Vivienne X. Zhu

CIT 110

Intro to Inform Technology

Research Paper

3 Dec, 2016

E-commerce

E-commerce is buying and selling products and services over the Internet. Nowadays, people participate in e-commerce very often as they pay bills online or purchase products from an e-retailer. In 1960s, the Electronic Data Interchange (EDI) was developed to take place of traditional mailing and faxing of documents. The computers of two different companies were able to share and exchange business information. However, in 1979, the American National Standards Institute (ANSI) developed a general standard for sharing business information over electronic networks (Roos). That same year, an English innovator, whose name is Michael Aldrich, invented online shopping by connecting a television to a transaction processing computer through a telephone line (“Internet Online Shopping”). In the 1980s, CompuServe, a popular networking service that offer tools like e-mails and chat rooms for PC users, added another service called the Electronic Mall. With this service, users could buy products from 110 online sellers without hesitation. In 1990, the researcher, Time Berners Lee applied hypertext to the Internet and invented the first web browser, which is called World Wide Web. Then, more and more companies started to develop online businesses (Roos). Currently, many people even prefer to shop online rather than shop at physical stores since online shopping is much more convenient. With e-commerce, customers are able to access detailed information of any product on the Internet. The information includes a product’s appearance, parameters, price, etc. Customers can compare different products easily and decide what they want to purchase. They can relax at home at any time to buy anything they find online, including those are not available at local stores. Also, they can review feedbacks on the Internet to see how other customers feel about the products before purchasing. As for retailers, e-commerce helps them save operating cost since they do not need to have a physical place to sell their products and services. They can finish transactions at any time and any place as long as there is Internet.

Moreover, there are many differences between traditional commerce and e-commerce. Traditional commerce shares product information through magazines and flyers, while e-commerce shares it through web sites and online catalogs. While e-commerce can finish many activities such as business communication, order generation, invoice generation, product acknowledgments, and so on through e-mail or websites, traditional commerce must use regular mail, phone calls, or printed forms.

# Despite there are many benefits in e-commerce, there is also danger in it. With the rise in e-commerce, hackers are targeting more e-commerce websites than ever. According to the article, “2014 Data Breaches,” fifty-five percent out of the total hacks occur in retails industry. This proves that e-commerce websites are severely prone to hacks and breaches. In 2014, a French e-commerce site was hacked. An employee of the company opened an embedded link with a cross site scripting attack from her email, then her account information was stolen. It was then used to insert malicious code into a plugin handling payment transactions. The attack was not noticed for weeks, as many deceitful charges were done using stolen customer credit card information. As stated in “Ecommerce Website Hacked,” “Three weeks after the attack, a Google scan flagged the site due to suspicious activity and the site was blacklisted, causing a drop in daily visitors close to 90 percent” (M.). There are many methods that hackers can attack e-commerce sites. Open-source attacks are one of the most popular methods. These attacks are against companies that use applications with open-source code and tools. WordPress and Magento are two of the popular open-source tools targeted by hackers because they are “relatively simple for businesses to set up and customize, while also have a fairly complex code base that provides many potential attack vectors” (Ellis and Willis). One of other methods is input field code injection. An input field in the website asks for specific information of customers, and is easily changed by an attacker. Attackers can use certain coding characters to cause the backend programing language to execute malicious code instead and steal useful information that can be used to gain additional knowledge by the way the server responds to unusual input data (Ellis and Willis).

Without sufficient security measures, businesses may have become victim to hacking and data breaches. Consumers’ banking information may be exposed to other people when they make purchases, and businesses will lose their reputation. Therefore, security is extremely crucial for e-commerce. E-commerce transaction security measures is one of the constituents of a comprehensive security system. Businesses should be conscious of security services that can protect their commerce site and help consumers gain confidence. Authentication is one of the issues that should be concerned with. It is the process of identifying both the online store and customer are legitimate. One way of authenticating a retailer is to acquire a digital certificate so that customers know that the website on which they make purchases is actually the retailer and they do not fear that they will lose their information to the third party. Credit card and debit card details can be sent to retailers safely by using Secure Sockets Layer (SSL), which manages transmission security on the Internet. Moreover, with the use of public key infrastructure (PKI), users of a public network can exchange data securely and privately; privacy and integrity will be ensured.

