

Cyber Security as a Backbone of E-Commerce

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Abstract

According to estimate 40% people in India use e-commerce rest 60% still depends on traditional market. Although the foreign people totally depends on e-commerce. Timesaving is a big advantage of online shopping through which our shopping becomes faster. With the help of online shopping we can shop anytime, anywhere, any product. There is no need to go outside for shopping. It enables us to choose a variety of products of every range from compatible to exclusive products. There is need to take some necessary steps to protect our self at the time of shopping online. Anything connected to the internet, which can include mobile devices like smart phones and tablets need to be use safely. The hackers can also target the peoples those who shop online. Everyone should have an alert for emails so that quick response can be made. We should be aware of our e-mails about problems with our credit cards or an account or the status of online order. Efforts should be done to increase more cybersecurity. Whenever a user has to enter his/her credit/debit card details his thumb impression should be verified every time whenever she or he do purchases. Introducing Bio-metrics can secure our e-commerce market. Being a safe and secure shopper starts with STOP.THINK.CONNECT. Take Security precautions think about the consequences of your actions online and enjoy the convenience of technology with peace of

mind while you shop online. Remember these tips during all online purchase and have a secure and happy shopping.

Keywords: *stop, think, connect, timesaving, cybersecurity*

1. Introduction

E-commerce refers to online business activities of buying and selling of products and services. In today's world most of the people are working in offices or working for their business they don't have the time to do shopping. Therefore they prefer to do shopping online. E-commerce plays a very significant role in the lives of working professionals. But still the growth of e-commerce is not more because there are also some people those who don't prefer online shopping because of the lack of security in e-commerce websites. Indian people demand on e-commerce less as compared to traditional market due to security. Although e-commerce site is password protected still hackers can crack it. So efforts should be made to secure ecommerce. This research will help the e-commerce website to increase their security which will also help them to increase their business. Cybersecurity work as a backbone because if there is more security more people will prefer to choose e-commerce and this will also help to make the digital world. The encryption and

biometrics can make the e-commerce website more secure. People should not use their permanent passwords while payment from credit/debit card. Digital signatures can be used as security purpose. Beside this this 3d password and biometric security can be used. Adhar-card can also be link with our ecommerce account. As biometric security is in passport services and also prove useful. The face recognition can be used as a password for the credit payment and thumb impression can also be used to increase the security of e-commerce. Hackers can crack our password but they do not crack thumb impression. As our credit/debit information is saved by the application when we shop but if our smart phone is lost there may be chances that it can harm our credit/debit card. So to secure this applications should not save it, every time we have to enter the details. With the help of online shopping people can do shopping from their home by using the internet they don't need to go to the stores for shop anything. Few well financed e-commerce companies are flip cart, snap deal have succeeded in establishing the trust and they are also increasing their business. There should be more security in e-commerce websites for online payment which will also help to increase e-commerce market.

2. Literature Review

In today's scenario with vast extend of Information Technology e-commerce security and its legislation are critical issue. There is a harmony that security matters are the important foundation of e-commerce, electronic consumers and firm privacy. To develop a security policy e-commerce prepare a friendly consumer infrastructure. Firms in developed countries have adopted e-commerce in their operation while firms in developing countries failed to meet the suit. It is important to visualize a full range of issues related to the e-commerce strategy of using social networking as a way to attempt to connect with customers and increase economy. Indian customers still depend less on e-commerce due to security concerns and companies also loss money. There are many security issues viz. phishing, denial of service attack Trojan horse, Logic bomb. Some people make their permanent account so it is more severe to attack. An important part of e-commerce that is new are Facebook, twitter as a way to connect directly to customers.

3. Challenges of E-Commerce

CYBER CRIME- Cyber-crime is the most important alarm that consumers have regarding e-commerce. No one wants to become a cyber-crime. Cyber-crime is e-crime. Cyber-crime includes criminal acts such as computer viruses, phishing, and denial-of service attacks that cause e-commerce website to lose revenues. Companies involved in e-commerce should take serious efforts in cyber-security. Many customers feel uncomfortable to do online shopping due to security concerns E-commerce have a great loss of money due to cyber-security so, recommendations should be made to protect security.

ETHICAL AND PRIVACY ISSUES- Another issue is privacy and ethical issues. Privacy includes privacy of a individual security concerns .The internet provides security concerns to the vast array of goods and services. Online shopping is easy customers came select products and pay online. This task looks easy but developers and business know how difficult is to protect customers security.

PREMISE- Another big problem is logistics. Customers should get rights products safe and secure within limited time period. For orders delivery outside the major cities, individual courier have to hire for the delivery of products to the door-step of customers.

PAYMENT COLLECTION-India economy is low and Indian consumers are used to pay through cash. Merchant's responsibility is to charge back and fraudulent change that is to be accounted in business model. Another problem in Indian market is to pay through COD. They pay for the product once the courier is received. It's a hard problem to pay through credit card as it is risky to provide financial information online and credit card penetration is also low in India.

