**COURSE
GUIDE**

**ENT 401
E - BUSINESS**

Course Team   Dr. Toyosi Daniel – BU (Course Writer)
Department of Information Resource Management
Faculty of Management Sciences
Babcock University

Bilkisu Katagum – NOUN (Course Writer)
Department of Entreprenuerial Studies
Faculty of Management Sciences
National Open University of Nigeria

Oluremi Oyedokun – NOUN (Course Writer)
Department of Entreprenuerial Studies
Faculty of Management Sciences
National Open University of Nigeria

Dr. Madu Galadima - NOUN (Course Editor)
Director ICT Unit
National Open University of Nigeria

Dr. Lawal Kamaldeen A.A (H.O.D) – NOUN
Department of Entrepreneurial Studies
Faculty of Management Sciences
National Open University of Nigeria

Dr. Timothy Ishola (Dean)
Faculty of Management Sciences
National Open University of Nigeria

NATIONAL OPEN UNIVERSITY OF NIGERIA

CONTENTS

1.0 Introduction

The course E-Business (ENT 414) is a core course, which carries two (2) credit units. It is prepared and made available to all undergraduate students in the Entrepreneurship Programme, in the Faculty of Management Sciences/Department of Entrepreneurial Studies. This course is useful material to you in your academic pursuit as well as in your workplace as managers and administrators.

2.0 What you will learn in this Course

The course is made up of Eighteen (18) units, covering areas such as;
- The concept and definitions
- an overview of Internet and mobile telecommunication
- importance of e-business
- website design
- Internet advertisements
- achieving competitive advantages using E-adverts
- online sales
- E-payments
- ATM,
- debit and credit cards

The Course Guide is meant to provide you with the necessary information about the course, the nature of the materials you will be using and how to make the best use of them towards ensuring adequate success in your programme as well as the practice of E-business in the society. Also included in this course guide is information on how to make use of your time and information on how to tackle the tutor-marked assignment (TMA). There will be tutorial sessions during which your facilitator will take you through your difficult areas and at the same time have meaningful interaction with your fellow learners.

3.0 Course Contents

The course consists of:
- Internet, Mobile Telecommunication, Overview of E-Business and Website Design
- Overview of Internet Advertisement, Online Shopping and E-Payments

- Overview of E-Marketing, E-Market Opportunity Analysis For Firms, Developing An E-Marketing Plan, Online Strategy Formulation Plan, Market Communication and Branding, Financial Appraisal and Implementation and Control of E-Marketing Plan
- Introduction to E-Business Security, Business Security Challenges, Network Security and Management, Copyright Law and Electronic Access To Information and Internet Firewall and Fraud Prevention

4.0 Course Aims

The main aim of this course is to arm you with adequate information on the concept and nature of E-Business, its components and its roles in businesses and the society as a whole. The course also aims at making you have a greater understanding of the fundamentals of marketing, business security challenges, copyright law, fraud prevention and the role of E-Business in the society.

5.0 Course Objectives

After completing this course, you should be able to;

- Explain Internet, Mobile Telecommunication, Overview of E-Business and Website Design
- Write an Overview of Internet Advertisement, Online Shopping and E-Payments
- Discuss E-Marketing, E-Market Opportunity Analysis For Firms, Developing An E-Marketing Plan, Online Strategy Formulation Plan, Market Communication and Branding, Financial Appraisal and Implementation and Control of E-Marketing Plan
- Introduce E-Business Security, Business Security Challenges, Network Security and Management, Copyright Law and Electronic Access To Information and Internet Firewall and Fraud Prevention

6.0 Course Materials

Major components of the course are;

- Course Guide
- Study Units
- Textbooks
- Assignment Guide

7.0 Study Units

There are four modules of 18 units in this course, which should be studied carefully.

Module 1: Overview of the Internet

Unit 1: Internet

Unit 2: Mobile Telecommunication

Unit 3: Overview of E-Business

Unit 4: Website Design

Module 2: Internet Advertisement

Unit 1; Overview of Internet Advertisement

Unit 2; Online Shopping

Unit 3; E-Payments

Module 3; Concept of E-Marketing

Unit 1; Overview Of E-Marketing

Unit 2; E-Market Opportunity Analysis For Firms

Unit 3; Developing an E-Marketing Plan

Unit 4; Online Strategy Formulation Plan

Unit 5; Market Communication and Branding

Unit 6; Financial Appraisal, Implementation and Control of E-Marketing Plan

Module 4; E-Business Security

Unit 1; Introduction to E-Business Security

Unit 2; Business Security Challenges

Unit 3; Network Security and Management

Unit 4; Copyright Law and Electronic Access to Information

Unit 5; Internet Firewall and Fraud Prevention

8.0 Assignment

There are many assignments in this course and you are expected to do all of them by following the schedule prescribed for them in terms of when to attempt them and submit it for grading your Tutor.

9.0 Tutor-Marked Assignments (TMAs)

You are expected to submit all the TMAs to your Tutor for grading on or before the stated deadline. If for any reason you cannot complete your assignment on time, contact your tutor before the assignment is due, to discuss the possibility of extension. Extension may not be granted after the deadline, unless on exceptional cases. The TMAs usually constitute 30% of the total score for the course.

10.0 Final Examination and Grading

At the end of the course, you will write the final electronic examination. It will attract the remaining 70%. This makes the total final score to be 100%.

11.0 Conclusion

This course, E-Business (ENT414) exposes you to issues and components involved in E-business, and its roles in businesses and the global market. On the successful completion of the course, you will have been armed with materials, expertise and skills necessary for the use of E-Business and how to overcome the security challenges involving E-business.

MAIN CONTENT

MODULE 1: OVERVIEW OF THE INTERNET

Unit 1: Internet

Unit 2: Mobile Telecommunication

Unit 3: Overview of E-Business

Unit 4: Website Design

MODULE 2: INTERNET ADVERTISEMENT

Unit 1: Overview of Internet Advertisement

Unit 2: Online Shopping

Unit 3: E-Payments

MODULE 3: CONCEPT OF E-MARKETING

Unit 1: Overview Of E-Marketing

Unit 2: E-Market Opportunity Analysis For Firms

Unit 3: Developing an E-Marketing Plan

Unit 4: Online Strategy Formulation Plan

Unit 5: Market Communication and Branding

Unit 6: Financial Appraisal, Implementation and Control of E-Marketing Plan

MODULE 4: E-BUSINESS SECURITY

Unit 1: Introduction to E-Business Security

Unit 2: Business Security Challenges

Unit 3: Network Security and Management

Unit 4: Copyright Law and Electronic Access to Information

Unit 5: Internet Firewall and Fraud Prevention

MODULE 1: OVERVIEW OF THE INTERNET

UNIT 1: INTERNET
UNIT 2: MOBILE TELECOMMUNICATION
UNIT 3: OVERVIEW OF E-BUSINESS
UNIT 4: WEBSITE DESIGN

UNIT 1: INTERNET
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3.0 Main Content

       3.1 Meaning of internet

       3.2 Internet as a business driver

       3.3 Relationship between internet and business and the impact

       3.4 Importance of internet in the society

4.0 Conclusion

5.0 Summary

6.0 Tutor-Marked Assignment

7.0 References/Further Reading

1.0 Introduction

The Internet is a **global network** of billions of computers and other electronic devices. With the Internet, it's possible to access almost any information, communicate with anyone else in the world, and do much more. You can do all of this by connecting a computer to the Internet, which is also called **going online.** When someone says, a computer is online, it's just another way of saying it's connected to the Internet. It's important to realize that the Internet is a global network of **physical cables**, which can include copper telephone wires, TV cables, and fiber optic cables. Even wireless connections like Wi-Fi and 3G/4G rely on these physical cables to access the Internet. When you visit a website, your computer sends a request over these wires to a **server**. A server is where websites are stored, and it works a lot

like your computer's hard drive. Once the request arrives, the server retrieves the website and sends the correct data back to your computer. What's amazing is that this all happens in just a few seconds.

This course has been designed, mainly, to develop your awareness of the E-business concept. It is assumed that such knowledge about E-business concept and models will not only improve your competences, but will also educate you in how to start and run an E-business. The first unit focuses on the idea of the Internet and its effect on businesses.

2.0 Objectives

At the end of this unit, you should be able to:
- Understand the concept of the Internet
- Describe the relationship between the internet and a business
- Know the importance of the Internet in the society

3.0 Main Content

3.1 Meaning of Internet

The Internet has revolutionized the computer and communications world like nothing before. The invention of the telegraph, telephone, radio, and computer set the stage for this unprecedented integration of capabilities. The Internet is at once a world-wide broadcasting capability, a mechanism for information dissemination, and a medium for collaboration and interaction between individuals and their computers without regard for geographic location. The Internet represents one of the most successful examples of the benefits of sustained investment and commitment to research and development of information infrastructure. Beginning with the early research in packet switching, the government, industry and academia have been partners in evolving and deploying this exciting new technology. Today, terms like "bleiner@computer.org" and "http://www.acm.org" trip lightly off the tongue of the random person on the street.

The Internet today is a widespread information infrastructure, the initial prototype of what is often called the National (or Global or Galactic) Information Infrastructure. Its history is complex and involves many aspects - technological, organizational, and community. And its influence reaches not only to the technical fields of computer communications but throughout

society as we move toward increasing use of online tools to accomplish electronic commerce, information acquisition, and community operations. (Leiner et al, 2017)

The Internet works because open standards allow every network to connect to every other network. This is what makes it possible for anyone to create content, offer services, and sell products without requiring permission from a central authority. It levels the playing field for everyone and it's the reason why we have a rich diversity of applications and services that many of us enjoy today.

The Internet is a network of networks that needs to operate around the world as if it were one. Like policy, the technical coordination of the Internet has common characteristics:

- Open,
- Independent,
- Run by a non-profit membership organizations that work together to meet the needs everyone. (Peterson and Welch, 2003)

This self-regulation has been the key to the successful growth of the Internet and is flexible enough to adapt to changing future needs.

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The overall responsibility for managing Internet Protocol address or domain names at upper levels is vested in the Internet Assigned Numbers Authority (IANA), which delegates the actual administration of most functions to other bodies. At global regional levels, the principal bodies providing allocation and registration services that support the operation of the Internet globally are:

- Réseaux IP Européens Network Coordination Centre
- American Registry for Internet Numbers
- Asia Pacific Network Information Centre
- Latin American and Caribbean IP address Regional Registry
- African Regional Registry for Internet Number Resources

Internet operations are coordinated worldwide through the Internet Engineering Planning Group (IEPG), an Internet operational group intended to assist Internet Service Providers to interoperate within the Global Internet. At global regional levels, bodies active in coordinating operations include the:

- American Registry for Internet Numbers; Manages the Internet numbering resources for North America, a portion of the Caribbean, and sub-equatorial Africa.
- Asia Pacific Networking Group (APOPs); Promotes the Internet and the coordination of network inter-connectivity in the Asia Pacific Region. (Peterson and Welch, 2003)

Internet network security is significantly facilitated by a number of Computer Emergency Response Teams (CERTs) in eight countries and within a number of service provider operations and private networks. They were formed to continually monitor the network for security incidents, serve as a repository for information about such incidents, and develop responsive advisories.

3.2. Internet as a Business driver

The Internet is said to be both over-hyped and undervalued**.** It has the capacity to change everything—the way we work, the way we learn and play, even, maybe or the way we sleep. What is more, it is doing so at far greater speed than the other great disruptive technologies of the 20th century, such as electricity, the telephone and the car.

While the media have concentrated on just a few aspects of the web—the glamorous consumer side of content and shopping on the one hand, and the extremist rantings on the other—something much more important is happening behind the scenes: e-business. The Internet is turning business upside down and inside out. It is fundamentally changing the way companies operate, whether in high-tech or metal-bashing. This goes far beyond buying and selling over the Internet, or e-commerce, and deep into the processes and culture of an enterprise.

Some companies are using the Internet to make direct connections with their customers for the first time. Others are using secure Internet connections to intensify relations with some of their trading partners, and using the Internet's reach and ubiquity to request quotes or sell off perishable stocks of goods or services by auction. Entirely new companies and business models are emerging in industries ranging from chemicals to road haulage to bring together buyers and

sellers in super-efficient new electronic marketplaces. The Internet is helping companies to lower costs dramatically across their supply and demand chains, take their customer service into a different league, enter new markets, create additional revenue streams and redefine their business relationships.

Supply chain management is also being made more efficient and firms can significantly reduce inventory costs. For example, an American bank Goldman Sachs, has estimated that in the electronics components industry these factors have already contributed to procurement savings of up to 40%. As the Internet contributes to the lowering of operating costs, Goldman Sachs estimates business to business e-commerce could cause a potential increase in the level of output by an average of 5% in developed nations' economies over the next 10 years. However, a possible counter argument might be made that the Internet offers even greater potential for cost savings and productivity gains in more tightly regulated economies where rigid labour and/or inefficient capital markets exist. (Allen, 2000)

It is also possible to state that emerging economies could be prime beneficiaries of e-commerce. As the Internet reduces transaction costs and the economies of scale possible through vertical integration, there could be a decline in the optimal size of the firms.

3.3. Relationship between internet and business and the impact

There is no doubt that the Internet - constituting an easy-to-access, world- wide network - has already had a significant effect on the conduct of international business and that this impact, despite the recent downturn in Internet-related businesses, is likely to continue, changing many aspects of international business in the future, although not necessarily in ways, and at the speed, that might have been expected looking ahead from the middle of the boom. Even in the boom, it was becoming clear that international expansion through the Internet posed many problems that did not have simple 'virtual solutions': for example, distributor relations could be seriously impaired by moves to bypass distributors in favor of direct dealing via the Internet; and Internet-based international retailers were already facing difficulties in expanding operations without establishing an old- style presence in foreign markets (Petersen et al, 2002) The electronic linking together of individuals, institutions, and companies in a worldwide web has created an unprecedented public data base that heralds the ultimate realization of the information.

Peterson and Welch (2003) carried out a study to see how the Internet impacts a firms' international operations and expansion. The authors focused on aspects such as patterns of internalization, mode effects, distributor relations and the role of language. Furthermore, they discussed the effects of the Internet on the digitization of products, importance of intellectual property right regimes for patterns of international expansion and several management issues associated with the increasing use of the Internet.

Figure 1 was used by the authors to consider the various impacts of the Internet, it presents two sides of a firm's internalization; its internalization pattern and its internationalization capacity.
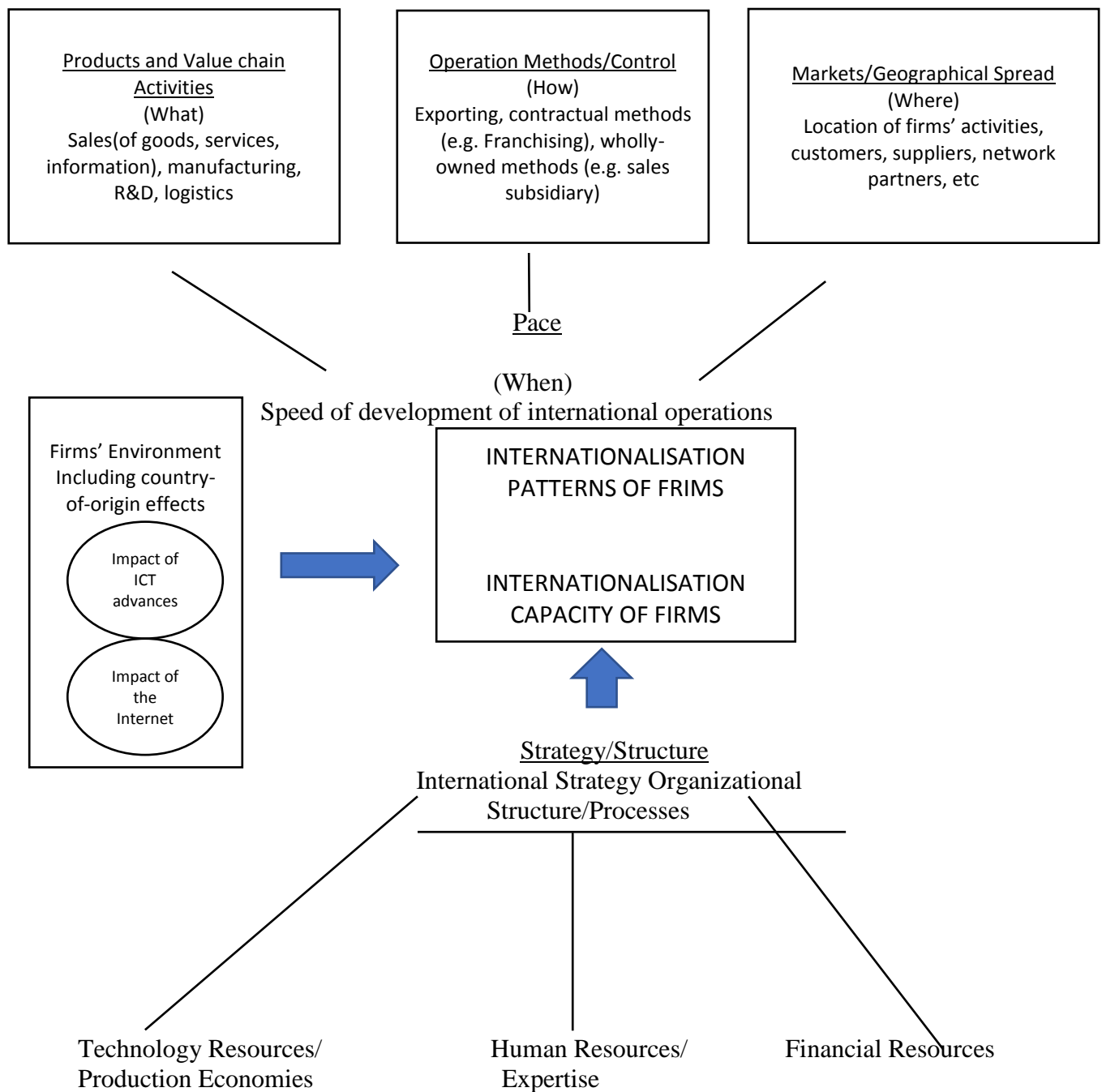
| Products and Value chain Activities (What) Sales(of goods, services, information), manufacturing, R&D, logistics | Operation Methods/Control (How) Exporting, contractual methods (e.g. Franchising), wholly-owned methods (e.g. sales subsidiary) | Markets/Geographical Spread (Where) Location of firms' activities, customers, suppliers, network partners, etc |

Pace

(When)
Speed of development of international operations

| Firms' Environment Including country-of-origin effects | INTERNATIONALISATION PATTERNS OF FRIMS |

Impact of ICT advances

Impact of the Internet

INTERNATIONALISATION CAPACITY OF FIRMS

Strategy/Structure
International Strategy Organizational Structure/Processes

Technology Resources/ Production Economies

Human Resources/ Expertise

Financial Resources

Figure 1; Various Dimension of Firms' Internationalization (Adapted from Welch and Luostarinen, 1988)

A firm's internationalization pattern refers to the different dimensions of the activities performed outside the home country – the What? How? Where? And When? Questions. The internalization capacity of a firm refers to a company's preconditions for involving itself successfully in international activities and the motivation of the company's decision makers

to operate internationally. At a basic level a firm's internationalization capacity is shown as being composed of its resource base (technological, human and financial) that is a condition for successful completion of international business ventures.   In addition, the internationalization strategy and organisational structure and processes of the firm are part of a firm's internationalization capacity.

3.2.1 Effect of Internet on Firms' Internationalization Capacity;

1.   **Technology/Production Economies resources:**

On the demand side, it is apparent that I&CT advances have provided a strong impetus for firms to become involved in international business operations - along with the fact that the Internet has greatly enhanced firms' ability to spot international business opportunities. On the supply side, internationalization implications of I&CT advances are less unidirectional. As far as technology and production economies are concerned the impact of I&CT advances on internationalization differs significantly between producers of 'traditional' physical goods and producers of digital information goods. Digital information goods (henceforward referred to as "e-products") typically are characterized by high fixed costs and negligible marginal costs, so that after having incurred up-front investment costs, the producer has a strong incentive to offer the e-product to as many customers as possible.

. Thus, the cost structure of e-products encourages the producer to achieve global scale economies. Moreover, e-products often are subject to "network externalities", by which the utility that the individual customer derives from the e-product increases as the total number of other users increases (Shapiro/ Varían 1999). Together, scale economies and network externalities provide a strong incentive for e-product providers to expand beyond the home market

In contrast, it could be argued that I&CT advances in general have diminished the motivation for producers of physical/non-digitized goods to expand internationally. Because of information technology development, many producers have digitized their manufacturing processes to enhance precision and save manual work. As an important side-effect, the digitization of production processes has also reduced the costs of switching from one line of manufacturing to another, thereby enabling more flexible production with a lower minimum efficient scale of operations (Westbrook/Williamson 1993, Halliburton/Jones 1994).

Through its influence on production economies, digitization of production processes tends to decrease some firms' motivation to internationalize, whereas the digitization of products is likely to increase firms' inclination to go international. However, the distinction between providers of physical goods and e-products is blurred. Today, few firms are purely physical good providers in as much as auxiliary services are attached to most goods, and in recent times many of these services must to a large extent been digitized (e.g. after-sales services offered through the producer's website). As this digitization of services proceeds, firms' incentive to internationalize should grow correspondingly.

If we look at how the Internet affects the interplay between firms' production economies and internationalization economies of scope, rather than of scale, the Internet has enhanced the possibilities of finding potential foreign partners in possession of complementary assets with which a firm may share production facilities and technology. One may suspect the realization of scope of economies via the Internet to be more important to small and medium-sized firms than to large, multinational firms. The proliferation of portals on the Internet provides evidence about firms' sharing of (scarce) resources. This uses the incumbent portal firms to serve the needs of the individual customer in a more comprehensive way than individual entities can do single-handedly. Apparently, digitization of goods and services together with the improved inter-firm communication opportunities offered by the Internet have changed production economies in ways that give firms a strong impetus to internationalize.