In order to run e-commerce, several steps are required. According to the article, “How does Ecommerce Work” by Ajeet Khurana. An exchange of value is a must. If one of the two parties is paying money, the other one should provide goods or service in return. There should be a shopping cart in the e-commerce website to accept orders. There should be also a payment mechanism to transact money. The process is conducted by the [payment gateway](https://www.thebalance.com/what-is-a-payment-gateway-1141598), which allows customers to choose payment options, accepts identification details, such as credit card numbers, and authenticates customers using a password, CVV code. More importantly, the products need to be delivered and customers need to be serviced. Sellers should make sure that they deliver the right products to their customers on time. Delays may cause customers’ dissatisfaction. When customers have questions to the products, sellers are supposed to answer and give advice to the customers. This is similar to traditional commerce since customers may not choose to make purchases in a store that does not provide good services to them.

Today, most businesses such as BestBuy, Target, Walmart, and Costco open both online stores and physical stores. No matter how many physical stores they own, they still insist running also the online stores to provide customers more options to buy. Indeed, some businesses never have any physical stores, and they are able to make themselves profitable through just the Internet. For example, both Amazon and eBay are large online marketplaces. Retailers can easily set up online stores in these marketplaces and sell their goods to customers. Based on an Amazon executive, “Sellers report an [average 50% increase](http://online.wsj.com/article/SB10001424052702304441404577482902055882264.html) in sales when they join Amazon Marketplace” (Hayes). This means that e-commerce actually leads the economic development. For example, individuals such as the founder of Nasty Gal, Sophia Amoruso is one of the richest self-made women. She started her business as an eBay store. Then she was able to learn how to build her own online store website. Now, Nasty Gal is the “fastest-growing retailer the country” (Perlroth). In short, e-commerce provides individuals a platform to easily start and develop businesses. Additionally, e-commerce can be applied to many types of applications including finance, marketing, auctions, and manufacturing. With the existence of e-commerce, things can be done simply in a timely manner.

Overall, by writing this paper, I learn that the history of e-commerce is not too complicated but fascinating. Also, I realize that most steps of running e-commerce are depending on the businesses. Except for the processes of placing orders online and receiving orders, most steps are invisible to customers. The security system for e-commerce was difficult to understand. I first went through the material, then I separated out the most confusing keywords for extra study. As people in today’s society are busier than before, without e-commerce, life would become complicated and frustrating.

Works Cited

“2014 Data Breaches by the Numbers (and the Impact).” *Gemalto*. N.p., 12 Feb. 2015.

Web. 29 Nov. 2016.

Ellis, David, and Aaron Willis. “How Hackers Find Your Ecommerce Website.”

*BlueSnap*. N.p., n.d. Web. 30 Nov. 2016.

Hayes, Mark. “The Pros and Cons of Selling on Amazon and EBay – Shopify.”

*Shopify's Ecommerce Blog*. N.p., n.d. Web. 30 Oct. 2016.

“Internet Online Shopping.” *The Michael Aldrich Archive*. N.p., n.d. Web. 29 Oct. 2016.

Khurana, Ajeet. “How Does Ecommerce Work? Understand the Nuts and Bolts.” *The*

*Balance*. N.p., 16 Oct. 2016. Web. 30 Oct. 2016.

M., Teemu. "5 Key Learnings: ECommerce Website Hacked." *Business Security*

*Insider*. F-secure, 9 Aug. 2015. Web. 29 Nov. 2016.

Perlroth, Nicole. "Naughty in Name Only." *The New York Times*. The New York Times,

2013. Web. 30 Oct. 2016.

Roos, Dave. "The History of E-commerce." *HowStuffWorks*. N.p., 15 Apr. 2008. Web.

29 Oct. 2016.