of their business (Amit & Zott, 2001). Lock-in creates value through direct incentives, high levels of trust and reliability, and more network effects capabilities. As far as customer retention (lock-in) is concerned, e-business contributes lock-in with personalized or unique products and services, access to more information or knowledge, maintain sustain trustworthy relationships, create obstruct to switch seller, and create loyalty programs and virtual communities (Alawneh, & Hanna, 2014). Common examples of e-business adding value through lock-in in trade sector includes customers to interact and share their experience, recommend the business to others, offer personalized products or services, and offer loyalty programmes and coupons.

Complementarities can be defined as provision of value beyond core, basic and expected attributes of a product or a service (Amit & Zott, 2001), through bundling of products and services that will lead to accrue more value. Complementarities indicate the degree an e-business contribute to value creation with wider product variety, product bundling, simplify buying process for the customer, collaboration between partners (inter-firm transactions), and integration of business activities in value chain (Alawneh, & Hanna, 2014). Common examples of e-business adding value in trade sector through complementarities include recommended products based on vertical and horizontal extension, consider different payment mechanisms in purchases (i.e. MasterCard, VISA or American Express, eZ Cash, mCash, and Mobitel Add-to-Bill), product bundling.

Efficiency can be defined as value creation through a decrease of the transaction costs in value chain activities of the business (Amit & Zott, 2001). Businesses gain efficiency through increase sales volumes, increasing product or service varieties or geographical reach, decreasing lead time, number of intermediaries, number of errors or returned goods, and therefore decreasing overall cost to the customers in e-business (Alawneh, & Hanna, 2014). Common examples of adding value through efficiency in trade sector includes substitution of traditional purchases with digital technologies through online purchases and payment, provision of instant information and communication, etc.

Value is now seen as a measure to assess the extent to which a product or service has succeeded, as value is created through efficiency of existing operations or ensuring effectiveness through new business processes. Therefore, the literature acknowledge the usage of ICT in business operations consequently improve the business performance; hence enhance the value created by the organization. According to Vargo (2009), value creation has multidisciplinary approach that is required to ensure customer requirements are satisfied (the beneficiary, the customer always defines value). Comprehensive understanding of e-business value creation, by considering each of these four drivers in value creation (Amit & Zott, 2001) is therefore require to explore each of these drivers and their relationships.

Research Methodology

Theoretical framework use this research is based on a value creation model originally proposed by Amit and Zott (2001), consist of four value drivers of the namely novelty, lock-in, complementarities and efficiency. Preliminary study with five open-ended questions was conducted among 18 respondents to assure applicability of the framework in Sri Lankan trade sector (as the original framework was developed based on e-business companies in the USA in 2001-2002). Few additional sub-elements were included under each component in e-business value creation referring to

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preliminary study and empirical studies (Alawneh, & Hanna, 2014; Zaborek, Doligalski, & Sysko-Romańczuk, 2016)

Novelty	Complementarities
<ol style="list-style-type: none"> 1. New/innovative products, services, and information 2. Presentation of new features and properties for services and products 3. Re-structuring of transactions and processes 4. Impact on sales/services/marketing 5. Impact on internal operations 6. Impact on coordination and customer communication 7. Market studies 8. New structuring of transactions 9. New methods of working, distribution and marketing 	<ol style="list-style-type: none"> 1. Bundling wider and variety products and services 2. Complete service solutions 3. Combination of online and off-line transactions, resources and capabilities 4. Integration of activities or processes 5. Changing business relationships in value chain 6. Access to products and services that are complementary to primary product or service of interest
Lock-in	Efficiency
<ol style="list-style-type: none"> 1. Personalization 2. Virtual communities 3. Trustworthy relationships 4. Affiliate or loyalty/fidelity programs 5. One focal contact point 	<ol style="list-style-type: none"> 1. Overall costs 2. Speed of transactions 3. Transparency of transactions 4. Ease of access to potential transaction 5. Degree of automation 6. Volume of services 7. Breadth and depth of information and services provided 8. Global market reach 9. Lead times 10. Errors and returned financial transactions