2. Human Resources;

The Internet has had important effects on the way in which people are managed within international companies. The ability of companies to develop global operations increasingly via the Internet depends on staff being able to initiate and carry through a range of new activities and deal with a variety of new technologies. This will place major demands on the human resources function to find the appropriate staff, either inside or outside the organisation. This is probably the most demanding aspect of global e-commerce, although the emergence of international call centres has demonstrated that staff can be trained to undertake a range of functions, and communicate with customers in a variety of languages, and even dialects, in a relatively impersonal international environment entry. The link between e-servicing and more personalized approaches to foreign customers, therefore, may depend on

some individuals who can move easily between these different forms of customer servicing staff. Companies using the Internet in the international arena are only just coming to terms with the demands and possibilities of the new Internet-driven environment for staffing and training issues. While the Internet itself is likely to alleviate some of these demands, such as via e-learning, it cannot be viewed as a 'cure-all' in international operations. Recent research in Denmark (see article by Welch, Worm and Fenwick (2003) in this issue) illustrates this in respect to the growth of so-called virtual assignments (i.e. managing a foreign staff activity via the Internet rather than in-person). Their use has been supplemented by a rise in short term assignments. Ultimately, there would appear to be some scope for a reduction in the need for staff movement internationally. ICT advances have already improved conditions for expatriation and short term assignments by making it much easier for the expatriate and his/her family to keep in contact with their networks back home. With the Internet, however, conditions for virtual assignments have improved significantly as well.

3. Financial Resources;

ICT advances in general have been important drivers of the convergence costs of capital of firms during the last decade. Because of this process of transition from independent national financial markets to a more integrated, globalized market international firms have, all else being equal, lost competitive advantage vis-domestic firms operating in what previously may have been high-cost capital markets. The creation of transparency across markets, ICT advances, and the Internet has reduce the disadvantage of foreignness in terms of being unknown to local stores. If the Internet has the effect of increasing the pace of internationalization - for example, opening a wider range of foreign markets that can be served, the ability to finance expansion may become a critical issue, particularly for new Internet-related ventures in the post "Internet bubble” world. The Internet should facilitate greater transparency about financing options on an international basis, thereby adding to pressure for lowering the cost of capital across countries. This could be an important consideration for Internet-related new ventures given the variability of markets for new venture finance.

4. International Strategy/Organizational Structure and Processes;

Whereas I&CT advances have supported firms' strategies of multinationalism and transnationality (Bartlett/Ghoshal 2000), the advent of the Internet seems to have placed

pressure on international companies for increased global integration and coordination (Roche 2000). The expectation at the height of the Internet boom was that international companies would experience a stronger need for global standardization because of increased transparency across national markets (Roche 2000). This, in turn, would force international firms toward stronger central co- ordination and control mechanisms, involving closer integration of their dispersed activities. As an example of Internet-induced transparency, pricing policies in different national markets would need to be brought more closely into line (Roche 2000). Inevitably, such a change would force a whole range of adjustments throughout the international company in areas such as purchasing, supply chain management, and marketing programmes. As a reflection of this move towards centralization, some international companies introduced websites for the corporation and for international operating companies in non-English speaking countries, such as Denmark, the website would normally be in English. The centralization bias of the Internet has been reinforced by the perceived strategic importance of online sales by international companies so that the direction and control of developments have been driven by headquarters - it has been being too important to leave to the various subsidiaries. This has been applied to testing in the marketplace of online sales of existing as well as new product.

3.4 Importance of internet in the society

The Internet is important to the society as it adds another resource to enhance businesses, education and entertainment. Many people in today's generation are relying in the internet to do a lot of different tasks. In fact, wherever you go these days, you can see people holding some sort of gadgets and using the internet to play games or search things that they want. But of course, the internet is not just about entertainment. It's also useful in many other things as well.

Today, many students are using the internet to do research and complete their assignments. Since the internet is full of information, most students use this as a source of education. In fact, there are now even online programs and courses available, which people can easily access to study and learn other things even while they're at the comfort of their homes.

Years ago, if you wanted to find something out, you would have to run to a public library and look through a pile of books, which is very tiring and time-consuming. But now, with just a

few clicks of your mouse, you can already get any information you need. Years ago, when you also wanted to buy something, such as food, shoes, or any items, you would go to a shop or restaurant to get that thing you need. But now, you can easily Google the product you want and have it delivered directly to your door! In fact, you can now even pay your bills and file your taxes online.

Hiring people, you need is also made much easier with the use of internet. Internet is also very important when it comes to communication. Before, when people wanted to speak with someone who lives in a distant place, they would have to reach a phone and make a phone call. If they don't have any access to a phone, they would write a letter, which usually takes a few days to arrive. But now, there are emails and social media, wherein you can instantly send messages to your loved ones. You can even make a video call and see the person even if he or she is at the other side of the world. This advantage also benefits other industries as well, particularly the entrepreneurs and business owners. If before, business owners would have to travel overseas to speak to a client, now they can make negotiations even if they are at the comfort of their own office.

4.0 Conclusion

At the end of this unit, we have been able to discuss the concept of the Internet, its use as a business driver and its effect on businesses. We have also been able to point out the different ways that it can affect the operations of a business on an international and local scale. Lastly, we were able to discuss its importance in today's society.

5.0 Summary

- Technological advancement is always a great weapon to the mankind to explore unexplored areas of the universe.
- Understanding the importance of Internet technology has helped many companies gain larger markets, audiences and create services that reach out to customers.
- The technology also helped organizations to enhance the level of communication with employees and customers.
- It provided a medium to publish information or content regarding the product or services that reaches out to millions of people across the globe.
- Customer support and service has been enhanced to a whole new level. Conducting online workshops, conferences, interviews, and data management has helped an

organization to reach out for customer's requirement. Internet has helped increased credibility for the work that is done.

- Technology has also increased exposure to different areas of the market, increase in quantity and quality, increase in sales, reduction in costs, increase in access to information, increase in supply chain, reduction in load on staff and reduction in use of products that are harmful to environment.

- Internet technology has completely changed how we communicate, respond or entertain ourselves. Its importance in everyday life is never ending and plays a great role in enhancement of quality of life.

- There has been a great increase in benefits and reduction in time. Internet is a powerful medium that has changed how we live and will continue to change in the future. We are sure to see further changes to the technology.

- Internet technology is sure to see a sea change in the coming years that will have tremendous effect on personal and professional life.

6.0 Tutor-Marked Assignment

i.   Highlight the effect of Internet on Firms' Internationalization Capacity

7.0 References/Further Reading

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UNIT 2: MOBILE TELECOMMUNICATION

CONTENT

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2.0 Objectives

3.0 Main Content

      3.1 What is mobile communication?

      3.2 What is telecommunication?

      3.3 Relationship between mobile and Telecommunication

      3.4 How mobile telecommunication is important to an E-business

4.0 Conclusion

5.0 Summary

6.0 Tutor-Marked Assignment

7.0 References/Further Reading

1.0 Introduction

In this unit, we are going to discuss the nature of mobile communication and telecommunication. We will also discuss the relationship between mobile and telecommunication and how mobile telecommunication is related to E-business.

2.0 Objectives

At the end of this unit, students will be able to;

- Understand the concept of Mobile Communication and Telecommunication
- Explain the relationship between mobile communication and telecommunication
- Discuss how e-businesses can use mobile telecommunication for all their operations

3.0 Main Content

      3.1 What is Mobile Communication?

Mobile communication is basically talking, texting or sending data or image files over a wireless network. An example of mobile communication is sending an email from a computer or a smart phone using a wireless network at home or in your local coffee shop.

The system used for mobile communication to work is called GSM (Global System for Mobile Communication). This is any radio telephone capable of operating while moving at any speed, battery operated and small enough to be carried around by a person. The system has different facilities. The different types of mobile communication systems are:

- **Two-way radio;** Mobile two-way radios are one-to-many communication systems that operate in half-duplex mode, i.e., push to talk. The most common among this type is citizen band (CB) radio, which uses amplitude modulation (AM). It operates in the frequency range of 26-27.1 MHz having 40 channels of 10 kHz. It is a non-commercial service that uses a press-to-talk switch. It can be amplitude modulated having double-sideband suppressed carrier or single-sideband suppressed carrier.

- **Public Land radio;** is a two-way FM radio system, used in police, fire and municipal agencies. It is limited to small geographical areas.

- **Mobile phone;** Mobile telephones offer full-duplex transmission. These are one-to-one systems that permit two simultaneous transmissions. For privacy, each mobile unit carries a unique telephone number.

- **Amateur (HAM) radio;** Amateur (HAM) radios cover a broad frequency band from 1.8 MHz to above 30 MHz These include continuous wave (CW), AM, FM, radio tele-printer, HF slow-scan still picture TV, VHF or UHF slow-scan or fast-scan TV, facsimile, frequency-shift keying and amplitude-shift keying. (Linton, 2017)

3.2 What is telecommunication?

Telecommunication is basically the transmission of signs, signals, messages, words, writings, images and sounds or information of any nature by wire, radio, optical or other electromagnetic systems. It occurs when the exchange of information between communication participants includes the use of technology. The technology used to communicate are called Telecommunication networks.

A telecommunication network is a collection of terminal nodes, links are connected to enable telecommunication between the terminals. The transmission links connect the nodes together. Each terminal in the network usually has a unique address so messages or connections can be routed to the correct recipients. The collection of addressed in the network is called the address space. There are different types of telecommunication networks. They are as follows;

- Computer Networks; ARPANET, Ethernet, Internet, Wireless networks.

- Public switched telephone networks (PSTN)

- Packed switched networks

- Radio networks

- Television networks

3.3 Relationship between mobile and Telecommunication

Mobile communication technologies have enabled a seamless interaction between people and the global network. Businesses can now use these technologies to effectively run their operations and connect with their customers effortlessly from far around the globe.   The mobile telecommunications industry has grown rapidly over the last three decades representing one of the most intriguing stories of technology diffusion. Since 2002 mobile subscribers have exceeded the number of fixed lines globally. The process to achieve what fixed phones have struggled to do for more than 120 years took less than a fifth of the time for mobile networks.

In fact, mobile telecommunications deeply affect the way users interact and have significant externalities for the economic activities for which they are used. There is widespread anecdotal evidence about the surge of new companies and business models with worldwide brands linked to the sector (e.g. Nokia, Vodafone) and the appearance of new modes of communication such as 'personal reachability'. Because of the lower access cost to the user compared to wired telecommunications, linked with the solution of the problem of creditworthiness of customers through prepaid cards, the technology could reach completely new segments of the population particularly in developing countries.

Mobile communication technology includes devices such as cellular phones, Wi-Fi enables hand-held devices and wireless laptops that can connect through Wi-Fi or with a cellular connection. It is important to understand the advantages and disadvantages of mobile communication technology for a business;

Advantages of mobile communication technology;
- Sharing Information; the Internet has helped broaden communication channels by connecting people all over the world through a single computer network. with hand-

held communications devices, business professionals can instantly share information with clients and vendors regardless of where they are.

- Less Down Time; because many business professionals are connected to clients and business associates through cellular devices, there is no down time anymore. Business managers, small business owners and professionals are always on call to clients because of the ability of clients to reach business professionals through cellular phone calls, texting or emails. The same mobile communication tools that can make a business easier, can also make business a burden when they take away time off.

Disadvantages of mobile communication technology;

- Cybercrime; Cybercriminals exploit communication technology to steal financial information and perpetrate identity theft. They do this by installing illegal spyware on peoples' computers without their consent, or by exploiting security vulnerabilities on online merchants' websites to steal customers' bank and credit card details.

3.4 How mobile telecommunication is important to an E-business

Telecommunication is an important tool for businesses. It enables companies to communicate effectively with customers and deliver high standards of customer service. Telecommunication is also a key element in teamwork, allowing employees to collaborate easily from wherever they are located. Mobile telecommunication gives companies the opportunity to introduce more flexible working by allowing employees to work efficiently from home. The introduction of smartphones gives employees new levels of productivity and capability on the move.

Customer Service; The telephone remains an important element of a customer service strategy. By using call management techniques, you can handle incoming calls quickly, even when lines are busy, and you can route calls to employees with the right skills to deal with the inquiry. Alternatively, you can offer callers the ability to choose from a range of options, such as "Press '1' for Accounts," or Press '2' for Sales." You can also use the telephone to contact customers proactively, following a service call, for example, or after a purchase.

Collaboration; Collaboration between different departments can help your company improve performance in projects such as new product development, customer relationship management and quality initiatives. According to consultancy McKinsey & Company,

(Linton, 2017)collaborative, complex problem solving is the essence of the work of many employees. Telecommunication helps your project teams maintain momentum and make important decisions, even when all members cannot attend meetings. Absent members can join a teleconference or a Web conference if they have a smartphone or computer with Internet connectivity.

Remote; If your employees in sales, technical and service teams spend a large portion of their working days with colleagues, visiting customers, working at home or traveling, mobile telecommunication can help them maintain essential contact and work productively on the move. The Yankee Group Enterprise Mobility Survey found that 40 percent of respondents regarded more than a third of employees as remote or mobile workers.

Smartphones; The increasing sophistication of smartphones makes mobile telecommunication an integral part of a wider communication capability. Employees can use the same telecommunication device to access data, send and receive emails, work on documents or participate in multimedia conferences. According to the Cisco Visual Networking Index Study, data-intensive applications are the main component of the growth in communication network traffic.

4.0 Conclusion

- Mobile communication is basically talking, texting or sending data or image files over a wireless network. An example of mobile communication is sending an email from a computer or a smart phone using a wireless network at home or in your local coffee shop.
- The types of mobile communication are; Two-way radio, Public Land radio, Mobile phone and Amateur (HAM) radio.
- Telecommunication is basically the transmission of signs, signals, messages, words, writings, images and sounds or information of any nature by wire, radio, optical or other electromagnetic systems.
- Mobile telecommunications deeply affect the way users interact and have significant externalities for the economic activities for which they are used.

5.0 Summary

At the end of this unit we discussed the concept of mobile communication and telecommunication. We highlighted the relationship between mobile and telecommunication and discussed how mobile telecommunications is related to E-business.

6.0 Tutor-Marked Assignment

    a)   State the benefits of telecommunication to an e-business.

7.0 References/Further Reading

Linton. I. (2017) *The Benefits of Using Telecommunication in Businesses.* Chron, Retrieved from http://smallbusiness.chron.com/benefits-using-telecommunication-businesses-18676.html

UNIT 3: OVERVIEW OF E-BUSINESS

CONTENT

1.0 Introduction

2.0 Objectives

3.0 Main Content

       3.1 What is e-business

       3.2 Types of E-businesses

       3.3 Importance of e-business

       3.4 E-business models

4.0 Conclusion

5.0 Summary

6.0 Tutor-marked assignment

7.0 References/Further Reading

1.0 Introduction

In the previous units, we discussed the concept of the Internet and Mobile Telecommunication. We discussed the ways in which the Internet and Mobile Telecommunication affects businesses and consumers alike. In this unit, we are going to discuss and define what E-business is, the types of E-business and its importance to a traditional business. We will also highlight and briefly discuss the different types of E-business models.

2.0 Objectives

At the end of this unit, students will be able to;

- Understand the nature of an e-business
- Know its importance and the different types of e-businesses
- Identify and explain the different E-business models

3.0 Main Content

3.1 What is E-Business?

Electronic commerce or e-commerce refers to a wide range of online business activities for products and services. It also pertains to "any form of business transaction in which the parties interact electronically rather than by physical exchanges or direct physical contact."

E-commerce is usually associated with buying and selling over the Internet, or conducting any transaction involving the transfer of ownership or rights to use goods or services through a computer-mediated network. Though popular, this definition is not comprehensive enough to capture recent developments in this new and revolutionary business phenomenon. A more complete definition is: E-commerce is the use of electronic communications and digital information processing technology in business transactions to create, transform, and redefine relationships for value creation between or among organizations, and between organizations and individuals. (Wilson, 2017)

3.2 Three Main Types of E-business

1. Business to Consumer (B2C); The most widely recognized form of e-business, B2C is the exchange of information, products or services taking place between a business and a consumer over the internet. As the internet develops, B2C is continually changing the way consumers acquire information, the way products are compared against one another and the way in which they are purchased. An example of a B2C only site is amazon.com. Ae.com is an example of a B2C site housing a physical location as well.

2. Business to Business (B2B); The largest form of e-business in terms of money spent is B2B. Business-to-business allows trading to take place between businesses, using a low-cost sales channel for the sale of goods and services and is responsible for constantly changing corporate buying habits. An example of a B2B site would be a car part company selling parts to a car dealership, another company, rather than directly to consumers.

3. Business to Government (B2G); B2G is the online exchange of information and transactions between businesses and government agencies, also known as e-government. B2G allows government agencies and businesses to use electronic means to conduct business and interact with each other over the internet. An example of a B2G site would be one that offers electronic tax filing.

3.3 Importance of e-business

E-business is important for the following reasons;

Costs; Operational costs such as maintenance of inventory and transaction costs have reduced thanks to e-business. Electronic invoicing has increased invoice-processing efficiencies, created transparency in ordering, streamlined payment processing and reduced costs incurred by the purchase of paper invoices. The number of employees has reduced as customers order their products online and pick them up or arrange for them to be delivered for a fee. Search costs for high-quality products and services have been reduced, as customers can easily find them on company websites.

Marketing; Companies using e-business have a wider online presence. They can advertise their products and services either on their websites or by hosting them on other domains. These advertisements have been customized to cater to the individual needs of their customers, enabling them to reach their clients at a more personal level. Companies also find that Internet marketing is cost effective, as they pay Internet advertising agencies only when customers view their page.

Communications; Adoption of e-business has improved communication in the hypermarket industry. The use of email has enabled companies to respond better and faster to customer issues. Improved customer service has nurtured better relations between retail outlets and customers, ensuring that they remain loyal to the outlets. Companies using websites in the hypermarket industry can offer after-sales services to their clients without the need for a physical presence or storefront. Constant communication of improvements in a company's products enhances its brand for customers.

Revenues; Companies that have adopted e-business have a faster product development cycle, enabling them to respond quickly to market needs. They take advantage of being market leaders to increase revenues before their competitors can enter the market. Inventory tracking enables companies to reduce overstocking and understocking, thereby releasing cash needed for maintenance of stock for other purposes, as well ensuring sales aren't lost because products are out of stock.

3.4 E-business models

An E-business model describes, as a system, how the pieces of a business fit together with emphasis on competition and organizational dynamics. The adoption of a successful e-

business model may make it possible to increase competitiveness in the marketplace. New business models have appeared on the markets, modifying the nature of company internal and external business processes. These new forms of conducting business have affected traditional management techniques taught on management courses and no sector has been left untouched. In this new context, it is important to acknowledge the importance of e-business models. They are the new keys to increasing a company's competitiveness in the marketplace by improving its current value added. The following are the different types of e-business models used;

- **Portals;** this is an e-business model that people use as a launching pad to enter the web. This was the first model of the Internet. It is a specially designed website that brings information from diverse sources, like emails, forums and search engines, together in a uniform way. Usually each information source gets its dedicated area on the page for displaying information (a portlet); often, the user can configure which ones to display.

- **E-tailing;** this is a popular model utilized by retail organizations for transactions with other companies. Organizations can act as intermediaries between producers and potential buyers to create added value.

- **Auction;** this plays an intermediary role between buyers and seller. This model of one seller to one broker to many buyers is more concerned with filling a gap in the marketplace than with mere content.

- **Value-chains**; this business model groups together partner companies that consult each other through an organized process in the making of a product with very high added value. The main objective is to maximize the creation of added value through an efficient operational process.

- **Barter;** this model allows goods and services to be exchanged without money. The Internet enables a business owner to barter tangible or intangible products with another company. For example, a company can make its warehouse space profitable by offering another company the possibility of storing its products there temporarily. The second variation of this model is the most virtual. In this case, companies or people with access to this e-business model are members of different associations or companies. This type of site favors shared expertise and knowledge.

- **Buying groups;** this model is a buying group for several business owners, which allows greater negotiating power. The model is especially useful for the smaller business unable to get the benefits of economy of scale. When businesses are joined together into a buying group, the new entity plays the role of intermediary for research and negotiation with suppliers. It can also provide the distribution of product catalogues as well as the management of commercial and financial transactions and the delivery of merchandise.

- **Integration;** this can either be vertical (according to a specific industry or market) or horizontal (according to an organizational function or process). A differentiation strategy is required if the website is to attract and retain new and existing buyers and sellers. (Wilson, 2017)

4.0 Conclusion

At the end of this unit, we discussed and defined E-business, the types of E-business and its importance to a traditional business. We also highlighted and briefly discussed the different types of E-business models.

5.0 Summary

- Electronic commerce or e-commerce refers to a wide range of online business activities for products and services.

- There are three main types of E-business; Business to Business, Business to Customer and Business to Government.

- An E-business model describes, as a system, how the pieces of a business fit together with emphasis on competition and organizational dynamics.

6.0 Tutor-marked assignment

a) Identify and discuss the different types of E-business
b) State 4 types of E-business models and briefly discuss them.

7.0 References/Further Reading

Wilson. S. (2017) Importance of E-Business in the Hypermarket Industry. Chron, Retrieved from http://smallbusiness.chron.com/importance-ebusiness-hypermarket-industry-14714.html

De Kare-Silver. S. (2000) E-Shock 2000- *The Electronic Shopping Revolution; Strategies for Retailers and Manufacturers,* Macmillan Business, London.

Phillips. P. (2003) *E-Business Strategy; Text and Cases*. McGraw-Hill Companies, New York, ISBN 0077098374

UNIT 4: WEBSITE DESIGN

CONTENT

1.0 Introduction

2.0 Objectives

3.0 Main Content

      3.1 Meaning of website

      3.2 Different types of website

      3.3 The usefulness of websites on business

4.0 Conclusion

5.0 Summary

6.0 Tutor-Marked Assignment

7.0 References/Further Reading

1.0 Introduction

In the previous unit we the concept and nature of E-business, in this unit, we will now go further and discuss the concept of a website, the different types of websites and the usefulness of websites on businesses.

2.0 Objectives

At the end of this unit, students will be able to;

- Define and understand the concept of a website
- Identify the different types of websites
- Know the usefulness of websites

3.0 Main Content

3.1Meaning of website

A **website**, or simply a **site**, is a collection of related web pages, including multimedia content, typically identified with a common domain name, and published on at least one web server. A website may be accessible via a public Internet

Protocol (IP) network, such as the Internet, or a private local area network (LAN), by referencing a uniform resource locator (URL) that identifies the site.

Websites have many functions and can be used in various fashions; a website can be a personal website, a commercial website for a company, a government website or a non-profit organization website. Websites are typically dedicated to a particular topic or purpose, ranging from entertainment and social networking to providing news and education. All publicly accessible websites collectively constitute the World Wide Web, while private websites, such as a company's website for its employees, and are typically a part of an intranet. (Wilson, 2017)

Web pages, which are the building blocks of websites, are documents, typically composed in plain text interspersed with formatting instructions of Hypertext Markup Language (HTML, XHTML). They may incorporate elements from other websites with suitable markup anchors. Web pages are accessed and transported with the Hypertext Transfer Protocol (HTTP), which may optionally employ encryption (HTTP Secure, HTTPS) to provide security and privacy for the user. The user's application, often a web browser, renders the page content according to its HTML markup instructions onto a display terminal. (Wilson, 2017)

Hyperlinking between web pages conveys to the reader the site structure and guides the navigation of the site, which often starts with a home page containing a directory of the site web content. Some websites require user registration or subscription to access content. Examples of subscription websites include many business sites, news websites, academic journal websites, gaming websites, file-sharing websites, message boards, web-based email, social networking websites, websites providing real-time stock market data, as well as sites providing various other services. As of 2016 users can access websites on a range of devices, including desktop and laptop computers, tablet computers, smartphones and smart TVs. Table 1 is on the different types of websites.

