

# Potential of E-commerce in Vietnam

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**Abstract**—Electronic Commerce (EC) has affected the global economy in many variety ways; it has changed from the information technology to all the economic sectors, especially, the productivity growth worldwide. Besides, inside potentials of developing countries are motivations for development of E-commerce. The current research proclaims that total Internet users in Vietnam have soared 153% from 28 to 43 million people, in a span of just 5 years from 2009 to 2013. From figure above and fact explain why E-commerce market size in Vietnam not only does not stop, but also grow tremendously with much large potential. The purpose of the authors is to prove that Vietnam is one of the potential markets for E-commerce. From the collected surveys, the results show that about 75% of the online population is potential buyers and 45% people said that they purchase online goods at least than once a week; 76% surveyed people, who do not know about E-commerce before explanation of the authors desires to keep purchase online goods.

**Keywords**—Electronic Commerce, Potential, Viet Nam

## I. INTRODUCTION

The Internet in global has been developing rapidly, especially in Vietnam. Total Internet users in Vietnam have increased from 23 million to 33 million, in a span of just 5 years from 2009 to 2013 [1]. On average, online time of Vietnamese by desktop, laptop is 4 hour 37 minutes by smartphones; tablet is 1 hour 43 minutes [2]. At the end of 2013, there are 116 registered e-commerce website [3]. In 2013, Vietnam B2C E-commerce sales estimate [4].

From fact and figure above, the authors see that Vietnam have Infrastructure for E-commerce. Moreover, many Vietnamese want to purchase goods online for the first time [5]. That is the reason why Vietnam has potential for E-commerce. In this project, we study about potential of E-commerce.

We conduct survey for students of universities in Ho Chi Minh City who experience using E-commerce. They carried out the survey about the habit of buying things online and what the consumers concern most and reveal a surprising result. For each 80 people get access to the Internet, 19% of them do not know the E-commerce and 45% rarely use E-commerce.

However, 34% of respondents are willing to participate in E-commerce.

The rest of this paper is organized as follows. In section II, we briefly explain e-commerce and its terminology. We present data from our survey and how we analysis in Section III. Section IV will be our conclusion.

## II. BACKGROUND AND RELATED WORK

### A. Background

Electronic commerce (E-commerce) means electronic buying and selling on the Internet [6]. Two major forms of E-commerce are Business-to-consumer (B2C) and business-to-business (B2B). Why Business-to-consumer target consumer, business-to-business refer to one business sell its products to other business [7].

When we refer to e-commerce, many of us think e-commerce is buying thing on online store, website. In fact, buying thing on online store is only one aspect of e-commerce, Business-to-consumer (B2C). Business-to-consumer (B2C) is transactions conducted between consumers, who are end-users of its products, and businesses on the Web [8]. For example, when you buy a book on tiki.vn for you to read, then that is Business-to-consumer.

Business-to-business (B2B) is transaction conducted between businesses to other business [8]. That form of e-commerce is involving a manufacturer and wholesaler, between wholesaler and retailer [9]. The typical supply chains include much business-to-business transaction [9]. The simple example for business to business is candy manufacturers. Many ingredients are manufactured independently and the candy manufacturers must purchase this ingredient separately. Sugar, milk can be manufactured by sugar manufacturers, cattle farms, and sells directly to candy manufacturer or through other reseller.

As technology grows, there is new form of e-commerce, which is mobile-commerce. Mobile-commerce defined "the delivery of electronic commerce capabilities directly into the

consumers hand, anywhere, via wireless technology.” by Kevin Duffey at Global Mobile Commerce Forum. Some retailer offer mobile version of website which is customized for the smaller screen and limited user interface of a mobile device [10]. There are also content purchase and delivery on mobile such as wallpapers, games, ring-tone, and movies. The development of smartphones and tablet is increasing the purchase and delivery of full-length music tracks and video. The download speed of 4G allow customer to purchase and download a movies in few second [11].

