E- COMMERCE AND INTERNET SECURITY

CHALLENGES IN NIGERIA

BY

OLORUNTOBA S.A., SOYEMI J. & OJUAWO O.O

DEPERTMENT OF COMPUTER SCIENCE

FEDERAL POLYTECHNIC, ILARO

PAPER PRESENTED

AT

THE FIRST ANNUAL NATIONAL CONFERENCE OF

THE SCHOOL OF APPLIED SCIENCE

THE FEDERAL POLYTECHNIC, ILARO

OGUN STATE, NIGERIA

OCTOBER 26-30, 2009.

ELECTRONIC COMMERCE AND INTERNET SECURITY

CHALLENGES IN NIGERIA

Olorutoba S. A; Soyemi J; O. Ojuawo O.O

Department of Computer Science polytechnic, Ilaro

ABTRACT

The emergence of electronic commerce in Nigeria has brought in its wake some major security concern. With the growing usage of internet by variety of users, security and protection of computer systems and networks has become a matter of of crime concern. A safe electronic commerce should not only protect from misuse of information but destruction of such information should also be checked.

This paper is of the view of security aspect must be addressed first for any company to start e-commerce activities. It also provides some visibility into the complexities of such inherent Vulnerabilities due to e-commerce security breach.

1. INTRODUCTION

The experimental growth of the internet has led to the search for new technologies for conducting effective business and commercial activities on internet.

Commerce is now undergoing a revolutionary phase where the cutting edge for business today is electronic commerce (e - commerce).

E-Commerce is defined as modern business activities that include the delivery of information, products and services and payment using internet.

Security has become one of the major concerns when an organization connects its private network to the internet. Banking for example, is an area of internet commerce where security is of great concern. Since the internet was designed without security critical applications in mind, it is very important to consider the implication of this towards using internet for global business.

This paper therefore review the basic business process on the internet, examines the security issues affecting the internet in relation to e-commerce and various attempt to move the internet toward secure technologies.

2.0 E-Commerce

E-Commerce has not changed the basic process of doing business, though in some cases, it has altered them almost beyond recognition. E-Commerce requires an information base on customer, creation of various information resources and an effective interaction between sellers, buyers and customer.

The impact of e-commerce maybe seeing in almost all areas of business, whether it be customer service, customized design of product, identify the potential customers and transmitting electronically relevant information to customers about new product. It also helps the customers through online advertising and marketing, online-order taking and on-line customer service. Some order benefit of e-commerce are listed below :

- Cost reduction due to competitiveness in procurement of the products. This competition brings down the product price.

- Cost reduction due to reducing the payment work.

- Information about the product, cost, size, specification et. c. are made available to the customer located at widely distance geographical boundaries.

- Improved customer relationship maybe achieved by fast dissipation of the information to the potential customers. This eliminates the need for whole sellers and retailers and brings down the product price.

- Total time reduction in the order processing, as e-commerce minimizes the time taking from order delivery.

- Provide better, fast and effective linkage with the clients.

- Open new vistas for the organization and generates better business avenues because of easy and cheap reach to the potential customer base.

- Enhances the organization product and market analysis as the organization gets faster feedback from the customer.

2.1 E-COMMERCE-APPLICATIONS

E-Commerce offers a number of applications to different people, Organizations et.c. Anything which suppliers and customers do in the market place can also be done on the web.

Some of these applications are:

- Marketing products and services online.

- Selling and distributing products and services.

- Online payments.

- Managing relationship

- Enterprise management and remote access

- Entertainment

- Banking and financial transactions.

Online marketing

In online marketing, various reasons features of the website are used to abstract customers to products. In advertisement, frames or banners are used in browsers to reserve a section of the display for advertisement ringing from static or simple animation to services integrated with customer profile. Feedbacks services allow site used to provide direct Feedbacks and recommendations or participate in customer surveys about the content of products on the phone site.

Online ordering

Selling and distribute of goods and services over the internet is obviously a key electronic commerce process. In the morning case of (physical) products, the electronic commerce

solution will typically Interface with an existing enterprise sales and distributions system to manage physical; distributing. Soft product such as software, graphics, music or any other digital content can be delivered to the internet, where appropriate.

Online payment

Depending on the needs of the business, payment medium may be digital-cash, electronic card, credit card etc. Issues concerning security, liability and relationship to fulfillment will all need to be worked out. For credit card payments, the status of the customer is authenticated on-line before the bank authorizes payments.

Managing Relationship

The internet is also an effective and valuable tool for maintaining relationships between the organization and various stakeholders of the business. It allows customers to access internally and obtain support for products and services online. Site search capabilities help the customers to quickly find the information relevant to them. In online management, customers are provided with the ability to track their orders as well make any changes required in the order information.

Enterprise Management and Remote Access.

Electronic commerce can be used to improve and manage relationships between enterprises and their customers and business partners.

Entertainment

Entertainment is a major application of E-Commerce you may select and buy audio and video discs in electronic form. Video on the demand, multi user games, and on-line discussions are order major activities related to entertainments which are all possible using e-commerce.

Banking and financial transaction

Banking and financial transactions is realized using e-commerce. Home banking through credit cards, e-currency, stock market information, bidding tender, money transfers,

financial news, bank to bank transfer, debit and credit of accounts and other related activities are performed well on the web.