3.2 Table 1; Different types of Websites

TYPES OF WEBSITES		
Type of Website	**Description**	**Examples**
Affiliate	A site, typically few in pages, whose purpose is to sell a third party's product. The seller receives a commission for facilitating the sale.	
Affiliate agency	Enabled portal that renders not only its custom CMS but also syndicated content from other content providers for an agreed fee. There are usually three relationship tiers (see Affiliate Agencies).	Commission Junction, advertisers like eBay, or a consumer like Yahoo!.
Archive site	Used to preserve valuable electronic content threatened with extinction. Two examples are: Internet Archive, which since 1996 has preserved billions of old (and new) web pages; and Google Groups, which in early 2005 was archiving over 845,000,000 messages posted to Usenet news/discussion groups.	Internet Archive, Google Groups
Attack site	A site created specifically to attack visitors' computers on their first visit to a website by downloading a file (usually a trojan horse). These websites rely on unsuspecting users with poor anti-virus protection in their computers.	

Blog (web log)	Sites generally used to post online diaries which may include discussion forums (e.g., Blogger, Xanga). Many bloggers use blogs like an editorial section of a newspaper to express their ideas on anything ranging from politics to religion to video games to parenting, along with anything in between. Some bloggers are professional bloggers and they are paid to blog about a certain subject, and they are usually found on news sites.	WordPress
Brand-building site	A site with the purpose of creating an experience of a brand online. These sites usually do not sell anything, but focus on building the brand. Brand building sites are most common for low-value, high-volume fast-moving consumer goods (FMCG).	
Celebrity website	A website the information in which revolves around a celebrity or public figure. These sites can be official (endorsed by the celebrity) or fan-made (run by a fan or fans of the celebrity without implicit endorsement).	jimcarrey.com
Crowd funding website	Platform to fund projects by the pre-purchase of products or by asking audience members to make a donation.	Kickstarter
Click-to-donate site	A website that allows the visitor to donate to charity simply by clicking on a button or answering a question correctly. An advertiser usually donates to the	The Hunger Site, Freerice

	charity for each correct answer generated.	
Community site	A site where persons with similar interests communicate with each other, usually by chat or message boards.	Myspace, Facebook, orkut, VK
Content site	A site the business of which is the creation and distribution of original content	wikiHow.com, About.com
Classified ads site	A site publishing classified advertisements	gumtree.com, Craigslist
Corporate website	Used to provide background information about a business, organization, or service.	
Dating website	A site where users can find other single people looking for long-term relationships, dating, short encounters or friendship. Many of them are pay per services, but there are many free or partially free dating sites. Most dating sites in the 2010s have the functionality of social networking websites.	eHarmony, Match.com
Electronic commerce (e-commerce) site	A site offering goods and services for online sale and enabling online transactions for such sales.	Amazon.com
Fake news website	A site publishing fake news stories, intending to deceive visitors and profit from advertising.	

Forum website	A site where people can hold conversations in the form of posted messages.	Skyscraper City, 4chan
Gallery website	A website designed specifically for use as a gallery; these may be an art gallery or photo gallery and of commercial or non-commercial nature.	
Government site	A website made by the local, state, department or national government of a country. Usually these sites also operate websites that are intended to inform tourists or support tourism.	
Gripe site	A site devoted to the criticism of a person, place, corporation, government, or institution.	
Gaming website **Gambling website**	A site that lets users play online games such as gambling.	
Humor site	Satirizes, parodies or amuses the audience.	The Onion
Information site	Most websites fit in this category to some extent. They do not necessarily have commercial purposes.	Most government, educational and nonprofit institutions have an informational site.
Media-sharing site	A site that enables users to upload and view media such as pictures, music, and videos	YouTube, DeviantArt
Mirror website	A website that is the replication of another website. This type of website is	

	used as a response to spikes in user visitors. Mirror sites are most commonly used to provide multiple sources of the same information, and are of particular value as a way of providing reliable access to large downloads.	
Microblog site	A short and simple form of blogging. Microblogs are limited to certain numbers of characters and works similar to a status update on Facebook.	Twitter
News site	Similar to an information site, but dedicated to dispensing news, politics, and commentary.	cnn.com
Personal website	Websites about an individual or a small group (such as a family) that contains information or any content that the individual wishes to include. Such a personal website is different from a *celebrity website*, which can be very expensive and run by a publicist or agency.	
Phishing site	A website created to fraudulently acquire sensitive information, such as passwords and credit card details, by masquerading as a trustworthy person or business (such as Social Security Administration, PayPal, a bank) in an electronic communication (see Phishing).	
Photo sharing site	A website created to share digital photos with the online community. (see Photo sharing).	Flickr, Instagram, Imgur
p2p/Torrents website	Websites that index torrent files. This type of website is different from a Bit torrent client which is usually a stand-alone software.	Mininova, The Pirate Bay, IsoHunt
Political site	A site on which people may voice	

	political views, provide political humor, campaign for elections, or provide information about a certain candidate, political party or ideology.	
Question and Answer (Q&A) site	Answer site is a site where people can ask questions & get answers.	Quora, Yahoo! Answers, Stack Exchange Network(including Stack Overflow)
Religious site	A site in which people may advertise a place of worship, or provide inspiration or seek to encourage the faith of a follower of that religion.	
Review site	A site on which people can post reviews for products or services.	Yelp, Rotten Tomatoes
School site	a site on which teachers, students, or administrators can post information about current events at or involving their school. U.S. elementary-high school websites generally use k12 in the URL	
Scraper site	a site which largely duplicates the content of another site without permission, without actually pretending to be that site, in order to capture some of that site's traffic (especially from search engines) and profit from advertising revenue or in other ways.	
Search engine site	A website that indexes material on the Internet or an intranet (and lately on traditional media such as books and newspapers) and provides links to information as a response to a query.	Google Search, Bing, GoodSearch, DuckDuckGo, Ecosia
Shock site	Includes images or other material that is intended to be offensive to most viewers	Goatse.cx, rotten.com
Showcase site	Web portals used by individuals and organisations to showcase things of interest or value	
Social bookmarking	A site where users share other content from the Internet and rate and comment	StumbleUpon, Digg

site	on the content.	
Social networking site	A site where users could communicate with one another and share media, such as pictures, videos, music, blogs, etc. with other users. These may include games and web applications.	Facebook, Google+
Social news	A social news website features user-posted stories that are ranked based on popularity. Users can comment on these posts, and these comments may also be ranked. Since their emergence with the birth of web 2.0, these sites are used to link many types of information including news, humor, support, and discussion. Social news sites allegedly facilitate democratic participation on the web.	Reddit, Digg, SlashDot
Warez	A site designed to host or link to materials such as music, movies and software for the user to download.	
Webcomic	An online comic, ranging in various styles and genres unique to the World Wide Web.	*Penny Arcade*, *xkcd*, *Gunnerkrigg Court*
Webmail	A site that provides a webmail service.	Hotmail, Gmail, Yahoo!
Web portal	A site that provides a starting point or a gateway to other resources on the Internet or an intranet.	msn.com, msnbc.com, Yahoo!
Wiki site	A site in which users collaboratively edit its content.	Wikipedia, wikiHow, Wikia
Top100 Sites	A Site that create the List of top100 website of particular niche.	
Coupon Sharing Site	A site that share free coupon to the user.	
Comparison Website	A site that compare the particular product or service online. For example, User can compare the Policy Price before taking the Insurance.	

Job Portal	A site that share the current Job Openings with the user.	

Source; Phillips (2003)

3.3 The usefulness of websites to a business

The following are the usefulness of a website to a business;

i. **Your small business will gain credibility;** Today, more and more consumers use the internet to search for the products or services they need. Your small business will gain credibility by having a website. Without one, potential customers will go to your competitors that do. If you already have a website but it is "home-made", having it professionally redesigned will provide your business with a professional image which will inspire even greater confidence. For home-based businesses, this is particularly beneficial since you do not have a store front to promote your products or services.

ii. **A website saves you money;** As a small business owner you probably think you can't afford a professional website, but you can't afford NOT to. Although the cost of designing a website varies, once it's up and running, a website for a small business generally costs under $100 a month and, in some cases, as little as $20. Compared with the cost of a newspaper ad, when you consider the potential market you can reach with a website, it is a very cost effective way to promote your business.

iii. **It will enable you to keep your customers informed;** Think of your website as being your online brochure or catalogue. It is much easier and quicker to update information about your products and services on your website than in print material, making it an effective way of letting your customers know about the arrival of new products, upcoming events, special promotions, or any new services you now offer. Unlike print ads which quickly become outdated, your website can provide current information and news.

iv. **It is always accessible;** A website is available to both your regular and potential customers 24/7/365 providing them with the convenience of reviewing your products and services when your store or office is closed. With today's busy lifestyles, this is a great selling point when making a purchase decision.

v. **A website makes it possible to target a wider market;** Whether you provide products or services, your website will provide an alternative location to sell them. As

a retailer, a website (e-Commerce) is a great place to sell your products to a wider market; even services can be made available globally.

vi.   **It provides a medium on which to showcase your work;** No matter what type of business you're in, a website is a great place to showcase your work. By including a portfolio or image gallery, as well as testimonials about your work, you can demonstrate what makes your business unique.

vii.   **A website saves you time;** Providing information to your customers takes time, whether it's on the phone, face-to-face, in a brochure, or in emails. With an online catalogue you can provide lots of information about your products and services. Once your website is up and running, it is available to your customers indefinitely, saving you time.

viii. **It improves customer service;** Maybe you sell environmentally friendly products and would like to share tips on how to recycle, or perhaps you're an accountant and want to give your clients advice on how to simplify their bookkeeping practices. By including a FAQ page, adding articles or uploading newsletters to answer all your customers' questions you can keep them up-to-date.

4.0 Conclusion

- A **website**, or simply a **site**, is a collection of related web pages, including multimedia content, typically identified with a common domain name, and published on at least one web server.

- A website may be accessible via a public Internet Protocol (IP) network, such as the Internet, or a private local area network (LAN), by referencing a uniform resource locator (URL) that identifies the site.

5.0 Summary

In this unit, we discussed the nature of a website, the different types of websites and the usefulness of a website to a business.

6.0 Tutor-Marked Assignment

    a)   Identify and discuss, four usefulness of a website.

7.0 References/Further Reading

Wilson. S. (2017) Importance of E-Business in the Hypermarket Industry. Chron, Retrieved from http://smallbusiness.chron.com/importance-ebusiness-hypermarket-industry-14714.html

De Kare-Silver. S. (2000) E-Shock 2000- *The Electronic Shopping Revolution; Strategies for Retailers and Manufacturers,* Macmillan Business, London.

Phillips. P. (2003) *E-Business Strategy; Text and Cases*. McGraw-Hill Companies, New York,   ISBN 0077098374

MODULE 2: INTERNET ADVERTISEMENT
UNIT 1: OVERVIEW OF INTERNET ADVERTISEMENT
UNIT 2: ONLINE SHOPPING
UNIT 3: E-PAYMENTS

UNIT 1: OVERVIEW OF INTERNET ADVERTISEMENT
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4.0 Conclusion

5.0 Summary

6.0 Tutor-Marked Assignment

7.0 References/Further Readings

1.0 INTRODUCTION

In the previous module, we discussed the concept and nature of the Internet, Website design, and E-business as a whole. In this unit we shall examine several strategies for promoting and advertising products and services on the Internet. Owing to the divergent understanding and applications of the Internet in marketing we also have multiples of ad and promotional techniques as seen in this unit of the course.

2.0 OBJECTIVES

At the end of this unit the student is expected to:
- Trace the history of web banner

- Explain what is Display Advertising

- Differentiate the various forms of web advertising

- Differentiate contextual and interactive advertising

- Define social media optimization and origin

- Enumerate understand and know the use of digital marketing

- Enumerate e-procurement and its advantages and disadvantages.

3.0 MAIN CONTENT

3.1 Web Banner

A **web banner** or **banner ad** is a form of advertising on the World Wide Web. This form of online advertising entails embedding an advertisement into a web page. It is intended to attract traffic to a website by linking to the website of the advertiser. The advertisement is constructed from an image (GIF, JPEG, PNG), JavaScript program or multimedia object employing technologies such as Silverlight, Java, Shockwave or Flash, often employing animation or sound to maximize presence. Images are usually in a high-aspect ratio shape (i.e. either wide and short, or tall and narrow) hence the reference to banners. These images are usually placed on web pages that have interesting content, such as a newspaper article or an opinion piece. (Sullivan, 2006)

The web banner is displayed when a web page that references the banner is loaded into a web browser. This event is known as an "impression". When the viewer clicks on the banner, the viewer is directed to the website advertised in the banner. This event is known as a "click through". In many cases, banners are delivered by a central ad server. When the advertiser scans their log files and detects that a web user has visited the advertiser's site from the content site by clicking on the banner ad, the advertiser sends the content provider some small amount of money (usually around five to ten US cents). This payback system is often how the content provider is able to pay for the Internet access to supply the content in the first place. Web banners function the same way as traditional advertisements are intended to function: notifying consumers of the product or service and presenting reasons why the consumer should choose the product in question, although web banners differ in that the results for advertisement campaigns may be monitored real-time and may be targeted to the viewer's interests.

Many web surfers regard these advertisements as highly annoying because they distract from a web page's actual content or waste bandwidth. Of course, the purpose of the banner ad is to attract attention and many advertisers try to get attention to the advert by making them annoying. Without attracting attention it would provide no revenue for the advertiser or for the content provider. Newer web browsers often include options to disable pop-ups or block images from selected websites. Another way of avoiding banners is to use a proxy server that blocks them, such as Privoxy.

3.1.1 History

The first clickable web ad (which later came to be known by the term "banner ad") was sold by Global Network Navigator (GNN) in 1993 to a law firm. GNN was the first commercially supported web publication and one of the very first web sites ever. Hot Wired was the first web site to sell banner ads in large quantities to a wide range of major corporate advertisers. Andrew Anker was Hot Wired's first CEO. Rick Boyce, a former media buyer with San Francisco advertising agency Hal Riney & Partners, spearheaded the sales effort for the company. Hot Wired coined the term "banner ad" and was the first company to provide click through rate reports to its customers. The first web banner sold by Hot Wired was paid for by AT&T, and was put online on October 25, 1994.] Another source also credits Hotwired and October 1994, but has Coors' "Zima" campaign as the first web banner. The hotwired AT&T banner ad and credits can be viewed here. (Kenny and Marshall, 2000)

In May of 1994, an early Internet commercialization pioneer, who mentored Boyce in his transition from traditional to online advertising, first introduced the concept of a clickable/trackable ad. He stated that he believed that only a direct response model – in which the return on investment of individual ads was measured – would prove sustainable over the long run for online advertising. Despite this prediction, banner ads were valued and sold based on the number of impressions they generated. This approach to banner ad sales proved successful and provided the economic foundation for the web industry from the period of 1994 to 2000 until the market for banner ads "crashed" and there was a radical revaluation of their value. The new online advertising model that emerged in the early years of the 21st century, was introduced by GoTo.com (later Overture, then Yahoo and mass marketed by Google's AdWords program), closely resembled the pioneer's 1994 projection. (Bhargava, 2006)

3.1.2 Standard Sizes

Ad sizes have been standardized to some extent; they are:

i.   **Rectangular and pop-up ads width by height** *(in pixels)*

- Large rectangle 336 by 280

- Medium rectangle 300 by 250

- Square pop-up 250 by 250

- Vertical rectangle 240 by 400

- Rectangle 180 by 150

ii.   **Banner and button ads**

- Leaderboard 728 by 90

- Full banner 468 by 60

- Half banner 234 by 60

- Button 1 120 by 90

- Button 2 120 by 60

- Micro bar 88 by 31

- Micro button 80 by 15

- Vertical banner 120 by 240

- Square button 125 by 125

iii.   **"Skyscraper" ads**

- Skyscraper 120 by 600

- Wide skyscraper 160 by 600

- Half-page 300 by 600

3.2 Display Advertising

Display advertising is a type of advertising that may, and most frequently does, contain graphic information beyond text such as logos, photographs or other pictures, location maps, and similar items. In periodicals, it can appear on the same page with, or a page adjacent to, general editorial content; as opposed to classified advertising, which generally appears in a

distinct section and was traditionally text-only in a limited selection of typefaces (although the latter distinction is no longer sharp).

Display advertising uses static and animated images in standard or non-standard sizes called web banners as well as interactive media that might include audio and video elements. Flash by Adobe (originally Macromedia, which was bought by Adobe) is the preferred format for interactive ads on the internet. Display ads do not have to be rich in images, audio or video. Text ads are also used where text is more appropriate or more effective. An example of text ads are commercial SMS messages to mobile devices users.

3.3 Interactive Advertising

Interactive Advertising is the use of interactive media to promote and/ or influence the buying decisions of the consumer in an online and offline environment. Interactive advertising can utilize media such as the Internet, interactive television, mobile devices (WAP and SMS), as well as kiosk-based terminals.

Interactive advertising affords the marketer the ability to engage the consumer in a direct and personal way, enabling a sophisticated and dimensional dialogue, which can affect a potential customer's buying decisions particularly in an e-commerce environment. Perhaps one of the most effective implementations of interactive advertising is so-called viral marketing. This technique uses images, texts, web links, Flash animations, audio/video clips etc., passed from user to user chain letter-style, via email. A notable example of this is the Subservient Chicken, a campaign by Burger King to promote their new line of chicken sandwiches and the "Have It Your Way" campaign. Interactive advertising is also assuming other avatars, such as online directories for brands. These directories presently perform a complementary role to conventional advertising, helping viewers recall and compare brands primarily seen on television. Response is mediated usually through forms and click-to-call technologies. (Bhargava, 2006)

3.4 Contextual Advertising

Contextual advertising is a form of targeted advertising for advertisements appearing on websites or other media, such as content displayed in mobile browsers. The advertisements

themselves are selected and served by automated systems based on the content displayed to the user.

3.4.1 How Contextual Advertising Works

Contextual advertising is targeted to the specific individual visiting a website (or page within a website). A contextual advertising system scans the text of a website for keywords and returns advertisements to the webpage based on what the user is viewing. The advertisements may be displayed on the webpage or as pop-up ads. For example, if the user is viewing a website pertaining to sports and that website uses contextual advertising, the user may see advertisements for sports-related companies, such as memorabilia dealers or ticket sellers. Contextual advertising is also used by search engines to display advertisements on their search results pages based on the keywords in the user's query.

3.4.2 Impact

Contextual advertising has made a major impact on earnings of many websites. Because the advertisements are more targeted, they are more likely to be clicked, thus generating revenue for the owner of the website (and the server of the advertisement). A large part of Google's earnings is from its share of the contextual advertisements served on the millions of webpages running the AdSense program.

Contextual advertising has attracted some controversy through the use of techniques such as third-party hyperlinking, where a third-party installs software onto a user's computer that interacts with the Web Browser Keywords on a webpage are displayed keywords as hyperlinks that lead to advertisers.

3.4.3 Agency Roles

There are several advertising agencies that help brands understand how contextual advertising options affect their advertising plans. There are three main components to online advertising, namely;

- **Creation** – what the advertisement looks like;

- **Media planning** – where the advertisements are to be run; and
- **Media buying** – how the advertisements are paid for.

Contextual advertising replaces the media planning component. Instead of humans choosing placement options, the function is replaced with computers facilitating the placement across thousands of websites.

3.5 Social Media Optimization

Social media optimization (SMO) is a set of methods for generating publicity through social media, online communities and community websites. Methods of SMO include adding RSS feeds, adding a "Digg This" button, blogging and incorporating third party community functionalities like Flickr photo slides and galleries or YouTube videos. Social media optimization is related to search engine marketing, but differs in several ways, primarily the focus on driving traffic from sources other than search engines, though improved search ranking is also a benefit of successful SMO. (Sullivan, 2006)

Social media optimization is in many ways connected as a technique to viral marketing where word of mouth is created not through friends or family but through the use of networking in social bookmarking, video and photo sharing websites. In a similar way the engagement with blogs achieves the same by sharing content through the use of RSS in the blog sphere and special blog search engines such as Technorati.

3.5.1 Origins

Rohit Bhargava was credited with inventing the term SMO. His original rules for conducting Social Media Optimization are: (Sullivan, 2006)

- Increase your link ability
- Make tagging and bookmarking easy
- Reward inbound links
- Help your content travel
- Encourage the mashup

3.5.2 Reasons to Adopt Social Media Marketing

The inflow of social media has skyrocketed over the past few years. Being present on social media platforms is an indispensable form of marketing and not one to be ignored. The benefits of connecting to social media platforms are vast; increases exposure and traffic, generates leads, reduces marketing expenses, improves your online search ranking, grows your customer base and develops loyal fans.

By learning where your audience is, on which platforms they are active and what platforms they are searching on is fundamental in identifying how to further grow your business.

The top social media platforms where users are most active include Facebook, Twitter, Instagram, LinkedIn, YouTube and Pin Interest.

The following are key benefits why firms should adopt social media platforms;

1. **Targets your audience more efficiently;** Knowing your audience is key for any business industry to grow more effectively. Not only does social media achieve this, but also has the tools to specifically target demographic variables of your intended audience; using customer's personal information (e.g. gender, age, relationship status, language). Understanding your target audience can help you shift your marketing strategy efficiently, but also discover new uncharted opportunities and analyze your audience's movements, interactions and behaviors.

2. **Expands your target audience and brings in new ones;** Social media platforms allows users to like, comment and share your page thereby creating free advertising to expand your business reach and bring in potential customers.

3. **Allows instantaneous feedback from customers;** Social media platforms allow immediate feedback from customers; whether they are negative or positive. This provides valuable insight to customer's perspectives; allows you to either enhance your product/service to better suit your customer's needs or learn that customers are satisfied with your businesses offerings. This avoids the tedious task of calling your customers or sending out emails to ascertain their level of satisfaction.

4. **Increases website traffic, search ranking and generating leads;** The more followers, likes, comments and sharing that occurs on your social media platforms, increases your search ranking ability. Creating blogs and linking your businesses activities to your social media accounts further improves your visibility online and traffic to your website. It is important to maintain regular updates, videos and images as well as interactive and compelling content to drive this more effectively. The more active you are on social media the more leads you generate towards your company. However, make sure that the content provided is stimulating and provides the information and demand required by your customers. The intention here is to build future connections and increase word-of-mouth.