Beside the development of E-commerce, the customers are still lack of knowledge about the payment methods. They tend to use the way of using credit card or purchasing online. However, some systems enable the customers to pay by alternative means, such as:

- Billing to mobile phone and landlines [12].
- Cash on delivery (C.O.D): A type of transaction in which payment for a good is made at the time of delivery. If the buyer does not pay, the good will be return to the seller. Cash on delivery is usually done through a shipping company, which delivery good to customer and collect their payment for seller. This type of payment is minimizing the risk of fraud, scam for both buyer and seller [13].
- Cheque or check
- Debit card: A payment system in which the payer authorizes the payee to take funds from his bank account. Typical examples are monthly premiums for an insurance policy, or electricity bill payments [14].
- Direct debit
- Electronic money
- Gift card
- Postal money order
- Invoice: a document sent to a buyer that specifies the amount and cost of products or services that have been provided by a seller. An invoice indicates what according to the buyer according to the payment terms of the seller must pay. Payment terms usually specify the period of time that a buyer has to send payment to the seller for the goods and/or services that they have purchased [15].

Because E-commerce helps those who live far away from the goods purchase them, product delivery is one of the most important aspect. One a payment has been accepted the goods or services can be delivered in the following ways:

- Downloading: this method is used for the digital products like software, music, movies, etc.
- Drop Shipping: the retailer does not keep any merchandise in stock. Instead, customer orders are sent to either the manufacturer or to a wholesaler that then ships the items directly to the customer [12].
- In-store pick-up
- Will call: the customer picks up the goods at the seller's place of business, primarily in North American commerce. It may also refer to the department within a business where goods are staged for customer pick up.

E-commerce has many advantages. That does not mean that it has no disadvantages. Beside its conveniences, the consumers have to face the fraud and security concerns.

- The Secure Sockets Layer are cryptographic protocols designed to provide communications security over a computer network [16]. It helps to solve the problem of the credit card number being intercepted in transit between the consumer and the merchant. Phishing is another danger.
- Phishing is the attempt to acquire sensitive information such as usernames, passwords, and credit card details (and sometimes, indirectly, money) by masquerading as a trustworthy entity in an electronic communication [17]. [18].
- Moreover, the lack of full cost disclosure is one of the concern of the online shopping.

### B. Related work

Today, there are many online retailer. Almost all of them allow consumer to reviews product on their site. It is good for consumer as well as retailer, because these consumer reviews will have great impact on purchasing behavior of buyer, as it have been show by K. Vimaladevi and Dr. M. Dhanabhakaym in "A Study on the Effects of Online Consumer Reviews on Purchasing Decision" [19]. Then the review can be share on Facebook, or Tweeter. Buyer will not have any difficulty in sharing their story, their experience due to the fact that many e-commerce is come with social media. Moving from B2C to Social Commerce: Case Study Zalora.com of four authors Nur Intan Md Dawot, Jenne Landan Song, Hasnatul Balquies Hashim and Ab Razak Che Hussin [20], the findings showed that any B2C commerce needs to move towards social commerce in order to leverage their business by applying all the social commerce design features that are necessary. Social commerce is a system that consists of four key components: business, technology, people and information [21].

Another ways to increase purchasing power is recommendation. One of the recommendation is k-nearest neighbor collaborative filtering based ones, which is known for its success in E-commerce nowadays [22] .

However, there are many challenges for development of E-commerce in global economy[23].