3.0   Security issues on the internet.

In this paper, security is defined as a way by which a system protect objects with respect to confidentiality and integrity. It includes.

- Protection of privacy of information.

- Protection of information against on authorized modification.

- Protection of system against denial of service and

- Protection of systems against unauthorized access.

A secure system is defined as a system on which enough trust can be put to it for sensitive information. A secure system will therefore preserve integrity of information on that system Eyitayo, (1998). Integrity is the issue of how to preserve objects to make them trustworthy that is protecting them from unauthorized modification.

Security issues are currently top the agenda of companies looking towards attaining an internet present and enormous effort are being made to satisfy this need.

Issues and ares of internet for which there are security concern include:

(i) E-mail

E-mail is the most use of means of communication between customers and the companies they deal with on-line, its use could expose the company to security threats, as company databases are known to have been destroyed by simply opening an application sent through E-mail.

On-line ordering and interactive marketing requiring access company's internal authentication details, making the system susceptible to eavesdropping and possibly breach of security.

Online payment for services and automation of the ordering process represent the highest level of internet commerce and access to data bases are object to subversion as badly written program can be tricked into altering areas of a database that should not be public or to grant access to restricted areas.

(ii) Down- loadable software

Another issue that has provoked security concerns in the internet community is the downloadable programs. The risk that is associated with downloadable application programs is that it might subvert system security, since it is not always possible to determine if it is coming from a secure source.

4.0   Available security technologies and its not implementation for secure internet Transaction

There are several security technologies or application internet. They include :

(i) Internet firewall

An internet firewall is a system or group of systems that enforces a security policy between an organization network and the internet. The firewall determines which insides services may be accessed from the outside side services which outsiders are permitted access to the permitted inside services and which outside services insiders may access.

Therefore setting up a firewall demand a comprehensive security policy of the organization which include.

- A convenient point where internet security can be monitored and alarm generated.

- A central point of contact for information delivery service to customers.

The firewall can be configured to allow internet access to these services while disallowing external access to other systems on the protected network.

(ii) Cryptography

Cryptography is a technique that allows a piece of information to be converted into cryptic form before being stored in the computer database or transmitted over an insecure channel.

Cryptography is designed to protect the contents of the data, by transforming the secret data into an encrypted form which a third party can not understand, thus protecting against threat of the lose of confidentiality. Cryptography also work as protection against threat of the lose of integrity, because a third party can not falsify any of the information in encrypted data.

(iii) Digital watermark

Digital watermark on technology is designed to allow me digital contents to be sent over the internet and safely from illegal copying and violation of its copyright. Digital watermark embed information such owners ID, buyers ID control codes for the system, in contents.

(iv) Electronic certificate

Electronic certificate is a good kind of authenticating meant to be address the problem of credit card person identification numbers on the internet which need to be confidential and secure, since online shops and consumers can not look and recognize each other directly, so they can not believe that the communication partner is the right person or shop.

The proper applications and implementations of these technologies will reduce security problem and bring about secure business transaction of the internet.

(v) E-mail connection

E-mail connectivity requires a path from the external environment to an internal machine. However, this path need to direct one as the other E-mail messages can be received at the bastion host before forwarding is to internal network. Further challenges come with does e-mail that has multimedia content. These may contain malicious programs that may bypass such measure entirely. A major safeguard measure would be to configure e-mail reading programs to automatically run this program.

Conclusion

No doubt internet system has come to stay and e-commerce is gaining ground. Users are individually responsible for understanding and respecting the security policy of the systems they are using and are responsible for employing available security mechanism and procedures for protecting their own data.

The web as it is now does not yet offer the most secure platform for internet Commerce.

A lot of progress has been made but real problems still exist, though can be overcome by using adequate technology.

Commercial transaction in Nigeria today shows the that transacting parties carry out business dealing through physical contact with each other. The level of e-commerce business is still at infant stage. This is the most appropriate time to being the needed dialogue toward evolving appreciate national policies and a suitable framework acceptable to all stakeholders for conducting business on the internet where all participants can operate securely.

References

Andeoli, J: Pacull, F and Paresehi, R (2004)

A framework for electronic commerce IEEE Internet computing Vol. I, No. 4,July-August.

C. S. Amaefule, E. A. Osita, V. E. Ejiofor and C. Egbeahadike (2009)

Information and Communicating Technology and National Development :

The Nigeria Example. Conference proceeding of Nigeria Computer Society Volume 20.283-288

Kobayashi, H and Konno, C (1998): Security technologies and Secured Internet in Japan, SEARCH' 98, july 7-10 Darwin Australia

Eyitayo A. O (1998), Security and Integrity issues for Internet commerce challenges and opportunities, presented at 4th Annual Conference on Engineering Challenges for 21st Century organized by the Botswana Institution of Engineers 6-9 August 1998.

Ameafule C. S. (2001) "Influence of Information in Business and Strategies for good customer 's relationship management. In journal of Management science, NAU Awka vol. 5 No. 1 January.

Friezel C. J in Udheeon C. C "an information Technology in Africa: Challenges and Opportunities African Centre for Technology (ACT) Nairobi, Kenya.