5. **Cost effective;** For new start-up companies, SMEs and entrepreneurs, creating brand awareness on a limited budget can often be challenging. Social media is a great way to increase brand awareness at little to no costs compared to other traditional advertising and marketing methods. This allows businesses to maximize their return on investments without breaking the bank. The more time and energy put in investing in social media will provide a greater impact to your businesses growth instantaneously.

6. **Develops customer service relations and loyalty;** The direct interaction between you and your customer is a key feature of social media platforms. It allows you to develop a direct bond with your customers and create a supportive network. The instant back and forth communication you get with social media helps establish trust and builds a loyal fan base. Loyal customers advocate your brand and can drive instant traffic to your business through social media. Furthermore, social media fosters direct communication with customers, in turn validating their value. This can lead to customers to recommending the company's product or service to others. At times, customers can encounter dissatisfaction and make this public. However, if customers feel that their voice has been heard and their negative experience has been quickly rectified and resolved, a once dissatisfied customer can regain confidence, trust and loyalty.

7. **Builds brand awareness and exposure;** This is what social media platforms does best: increases your brand awareness and exposure. You basically have access to

many millions of potential customers signed up to these social media platforms at your disposable. Social media gets your business to be active visually and engagingly.

3.6 Digital Marketing

Digital Marketing is the practice of promoting products and services using digital distribution channels to reach consumers in a timely, relevant, personal and cost-effective manner. Whilst digital marketing does include many of the techniques and practices contained within the category of Internet Marketing, it extends beyond this by including other channels with which to reach people that do not require the use of the Internet. Because of this non-reliance on the Internet, the field of digital marketing includes a whole host of elements such as mobile phones, sms/mms, display/banner ads and digital outdoor.

Previously seen as a stand-alone service it is frequently being seen as a domain that can and does cover most, if not all, of the more traditional marketing areas such as Direct Marketing by providing the same method of communicating with an audience but in a digital fashion.

3.6.1 Digital Marketing – Pull vs. Push

There are two different forms of digital marketing, each of which has its pros and cons. (Sullivan, 2006)

Pull: Pull digital marketing technologies involve the user having to seek out and directly grab (or pull) the content. Website/blogs and streaming media (audio and video) are good examples of this. In each of these examples, users have a specific link (URL) to view the content.

Pros:
- No restrictions, in terms of type of content or size as the user determines what they want.
- No technology required to send the content, only to store/display it.
- No regulations or opt-in process required.

Cons
- Considerable marketing effort required for users to find the message/content.

- Limited tracking capabilities – only total downloads, page views, etc.

- No personalization – content is received and viewed the same way across all audiences.

Push: Push digital marketing technologies involve both the marketer (creator of the message) as well as the recipients (the user). Email, SMS, RSS are examples of push digital marketing. In each of these examples, the marketer has to send (push) the messages to the users (subscribers) in order for the message to be received.

Pros

- Can be personalized -- messages received can be highly targeted and specific to selected criteria – like a special offer for females, 21 years old or over and living in California.

- Detailed tracking and reporting – marketers can see not only how many people saw their message but also specific information about each user such as their name as well as demographic and psychographic data.

- High Return on Investment (ROI) possible – if executed the right way, push messaging can help drive new revenue as well as brand reinforcement.

Cons

- Compliance issue – each push messaging technology has its own set of regulations, from minor (RSS) to heavily controlled (email and text messaging)

- Requires mechanism to deliver content – the marketer has to use an application to send the message, from an email marketing system to RSS feeders.

- Delivery can be blocked – if the marketer does not follow the regulations set forth by each push message type, the content can be refused or rejected before getting to the intended recipient.

3.6.2 Digital Marketing and Multi-Channel Communications

While digital marketing is effective when using one message type, it is much more successful when a marketer combines multiple channels in the message campaigns. For example, if a company is trying to promote a new product release, they could send out an email message or text campaign individually. This, if properly executed, could yield positive results. However, this same campaign could be exponentially improved if multiple message types are implemented.

An email could be sent to a list of potential customers with a special offer for those that also include their cell phone number. A couple of days later, a follow up campaign would be sent via text message (SMS) with the special offer.

Push and pull message technologies can also be used in conjunction with each other. For example, an email campaign can include a banner ad or link to a content download. This enables a marketer to have the best of both worlds in terms of their marketing messaging.

SELF ASSESSMENT EXERCISE

Discuss fully the relevance of digital marketing in today's world.

3.7 E-Procurement

E-procurement (**electronic procurement**, sometimes also known as supplier exchange) is the business-to-business or business-to-consumer purchase and sale of supplies and services through the internet as well as other information and networking systems, such as Electronic Data Interchange and Enterprise Resource Planning. Typically, e-procurement Web sites allow qualified and registered users to look for buyers or sellers of goods and services. Depending on the approach, buyers or sellers may specify costs or invite bids. Transactions can be initiated and completed. Ongoing purchases may qualify customers for volume discounts or special offers. E-procurement software may make it possible to automate some buying and selling. Companies participating expect to be able to control parts inventories more effectively, reduce purchasing agent overhead, and improve manufacturing cycles.

E-procurement is expected to be integrated with the trend toward computerized supply chain management. E-procurement is done with a software application that includes features for supplier management and complex auctions. E-Bay's tools for its sellers have similar features.

There are six main types of e-procurement:

- **Web-based ERP (Electronic Resource Planning)**: Creating and approving purchasing requisitions, placing purchase orders and receiving goods and services by using a software system based on Internet technology.

- **E-MRO (Maintenance, Repair and Operating)**: The same as web based ERP except that the goods and services ordered are non-product related MRO supplies.

- **E-sourcing**: Identifying new suppliers for a specific category of purchasing requirements using Internet technology.

- **E-tendering**: Sending requests for information and prices to suppliers and receiving the responses of suppliers using Internet technology.

- **E-reverse auctioning**: Using Internet technology to buy goods and services from a number of known or unknown suppliers.

- **E-informing**: Gathering and distributing purchasing information both from and to internal and external parties using Internet technology.

The e-procurement value chain consists of Indent Management, eTendering, eAuctioning, Vendor Management, Catalogue Management, and Contract Management. Indent Management is the workflow involved in the preparation of tenders. This part of the value chain is optional, with individual procuring departments defining their indenting process. In works procurement, administrative approval and technical sanction are obtained in electronic format. In goods procurement, indent generation activity is done online. The result of the stage is taken as inputs for issuing the NIT. Elements of e-procurement include Request for Information, Request For Proposal, Request for Quotation, RFx (the previous three together), and eRFx (software for managing RFx projects). (Bhargava, 2006)

3.7.1 Advantages and Disadvantages

Advantages include getting the right product, from the right supplier, at the right time, for the right price and the right quantity. E-procurement has the advantage of taking supply chain management to the next level, providing real time information to the vendor as to the status of a customer's needs. For example, a vendor may have an agreement with a customer to automatically ship materials when the customer's stock level reaches a low point, thus bypassing the need for the customer to ask for it. A major disadvantage of this type of agreement could be that the vendor has the power to take advantage of the customer by knowing more information about the customer than they would have if the customer was in a normal supply chain management structure.

4.0 CONCLUSION

As in conventional traditional marketing of goods and services, in Internet marketing there are several strategies adopted to promote goods and services. These initiatives do not defer much from the conventional forms, but are only effected electronically. For instance, the use of banners to promote and publicize goods and services in traditional setting is also adopted in Internet marketing promotional. It is worthy to note that there continues to be addition of electronic promotional stunts to keep modern day marketing exciting and dynamic.

5.0 SUMMARY

- A **web banner** or **banner ad** is a form of advertising on the World Wide Web. This form of online advertising entails embedding an advertisement into a web page. It is intended to attract traffic to a website by linking to the website of the advertiser.

- **Display** advertising is a type of advertising that may, and most frequently does, contain graphic information beyond text such as logos, photographs or other pictures, location maps, and similar items.

- **Interactive Advertising** is the use of interactive media to promote and/or influence the buying decisions of the consumer in an online and offline environment.

- **Contextual advertising** is a form of targeted advertising for advertisements appearing on websites or other media, such as content displayed in mobile browsers.

- **Social media optimization** (SMO) is a set of methods for generating publicity through social media, online communities and community websites.

- **Digital Marketing** is the practice of promoting products and services using digital distribution channels to reach consumers in a timely, relevant, personal and cost-effective manner.

- **E-procurement** (**electronic procurement**, sometimes also known as supplier exchange) is the business-to-business or business-to-consumer purchase and sale of supplies and services through the internet as well as other information and networking systems, such as Electronic Data Interchange and Enterprise Resource Planning.
- The e-procurement value chain consists of Indent Management, e-Tendering, e-Auctioning, Vendor Management, Catalogue Management, and Contract Management.

6.0 TUTOR-MARKED ASSIGNMENT

1. Briefly discuss Interactive Marketing as a form of Internet marketing.

2. Mention five forms of e-procurement.

7.0 REFERENCES/FURTHER READINGS

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UNIT 2: ONLINE SHOPPING

CONTENTS

1.0 Introduction

2.0 Objectives

3.0 Main Content

4.0 Conclusion

5.0 Summary

6.0 Tutor-Marked Assignment

7.0 References/Further Readings

1.0 INTRODUCTION

Online shopping is the process consumers go through to purchase products or services over the Internet. An online shop, e-shop, e-store, internet shop, webshop, webstore, online store, or virtual store evokes the physical analogy of buying products or services at a bricks-and-mortar retailer or in a shopping mall. Online shopping is a type of electronic commerce used for business-to-business (B2B) and business-to-consumer (B2C) transactions. The term **"Webshop"** also refers to a place of business where web development, web hosting and other types of web related activities take place (Web refers to the World Wide Web and "shop" has

a colloquial meaning used to describe the place where one's occupation is carried out). (Cumming, 2006)

2.0 OBJECTIVES

At the end of this unit the student is expected to:

- Define online shopping

- Trace the history and development of online shopping

- Identify the target audience of online shopping

- Recount the trends in online shopping

- Identify the payment systems available for online shoppers

- Enumerate the issues of logistics, security, convenience, user interface, and much more.

3.0 MAIN CONTENT

3.1 History of Online Shopping

Since about 1990, online shopping has emerged into every corner of life, linking people to the culture of capitalism in frequent and daily ways. It lets us buy what we want, when we want at our convenience, and helps us to imagine ourselves buying, owning, and having positive outcomes by the goods available out there on the web. Shopping has been a way of identifying oneself in today's culture by what we purchase and how we use our purchases. Online shopping has always been a middle to high class commodity since its first arrival on the internet in society. In 1990, Tim Berners-Lee created The World Wide Web Browser. A few years later in 1994 other advances took place such as Online Banking, after that, the next big development was the opening of an online pizza shop by Pizza Hut. In that same year Netscape introduced SSL encryption to enable encryption over the data transferred online which has become essential for online shopping. In 1995, Amazon started up with online shopping, then in 1996, eBay opened for online shopping as well. The idea of online shopping pre-dates the World Wide Web for there were earlier experiments involving real-time transaction processing from a domestic television. The technology, based on Videotex was first demonstrated by Michael Aldrich in 1979 who designed and installed systems in the UK, including the first Tesco pilot system in the 1980s. (Cummings, 2006)

3.2 Target Audience

In general, shopping has always catered to middle class and upper class women. Shopping is fragmented and pyramid-shaped. At the pinnacle are elegant boutiques for the affluent, a huge belt of inelegant but ruthlessly efficient "discounters" flog plenty at the pyramid's precarious middle. At its base are the world's workers and poor, on whose cheapened labor the rest of the pyramid depends for its incredible abundance. Shopping has evolved from single stores to large malls with different services such as offering delivery, attentive service and store credit and accepting return. These new additions to shopping have encouraged and targeted middle class women. In recent years, online shopping has become popular; however, it still caters to the middle and upper class. To shop online, one must be able to have access to a computer and most of the time, own a credit card. This technology separates social classes and their ability to shop. The shopping landscape not only helps distract us from the enormous social segregation by race and class that the most privileged Americans find completely natural, it helps to reproduce this segregation. Shopping has evolved with the growth of technology and that means an even larger separation between social classes and their means to shop. Social position strongly influences individual preferences and tastes in popular culture. If we focus on the demographic characteristics of the in-home shopper, in general, the higher the level of education, income, and occupation of the head of the household, the more favourable the perception of non-store shopping. It should be remembered that an influential factor in consumer attitude towards non-store shopping is exposure to technology, since it has been demonstrated that increased exposure to technology increases the probability of developing favourable attitudes towards new shopping channels.

Online shopping widened the target audience to men and women of the middle class. At first, main users of online shopping were young men with a high level of income and a university education. This profile is changing. For example, in the United States in the early years of Internet there were very few women users, but by 2001 women were 52.8 percent of the online population. Sociocultural pressure has made men generally more independent in their purchase decisions, while women place greater value on personal contact and social relations. In addition, male shoppers are more independent when deciding on purchasing products because unlike women, they don't necessarily need to see or try on the product.

3.3 Trends and Predictability in Online Shopping

One third of people that shop online use a search engine to find what they are looking for and about one fourth of people find websites by word of mouth. Word of mouth has increased as a leading way that people find websites to shop from. When an online shopper has a good first experience with a certain website sixty percent of the time they will return to that website to buy more. Books are one of the things bought most online, however clothes, shoes and accessories are all very popular things to buy online. Cosmetics, nutrition products and groceries are increasingly being purchased online. About one fourth of travelers are buying their plane tickets online because it is a quick and easy way to compare airline travel and make a purchase. Online shopping provides more freedom and control than shopping in a store.

According to sociological perspective online shopping is arguably the most predictable way to shop. One knows exactly what website to go to, how much the product will cost, and how long it will take for the product to reach them. Online shopping has become extremely routine and predictable, which is one of its great appeals to the consumer.

3.4 Logistics

Consumers find a product of interest by visiting the website of the retailer directly, or do a search across many different vendors using a shopping search engine. Once a product has been found on the web site of the seller, most online retailers use shopping cart software to allow the consumer to accumulate multiple items and to adjust quantities, by analogy with filling a physical shopping cart or basket in a conventional store. A "checkout" process follows (continuing the physical-store analogy) in which payment and delivery information is collected, if necessary. Some stores allow consumers to sign up for a permanent online account so that some or all this information only needs to be entered once. The consumer often receives an e-mail confirmation once the transaction is complete. Less sophisticated stores may rely on consumers to phone or e-mail their orders (though credit card numbers are not accepted by e-mail, for security reasons).

3.5 Payment

Online shoppers commonly use credit card to make payments, however some systems enable users to create accounts and pay by alternative means, such as:

- Debit card

- Various types of electronic money

- Cash on delivery (C.O.D., offered by very few online stores)

- Cheque

- Wire transfer/delivery on payment

- Postal money order

- PayPal

- Google Checkout

- Moneybookers

- Reverse SMS billing to mobile phones

- Gift cards

- Direct debit in some countries

Some sites will not allow international credit cards and billing address and shipping address should be in the same country in which site does its business. Other sites allow customers from anywhere to send gifts anywhere. The financial part of a transaction might be processed in real time (for example, letting the consumer know their credit card was declined before they log off), or might be done later as part of the fulfillment process. While credit cards are currently the most popular means of paying for online goods and services, alternative online payments will account for 26 percent of e-commerce volume by 2009. (Wilson, 2017)

3.6 Product Delivery

Once a payment has been accepted the goods or services can be
delivered in the following ways.

- **Download:** This is the method often used for digital media products such as software, music, movies, or images.
- **Shipping:** The product is shipped to the customer's address.
- **Drop shipping:** The order is passed to the manufacturer or third-party distributor, who ships the item directly to the consumer, bypassing the retailer's physical location to save time, money, and space.

- **In-store pickup:** The customer orders online, finds a local store using locator software and picks the product up at the closest store. This is the method often used in the bricks and clicks business model.

3.7 Shopping Cart Systems

Simple systems allow the offline administration of products and categories. The shop is then generated as HTML files and graphics that can be uploaded to a webspace. These systems do not use an online database. A high-end solution can be bought or rented as a standalone programme or as an addition to an enterprise resource planning programme. It is usually installed on the company's own webserver and may integrate into the existing supply chain so that ordering, payment, delivery, accounting and warehousing can be automated to a large extent. Other solutions allow the user to register and create an online shop on a portal that hosts multiple shops at the same time. Open source shopping cart packages include advanced platforms such as Interchange, and off the shelf solutions as osCommerce, Magento, Zen Cart and VirtueMart. Commercial systems can also be tailored to ones needs so that the shop does not have to be created from scratch. By using a framework already existing, software modules for different functionalities required by a webshop can be adapted and combined.

3.8 Information Load

Designers of online shops should consider the effects of information load. Mehrabian and Russel (1974), introduced the concept of information rate (load) as the complex spatial and temporal arrangements of stimuli within a setting. The notion of information load is directly related to concerns about whether consumers can be given too much information in virtual shopping environments. Compared with conventional retail shopping, computer shopping enriches the information environment of virtual shopping by providing additional
product information, such as comparative products and services, as well as various alternatives and attributes of each alternative, etc.

Two major sub-dimensions have been identified for information load: complexity and novelty. Complexity refers to the number of different elements or features of a site, which can be the result of increased information diversity. Novelty involves the unexpected,

suppressing, new, or unfamiliar aspects of the site. A research by Huang (2000), showed that the novelty dimension kept consumers exploring the shopping sites, whereas the complexity dimension has the potential to induce impulse purchases.

3.9 User Interface

It is important to take the country and customers into account. For example, in Japan, privacy is very important and emotional involvement is more important on a pension's site then on a shopping site. (Cummings, 2006) Next to that, there is a difference in experience: experienced users focus more on the variables that directly influence the task, while novice users are focusing more on understanding the information. There are several techniques for the inspection of the usability. The ones used in the research of Chen & Macredie (2005), are: Heuristic evaluation, cognitive walkthrough and the user testing. Every technique has its own (dis-)advantages and it is therefore important to check per situation which technique is appropriate. When the customers visited the online shop, a couple of factors determine whether they will return to the site. The most important factors are the ease of use and the presence of user-friendly features.

3.10 Convenience

Online stores are usually available 24 hours a day, and many consumers have Internet access both at work and at home. A visit to a conventional retail store requires travel and must take place during business hours. Searching or browsing an online catalog can be faster than browsing the aisles of a physical store. Consumers with dial-up Internet connections rather than broadband have much longer load times for content-rich websites and have a considerably slower online shopping experience. Some consumers prefer interacting with people rather than computers (and vice versa), sometimes because they find computers hard to use. Not all online retailers have succeeded in making their sites easy to use or reliable.

In most cases, merchandise must be shipped to the consumer, introducing a significant delay and potentially uncertainty about whether the item was in stock at the time of purchase. Bricks-and clicks stores offer the ability to buy online but pick up in a nearby store.
Many stores give the consumer the delivery company's tracking number for their package when shipped, so they can check its status online and know exactly when it will arrive. For

efficiency reasons, online stores generally do not ship products immediately upon receiving an order.

Orders are only filled during warehouse operating hours, and there may be a delay of anywhere from a few minutes to a few days to a few weeks before in-stock items are packaged and shipped. Many retailers inform customers how long they can expect to wait before receiving a package, and whether they generally have a fulfillment backlog. A quick response time is sometimes an important factor in consumers' choice of merchant. A weakness of online shopping is that, even if a purchase can be made 24 hours a day, the customer must often be at home during normal business hours to accept the delivery. For many professionals this can be difficult, and absence at the time of delivery can result in delays, or in some cases, return of the item to the retailer. Automated delivery booths, such as DHL's Packstation, have tried to address this problem. In the event of a problem with the item - it is not what the consumer ordered, or it is not what they expected – consumers are concerned with the ease with which they can return an item for the correct one or for a refund. Consumers may need to contact the retailer, visit the post office and pay return shipping, and then wait for a replacement or refund.

Some online companies have more generous return policies to compensate for the traditional advantage of physical stores. For example, the online shoe retailer Zappos.com includes labels for free return shipping, and does not charge a restocking fee, even for returns which are not the result of merchant error. (Note: In the United Kingdom, Online shops are prohibited from charging a restocking fee if the consumer cancels their order in accordance with the Consumer Protection (Distance Selling) Act 2000). (Cummings, 2006)

3.11 Information and Reviews

Online stores must describe products for sale with text, photos, and multimedia files, whereas in a physical retail store, the actual product and the manufacturer's packaging will be available for direct inspection (which might involve a test drive, fitting, or other experimentation). Some online stores provide or link to supplemental product information, such as instructions, safety procedures, demonstrations, or manufacturer specifications. Some provide background information, advice, or how-to guides designed to help consumers decide which product to buy. Some stores even allow customers to comment or rate their items. There are also dedicated review sites that host user reviews for different products. In a

conventional retail store, clerks are generally available to answer questions. Some online stores have real-time chat features, but most rely on e-mail or phone calls to handle customer questions.

3.12 Price and Selection

One advantage of shopping online is being able to quickly seek out deals for items or services with many different vendors (though some local search engines do exist to help consumers locate products for sale in nearby stores). Search engines and online price comparison services can be used to look up sellers of a product or service. Shoppers find a greater selection online in certain market segments (for example, computers and consumer electronics) and in some cases lower prices. This is due to a relaxation of certain constraints, such as the size of a "brick-and-mortar" store, lower stocking costs (or none, if drop shipping is used), and lower staffing overhead. Shipping costs (if applicable) reduce the price advantage of online merchandise, though depending on the jurisdiction, a lack of sales tax may compensate for this. Shipping a small number of items, especially from another country, is much more expensive than making the larger shipments bricks-and-mortar retailers order. Some retailers (especially those selling small, high-value items like electronics) offer free shipping on sufficiently large orders.

SELF ASSESSMENT EXERCISE
What dangers and security concerns are inherent in internet marketing?