## III. METHODOLOGY

There are two surveys in this experiment. For the first survey, the authors decide to survey 79 students from two universities as University of Science and University of Economics in Ho Chi Minh City because of these reasons below. Ho Chi Minh City is the economic center of Vietnam and accounts for a large proportion of the economy of Vietnam. Although the city takes up just 0.6% of the population of Vietnam, 2013, GDP (Gross Domestic Product) of the city grew 7.6% by quarter 1, 8.1% by quarter 2 and 10.3% by the end of quarter 3. By the end of 2014, the city's GDP grew 9.5%; with GDP per capital reach \$5100. [23] Besides, in 21st century, information technology (IT) is growing faster and used by a lot of people and businesses. In most businesses,

IT is implemented as a tool to execute their business, to interact with customers and to promote the organizations product. This data set is chosen because these majors of these students help the experiment be more accurate and general. The second survey is used to survey 90 people, who do not have knowledge about E-commerce, because they help the authors know about awareness of almost Vietnamese and after the authors introduce and explain how to purchase online goods to prove the lack of knowledge about the Internet does not prevent them from being aware of and using E-commerce.

For the first survey, the experiment is implemented through Google Form, which is supported by Google Inc. Prior to diving into the manner of setting up the questions in the surveys; the knowledge about Google Form should be sharpened. Google form is a tool of Google that help users create a form to get information from the others online through a link. The first advantages of this application are free and it is easy to construct a list of questions and distribute the subjects for analyzing, etc. Secondly, with this application, people can build up a questionnaire quickly by clicking and typing and then send the surveys via email to many subjects on the Internet instead of writing questions down to a paper and then doing some photocopying before sending that questionnaire to the subjects by hand. But, because the second survey for people who do not have lots of experiences about the Internet, the authors print the questions to get feedbacks facilely. Furthermore, after all feedbacks of two surveys are collected, after that, Google Form implements statistics and analysis automatically.

In total 79 respondents in Ho Chi Minh City and 90 respondents in suburban, 61.1% are female and 38.9% are male (**Fig. 1**). Most n = 169, 57.4% are 15-30 and 42.6% are 31-45 years old (**Fig. 2**). A significant number of respondents n=79, 70.89% study in university of science. This thing proves that students who have experience about E-commerce are important potential in Vietnam, especially female.

The average frequency of Internet usage was 60 or more hours in a week. Furthermore, majority of respondents n= 79, 75% have made an online purchase from Internet before. From collected these figures above, the Internet really has important effect on purchasing power in Vietnam.

To describe the number of using E-commerce times once week, Principal Components Analysis is conducted. As a result of the component analysis, rotated component matrix table is formed. From data of this table, the chart (**Fig. 3**) is drown to compare frequency of purchasing online goods from 75% of 79 surveyed people. (Orange) Never/week; (Red) Less than 1 times/week; (Grey) From 1 to 3 times/week; (Green) From 4 to 7 times/week; (Moss Green) More than 7 times/ week.

Besides, the author list out six regular activities of E-commerce user which are; (Grey) Use; (Red) No use; (1) Finding product information; (2) Using ATM; (3) Using International Cards; (4) Selling/Buying goods; (5) Buying courses/ Studying online; (6) Buying games/software; (7) Owning an online shop to evaluate utility of E-commerce to consumers. (**Fig. 4**)

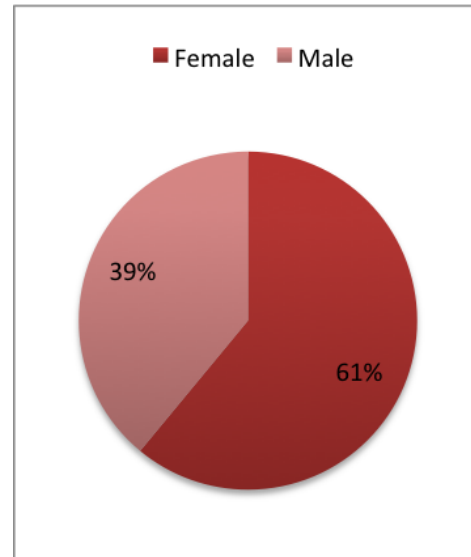


Fig. 1. Gender of Consumers (%)