Figure 2: Proposing Novelty-Lock-in-Complementarity-Efficiency drivers for value creation in e-business

The research uses mixed research method of collecting both numerical and descriptive data with a descriptive survey strategy. Data for this study were extracted from respondents selected from purposeful sampling, who habitually engage in purchases with locally established e-businesses. The rationale for sampling strategy was to ensure relevance, reliability, credibility, and richness of data collection; and scope been locally established e-businesses was to discuss related ICT developments in local context. Four hypothesis were formulated considering each driver in e-business value creation, to investigate the value creation factors in e-business.

- H1 : There is significant effect from novelty for value creation in e-business
- H2: There is significant effect from lock-in for value creation in e-business
- H3 : There is significant effect from Complementarities for value creation in e-business

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H4 : There is significant effect from Efficiency for value creation in e-business

Data was collected with a questionnaire (created in English) with structured questions in year 2018 (cross-sectional in time horizon). Five-point-likert scale was selected, which appears to be less confusing (scale values: 1=Very low, 2=Low, 3=Moderate, 4=High, and 5=Very high), hence expecting high response rate. The data analysis is based on SPSS and manual mapping to identify the effect of each of the driver in value creation and level of ultimate value creation.

Results and Evaluation

Data was drawn with interviews and structured questionnaire based on validated sub-e drivers relate to e-business value creation during April to June 2018. Respond rate was 76.25 (total of 183 responded from 240 distributed questionnaires). The collected data was analyzed based on SPSS version 21 (Table 1) and mapping relationship manually to reveal the value creation practices in e-business. The questionnaire data set has been tested with Cronbach’s Alpha for internal consistency before applying for analysis. For the results to be reliable, the variables have to obtain values greater than the cut-off value of 0.7, as suggested by Nunnally (1978). Value creation in e-business was assessed based on four drivers, namely novelty, lock-in, complementarities, and efficiency (Amit and Zott, 2001). Data analyzed in SPSS produces alpha coefficient of reliability of 0.823, suggesting that the items have relatively high internal consistency. The values have been further proved to be reliable and each of four drivers are essential for the analysis of value creation in e-business (alpha coefficient of reliability values for novelty is 0.875; lock-in is 0.774; complementarities is 0.825; and efficiency is 0.813). Calculated p-value under each driver been lesser than 0.05 (statistical significance, α of 5%) concludes that variables can be considered as applicable factors in e-learning value creation (statistical significance, α value for novelty is 0.0287; lock-in is 0.0227; complementarities is 0.0382; and efficiency is 0.0313). Thus research model with four hypothesis, got accept indicating there is a significant effect of novelty, lock-in, complementarities, and efficiency sub-elements on creating value in e-business.

A model of regression was run separately, for each hypothesis based on each of the independent variables (novelty, lock-in, complementarities, and efficiency). Accordingly, examined the coefficients of the causal relationships between constructs, which would validate the hypothesized effects.

Table 1: Summary of Statistical Analysis

	Mean	Std. Deviation	Std. Error Mean	Mean Difference	Std. Error Difference	t-Value	Regression coefficient β
Novelty	4.0512	0.78415	0.05837	0.32641	0.13254	2.46273	0.754
Lock-in	4.3274	0.72136	0.05917	0.35994	0.16248	2.21529	0.743
Complementarities	4.5785	0.84521	0.06359	0.27631	0.13047	2.11780	0.777
Efficiency	4.7821	0.80153	0.06236	0.29584	0.12531	2.30865	0.842

E-business value level perceived by the customers reflected with four drivers, namely efficiency, complementarities, novelty, and lock-in was 0.870 ($R^2=0.870$). This can be interpreted that 87% of the e-business value level is referred directly with efficiency, complementarities, novelty and lock-in, while still 13% of e-business value level might be attributed indirectly to other tangible or intangible

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factors such as, customers' trust, satisfaction and commitment with the services, customers' experiences and demographics, personal characteristics of customers, online customers' behaviors, technological factors, cultural factors, societal factors, etc.