4. Recommendations to Cyber Security

BIOMETRICS- Biometrics is one of the methods to provide security to e-commerce. As different people have different biometrics so there is less/no chance for attacker to attack the site. Bio-metrics related to human characteristics. It refers to authentication technique that depends on physical characteristics which automatically verified user. There are several types of biometric identification schemes which can secure our site viz. fingerprint, hand geometry, retina, iris, vein, voice.

Facial Recognition- A facial recognition is a computer application to authenticate user face. It identifies a user face from a digital image or video frame and compare the selected image with the database. This one of the method to secure ecommerce site.

Finger Print- Finger print is another way to secure our website. There are several apps available which should be attach with site security. Finger Print sensor is an electronic device to capture pattern of finger print.

Different O.S. use different fingerprint sensor e.g. iPhone uses capacitance so different O.S. users should install different sensors according to their need viz. Optical, ultrasonic, Passive, Capacitance

Hand Geometry- Hand Geometry identifies shape of the hand of users. So in laptop hand geometry device should ported to verify user identity.

Retina- As per the advancement in technology Laptops should come with retinal camera. The retinal scan is performed by casting an unperceived beam low-energy infra light into a user's eye when they look through the scanners eyepiece.

3D PASSWORD - Authentication can be used to make a system more secure .Many authentication techniques can be used for proving authentication, Such as textual password, Graphical password, etc. but each of this individually having some limitations & drawbacks. To overcome the Drawbacks of previously existing authentication technique. A new better authentication technique is used, which is called as 3D password. The 3D password is multi-password & multi-factor authentication system as it uses a various authentication techniques such As textual password, Graphical password etc. Most important thing of 3d password scheme is inclusion of 3d virtual environment. 3d virtual environment is virtual environment which consist real time object scenarios. It is not actual real time environment, it is just user interface provided to scheme which looks like same as real environment. 3d password is more secure authentication scheme than any other authentication techniques. Because this authentication scheme is more advanced than any other schemes. Also this scheme is hard to break & easy to use. Authentication is one of the most important security service provided to system by the different authentication schemes or algorithms. To protect any system authentication must be provided, so that only authorized persons can have right to use or handle that system & data related to that system

securely. There are many authentication algorithms are available some are effective & secure but having some drawback. Previously there are many authentication techniques were introduced such as graphical password, text password, Biometric authentication, etc. generally there are four types of authentication techniques are available such as: • Knowledge based: means what you know. Textual password is the best example of this authentication scheme. • Token based: means what you have. This includes Credit cards, ATM cards, etc. as an example.

Recognition Based: means what you recognize. Includes graphical password, iris recognition, face recognition, etc.

DIGITAL SIGNATURE - For minimizing operational costs and provide enhanced services APPLICATIONS SUCH AS banking, stock trading, and the sale and purchase of merchandise are increasingly emphasizing electronic transactions because of this the phenomenal increases in the amounts of electronic documents that are generated, processed, and stored in computers and transmitted over networks. The electronic information managed in these applications is valuable and sensitive and must be protected against tampering by malicious third parties. Sometimes, there is a need to prevent the information or items related to it from being tampered with by the sender (originator) and/or the recipient. Traditionally, paper documents are validated and certified by written signatures, which work fairly well as a means of providing authenticity. For electronic documents, a similar mechanism is necessary. Digital signatures, which are nothing but a string of ones and zeroes generated by using a digital signature algorithm, serve the purpose of validation and authentication of electronic documents. Validation refers to the process of certifying the contents of the document, while authentication refers to the process of certifying the sender of the document. A digital signature should have all the aforementioned features of a conventional signature plus a few more as digital signatures are being used in practical, but sensitive, applications such as secure e-mail and credit card transactions over the Internet. Since a digital signature is just a sequence of zeroes and ones, it is desirable for it to have the following properties: the signature must be a bit pattern that depends on the message being signed the signature must use some information that is unique to the sender to prevent both forgery and denial; it must be relatively easy to produce; it must be relatively easy to recognize and verify the authenticity

of digital signature; it must be computationally infeasible to forge a digital signature either by constructing a new message for an existing digital signature or constructing a fraudulent digital signature for a given message; and it must be practical to recopies of the digital signatures in storage for arbitrating possible disputes later. To verify that the received document is indeed from the claimed sender and that the contents have not been altered, several procedures, called authentication techniques, have been developed. However, message authentication techniques cannot be directly used as digital signatures due to inadequacies of authentication techniques. For example, although message authentication protects the two parties exchanging messages from a third party, it does not protect the two parties against each other.

5. Conclusion

This research is all about why Indian people rely less on e-commerce due to security concerns as phishing, loss of money, threats to customer's financial information etc. How Cyber-security is the backbone of e-commerce. E-commerce market can be increase in India which can save customers time also and he can have a look to variety of products. This can be possible if the methods described above came in to practice. No permanent password should be allowed. To increase more security biometrics security should come into practice.

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