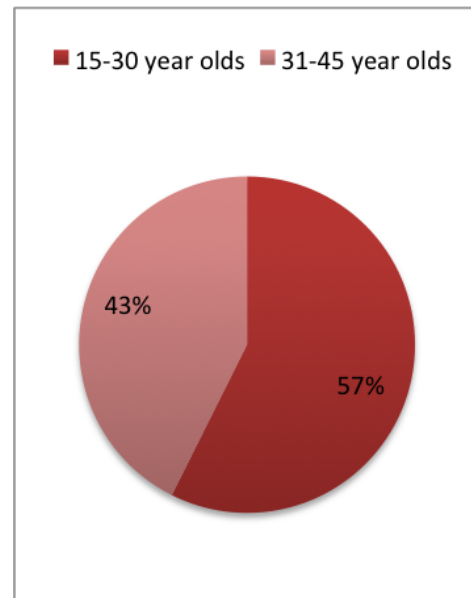


Fig. 2. Ages of Consumers (%)

With 90 people, who do not have knowledge about E-commerce, the authors introduce what is E-commerce and explain how to purchase online goods. After that, they are participated in a trial test to check their satisfactions about purchasing online goods. (**Fig. 5**)

#### IV. CONCLUSION

When the potential is mentioned, people tend to think about the potential of the existing factors and forget that of the promising factors. However, from the results, the authors succeed in coming to two conclusions relating to both kinds of factors.

- The first conclusion involves those who do not have

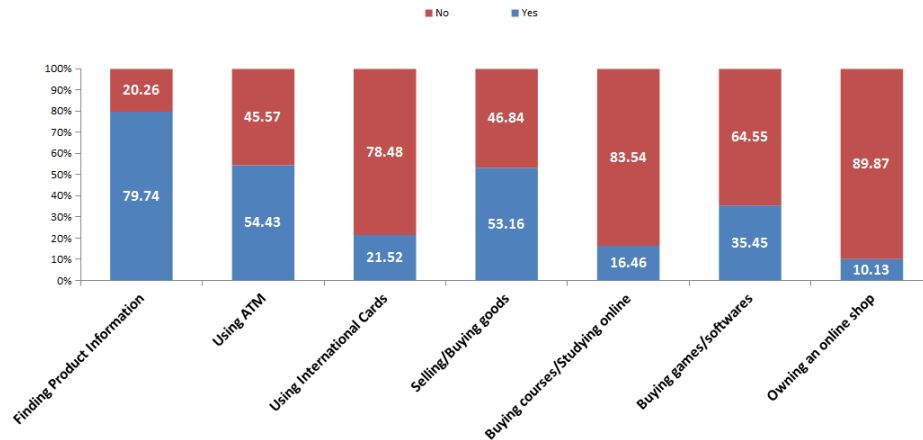


Fig. 4. Activities in E-commerce (%)

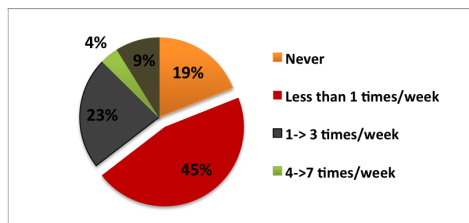


Fig. 3. Using E-commerce Frequency (%)

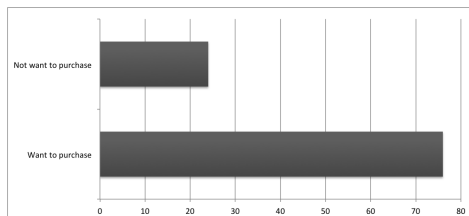


Fig. 5. Satisfaction of Consumers (person)

the chances to get access to the Internet. They are representative of the promising factors. However, the lack of knowledge about the Internet does not prevent them from being aware of and using E-commerce. After gain enough knowledge and have enough facilities, they start to use E-commerce. More than a half of them are willing to use E-commerce. In the future, they soon adapt to E-commerce, the new kind of purchasing goods. They are one of the most important sectors in E-commercial industry. E-commerce should be introduced and approach these factors.