3.13 Fraud and Security Concerns

Given the lack of ability to inspect merchandise before purchase, consumers are at higher risk of fraud on the part of the merchant than in a physical store. Merchants also risk fraudulent purchases using stolen credit cards or fraudulent repudiation of the online purchase. With a warehouse instead of a retail storefront, merchants face less risk from physical theft. Secure Sockets Layer (SSL) encryption has generally solved the problem of credit card numbers being intercepted in transit between the consumer and the merchant. Identity theft is still a concern for consumers when hackers break into a merchant's web site and steal names, addresses and credit card numbers. Several high-profile break-ins in the 2000s has prompted some U.S. states to require disclosure to consumers when this happens. Computer security

has thus become a major concern for merchants and e-commerce service providers, who deploy countermeasures such as firewalls and anti-virus software to protect their networks. (Wilson, 2017)

Phishing is another danger, where consumers are fooled into thinking they are dealing with a reputable retailer, when they have been manipulated into feeding private information to a system operated by a malicious party. On the other hand, dealing with an automated system instead of a population of store clerks reduces the risk of employees stealing consumer information, or dumpster diving of paper receipts. Denial of service attacks are a minor risk for merchants, as are server and network outages. Quality seals can be placed on the Shop webpage if it has undergone an independent assessment and meets all requirements of the company issuing the seal. The purpose of these seals is to increase the confidence of the online shoppers; the existence of many different seals, or seals unfamiliar to consumers, may foil this effort to a certain extent. Several sources offer advice on how consumers can protect themselves when using online retailer services. These include:

- Sticking with known stores, or attempting to find independent consumer reviews of their experiences; also ensuring that there is comprehensive contact information on the website before using the service, and noting if the retailer has enrolled in industry oversight programs such as trust mark or trust seal.
- Ensuring that the retailer has an acceptable privacy policy posted. For example note if the retailer does not explicitly state that it will not share private information with others without consent.
- Ensuring that the vendor address is protected with SSL (see above) when entering credit card information. If it does the address on the credit card information entry screen will start with "HTTPS".
- Using strong passwords, without personal information. Another option is a "pass phrase," which might be something along the lines: "I shop 4 good a buy!!" These are difficult to hack, and provides a variety of upper, lower, and special characters and could be site specific and easy to remember.

Although the benefits of online shopping are considerable, when the process goes poorly it can create a thorny situation. A few problems that shoppers potentially face include identity

theft, faulty products, and the accumulation of spyware. Most large online corporations are inventing new ways to make fraud more difficult, however, the criminals are constantly responding to these developments with new ways to manipulate the system. Even though these efforts are making it easier to protect yourself online, it is a constant fight to maintain the lead. It is advisable to be aware of the most current technology and scams out there to fully protect yourself and your finances.

One of the hardest areas to deal with in online shopping is the delivery of the products. Most companies offer shipping insurance in case the product is lost or damaged; however, if the buyer opts not to purchase insurance on their products, they are generally out of luck. Some shipping companies will offer refunds or compensation for the damage, but it is up to their digression if this will happen. It is important to realize that once the product leaves the hands of the seller, they have no responsibility (provided the product is what the buyer ordered and is in the specified condition).

3.13.1 Privacy

Privacy of personal information is a significant issue for some consumers. Different legal jurisdictions have different laws concerning consumer privacy, and different levels of enforcement. Many consumers wish to avoid spam and telemarketing which could result from supplying contact information to an online merchant. In response, many merchants promise not to use consumer information for these purposes, or provide a mechanism to opt-out of such contacts. Brick-and-mortar stores also collect consumer information. Some ask for address and phone number at checkout, though consumers may refuse to provide it. Many larger stores use the address information encoded on consumers' credit cards (often without their knowledge) to add them to a catalog mailing list. This information is obviously not accessible to the merchant when paying in cash.

Many successful purely virtual companies deal with digital products, (including information storage, retrieval, and modification), music, movies, office supplies, education, communication, software, photography, and financial transactions. Examples of this type of company include: Google, eBay and Paypal. Other successful marketers use Drop shipping or affiliate marketing techniques to facilitate transactions of tangible goods without maintaining real inventory. Examples include numerous sellers on eBay. Some non-digital products have

been more successful than others for online stores. Profitable items often have a high value-to-weight ratio, they may involve embarrassing purchases, they may typically go to people in remote locations, and they may have shut-ins as their typical purchasers. Items which can fit through a standard letterbox – such as music CDs, DVDs and books – are particularly suitable for a virtual marketer, and indeed Amazon.com, one of the few enduring dot-com companies, has historically concentrated on this field.

Products such as spare parts, both for consumer items like washing machines and for industrial equipment like centrifugal pumps, also seem good candidates for selling online. Retailers often need to order spare parts specially, since they typically do not stock them at consumer outlets – in such cases, e-commerce solutions in spares do not compete with retail stores, only with other ordering systems. A factor for success in this niche can consist of providing customers with exact, reliable information about which part number their version of a product needs, for example by providing parts lists keyed by serial number.

Products less suitable for e-commerce include products that have a low value-to-weight ratio, products that have a smell, taste, or touch component, products that need trial fittings – most notably clothing – and products where colour integrity appears important. Nonetheless, Tesco.com has had success delivering groceries in the UK, albeit that many of its goods are of a generic quality, and clothing sold through the internet is big business in the U.S. Also, the recycling program Cheap cycle sells goods over the internet, but avoids the low value-to-weight ratio problem by creating different groups for various regions, so that shipping costs remain low. (Cummings, 2006)

3.13.2 Aggregation

High-volume websites offer hosting services for online stores to small retailers. These stores are presented within an integrated navigation framework. Collections of online stores are sometimes known as virtual shopping malls or online marketplaces. Become.com is a product price comparison service and discovery shopping search engine with a mission to help shoppers make ideal buying decisions. Dulance was a price engine that specialized in searching for hard-to-find products often sold by small independent online retailers ("The Long Tail").

4.0 CONCLUSION

Indeed online shopping is a form of e-commerce, but more devoted to the buying of goods and services in virtual shop where the goods are physically displayed, though virtually. Though it is not as encompassing as Internet marketing they have the same concept. It has brought a big relive and convenience to shopping experiences all over the world.

5.0 SUMMARY

i.   **Online shopping** is the process consumers go through to purchase products or services over the Internet. An online shop, eshop, e-store, internet shop, webshop, webstore, online store, or virtual store evokes the physical analogy of buying products or services at a bricks-and-mortar retailer or in a shopping mall.

ii.   Since about 1990, online shopping has emerged into every corner of life, linking people to the culture of capitalism in frequent and daily ways.

iii. In general, shopping has always catered to middle class and upper class women.

iv.   One third of people that shop online use a search engine to find what they are looking for and about one fourth of people find websites by word of mouth.

v.   Consumers find a product of interest by visiting the website of the retailer directly, or do a search across many different vendors using a shopping search engine.

vi.   Online shoppers commonly use credit card to make payments, however some systems enable users to create accounts and pay by alternative means.

vii. Once a payment has been accepted the goods or services can be delivered in the several ways.

viii. Online stores are usually available 24 hours a day, and many consumers have Internet access both at work and at home.

ix.   One advantage of shopping online is being able to quickly seek out deals for items or services with many different vendors (though some local search engines do exist to help consumers locate products for sale in nearby stores).

x.   Given the lack of ability to inspect merchandise before purchase, consumers are at higher risk of fraud on the part of the merchant than in a physical store.

xi.   Privacy of personal information is a significant issue for some consumers. Different legal jurisdictions have different laws concerning consumer privacy, and different levels of enforcement

xii.   High-volume websites offer hosting services for online stores to small retailers.

6.0 TUTOR-MARKED ASSIGNMENT

a) List ten payment options in online shopping.

b) Briefly discuss ways to deliver goods and services in online shopping.

7.0 REFERENCES/FURTHER READINGS

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UNIT 4: E-PAYMENTS

CONTENTS

1.0 INTRODUCTION

In the previous unit, we discussed the concept and forms of online shopping. In this unit, we will be discussing the different e-payments methods. Due to the challenge of payment

methods over the Internet, several e-payment options have been developed the ease Internet marketing transactions. The various e-payment methods are emphasized in this unit.

2.0 OBJECTIVES

At the end of this unit the student is expected to:

- List the various forms of e-payments
- Differentiate the various forms of e-payment methods
- Identify the advantages and disadvantages associated with the use of the e-payment methods
- Answer the questions of security as well as other challenges that come with use of the e-payment options.

3.0 MAIN CONTENT
3.1 Debit Card

A **debit card** is a plastic card which provides an alternative payment method to cash when making purchases. Functionally, it is similar to writing a cheque as the funds are withdrawn directly from either the bank account (often referred to as a *cheque card*), or from the remaining balance on the card. In some cases, the cards are designed exclusively for use on the Internet, and so there is no physical card. The use of debit cards has become wide-spread in many countries and has overtaken the cheque and in some instances cash transactions by volume. Like credit cards, debit cards are used widely for telephone and Internet purchases. This may cause inconvenient delays at peak shopping times (e.g., the last shopping day before Christmas), caused when the volume of transactions overloads the bank networks. In some countries the debit card is multipurpose, acting as the ATM card for withdrawing cash and as a cheque guarantee card. Merchants can also offer "cashback"/"cashout" facilities to customers, where a customer can withdraw cash along with their purchase.

3.2 Credit or Debit?

For consumers, the difference between a "debit card" and a "credit card" is that the debit card deducts the balance from a deposit account, like a checking account, whereas the credit card

allows the consumer to spend money on credit to the issuing bank. In some countries: When a merchant asks "credit or debit?" the answer determines whether they will use a merchant account affiliated with one or more traditional credit card associations (Visa, MasterCard, Discover, American Express, etc.) or an interbank network typically used for debit and ATM cards, like PLUS, Cirrus (interbank network), or Maestro. In other countries: When a merchant asks "credit or debit?" the answer determines whether the transaction will be handled as a *credit transaction* or as a *debit transaction*. In the former case, the merchant is more likely than in the latter case to have to pay a fee defined by fixed percentage to the merchant's bank. In both cases, the merchant may have to pay a fixed amount to the bank. In either case, the transaction will go through a major credit/debit network (such as Visa, MasterCard, Visa Electron or Maestro). In either case, the transaction may be conducted in either online or offline mode, although the card issuing bank may choose to block transactions made in offline mode. This is always the case with Visa Electron transactions, usually the case with Maestro transactions and rarely the case with Visa or MasterCard transactions. In yet other countries: a merchant will only ask for "credit or debit?" if the card is a combined credit+debit card. If the payee chooses "credit", the credit balance will be debited the amount of the purchase; if the payee chooses "debit", the bank account balance will be debited the amount of the purchase. This may be confusing because "debit cards" which are linked directly to a checking account are sometimes dual-purpose, so that they can be used seamlessly in place of a credit card, and can be charged by merchants using the traditional credit networks. There are also "pre-paid credit cards" which act like a debit card but can only be charged using the traditional "credit" networks. The card itself does not necessarily indicate whether it is connected to an existing pile of money, or merely represents a promise to pay later.

In some countries, the "debit" networks typically require that purchases be made in person and that a personal identification number be supplied. The "credit" networks allow cards to be charged with only a signature, and/or picture ID. In other countries, identification typically requires the entering of a personal identification number or signing a piece of paper. This is regardless of whether the card network in use mostly is used for credit transactions or for debit transactions. In the event of an offline transaction (regardless of whether the offline transaction is a credit transaction or a debit transaction), identification using a PIN is impossible, so only signatures on pieces of paper work.

In some countries, consumer protections also vary, depending on the network used. Visa and MasterCard, for instance, prohibit minimum and maximum purchase sizes, surcharges, and arbitrary security procedures on the part of merchants. Merchants are usually charged higher transaction fees for credit transactions, since debit network transactions are less likely to be fraudulent. This may lead them to "steer" customers to debit transactions. Consumers disputing charges may find it easier to do so with a credit card, since the money will not immediately leave their control. Fraudulent charges on a debit card can also cause problems with a checking account because the money is withdrawn immediately and may thus result in an overdraft or bounced checks. In some cases, debit card-issuing banks will promptly refund any disputed charges until the matter can be settled, and in some jurisdictions the consumer liability for unauthorized charges is the same for both debit and credit cards.

In other countries, in India, the consumer protection is the same regardless of the network used. Some banks set minimum and maximum purchase sizes, mostly for online-only cards. However, this has nothing to do with the card networks, but rather with the bank's judgement of the person's age and credit records. Any fees that the customers must pay to the bank are the same regardless of whether the transaction is conducted as a credit or as a debit transaction, so there is no advantage for the customers to choose one transaction mode over another. Shops may add surcharges to the price of the goods or services in accordance with laws allowing them to do so. Banks consider the purchases as having been made now when the card was swiped, regardless of when the purchase settlement was made. Regardless of which transaction type was used, the purchase may result in an overdraft because the money is considered to have left the account at the card swiping. Although many debit cards are of the Visa or MasterCard brand, there are many other types of debit card, each accepted only within a country or region, for example Switch (now: Maestro) and Solo in the United Kingdom, Carte Bleue in France, Laser in Ireland, "EC electronic cash" (formerly Euro check) in Germany and EFTPOS cards in Australia and New Zealand. The need for cross-border compatibility and the advent of the euro recently led to many of these card networks (such as Switzerland's "EC direkt", Austria's "Bankomatkasse" and Switch in the United Kingdom) being rebranded with the internationally recognized Maestro logo, which is part of the MasterCard brand. Some debit cards are dual branded with the logo of the (former) national card as well as Maestro (e.g. EC cards in Germany, Laser cards in Ireland, Switch and Solo in the UK, Pinpas cards in the Netherlands, Bancontact cards in Belgium, etc.). Debit card systems have become popular in video arcades, bowling centers and theme parks.

The use of a debit card system allows operators to package their product more effectively while monitoring customer spending. An example of one of these systems is ECS by Embed International. (Wilson, 2017) A prepaid debit card looks a lot like a credit card. It even works a lot like a credit card, when you use it in a store to purchase products. However, a prepaid credit card is not a credit card. The two work very differently.

Whenever you use a credit card, you are borrowing money from someone else to purchase something. A credit card is then a loan. It doesn't matter if it is a secure credit card, a small business credit card or anything else: the credit card company is lending you money to make your purchase, for which you are going to be charged interest on later (assuming you don't pay the total balance within a 30-day period). A prepaid debit card, on the other hand, is not a loan. It is simply a method following some of the principles of credit cards for the basic transaction, but instead of borrowing money from a third party you are taking money straight from your debit card account. Therefore, it is referred to as prepaid: you put the money into the account, then you can take the money out of it using your debit card, as opposed to paying for the purchase after the fact with a credit card. There are therefore no interest rates applied to debit cards, although there are sometimes fees associated with them. You never should worry about going into debt using a debit card, since you are only taking out what you take in. Many people find them a welcome alternative to traditional credit cards.

3.3 FSA Debit Cards

In the U.S.A, FSA debit card only allows medical expenses. It is used by some banks for withdrawals from their FSAs, MSAs, and HSAs as well. They have Visa or MasterCard logos, but cannot be used as "debit cards", only as "credit cards"", and they are not accepted by all merchants that accept debit and credit cards, but only by those that accept FSA debit cards. Merchant codes and product codes are used at the point of sale (required by law by certain merchants by certain dates in the USA) to restrict sales if they do not qualify. Because of the extra checking and documenting that goes on, later, the statement can be used to substantiate these purchases for tax deductions. In the occasional instance that a qualifying purchase is rejected, another form of payment must be used (a check or payment from another account and a claim for reimbursement later). In the more likely case that non-qualifying items are accepted, the consumer is technically still responsible, and the discrepancy could be revealed during an audit. (Cummings, 2006)

3.4 Wire Transfer

Wire transfer is a method of transferring money from one entity to another. A wire transfer can be made from one entity's bank account to the other entity's bank account, and by a transfer of cash at a cash office.

3.4.1 History

Although the genesis of wire transfer dates as far back as the giro, the modern wire transfer was a product of the telegraph companies, which made it possible to wire a money order from one office to another. Later, it became possible to wire money between banks, which is essentially the same process as the giro. Therefore, the term giro is still used for it in many other European countries.

3.4.2 Process

Bank wire transfers are often the most expedient method for transferring funds between bank accounts. A bank wire transfer is affected as follows:

- The sending bank transmits a message, via a secure system (such as SWIFT or Fed wire), to the receiving bank, requesting that it effect payment according to the instructions given.

- The message also includes settlement instructions. The actual transfer is not instantaneous: funds may take several hours or even days to move from the sender's account to the receiver's account.

- Either the banks involved must hold a reciprocal account with each other, or the payment must be sent to a bank with such an account, a correspondent bank, for further benefit to the ultimate recipient.

3.4.3 Regulation

Bank transfer is the most common payment method in Europe, with several million transactions processed each day. Debit cards are used extensively to pay in stores, while monthly bills are usually paid with a direct transfer (by cellular phone or Internet, or at the bank or an ATM). In 2002, the European Commission relegated the regulation of the fees that a bank may charge for payments in Euros between European Union member countries down to the domestic level resulting in very low or no fees for transfers within the Eurozone; wire transfers between this zone and external areas can be expensive. In the United States, domestic wire transfers are governed by Federal Regulation J and by Article 4A of the Uniform Commercial Code. (Bhargav, 2006)

3.4.4 Security

Bank-to-bank wire transfer is considered the safest international payment method. Each account holder must have a proven identity. Chargeback is unlikely, although wires can be recalled. Information contained in wires is transmitted securely through encrypted communications methods. The price of bank wire transfers varies greatly, depending on the bank and its location; in some countries, the fee associated with the service can be costly. Wire transfers done through cash offices are essentially anonymous and are designed for transfer between persons who trust each other. It is unsafe to send money by wire to an unknown person to collect at a cash office: the receiver of the money may, after collecting it, simply disappear. This scam has been used often, especially in so-called Nigerian letters, also called *advance fee fraud* or *419 scams*.

International transfers involving the United States are subject to monitoring by the Office of Foreign Assets Control (OFAC), which monitors information provided in the text of the wire to ascertain whether money is being transferred to terrorist organizations or countries or entities under sanction by the United States government. If a financial institution suspects that funds are being sent from or to one of these entities, it must block the transfer and freeze the funds.

3.4.5 Methods

Western Union

One of the largest companies that offer wire transfer is Western Union which allows individuals to transfer or receive money without an account with Western Union or any financial institution. Concern and controversy about Western Union transfers have increased in recent years, because of the increased monitoring of money-laundering transactions, as well as concern about terrorist groups using the service, particularly in the wake of the September 11, 2001 attacks. Although Western Union keeps information about senders and receivers, some transactions can be done essentially anonymously, for the receiver is not always required to show identification.

International

Most international transfers are executed through SWIFT, a co-operative society, founded in 1974 by seven international banks, which operate a global network to facilitate the transfer of financial messages. Using these messages, banks can exchange data for funds transfer between financial institutions. SWIFT's headquarters are in La Hulpe, on the outskirts of Brussels, Belgium. The society also acts as a United Nations sanctioning international-standards body, for the creation and maintenance of financial-messaging standards.

Each financial institution is provided an ISO 9362 code, also called a *Bank Identifier Code* (*BIC*) or *SWIFT Code*. These codes generally are eight characters long For example: Deutsche Bank is an international bank, with its head office in Frankfurt Germany, the SWIFT Code for which is *DEUTDEFF*:

- *DEUT* identifies Deutsche Bank.
- *DE* is the country code for Germany.
- *FF* is the code for Frankfurt.

Using an extended code of 11 digits (if the receiving bank has assigned extended codes to branches or to processing areas) allows the payment to be directed to a specific office. For example: DEUTDEFF500 would direct the payment to an office of Deutsche Bank in Bad Homburg. European banks making transfers within the European Union also use the International Bank Account Number, or IBAN.

United States

Banks in the United States use SWIFT to make payments to banks in other countries.
Domestic bank-to-bank transfers are conducted through the Fed wire system, which uses the Federal Reserve System and its assignment of routing transit number, which uniquely identify each bank.

ASSESSMENT EXERCISE

Western Union Money Transfer has reduced the concerns, bottleneck, and problems encountered in remittance of funds from one person to another. Discuss

3.5 Money Order

A **money order** is a payment order for a pre-specified amount of money. Because it is required that the funds be prepaid for the amount shown on it, it is a more trusted method of payment than a personal check. Merchants welcome the extra security of a pre-paid money order instead of a personal check, which can bounce.

3.5.1 History of Money Orders

The money order system was established by a private firm in Great Britain in 1792, and was expensive and not very successful. In about 1836, it was sold to another private firm which lowered the fees which therefore significantly increased the popularity and usage of the system. The Post Office noted the success and profitability, and took over the system in 1838. Fees were reduced further, and usage increased further, making the money order system reasonably profitable. The only drawback was the need to send an advance to the paying Post Office before payment could be tendered to the recipient of the order. This drawback was probably the primary incentive for establishment of the Postal Order System on 1 January 1881. (Bhargav, 2006)

3.5.2 Using Money Orders

A money order is purchased for the amount desired. In this way it is similar to a certified check. The main difference is that money orders are usually limited in maximum face value to some specified figure (for example, the United States Postal Service limits domestic postal money orders to US$1,000 as of July 2008) while certified checks are not.

Money orders typically consist of two portions: the negotiable check for remittance to if the person can relate to the matter made creditor, and a receipt that the customer retains for his/her records. The amount is printed by machine or check writer on both portions, and similar documentation, either as a third hard copy or in electronic form and retained at the issuer and agent locations.

Money orders were originally issued by the U.S. Postal Service as an alternative to sending cash through the postal system for those who did not have checking accounts. They were later offered by many more vendors than just the postal service as a means to pay bills and send money internationally where there were no reliable banking or postal systems.

3.5.3 Drawbacks of Money Orders

Money orders have limited acceptance in the insurance and brokerage industry because of concerns over money laundering. Because of provisions within the USA PATRIOT Act and the Bank Secrecy Act, money orders require far more regulatory processing requirements than personal checks, cashier's checks, or certified checks. Thus, most brokerage firms, insurance firms, and even many banks will not accept them as payment.

As of 2006 there has been a significant increase in counterfeit postal money orders. Often, such a counterfeit will be sent to an unwitting victim who is instructed, on some pretext, to deposit it at his/her bank and return some of the funds. The victim is more likely to trust an "official" money order than a regular check, for the reasons given above. However, because money orders are paid through the postal service rather than the usual check clearing system, they often take longer to "bounce" than an ordinary check. When this finally occurs, it is charged back to the victim, who may already have sent back the funds, for which he or she must take the loss. For this reason, banks are now applying increased security to incoming money orders, and are becoming more reluctant to accept them. A safer approach is to cash them at a post office. In this case, the authenticity of the item is immediately determined, and if deemed good, the holder is paid and absolved of further responsibility for the funds.

3.5.4 Money Orders in India

In India, a Money Order is a service provided by the Indian Postal Service. A payer who wants to send money to a payee pays the amount and a small commission at a post office and receives a receipt for the same. The amount is then delivered as cash to the payee after a few days by a postal employee, at the address specified by the payer. A receipt from the payee is collected and delivered back to the payer at his address. This is more reliable and safer than sending cash in the mail. (Bhargav, 2006)

It is commonly used for transferring funds to a payee who is in a remote, rural area, where banks may not be conveniently accessible or where many people may not use a bank account at all. Money orders are the most economical way of sending money in India for small amounts.