Specifically, result shows that e-business value creation drivers namely novelty, lock-in, complementarities, and efficiency affect positively and significantly e-business value level ($p < 0.05$). According to β novelty accounts for 75.4%, lock-in accounts for 74.3%, complementarities accounts for 77.7%, and efficiency accounts for 84.2% of the variance in e-business value level as perceived by the customer (regression coefficient, β value for novelty is 0.754; lock-in is 0.743; complementarities is 0.777; and efficiency is 0.842).

Discussion and Conclusion

The main purpose of this study is to provide a context for better understanding of e-business value and how the drivers of e-business value creation are necessary for e-business performance in trade sector in Sri Lanka. According to e-business, efficiency, complementarities, novelty, and lock-in drivers contributes significantly and positively in enhancing e-business value creation as perceived by the customers. Table 1 further indicates that e-business customers have higher positive perception about the efficiency and complementarities than novelty and lock-in. Possible explanations for these findings can be: first, due to the fact that most of customers seeks some benefit in e-business purchases in trade sector, where high choice and competition exist locally. Efficiency and complementarities are perceived with more value in e-business in trade sector in Sri Lanka, which might have been attributed by their demographics, economical, and social contexts; second, considering that e-business orientation is towards offering more convenience and cost advantage while achieving the customer expectations. Hence efficiency and complementarities perceived more as e-business value, specially in the context of e-businesses arranging logistic activities for the customer; third, considering that financial capital, expertise and practices, new methods of operating, global market reach, wide chain of participants, and advanced ICT infrastructure which in turn lead providing new and innovative products, services, and operational capabilities, that are undoubtable valuable to in customer experience. Novelty and lock-in are perceived to be valuable, but not as critical as efficiency and complementarities, because the customers seek to satisfy a need in the most beneficial way, but not to seek most sophistication or availability of wide choices, get 'stuck' in one business considering loyalty schemes they can entertain.

The questionnaire revealed that most of the customers consider are highly concern (five-point-likert scale values 5=very high) on overall costs, speed and transparency of transactions, ease in access and transact, and breadth and depth of solution under efficiency; overall completeness of the solution, different combinations available to complete transactions, and integration of customer activities with businesses' under complementarities; new (but customer focus) in business models, overall improvements in business processes, and impact on internal operations and communication under novelty; and trustworthy relationships under lock-in. In this sense, the efficiency driver seems attracting more customers by creating more value in e-business and complementarities, novelty, and lock-in respectively. Therefore, managerial implication is to exploit ICT to adopt and implement e-business to exploit opportunities and remedy threats associate with the businesses value creation in trade sector in Sri Lanka.

The results also demonstrates that characteristics of the core product is more appropriate than complementarities in e-business to create value in trade sector, as customers generally concern on what to purchase in number of viewpoints (efficiency and novelty drivers), and then only they look at combined value of purchasing bundle of goods (complementary and lock-in drivers). This acknowledges the interconnectivity of these four perspectives in strengthening value creation in e-business.

The study further reveals that value creation in e-business in trade sector can best safeguard by continuously developing and improving business processes associated with these particular value drivers. Success in this respect requires some thorough rethinking on product or services as well as

business processes. In particular, it should be recognized that e-business operations are complex and competitive than regular business operations.

The findings of this study have important implications managers and practitioners in trade sector to answer the question of whether and how e-business investments can create business value, because it is not clear to them how this value is created, and what are the drivers that boost that value (Ark & Jong, 2004), also which of them is most important. This study is providing them with a set of practical recommendations for attaining high levels of e-business value by concerning on complexity and challenges value creation in e-business and subsequent delivery and capturing of value.

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