- In the second conclusion, the existing factors are proven. They are those who live in the urban area such as Ho Chi Minh City or Hanoi. They have the opportunities to get access to the Internet. They go online everyday and have time to get all the benefits the Internet brings to. There-

fore, E-commerce is familiar with them. On the contrary, they said that they do not use E-commerce weekly. The reason is that they are not aware of the activities of the E-commerce. They use E-commerce without knowing it. That comes to the conclusion that these existing factors still have the potential for E-commerce. The E-commerce business should understand these factors and include them into the E-commerce. They extend the sector of E-commerce in the economy of Vietnam.

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#### REFERENCES

- [1] *Information and Data on information and Communication Technology*. Information and Communications Publishing House, 2014.
- [2] V. E-commerce and I. T. Agency, "Vietnam mobile e-commerce report," 2014.
- [3] —, "Vietnam mobile e-commerce report," 2013.
- [4] "http://www.vecita.gov.vn/home/en," Last access February 2, 2015 at 10:57 PM.
- [5] T. T. Ha, "Google online shopper study," 2013.
- [6] H. Bidgoli, *Electronic commerce: principles and practice*. Academic Press, 2002.
- [7] *Selected Readings on Electronic Commerce Technologies: Contemporary Applications*. Information Science Reference, 2009.
- [8] G. Schneider, *Electronic Commerce*.
- [9] "Business to business - b to b," last access 17 Mar 2015. [Online]. Available: <http://www.investopedia.com/terms/b/btob.asp>.
- [10] "To convert ecommerce into mobile website," last access 17 Mar 2015. [Online]. Available: <http://www.mobi-commerce.net/how-it-works>
- [11] M. Niranjanamurthy and N. Kavyashree, "Analysis of e-commerce and m-commerce: Advantages, limitations and security issues," *International Journal of Advanced Research in Computer and Communication Engineering*, vol. 2, no. 6, 2013.
- [12] —, "Order storm white paper: How to run a profitable drop ship program online," *International Journal of Advanced Research in Computer and Communication Engineering*, vol. 2, no. 6, January 2009.
- [13] "Cash on delivery," last access 17 Mar 2015. [Online]. Available: <http://www.investopedia.com/terms/c/cashondelivery.asp>
- [14] "direct debit," last access 17 Mar 2015. [Online]. Available: <http://www.finance-glossary.com/define/direct-debit/>
- [15] "Invoice," last access 17 Mar 2015. [Online]. Available: <https://www.economic.co.uk/accountingsystem/glossary/invoice>

- [16] T. Dierks, "The transport layer security (tls) protocol version 1.2," 2008.
- [17] Z. Ramzan, "Phishing attacks and countermeasures," in *Handbook of Information and Communication Security*. Springer, 2010, pp. 433–448.
- [18] A. van der Merwe, M. Looock, and M. Dabrowski, "Characteristics and responsibilities involved in a phishing attack," in *Proceedings of the 4th international symposium on Information and communication technologies*. Trinity College Dublin, 2005, pp. 249–254.
- [19] K. Vimaladevi and M. Dhanabkaym, "A study on the effects of on-line consumer reviews on purchasing decision," *Prestige International Journal of Management & IT-Sanchayan*, vol. 1, no. 1, pp. 91–99, 2012.
- [20] N. I. M. Dawot, J. L. Song, and H. B. Hashim, "Moving from b2c to social commerce: Case study zalora. com."
- [21] L. Zhou, P. Zhang, and H.-D. Zimmermann, "Social commerce research: An integrated view," *Electronic commerce research and applications*, vol. 12, no. 2, pp. 61–68, 2013.
- [22] B. M. Sarwar, G. Karypis, J. Konstan, and J. Riedl, "Recommender systems for large-scale e-commerce: Scalable neighborhood formation using clustering," in *Proceedings of the fifth international conference on computer and information technology*, vol. 1. Citeseer, 2002.
- [23] J. G. Coppel, "E-commerce: Impacts and policy challenges."