3.5.5 Money Orders in the United States

In the United States, money orders are typically sold by third parties such as the United States Postal Service, grocery stores, and convenience stores. Some financial service companies such as banks and credit unions may not charge for money orders to their clients. Money orders remain a trusted financial instrument. In 2005, 889 million money orders were purchased in the United States for a gross transaction volume of $145 billion. (source: Federal Reserve). However, just because a business can issue a money order does not necessarily mean that they will cash them.

3.5.6 International Money Orders

An international money order is very similar in many aspects to a regular money order except that it can be used to make payments abroad. With it, a buyer can easily pay a seller for goods or services if he or she resides in another country. International money orders are often issued by a buyer's bank and bought in the currency that the seller accepts. International money orders are thought to be safer than sending currency through the post because there are various forms of identification required to cash an international money order, often including a signature and a form of photo identification.

When purchasing an international money order, it is important to ensure that the specific type of money order is acceptable in the destination country. Several countries are very strict that

the money order be on **pink and yellow paper** and have the words "**international postal money order.**" The Japan Post (one of the largest banking institutions in the world) requires these features. Most other countries have taken this as a standard when there is any doubt of a document's authenticity. (Bhargav, 2006)

3.5.7 Alternatives to Money Orders

In the last decade, a number of electronic alternatives to money orders have emerged and have, in some cases, supplanted money orders as the preferred cash transmission method. In Japan, the konbini system enables cash to cash transfers and is available at many of the thousands of convenience stores located in the country. Many of these alternatives use the ubiquitous Visa/MasterCard payment systems to settle transactions. In Italy, the PostePay system offered through the Italian post office. In Ireland, 3V is offered through mobile top-up locations, and in the United States, Paid by Cash is offered at 60,000 grocery and convenience stores. (Bhargav, 2006)

4.0 CONCLUSION

One issue that was really a threat to electronic form of business was the payment methods, bearing in mind the frauds. However, several e-payment options that are effective have been developed. Though this has not ruled out the threat of fraud completely, but it has giving occasion for businesses to be transacted electronically, successfully. The variety of payment options matches the concept of Internet marketing that is out to give consumers several options and convenience.

5.0 SUMMARY

Due to the challenge of payment methods over the Internet, several e-payment options have been developed the ease Internet marketing transactions.

For consumers, the difference between a "debit card" and a "credit card" is that the debit card deducts the balance from a deposit account, like a checking account, whereas the credit card allows the consumer to spend money on credit to the issuing bank.

A **debit card** is a plastic card which provides an alternative payment method to cash when making purchases. Functionally, it is like writing a cheque as the funds are withdrawn directly from either the bank account (often referred to as a *cheque card*), or from the remaining balance on the card. In some cases, the cards are designed exclusively for use on the Internet, and so there is no physical card

In the U.S.A, a FSA debit card only allows medical expenses. It is used by some banks for withdrawals from their FSAs, MSAs, and HSAs as well.

Wire transfer is a method of transferring money from one entity to another. A wire transfer can be made from one entity's bank account to the other entity's bank account, and by a transfer of cash at a cash office.

A **money order** is a payment order for a pre-specified amount of money. Because it is required that the funds be prepaid for the amount shown on it, it is a more trusted method of payment than a personal check. Merchants welcome the extra security of a pre-paid money order instead of a personal check, which can bounce.

ANSWER TO SELF ASSESSMENT EXERCISE
See 3.4.5

6.0 TUTOR-MARKED ASSIGNMENT

i.   Describe briefly the process banks use to transfer/wire funds electronically.
ii.   Identify five points associated with debit cards.

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MODULE 3; CONCEPT OF MARKETING

UNIT 1; OVERVIEW OF E-MARKETING
UNIT 2; E-MARKET OPPORTUNITY ANALYSIS FOR FIRMS
UNIT 3; DEVELOPING AN E-MARKETING PLAN
UNIT 4; ONLIE STRATEGY FORMULATION PLAN
UNIT 5; MARKET COMMUNICATION AND BRANDING
UNIT 6; FINANCIAL APPRAISAL, IMPLEMENTATION AND CONTROL OF E-MARKETING PLAN

UNIT 1: OVERVIEW OF E-MARKETING

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1.0 INTRODUCTION

Electronic marketing, also referred to as *online marketing*, *Internet advertising*, *Internet Marketing*, is the marketing of products or services over the Internet. When applied to the subset of website-based advertisement placements, Electronic marketing is commonly referred to as *Web advertising (Webvertising)* and/or *Web marketing*. The Internet has brought many unique benefits to marketing, one of which being lower costs for the distribution of information and media to a global audience. The interactive nature of Electronic marketing, both in terms of providing instant response and eliciting response, is a unique quality of the medium. E-marketing is sometimes considered to have a broader scope since it refers to digital media such as web, e-mail and wireless media, but also includes management of digital customer data and electronic customer relationship management systems (E-CRM systems).

2.0 OBJECTIVES

At the end of this unit the student is expected to:

- define Electronic marketing

- identify some services associated with Internet marketing

- differentiate Electronic marketing from traditional form of marketing

- know the advantages of Electronic marketing as well as the limitations

- understand the basic security concerns about Electronic marketing;

- answer the question of the impact of Electronic marketing to industries

- know what Electronic market structure is.

3.0 MAIN CONTENT

3.1 Services

Electronic marketing ties together creative and technical aspects of the Internet, including design, development, advertising, and sales. Electronic marketing methods and strategies encompass a wide range of services:

  i.   Affiliate marketing

  ii.   Behavioral marketing

  iii.   Cause marketing

  iv.   Contextual advertising

v.   Customer relationship management (CRM) marketing

vi.   Digital marketing

vii.   Display advertising

viii. E-mail marketing

ix.   In-text advertising

x.   Interactive advertising

xi.   Internet news releases

xii.   Lead scoring

xiii. Newsletter marketing

xiv.   Online market research

xv.   Online reputation management (ORM)

xvi.   Search engine marketing (SEM)

xvii. Social media marketing

xviii. Blog marketing

xix.   Multivariate testing or optimization

xx.   Viral marketing

ii. software-based advertising.

Electronic marketing does not simply entail building or promoting a website, nor does it mean placing a banner ad on another website. Effective electronic marketing requires a comprehensive strategy that synergizes a given company's business model and sales goals with its website function and appearance, focusing on its target market through proper choice of advertising type, media, and design. Electronic marketing also refers to the placement of media along different stages of the customer engagement cycle through search engine marketing (SEM), search engine optimization (SEO), banner ads on specific websites, email marketing and Web 2.0 strategies. In 2008, *The New York Times* working with comScore published an initial estimate to quantify the user data collected by large Internet-based companies. Counting four types of interactions with company websites in addition to the hits from ads served from advertising networks, the authors found the potential for collecting upward of 2,500 pieces of data on average per user per month.

3.2 Business Models

Electronic marketing is associated with several business models:

- E-commerce – goods are sold directly to consumers or businesses;

- Publishing – the sale of advertising;
- Lead-based websites – an organization generates value by acquiring sales leads from its website.

There are many other business models based on the specific needs of each person or business that launches an Internet marketing campaign.

3.3 Differences from Traditional Marketing

One-to-one approach

The targeted user is typically browsing the Internet alone, so the marketing messages can reach him personally. This approach is used in search marketing, where the advertisements are based on search engine keywords entered by the user.

Appeal to specific interest

Electronic marketing places an emphasis on marketing that appeal to a specific behavior or interest, rather than reaching out to a broadly-defined demographic. "Off-line" marketers typically segment their markets according to age group, sex, geography, and other general factors. Online marketers have the luxury of targeting by activity. For example, a kayak company can post advertisements on kayaking and canoeing websites with the full knowledge that the audience has a related interest. Electronic marketing differs from magazine advertisements, where the goal is to appeal to the projected demographic of the periodical. Because the advertiser has knowledge of the target audience – people who engage in certain activities (e.g., uploading pictures, contributing to blogs) – the company does not rely on the expectation that a certain group of people will be interested in its new product or service.

3.4 Advantages

Electronic marketing is relatively inexpensive when compared to the ratio of cost against the reach of the target audience. Companies can reach a wide audience for a small fraction of traditional advertising budgets. The nature of the medium allows consumers to research and purchase products and services at their own convenience. Therefore, businesses have the advantage of appealing to consumers in a medium that can bring results quickly. The strategy

and overall effectiveness of marketing campaigns depend on business goals and cost-volume-profit (CVP) analysis.

Electronic marketers also have the advantage of measuring statistics easily and inexpensively. Nearly all aspects of an Internet marketing campaign can be traced, measured, and tested. The advertisers either pay per web banner impression, per click (PPC), per play (PPP), or per action accomplished. Therefore, marketers can determine which messages or offerings are more appealing to the audience. The results of campaigns can be measured and tracked immediately because online marketing initiatives usually require users to click on an advertisement, visit a website, and perform a targeted action. Such measurement cannot be achieved through billboard advertising, where an individual will at best be interested, then decide to obtain more information later.

Electronic marketing as of 2007 is growing faster than other types of media because exposure, response, and overall efficiency of Internet media is easier to track than traditional off-line media – using web analytics for instance – Electronic marketing can offer a greater sense of accountability for advertisers. Marketers and their clients are becoming aware of the need to measure the collaborative effects of marketing (i.e., how the Internet affects in-store sales) rather than soloing each advertising medium. The effects of multichannel marketing can be difficult to determine, but are an important part of ascertaining the value of media campaigns.

3.5 Limitations

E-marketing requires customers to use new technologies rather than traditional media. Low-speed Internet connections are another barrier. If companies build large or overly-complicated websites, individuals connected to the Internet via dial-up connections or mobile devices may experience significant delays in content delivery. From the buyer's perspective, the inability of shoppers to touch, smell, taste or "try on" tangible goods before making an online purchase can be limiting. However, there is an industry standard for e-commerce vendors to reassure customers by having liberal return policies as well as providing in-store pick-up services. A survey of 410 marketing executives listed the following barriers to entry for large companies looking to market online: insufficient ability to measure impact, lack of internal capability, and difficulty convincing senior management.

3.6 Security Concerns

Information security is important both to companies and consumers that participate in online business. Many consumers are hesitant to purchase items over the Internet because they do not trust that their personal information will remain private. Encryption is the primary method for implementing privacy policies. Recently some companies that do business online have been caught giving away or selling information about their customers. Several of these companies provide guarantees on their websites, claiming that customer information will remain private. Some companies that purchase customer information offer the option for individuals to have their information removed from the database, also known as opting out. However, many customers are unaware when their information is being shared, and are unable to stop the transfer of their information between companies if such activity occurs. Another major security concern that consumers have with e-commerce merchants is whether they will receive exactly what they purchase. Online merchants have attempted to address this concern by investing in and building strong consumer brands (e.g., Amazon.com, eBay, Overstock.com), and by leveraging merchant/feedback rating systems and e-commerce bonding solutions. These solutions attempt to assure consumers that their transactions will be free of problems because the merchants can be trusted to provide reliable products and services. Additionally, the major online payment mechanisms (credit cards, PayPal, Google Checkout, etc.) have also provided back-end buyer protection systems to address problems if they do occur.

3.7 Effects on Industries

E-marketing has had a large impact on several previously retail-oriented industries including music, film, pharmaceuticals, banking, flea markets, as well as the advertising industry itself. E-marketing is now overtaking radio marketing in terms of market share. In the music industry, many consumers have been purchasing and downloading music (e.g., MP3 files) over the Internet for several years in addition to purchasing compact discs. By 2008 Apple Inc.'s iTunes
Store has become the largest music vendor in the United States (US.). The number of banks offering the ability to perform banking tasks online has also increased. Online banking is believed to appeal to customers because it is more convenient than visiting bank branches.

Currently over 150 million US adults now bank online, with increasing Internet connection speed being the primary reason for fast growth in the online banking industry. Of those individuals who use the Internet, 44 percent now perform banking activities over the Internet. Internet auctions have gained popularity. Unique items that could only previously be found at flea markets are being sold on eBay. Specialized e-stores sell items ranging from antiques to movie props. As the premier online reselling platform, eBay is often used as a price-basis for specialized items. Buyers and sellers often look at prices on the website before going to flea markets; the price shown on eBay often becomes the item's selling price. It is increasingly common for flea market vendors to place a targeted advertisement on the Internet for each item they are selling online, all while running their business out of their homes.

3.8 Internet Market Structures

According to Mahadevan, all business on the Internet falls into one of three broad market structures: portals, market makers, and product/service providers. B2B portals primarily provide members of an industry with a sense of community by providing them with information about products, services, and general industry information. They are also used as focal points to channel traffic into the websites of product/service providers in the designated industry. Market makers also offer customers a sense of community and industry information, but they differ from portals in that they participate in the facilitation of business transactions between the buyer and supplier. This market structure can provide an industry with cost reductions by reducing product search costs and transaction costs. Product/service providers are suppliers that sell to their customers directly via the Internet. Once a company has weighed the pros and cons of taking their business online, they must then decide which direction would be best for their company in terms of implementing an e-business model. Unfortunately, there is no unique, successful business model for companies that perform electronic business. Just as in traditional business, the model depends on the products and services that the company offers, the market structure, etc. It is also important to understand exactly what a business model is and what the company hopes to accomplish with the model.

A good business model is essential to every successful organization, whether it is a new venture or an established player. Success online, just as in traditional business, involves adding value to the firm as well as adding value to the customer. A good business model

should tell who the customer is, what the customer values, how the business makes money, and how value is delivered to the customer at an appropriate cost. All new business models are variations on the generic value chain which underlies all businesses. They consist of two parts; activities associated with making something, and activities associated with selling something. A new business model involves either the design of a new product or a process innovation, a better way of making, selling, or distributing an already proven product or service In terms of business-to-business e-business models, the process innovation models are the way that companies will more commonly use the Internet. It is important for companies to understand that their business model does not have to be set in stone.

SELF ASSESSMENT EXERCISE

Discuss the advantages and disadvantages of Traditional Marketing

4.0 CONCLUSION

The advent of the Internet has opened several doors of opportunities in business, even in marketing. The Internet has made the act of marketing to be more dynamic and competitive. The playing field in marketing seems to have levelled and opening the global market to several players. The concept will continue to thrive and expand so long there are growing demands for goods and services.

5.0 SUMMARY

i. **Electronic marketing**, also referred to as *online marketing*, *Internet advertising*, *Internet marketing*, is the marketing of products or services over the Internet.

ii. Internet marketing ties together creative and technical aspects of the Internet, including design, development, advertising, and sales. Internet marketing methods and strategies encompass a wide range of services.

iii. Internet marketing is associated with several business models.

iv. Internet marketing differs from magazine advertisements, where the goal is to appeal to the projected demographic of the periodical.

v. Internet marketing is relatively inexpensive when compared to the ratio of cost against the reach of the target audience.

vi. Internet marketing requires customers to use newer technologies rather than traditional media. Low-speed Internet connections are another barrier.

vii.   Information security is important both to companies and consumers that participate in online business. Many consumers are hesitant to purchase items over the Internet because they do not trust that their personal information will remain private.

viii.   Internet marketing has had a large impact on several previously retail-oriented industries including music, film, pharmaceuticals, banking, flea markets, as well as the advertising industry itself.

ix.   According to Mahadevan, all business on the Internet falls into one of three broad market structures: portals, market makers, and product/service providers.

x.   The Internet economy is a broader concept than e-commerce and e-business.

6.0 TUTOR-MARKED ASSIGNMENT

List ten methods and strategies associated with Internet marketing.

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UNIT 2: E-MARKET OPPORTUNITY ANALYSIS

CONTENT

1.0 Introduction

2.0 Objectives

3.0 Main Content

     3.1What is E-Marketing Opportunity Analysis?

     3.2 Marketing Opportunity Analysis Steps

4.0 Conclusion

5.0 Summary

6.0 Tutor-marked assignment

7.0 References/Further reading

1.0 Introduction

In this unit, we are going to discuss the opportunity analysis for an e-business. We will discuss the concept of e-marketing opportunity analysis and the steps that are firm will take to see the potential of an e-market.

2.0 Objectives

At the end of this unit, students should be able to;

- Define and understand the concept of e-marketing opportunity analysis
- List the benefits of the concept
- Identify the steps in the E-Marketing Opportunity analysis process.

3.0 Main Content

3.1What is E-Marketing Opportunity Analysis?

Market-opportunity analysis is an essential tool for those who plan to launch businesses, whether startups or new ventures within an existing business. While it does not guarantee a venture's success, the process of thinking through the conditions that define opportunity attractiveness increases the likelihood of pursuing a solid idea. Not doing opportunity analysis, or doing it poorly, increases a venture's chance of failure.

It is important to understand the potential impact that a new technology might have on the market. A Market Opportunity analysis is an application of forecasting techniques to the market factors that may influence the demand for a product identified as a market opportunity. The main aim of a Market Opportunity Analysis is to help guide the process of better understanding of the most important market segments, how fast the opportunity is growing, what the key sustainable differentiations are and why these are important.

Before a firm can deeply explore a marketing opportunity analysis for an e-market, they should consider it will differ from the analysis in a traditional marketplace. Mohammed et al (2003), and some analysts believe that the two analyses differ in the following ways:

- Competition occurs across industry boundaries rather than with industry boundaries.
- Competition developments and responses are occurring at an unprecedented speed
- Competition occurs between alliances of companies rather than between individual companies
- Consumer behaviour is still in the early stages of being defined, thus it is easier to influence and change consumer behaviour
- Industry value chains or systems are rapidly being reconfigured

3.2 Marketing Opportunity Analysis Framework/Steps

There are six steps that a firm can go through to begin the opportunity framing of its potential e-market. These steps will create a sufficient base of knowledge and perspective to frame a winning business model and establish a solid foundation for making a well-informed go/no-go decision. The following are the steps that a firm should satisfy to frame market opportunity, as well as the benefits of each step.

i. **Step 1: Investigate opportunity in an existing or new value system:** opportunity identification and analysis is attached to an existing or new value system. The value system can be thought of as the entire chain of suppliers, distributors, competitors, buyers, and intermediaries that bring an existing offering to market. In an e-market, the starting point for opportunity identification is when someone believes that the value system can be reinvented. The first step is essentially to identify which market

that the company wants to enter. In an e-market the business arena is defined from within or across an industry value chain or value system. Start the exploration by looking for a set of activities ripe for positive transformation, either within a firm or across activities conducted by multiple firms. Firms can look at the value system with a lens that yields ideas about new business possibilities. A firm can look for one of three things; a trapped value, new-to-the-world value and a hybrid value (combination of both trapped and new-to-the-world values. The benefit of this step is that it helps identify previously unexploited areas of potential market value for further analysis.

ii. **Step 2: Identify unmet or undeserved needs:** New-value creation is based on doing a better job of meeting customer needs. Customers will switch from their old supplier only if the new company does a better job of meeting some set of needs. Companies can use the customer decision process to determine these unmet or undeserved needs. The customer decision process is an organizing framework to look systematically for unmet or undeserved needs. The process maps the activities and the choices that customers make in accessing a specific experience within a value system. The benefit is that the process may help to generate new ideas about unmet or undeserved needs

iii. **Step 3: Determine target customer segments:** To be effective and efficient, it is important for a company to know which customer groups are most attractive, which groups the company should pursue, which groups the company should not emphasize, and what offerings to present to which target segment. Customer segmentation must be actionable and meaningful. Simple market maps profiling the segments will identify where the money is, how well competitors serve the segments and where the undeserved customers are. The main benefit of this step is that it allows a company to craft an offering that will appeal to the target customers.

iv. **Step 4: Assess resource requirements to deliver the offering:** Having determined the initial customer focus of the business, the company should stake out the capabilities and technology needed to deliver the benefits of the offering. The management team should identify at least three or four resources or assets that make up a winning resource system that it can bring to bear, create, or provide through business partnerships. This resource system is central to delivering new benefits or unlocking trapped value, the core of the company's value story, and should hold the promise for measurable advantage when compared with the current and prospective

players in the targeted marketplace. A resource system is a discrete collection of individual and organizational activities and assets that, when combined, create organizational capabilities. In opportunity assessment, a company must be realistic about any missing capability gaps. The main benefit of this step is that it identifies existing resource strengths and weaknesses needing to be addressed internally or with partners to bring offering to market.

v.   **Step 5: Assess competitive, technological, and financial attractiveness of opportunity:** there are nine factors in four areas that marketing teams can assess to determine the character and magnitude of the opportunity;

- **Competitive intensity;** competitor mapping that shows direct and indirect competitors; strengths and weaknesses.
- **Customer dynamics;** levels of unconstrained opportunity; segment interaction; and the likely rate of growth
- **Technology vulnerability;** impact of the penetration of enabling technologies; and new technologies on the value proposition
- **Microeconomics;** estimate of the size or volume of the market; and level of profitability.

The main benefit of this step is that it determines the character and magnitude of the opportunity and also it establishes barriers to entry and potential rewards.

vi.   **Step 6: Conduct go/no-go assessment:** An opportunity framework can be seen as the first draft of a business plan. It should clearly state the value proposition and target customers. It should demonstrate the benefits of these customers and estimate the magnitude in financial terms of the opportunity, identify key capabilities and resources. The management must decide whether to proceed to defining the specific value proposition and designing a business model. This is the first of several go/no-go decision gates. The main benefit of this step is to determine whether the opportunity is attractive enough to pursue.

SELF ASSESSMENT EXERCISE

List and explain the steps of the marketing opportunity analysis framework

4.0 Conclusion

In this unit, we discussed the meaning and concept of market opportunity analysis of an e-market. We also discussed the steps that firm should or can take when opportunity framing of its potential market.

5.0 Summary

- A Market Opportunity analysis is an application of forecasting techniques to the market factors that may influence the demand for a product identified as a market opportunity.

- The main aim of a Market Opportunity Analysis is to help guide the process of better understanding of the most important market segments, how fast the opportunity is growing, what the key sustainable differentiations are and why these are important.

- The steps in the market opportunity analysis framework are; Investigating opportunity in an existing or new value system; Identifying unmet or undeserved needs; Determine target customer segments; Assess resource requirements to deliver the offering; Assess competitive, technological, and financial attractiveness of opportunity; and Conduct go/no-go assessment.

6.0 Tutor-marked assignment

a) Identify and discuss the steps in the market opportunity analysis framework and its benefits.

ANSWER TO SELF ASSESSMENT EXERCISE

See 3.2

7.0 References/Further reading

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UNIT 3: DEVELOPING AN E-MARKETING PLAN

CONTENTS

1.0 INTRODUCTION

Many first-time business owners think that by simply placing an ad in a local newspaper or a commercial on a radio or a television station, customers will automatically flock to purchase their product or service. This is true to a certain extent. Some people are likely to learn about your invention and try it, just out of curiosity. But hundreds, even thousands, of other potential customers may never learn of your business. Do develop an adequate marketing program. What you as a potential business owner must do is maintain a thorough understanding of your marketing program, and use it to extract advantages from the marketplace. Go over different strategies and techniques until you understand how to apply them to get the results you desire. Remember, your aim is not only to attract and keep a

steady group of loyal customers, but also to expand your customer base by identifying and attracting, new customers and to reduce risks by anticipating market shifts that can affect your bottom line.

2.0 OBJECTIVES

At the end of this unit the student is expected to:

- Identify the four **P**s of marketing
- Define a target market
- Identify competition
- Develop marketing budget and the location of a market
- Develop pricing, promotional and marketing strategies
- Find the right market mix.

3.0 MAIN CONTENT

3.1 The Four Ps of Marketing

To help you accomplish this aim, your marketing plan should include strategies typical of any marketing plan. The plan should especially include what marketers dub as the four **P**'s of Marketing:

- Product
- Price
- Place
- Promotion

Review your plan. Make certain it contains the strategies listed below and on the next page and then determine how these strategies will be applied by you. Include a brief explanation for each strategy.

3.2 Describe your Target Market;

- By age
- By sex
- By profession or career

- By income level

- By educational level

- By residence

Identify and describe your customers (target market) by their age, sex, income/educational levels, profession/career and residence. Know your customers better than you know anyone - their likes, dislikes and expectations. Since you will have limited resources target only those customers who are more likely to purchase your product. As your business grows and your customer base expands, then, you may need to consider modifying this section of the marketing plan to include other customers.

3.3 Identify your Competition

- By market research data

- By demand for product

- By your nearest direct and indirect competitors

- By the strengths and weaknesses of competitors

- By an assessment of how competitor's businesses are doing

- By a description of the unique features of your product

- By the similarities and dissimilarities between your product and competitor's

- By a pricing strategy for and comparison of yours and the competition's.

Identify the five nearest direct competitors and the indirect competitors. Start a file on each identifying their weaknesses and strengths. Keep files on their advertising and promotional materials and their pricing strategies. Review these files periodically determining when and how often they advertise, sponsor promotions and offer sales.

3.4 Describe your Product

Try to describe the benefits of your goods from your customer's perspective. Emphasize its special features - i.e., the selling points. Successful business owners know or at least have an idea of what their customers what or expect from them. This type of anticipation can be helpful in building customer satisfaction and loyalty.

3.5 Develop a Marketing Budget

- For your advertising and promotional plan

- For costs allocated for advertising and promotions

- For advertising and promotional materials

- For a list of advertising media to be used

Operating an effective marketing plan requires money, so you will have to allocate funds from your operating budget to cover advertising, promotional and all other costs associated with marketing. Develop a marketing budget based on the cost for the media you will use, and the
cost for collecting research data and monitoring shifts in the marketplace.

3.6 Describe Location (Place)
- description of the location

- advantages and disadvantages of location.

Again, try to describe the location of your business from your customer's perspective. Describe its assets – i.e., the convenience, whether public transportation is accessible, the safety aspects - street lighting, well-lit parking lot or facility, decor, etc. Your location should be built around your customers, it should be accessible and should provide a sense of security.

3.7 Develop Pricing Strategy
- pricing techniques and brief description of these techniques

- retail costing and pricing

- competitive position

- pricing below competition

- pricing above competition

- price lining

- multiple pricing

- material costs

- labor costs

- Overhead costs.

Although your pricing strategy may be based on the strategy devised by others, you should study this plan and the strategies used by competitors. That way you will acquire a thorough understanding of how to price your product, and you can determine if your prices are in line with competitors, if they are in line with industry averages and what adjustments you can make to bring them in line. The key to success is to have a well-planned strategy, to establish your policies and to constantly monitor prices and operating costs to ensure profits. Keep abreast of changes in the marketplace because these changes can affect your bottom line.

3.8 Develop an Effective Promotional Strategy

- advertising media
- print media (newspaper, magazine, classified ads, Yellow Pages advertising, brochure)
- radio
- television
- networking
- business cards
- tee shirts, hats, buttons, pens
- Internet.

Develop a promotional strategy that uses various media for promoting your business. Monitor the different media identifying those that most effectively promote your business. Concentrate on developing material for these formats that clearly identifies your services, its location and price. Since financial institutions weigh the soundness of your marketing plan when deciding whether your business is a good risk for their money, it is important that you prepare and present credible market data that shows there is a need in the community for your business and that demonstrates your ability to compete.

SELF ASSESSMENT EXERCISE

Discuss the 4**P**s in marketing.

3.9 Internet Marketing as Promotional Strategy

Internet marketing can attract more people to your website, increase customers for your business, and enhance branding of your company and products. If you are just beginning your

online marketing strategy the top 10 list below will get you started on a plan that has worked for many. (Mohamed et al, 2003)

   i.   Start with a web promotion plan and an effective web design and development strategy.

   ii.   Get ranked at the top in major search engines, and practice good Search Optimization Techniques.

  iii.   Learn to use E-mail Marketing effectively.

  iv.   Dominate your marketing niche with affiliate, reseller, and associate programs.

   v.   Request an analysis from an Internet marketing coach or Internet marketing consultant.

  vi.   Build a responsive opt-in e-mail list.

 vii.   Publish articles or get listed in news stories.

viii.   Write and publish online press releases.

  ix.   Facilitate and run contests and giveaways via your website.

   x.   Blog and interact with your visitors.

3.10 Internet Marketing and Home Business

Of all the components of **Internet marketing**, prospective customers and clients expect a business to have a website. In fact, not having one could raise a red flag to a prospect. Online usage has become so pervasive today; many prospects might easily choose to do business with a company that they can get up-to-date information on 24 hours per day, seven days per week. Even a business that only has very local customers, such as a single location restaurant, or shoe store can benefit from having a Web site. And, those businesses whose customers are not restricted to a geographical area might have a difficult time finding an alternate method of attracting customers that offers the reasonably low expense and worldwide reach of a Web presence. Because of the "virtual" nature of most home businesses, websites, if not an absolute necessity, can certainly provide benefits to a home business operator. Since most home-based businesses don't have a physical location, a website provides an inexpensive means for prospects to get to know what you do or what you sell and can even be a "storefront" for selling goods and services directly. The Internet has greatly enabled home

businesses to prosper because of the reasonably low cost to start and maintain a web presence. Therefore, Internet marketing should be part of your business plan and your marketing strategy.

3.11 Finding the Right Internet Marketing Mix

How much of your marketing strategy should be handled online, which Internet marketing elements you use, and the importance you should give to your Web site, depends on the nature of your business, your budget, and, to some extent, your personal traits. Unless you transact business only online, for example if you are an eBay reseller, you will probably want to include some traditional offline marketing elements in your strategy. Even those who conduct business only online might consider placing traditional ads in newspapers or magazines to bring prospects to their website to transact business. Perfect examples of this are Expedia, Travelocity and Monster.com. While they are online businesses, they invest heavily in traditional advertising, including radio and TV advertising, to draw traffic to their sites where the actual business is conducted. If you have a personal distaste for "spam", which most of us do, you may not want to include E-mail marketing in your Internet marketing strategy. However, E-mail marketing doesn't have to mean just sending out unsolicited messages to every e-mail address you can gather. If you include a visitor registration form on your website, for example, or if you exhibit at trade shows, you have the vehicles needed to collect email addresses of interested prospects. You might consider creating a newsletter and sending it to these prospects on a regular basis. Or, you might just set up a schedule where you periodically send an email to your interested prospects to see how they're doing, if you can be of assistance to them, or if their needs have changed since you last talked. Of course, your budget will also determine the components you use in your **Internet marketing strategy**.

A website will require you to register a domain name and to purchase web hosting services for your website. Both items are deeply discounted, in fact I recently saw an offer for domain name registration for only $1.99 per year - provided you also purchase other services, like hosting, which is now also available for less than $10 per month. Once that's done, you'll need a design and content for your website, which you'll either need to provide yourself or pay to have a web content professional and/or web designer handle it for you. Once your content and design are in place, you'll want your site to be found, so you'll want to either

learn about search engine optimization (SEO) or pay an SEO contractor to do it for you. Depending on your budget, you should also research which directories are available and how much they cost for a paid listing (PFI). Ideally, if you pay to have web content written for you, that content should be optimized when it's written. Likewise, you or your web designer should know something about SEO because how your site is designed can enhance or limit your site traffic. In both cases, you may pay a bit more, but you'll save time in the long run. Once the site is up and running, you'll either need to maintain it yourself or outsource the duties to an independent Webmaster to do it for you. Pay-per-click advertising, like Google AdWords can be easy on your budget because you can specify how much you're willing to pay when someone clicks your ad and how much you're willing to pay per day. You can also specify whether you want to include your ad only on search pages or on other websites related to your keywords. Plus, they're easy to activate, disable, rack, and update. You can also use images with PPC advertising, which may be more cost effective than placing banner ads on other Web sites. On the other side of the coin, you can use pay per click ads to make money with your website, through programs like Google AdSense, Yahoo Publisher or Microsoft AdCenter.

3.12 Tracking Results

Let's face it, the average home business operator is not awash in cash. If you're going to be spending money on Internet marketing you need to track its effectiveness. As you do so, you'll discover what works and what doesn't work for your business. And, you cam learn from the mistakes you make in your Internet advertising campaign to become an Internet advertising success. Knowing what's worth spending money on and what isn't is critical for your business success. Keep in mind, in most cases patience is a true virtue. Search engines aren't likely to find you overnight and your Internet marketing campaign and search engine marketing programs may not generate a bundle of revenue right away. Because you'll have literally millions of competitors on the Internet, it will behoove you to keep up to date and keep on your toes. However, some knowledge, some capable assistance, and a well-managed **Internet marketing strategy** can increase your chances for home business success.

4.0 CONCLUSION

A good marketing plan will always go a long way in determining the how well the product or service is received in the market place, be it the traditional way of doing business or the modern way of business transactions through electronic platforms. It will help business owners to know exactly what they are doing and what they are expecting in return. At the end of this unit, we discussed the nature and concept of a e-marketing plan.

5.0 SUMMARY

- Many first-time business owners think that by simply placing an ad in a local newspaper or a commercial on a radio or a television station, customers will automatically flock to purchase their product or service.

- To help you accomplish this aim, your marketing plan should include strategies typical of any marketing plan. The plan should especially include what marketers dub as the four P's of Marketing.

- Successful business owners know or at least have an idea of what their customers what or expect from them. This type of anticipation can be helpful in building customer satisfaction and loyalty.

- Internet marketing can attract more people to your website, increase customers for your business, and enhance branding of your company and products.

- Of all the components of **Internet marketing**, prospective customers and clients expect a business to have a website.

- How much of your marketing strategy should be handled online, which Internet marketing elements you use, and the importance you should give to your Web site, depends on the nature of your business, your budget, and, to some extent, your personal traits.

- Let's face it: the average home business operator is not awash in cash. If you're going to be spending money on Internet marketing you need to track its effectiveness.

6.0 TUTOR-MARKED ASSIGNMENT

i.   Identify five factors used to describe target market.

ii.   Briefly discuss how Internet marketing has aid home businesses.

7.0REFERENCES/FURTHER READINGS

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UNIT 4: ONLINE STRATEGY FORMULATION

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1.0 INTRODUCTION

It is pertinent to explore strategies and techniques that you can use on the Internet that will enhance and support your business overall marketing objectives. The strategies include learning how to conduct banner promotions, generate targeted online traffic, positioning your content, and overall brand awareness.

2.0 OBJECTIVES

At the end of this unit the student is expected to:

- Develop internet marketing strategy

- Enumerate the important things in developing internet marketing strategies

- Avoid myths in internet marketing

- Market in a virtual marketing world

- Network on the Internet.

3.0 MAIN CONTENT

3.1 Internet Marketing Strategy: What can it do for You?

Having an Internet marketing strategy gives you a measurable and definitive way to target your market and position your business so that those looking for what you have to offer are finding you easily. This is only the first level of the sales process, but it is vital to the success of your online business, but remember traffic marketing is not sales. Traffic can be increased by search engine optimization, using pay per clicks, or marketing your site in advertising campaigns. After completing the marketing step which brings the traffic you must then turn your attention to selling to your visitor once they get there. How are you approaching those prospective clients and customers that are visiting your site? Are you persuading them to take the action that you want them to take? Have you defined what it is that you want them to do? Perhaps you want them to; Buy a product? Request more information? Subscribe to your newsletter or request a free report?

There are proven methods and tactics that you can use online to increase your conversion rate and get that prospect to become a customer or client. If you haven't taken time to plan your Internet Marketing Strategy you have made a costly mistake that could be draining to your business and costing you customers. Consider this "What is the annual worth of one customer to you?" Is it $25, $250, or perhaps $2500? If having an Internet Marketing Strategy would help you cultivate and convert just 1 new customer each week would planning that strategy be worth it to you? Truth is that Internet Marketing differs in many degrees from traditional

brick and mortar marketing, but there are a few strategies that remain the same and must be present for your online marketing to be successful. For example, consider the following:

What is the Key Missing Component in the Virtual Sales Process?

When marketing virtually you are missing a key component to the sales process. Do you know what one thing is lacking and could cause a potential problem and cost you a loss of sales if not approached with a real solution? The answer is human interaction. This has been the biggest struggle to e-commerce businesses online. Let's think about this for a moment. When a person enters a physical store, they are met with the interaction of a sales person. Face-to-face contact takes place and over 90% of normal communication between the two people is non-verbal. Websites or virtual storefronts as I like to call them don't allow that non-verbal communication to take place in the traditional way and the friendly sales person is replaced with the cold technology of background code.

The key question we must ask ourselves here is "How can you provide that human interaction to potential clients and customers so that you are able to move that client or customer through a successful sales process?"

3.2 Internet Marketing Strategy: Why is it Important?

Would you start a business without a business plan? Would you place your yellow pages' ad in an irrelevant category just to see if anyone would call? Would you pay thousands of dollars to have a billboard ad created and placed where there is no traffic? If you are among most business owners you probably answered no to all the above questions. Businesses are very careful when it comes to spending marketing dollars, but truth is most businesses have neglected the most effective marketing tool that they have which is the strategic planning of their internet presence. It's not a problem to spend thousands of dollars to pay for the design and development but the planning process and strategy building has been neglected. Why? Many are under the misconception that a web designer is an expert in Internet marketing and that they are also well versed in search engine optimization. They are only met with disappointment. Do you know anyone who has experienced following problems?

- Minimal sales and conversion.

- Traffic to the site is not as expected or hundreds of dollars are being paid for traffic leads but still there is no conversion from that traffic.

- Subscriptions to reports or newsletters that you offer are slim to none.

- You have received only minimal requests for services or products by email or telephone since your site launch.

How could these problems have been avoided? An Internet Marketing Strategy can help position you to your target and niche market as well as increase conversion by following the five levels of the sales process mentioned below. While the answer seems simple the process is a bit more involved but vital to the success of a business that is about to launch online.

SELF ASSESSMENT EXERCISE

Why is internet marketing strategy important?

3.3 Four Myths to Avoid in Internet Marketing Strategies

There's more marketing hype published on the Internet in one day than P.T. Barnum generated in his lifetime. Like a worm swallowing its tail, the Internet marketing beast feeds mostly on itself. The clear majority of what appears on the Internet about marketing is designed to help you market products and services sold and delivered exclusively on the Internet. So, what does that mean for the independent professional whose web presence is primarily aimed at selling his or her own personal services?

You know, services delivered the old-fashioned way, by humans interacting face-to-face or at least voice-to-voice. At best, the average professional is likely to be overwhelmed by the sheer volume of Internet marketing advice available. At worst, he or she is being seriously misled by it. The problem is that marketing your own professional services is simply not the same as marketing a retail product or an anonymous business service. You cannot sell corporate consulting like you do web hosting; nor can you sell life coaching the same way you do an e-book. If you try to market yourself by following advice designed for marketing Internet products and services, you're likely to make some serious mistakes.

Here are four Internet marketing myths that may be hazardous to the health of your business. So, you need to be mindful of them in developing your marketing strategies.

Myth One – It all starts with a great website

The place where it starts is with a well-defined service. If you don't have a crystal-clear picture of who you are marketing to and exactly what you are selling them, the best web site in the world would not get you clients. Before you even think about building a web site, you should know who your target market is, how to describe your professional specialty, and what specific benefits your work provides for your clients. The content of your site is much more important than the design. Yes, you should have a professional-looking site, but a brilliant design and dazzling graphics would not pay off anywhere near as well as a clear explanation of why a client should work with you. Useful material such as articles, assessments, and other samples of your expertise will go much further to persuade prospective clients than flash intros and interactive menus.

Myth Two – More traffic translates to increased profits

The only result that more traffic to your web site guarantees you is increased bandwidth use by your web host. Before spending money on banner ads, web directories, or pay-per-click listings to drive more visitors to your site, you need to be sure that they will want to do business with you once they get there. Ask your colleagues and current clients to critique your site. Do they understand what you are offering? Can they see concrete benefits to your target audience? Revise your site based on their feedback. Then personally invite some prospective clients to visit and touch base afterward. Do your prospects seem more inclined to do business with you after seeing your site? If so, you are on the right track. If not, you still have more work to do.

Myth Three – Do whatever it takes to build your list

There is no question that a substantial opt-in mailing list is a valuable marketing asset, but the quality of names on your list is much more important than the quantity. Acquiring names through giveaways of other people's material, trading lists with joint venture partners, or purchasing them from a vendor rarely provides qualified buyers truly interested in your services. Absolutely, ask your site visitors and people you meet to join your mailing list and offer them something of value in return. A well-written e-zine, helpful report, or informative audio are all effective premiums. But, your premium should be directly related to the services

you provide and serve to increase your professional credibility. Names acquired from promotional gimmicks or unknown sources seldom turn into paying clients.

Myth Four – Killer copy is the secret to sales

Hype-laden web copy may be effective in selling certain info-products or courses, but it hardly inspires trust. You are not going to convince anyone to hire you individually as a consultant, coach, trainer, designer, or financial advisor by offering "not one, not two, but three valuable bonuses" as if you were selling steak knives on late-night TV. Your Internet persona should reflect the same professionalism as the work you do with your clients. If writing marketing materials isn't your forte, hire a professional copywriter. But be sure you hire one with experience writing for professionals like yourself. The copy on your web site should inspire feelings of confidence about your abilities, and communicate your reliability and solid qualifications.

3.4 Marketing in a Virtual World

Before the Internet, small business owners like yourself were usually limited to a local market-resorting to expensive advertising and brochures, direct mail, cold-calling, networking at the local Chamber of Commerce or Rotary. You hoped customers found you through word-of- mouth or a Yellow Pages ad. Today, you can work with a consultant, a financial planner, or a business coach across the country as easily as someone across town. In the Internet age, prospects often find you (instead of the other way around). This is the age of the virtual customer. Yet, although the Internet has made it perfectly reasonable to land a major client you have never met in-person, it has also created new expectations among consumers. Prospects now "Google" around to find someone with your skills. They expect you to make a good virtual "case" for yourself. If you don't pass the test, or make a bad impression, or appear lackluster compared to your competitors, you will lose the potential client. The only way to be truly successful in business is by establishing a good reputation. And understanding the way business has shifted in the Internet age can help you bring the potential of marketing your business into the virtual world.

3.4.1 The Virtual First Impression

The Internet has increased the expectation among consumers that businesses will have a credible online presence. Many of us now form "first impressions" of people and companies

via our Internet browsers. From the moment, your name and business appear in a Web browser to the moment your Web site loads, your first impression often means the difference between a shot at your prospect's business, or being shut out. Think about it. You have probably used the Internet to research a company or a person you're considering doing business with. Certainly, potential clients and customers are checking you out online, too. Prospects you've never met are forming opinions about your business at the click of a mouse. Internet first impressions are not just influenced by how your Web site looks, but also by how often your business appears or how high it ranks in a web browser.

3.4.2 Become an Online Center of Influence

We all know people who command rapt attention whenever they speak. Others want to listen to, learn from, and emulate them. They are centers of influence, a distinction you can pursue online by developing the following qualities:

- Share inside knowledge with your target market;
- Participate, listen, contemplate, and offer thoughtful responses;
- Be willing to voice an opinion;
- Assume leadership positions in your industry.

Certainly, experience counts. But this is not the only prerequisite to becoming an online center of influence that will earn you the distinction of 'trusted advisor' within your target market. Start by making your Web site a resource for your industry, feature lots of useful information, including articles, links, downloadable files, customer resources, and anything else of use to your target market. Be generous and give, give, give!

3.4.3 Create a Virtual Podium with Tele-classes

Tele-classes are a great way for businesses to develop a virtual reputation. They can be promoted easily by email, and provide information to prospects, clients, and customers all over the world, with minimal cost and effort. Business coach and tele-class leader Michael Losier set up a tele-class about exhibiting at trade shows: 'I had 60 students in my first class, which was very profitable, and many later hired me as a consultant." Also, it may be just as

effective and less effort to participate as a guest lecturer in another professional's class rather than producing your own tele-class.

3.4.4 Placing Articles Online

Online articles draw upon your expertise by providing useful information that Web site visitors are actively seeking out. Online articles position you as an expert in your field and convey a level of authority that establishes trust and sets the stage for sales. When high-traffic, high-credibility Web sites and newsletters publish your articles, you ride on the coattails of their loyal relationships with readers. Your articles are seen by visitors as referrals from trusted friends. Some of the most prime "real estate" in the world these days is at the top of the search engine listings. The most widely used search engines rank Web sites by the quantity of other Web sites that link to them. This means that every article you publish that links to your Web site can improve your search engine rankings.

3.4.5 Build Online Relationships

Most business networking used to happen when we recommended an associate, swapped business cards, or connected with colleagues over lunch. But increasingly, social networking is migrating to the Internet. Through social networking Web sites and online discussion lists, entrepreneurs can access virtual communities of prospects and associates while developing virtual "platforms" to generate leads and sales and establish themselves as recognized experts.

Marketing consultant Max Blumberg credits his involvement in Ecademy.com, a business networking Web site, with elevating his business profile and generating new clients. "When I first encountered Ecademy I'd never heard of online networking, but the benefits of a large community where I could share ideas and cultivate new relationships was very appealing." Blumberg started by posting a profile about his business, then started sharing his knowledge with other Ecademists. "I set up a club where members could get help with common marketing challenges. Many of these people became clients and friends with whom I socialize. We reciprocally use each other's services," says Blumberg, whose Ecademy presence has even been noticed by large companies who are starting to contact him. The key to building a niche community is identifying your ideal customers and the communities they

belong to. By targeting the best, most favorably inclined prospects within a niche, you can become your target market's vendor of choice, and sell more with far less effort.

3.5 Networking on the Internet

Networking is one of the most effective ways to find clients for any consulting or professional services business. But if you limit your networking to only what you can do in person, you will be missing out on a huge number of possibilities. Networking is more than entering a room full of people and exchanging business cards. It's creating a pool of contacts with which you can exchange clients, referrals, resources, ideas, and information. Networking can happen by phone, by mail, over coffee, and increasingly, over the Internet. The growth of the Internet has created many new ways to network without ever leaving your home or office. Pick a topic, any topic, and there will be multiple web sites and online communities devoted to it. Almost any type of Internet presence offers opportunities for networking. In your favorite search engine, type the name of your profession or specialty, e.g. "interior design" or "marketing communications." Or, if you have a clearly defined target market, you can use that, e.g. "baby boomers" or "biotechnology." Skip the sponsored links or banner ads and focus on the detailed results. What you will find is the following:

Professional Associations and Schools - Many association or school sites provide member rosters, resource pages, back issues of newsletters, event calendars, and bulletin boards or discussion lists. Not all the features will be restricted to members or students.

Resource Sites and Online Communities - These include directories of people in the profession, vendors, articles, event calendars, bulletin boards, discussion lists, live chats, and links to even more resource sites.

Publications - Magazines and newsletters maintain sites that offer everything from back issues to complete online communities.

Job Postings - These may appear on any of the above sites, and often include opportunities for independent professionals, not just those looking for full-time employment.

Colleagues and Competitors - Colleagues and competitors may be the same people, depending on your relationship with them. Their sites will tell you more about them and their work, and may offer many of the same features as resource sites.

Potential Clients – Their sites will tell you about the work they do, current and upcoming projects, and even the names of executives and managers. Also, if you subscribe to an online service offering interactive "channels," like America Online, CompuServe or MSN, there may be an entire area dedicated to your profession or target market. Some of these resources are available to non-members as well. Now, how can you use all this information to network? Here are some of the most common ways:

Bulletin Boards - These are web pages where you can view and post questions and comments on a specific subject. Answering a posted question is an excellent way to demonstrate your expertise, become known to the people who frequent the board, and get to know others in your field. Don't be overly self-promotional when posting, just include a signature line at the end of your post, e.g. "Ingrid Gustafson, Nordic Design." If you see someone else on the board who you would like to get to know in a collegial way, e-mail them. But never directly approach for business the people you find there. You might find yourself banned from membership.

Discussion Lists – These are like bulletin boards, but are e-mailed to members of the list daily, weekly, or whenever a new posting arrives. When posting to these lists, you can include more information about yourself in a signature box at the end of each e-mail. Keep it short, but include some reason for people to get in touch with you outside the list, such as, "Subscribe to my free newsletter," or, "Visit my web site for a free resource guide." In addition to locating discussion lists through search engines as described above, you can find them through online community hosts such as Yahoo Groups or MSN Groups.

Live Chats – Many online communities sponsor real-time chats on specific topics. Participating in these chats is an excellent way to meet people interested in the subject being discussed. Chat rooms that require membership are best, because you are more likely to encounter professionals seriously interested in the topic instead of people just looking for a date. Attending chats featuring a guest speaker can be more valuable than you might think. If you ask a question during one of these, do not be surprised if people contact you by e-mail

during or after the chat to offer you more resources related to your question. You can make the same type of contacts when you are the one who has something to offer.

Articles – Notice who is writing them and who is being written about. These people are likely to be leaders in your field, or at least highly visible. That makes them good contacts for you. Send them an e-mail complimenting them on the article and suggesting you get acquainted for mutual benefit. Make a specific suggestion about what you can offer, e.g. referrals or resources.

Others in Your Field – These may be colleagues, competitors, vendors, or potential clients. Approach them collegially with ideas about how a relationship could benefit you both, such as exchanging referrals, pooling resources, links on each other's web site, or trading endorsements or articles in each other's e-zine.

If you cannot find a board, list, chat, or site with the exact focus you want, consider starting one of your own. While hosting one of these communities takes time and effort, it will also put you in the center of the network that forms around it instead of on the outskirts.

3.6 Strategies to Boost your Online Sales

There is really no deep secret about increasing sales through the Internet. You drive traffic by creating more sales leads. When these newbie shoppers show up, you engage them and convert their interest into a transaction. But all that is much easier said than done. Here are specific ways to build sales momentum and to make your online store crackle and then pop.

3.6.1 Seek out Strategic Partners

Question: What's the online retail equivalent of "location, location, location?" Answer: Links to your site in all the right places. You want to create awareness of your wares among customers. So, the first step is to truly define your target buyer. Thoroughly research your customer's profile and preferences. Next, develop come-hither offerings, teasers, interactive ads and must-read content for as many appropriate sites as you can manage and afford. "Small businesses can develop relevant content for other sites that drives traffic on a very low-cost basis," says Andrew Restivo, founder of GourmetFoodMall.com, a New Orleans

based online shopping mall for more than 150 specialty food companies. In considering sites as partners or affiliates, don't forget professional organizations and associations, especially when you market services or business products. Try trading or paying for links with other small or midsize e-commerce marketers. But before making customers may never even make it to your home page," says Michelle Jackson, spokesperson for Range Online Media, a Fort Worth, Texas, search marketing company. Also, consider easy ways to get to the shopping cart and reliable site-wide product search functionality. When a shopper arrives with product specifics already in mind, you do not want to make that buyer work or wait. (Mohammed et al, 2003)

3.6.2 Cross-promote like Crazy

Do not make your online store a stand-alone orphan; make it work with other sales channels. Successful sellers have figured out that the Web is just one sales channel, like mail-order catalogs, phone orders or face-to-face contact. Everything must work together. That means customers being able to research one of your products online, buying it by phone, and picking it up at the offline store. If you only sell online, you must make sure your branded URL is seen far and wide. That includes using it in every e-mail signature of every employee you have. Print the store URL on all brochures, catalogs, packing material, shipping boxes, shopping bags, delivery trucks, posters and postcard notices. If you attend trade shows or conferences, make sure your booth signage and promotional material also have a big, bold printed URL stamped on them. Don't miss an opportunity. Also, register variants and misspellings of your domain name so customers who get it wrong will find you anyway. For instance, a company named "Baskets R Us" should also register "Baskets Are Us." Think about it: For a few hundred dollars in registration fees, you might net one return customer who buys thousands of dollars' worth of wares over time.

3.6.3 Keep it Personal
Customers will feel more valued and comfortable about buying online if you establish a bond. The more you're in touch and display a personal tone, the more your customer will relax.

3.6.4 Be Specific (and Honest) About Your Product Offerings

"The more detail you include, the better. People like to know the histories of what you're selling and who you are," advises Lynne Dralle, an eBay Power Seller who has sold thousands of items at online auctions. "Always describe exactly what the buyer is getting. Be honest," she says. When selling her collectibles, Dralle mentions any chips or flaws, but she also tells stories, like how her Aunt Mary brought an item over from England. High-quality photographs of products also are a must. If you don't have a digital camera, consider investing in one so you can upload images to your PC. . (Mohammed et al, 2003)

3.6.5 Set Delivery Policies that Work for Your Business Model

The great debate about whether free shipping boosts online sales is finally fading into individual solutions. While you still find advocates pro and con, it's now boiling down to a matter of your product pricing. "Free shipping costs can kill you if you can't include them in the price of the product," says GourmetFoodMall.com's Restivo, whose company regularly surveys online consumers on such issues. But if you jack up your price to accommodate free shipping on commodity items that only sell at the lowest price possible, you lose. In those cases, customer expects to pay a reasonable amount for shipping, Restivo says. On the other hand, high shipping prices are a big detriment to sales of perishable or premium products, presumably because it's easy to forgo those items when they don't feel like a "bargain." Restivo's tip: Rely on second-day-air shipping. Costs are much cheaper than overnight and customers are satisfied. . (Mohammed et al, 2003)

3.6.6 Spruce up Your Site and Service

The goal is to get customers to return and to spread the word among friends and family that your online shop is worth a visit. So do everything you can to make the experience fast, fun and fabulously better than your competitors. Explain all your policies, upfront. Promise 100% money-back guarantees with no strings attached. Offer free samples. Quickly respond to every query or comment. Invest in a live chat function so that customers can get answers to product questions immediately. Create reasons to return to your site with a loyalty club or contests or email games and discounts. Make connections with customers and don't let go. One last point: Don't forget that having well-written content and product descriptions are

important – because you want the search engines to find you. Learn how to optimize your site for search engines.

4.0 CONCLUSION

Indeed, there are several strategies being adopted in internet marketing. Thus, there is no one strategy that could be all encompassing but basic the rule remain that the goals must be well spelt out and the market and the audience. Well identified A true test of any strategies will be how effective and efficient the strategy is capturing business as well as positioning the organization to compete better in the global market.

5.0 SUMMARY

It is pertinent to explore strategies and techniques that you can use on the Internet that will enhance and support your business's overall marketing objectives. The strategies include learning how to conduct banner promotions, generate targeted online traffic, positioning your content, and over all brand awareness. Having a Internet marketing strategy gives you a measurable and definitive way to target your market and position your business so that those looking for what you must offer are finding you easily. There are proven methods and tactics that you can use online to increase your conversion rate and get that prospect to become a customer or client. If you haven't taken time to plan your Internet Marketing Strategy you have made a costly mistake that could be draining to your business and costing you customers. There is more marketing hype published on the Internet in one day than P.T. Barnum generated in his lifetime. Like a worm swallowing its tail, the Internet marketing beast feeds mostly on itself. The clear majority of what appears on the Internet about marketing is designed to help you market products and services sold and delivered exclusively on the Internet. Before the Internet, small business owners like yourself were usually limited to a local market -resorting to expensive advertising and brochures, direct mail, cold-calling, networking at the local Chamber of Commerce or Rotary Networking is one of the most effective ways to find clients for any consulting or professional services business. But if you limit your networking to only what you can do in person, you'll be missing out on a huge number of possibilities. There's really no deep secret about increasing sales through the Internet. You drive traffic by creating more sales leads. When these newbie shoppers show up, you engage them and convert their interest into a transaction

6.0 TUTOR-MARKED ASSIGNMENT

1. Mention five things you can do in marketing in a virtual world.

2. Identify five strategies to increase your online sales.

7.0 REFERENCES/FURTHER READINGS

Mohammed. R. A., Fisher. R. J., Jaworski. B.J., and Paddison. G.J (2003) *Internet Marketing; Building advantage in a Networked economy* McGraw Hill- New York ISBN 0-07-253842-2

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UNIT 5: MARKET COMMUNICATION AND BRANDING
CONTENT

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      3.3 Communication types and steps in the communication process.

      3.4 What is a brand and brand equity?

      3.5 What is the Seven-step branding process?

4.0 Conclusion

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6.0 Tutor-marked assessment

7.0 References/Further Reading.

1.0 Introduction

In the previous unit we discussed formulation of an online strategy In this unit, we are going to discuss the concept of market communication and branding and its role in an e-business. We will discuss the role of the internet in a marketing communications campaign, the types of communication and the steps in communication. We will also talk about the concept of a brand, brand equity and the Seven-step branding process.

2.0 Objectives.

At the end of this unit, students will be able to;

- Define Market Communication and understand its importance
- Explain the role of the Internet in a Marketing Communication campaign.
- Identify and explain the communication types and steps in the communication process
- Define what branding is and brand equity.
- Enumerate the Seven-step Branding process

3.0 Main Content

3.1What is market communication and the importance of Integrated Communication.

Communication at its simplest, is about delivering a message. While companies have traditionally had options for delivering both personalized and interactive messages to customers, the Internet now enables a business not only to target its advertisements and to personalize its communications but also to engage in nearly constant two-way dialogue with its customers. With this powerful new set of tools, firms can interactively and personally communicate with users to move them from awareness to commitment, and in some cases, to dissolution.

While the Internet introduces new possibilities, it does not change the fundamental principles of marketing communication. Marketers must still choose specific communication objectives, plan and execute the communications campaign, and measure results. The Internet does, however, change the game in crucial ways. Already it has created a new communications context for all companies. Consumers' expectations are higher because of the capabilities they have experienced on the Internet and that intensifies the need for firms to concentrate on managing communications with users. Internet customers expect easy interactions with a high degree of customization.

As a communication medium, the Internet offers users tremendous power over how they interact with its content. A television viewer can use the remote control to avoid unwanted advertisements, but if he is interested in a commercial, he has no power to lengthen the ad or to further explore the offering. On the Internet, on the other hand, if an ad attracts attention, the consumer can elaborate on the message, go to a related website, and even make a purchase. The two-way dialogue that the Internet enables, and which Internet users have come to expect, transforms communications and have not traditionally been considered marketing communications into advertisements. Customer service becomes a critical marketing component because users expect prompt, fast responses to messages during the exploration and commitment phases. The Internet, increases the power of both the customer and the firm. Customers have more control over what information they view, and the firm has more opportunities to move the customer through the relationship stages.

3.1.1 Importance of Integrated Communication; Integrated marketing is essentially a synergy between traditional marketing communications tools and Internet tools to pass on a

message to Customers. In any discussion about marketing communications, even if it relates to an E-business, the traditional marketing communication drivers must be included in said discussion. The Internet does not replace existing channels, rather, it is a powerful addition that should be utilized in an integrated approach to marketing communication. Traditional and Interactive marketing methods are converging as it becomes apparent that an integrated approach is crucial in today's world. Effective campaigns will mix online ads with traditional communications options, and will integrate strategies across the various Internet tools.

The Internet wears many hats, it can be a distribution channel, an advertising vehicle, or a customer service vehicle, each of which plays a part in marketing communications. As this trend continues, there will be significant implications for marketing communications within these media. Wireless devices and broadband access are two vehicles that facilitate such convergence, and already they are gaining widespread acceptance. Marketers will have to discover how to best take advantage of these tools, and most agree that integrated communications is the best solution.

To be effective, an Integrated Marketing communication approach requires support at the highest corporate level. High-level coordination is also imperative to ensure that marketing communications adhere to the marketing strategy and positioning objectives that define the target audience and value proposition for the firm's offering.

3.2 Role of Internet in a marketing communications campaign.

The Internet can play a role in virtually every stage of the campaign, from identifying the target audience to evaluating the performance of the campaign. The Internet's most important strengths as a powerful marketing tool include the characteristics of being interactive and individual, and its measuring and tracking capabilities.

Interactivity and Individualization will help firms to move users through the relationship stages efficiently and smoothly. By utilizing the online marketing communications levers in an interactive and individual way, firms can streamline the progression of the customer relationship in ways never possible. For example, a banner ad can generate awareness and exploration due to the interactivity that a click-through provides. A user sitting at a browser

can see an ad, click through to a website, explore it, and make a purchase. It is a seamless interactive process that television, radio and print cannot match. This easy progression seems very promising for web firms, but it can also be dangerous. The same characteristics allow Internet users to dissolve a relationship easily too. An inaccessible site, poor navigation and controls, or cumbersome registration process can lead users to point their browsers elsewhere. The opportunity to communicate to users via the Internet in a more personalized and interactive manner is itself a significant boon to marketing communications.

3.3 Communication types and steps in the communication process.

Marketing communications, which include all the points of contact that the firm has with its customers can be grouped into four categories;

- Mass Offline: marketing levers include television, radio, outdoor ads, point-of-purchase displays, public relations and print media including newspapers, magazines, brochures, newsletters, and yellow pages.
- Personal Offline: the levers include telemarketing, direct mail, sales force, and customer service.
- Mass Offline: levers include websites, banners, interstitials, rich media, search engines, listings, classifieds, and sponsorships.
- Personal Online: levers include personalized websites, dynamic ad placement, interactive television, wireless devices, e-mail, and customer service.

3.3.1   Steps in the Communication Process;

To successfully build and execute a marketing communications campaign, a firm needs to establish the best way to use the appropriate levers. The starting point for any communications campaign should be the segmentation, targeting and positioning choices made as part of the marketing strategy. The process of planning a communication campaign in accordance with marketing strategy has six stages;

- **Identify the target audience:** at the start of a campaign, the first thing that a firm must do is to identify the target audience. Having questions such as who is the potential customer, whose need is being met by the product and who is willing to pay

for it, drive the customer research that determines the audience that is best to target. Generally, this information is obtained in one of three ways; from experience, from demographics, or from tracking previous behavior. Demographic information can be obtained through original customer research or through customer-research firms. Also, the Internet has made tracking consumer behavior easier and less expensive and developing target audiences based on Internet tracking is becoming a promising reality. By keeping track of the webpages that users visit, time spent on specific webpages, ads and links clicked on, and purchases made, marketers can develop an extremely valuable database.

- **Determine the communication objectives:** before creating the communication, its intent must be clear. The message should focus on developing one of the four customer relationship stages. If the firm or the offering is new to the target audience, the message should build awareness. Once an overall objective is set for an integrated marketing campaign, individual goals should be set for each of the media elements in the campaign. Traditionally, communications have been classified according to whether they are intended to, build awareness, knowledge, and preference or; provide an immediate stimulus to purchase.

- **Develop a media plan:** developing a media plan involves choosing the right media for the message and deciding how to use them. The media plan must be consistent with the target audience; consistent with the communication objective and; the different parts of the plan must fit together well.

- **Create the message:** creating the message requires significant planning and analysis. One of the first things to consider is the communication theme. The target audience must be receptive to the theme and must be consistent with the objective that has been determined. The theme of a message designed to promote awareness may need to be adjusted when it comes time to focus on the later stages of the customer relationship. The theme should also be consistent with the offering's function and with brand personality.

- **Execute the campaign;** once the content for the integrated marketing communications campaign is ready for distribution, the firm can take the final steps to execute the campaign. It will need to buy media placements and consider whether to participate in a partnership with other marketers. It will also need to distribute the execution materials to the media.

- **Evaluate the effectiveness of the campaign;** the evaluation process begins as soon as the message is distributed. Each element of the campaign should be evaluated against its objectives. In addition, the synergy of the integrated messaged in the campaign should be evaluated to determine whether the messages and the media are integrated optimally. In the case of the messages that are targeted to individual consumers, the evaluation should include a look at whether the communication method and content are consistent with the customer's history.

3.4 What is a brand and brand equity?

A brand is a name, term, sign, symbol, or design, or a combination of them intended to identify the goods and services of one seller or group of sellers and to differentiate them from those of the competition. Brand equity on the other hand is a combination of assets that can be viewed from both firm and customer perspective. It is basically a combination of consumer responses and benefits.

Consumer responses can take two forms; brand awareness and brand associations. Brand awareness refers to the strength of a brand's presence in the consumer's mind. A brand with high brand awareness is more likely to be recollected-either prompted by an advertisement or unaided by the firm. Brand associations refer to the connections that consumers make to the brand. These associations can usefully be categorized in terms of strength, valence and uniqueness.

Researchers recommend that marketer measure consumer perceptions with a combination of techniques such as depth interviews, focus groups, thought listing, visual techniques, projective techniques and rating scales.

E-marketing programs can be used to create brand equity through website design, the brand name and logo, the types of services that are offered, cobranding arrangements and so on.

3.5 What is the Seven-step branding process?

The seven steps are as follows;
- **Step 1; Clearly define the Brand Audience;** branding strategies will be ineffective without a clear specification of the target audience for the offering.

- **Step 2; Understand Target Customers;** From the broad description of the target customer, it is frequently useful to describe a composite prototypic customer who can bring the target customer segment to life.

- **Step 3; Understand the Competition;** the competitive environment is also critical given the need to provide relative or superior value to target customers.

- **Step 4; Design compelling brand intent;** the brand intent brings to life the value proposition or cluster. Value propositions or clusters tend to focus on high-level customer benefits. Here, firms are looking for a description of how the brand should be interpreted from the customer's viewpoint.

- **Step 5; Identify key leverage points in customer experience;** this step requires the firm to move from the strategic notion of brand intent to the tactical notion of marketing levers-prices of products, customer interface, mix of online versus offline communications-that will activate the customer.

- **Step 6; Execute the branding strategy;** principles of good execution include integrity, consistency, patience and flexibility.

- **Step 7; Establish feedback systems;** branding strategies rarely work out exactly as planned, and so it is important to have regular feedback systems in place.

4.0 Conclusion

At the end of this unit, we discussed the concept of market communication and branding and its role in an e-business. We also discussed the role of the internet in a marketing communications campaign, the types of communication and the steps in communication. We also defined a brand, brand equity and identified and briefly discussed the Seven-step branding process

5.0 Summary

- Communication at its simplest, is about delivering a message.

- To be effective, an Integrated Marketing communication approach requires support at the highest corporate level. High-level coordination is also imperative to ensure that marketing communications adhere to the marketing strategy and positioning objectives that define the target audience and value proposition for the firm's offering.

- Marketing communications, which includes all the points of contact that the firm has with its customers can be grouped into four categories; Mass Online, Personal Online, Mass Offline and Personal Offline.

- The process of planning a communication campaign in accordance with marketing strategy has six stages.

- A brand is a name, term, sign, symbol, or design, or a combination of them intended to identify the goods and services of one seller or group of sellers and to differentiate them from those of the competition. Brand equity on the other hand is a combination of assets that can be viewed from both firm and customer perspective.

- The seven-step branding process are; Step 1; Clearly define the Brand Audience. Step 2; Understand Target Customers. Step 3; Understand the Competition. Step 4; Design compelling brand intent. Step 5; Identify key leverage points in customer experience. Step 6; Execute the branding strategy. Step 7; Establish feedback systems.

6.0 Tutor-marked assessment.

a. Identify and discuss the Seven-step branding process
b. What are the stages of the Marketing Communication process

7.0 References/Further Reading.

Mohammed. R. A., Fisher. R. J., Jaworski. B.J., and Paddison. G.J (2003) *Internet Marketing;   Building advantage in a Networked economy* McGraw Hill- New York ISBN 0-07-253842-2

UNIT 6: FINANCIAL APPRAISAL, IMPLEMENTATION AND CONTROL OF E-MARKETING PLAN

CONTENTS:

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        3.1 Financial Appraisal

        3.2 Implementation

        3.3 Control

4.0 Conclusion

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6.0 Tutor-marked assessment

7.0 References/Further reading

1.0 Introduction

In this unit, we are going to discuss the financial appraisal, implementation and control of an e-marketing plan. We will further highlight the importance of these stages of the marketing plan and the techniques used in each of the stage.

2.0 Objectives

At the end of this unit, students will be able to;

- Understand the concept of financial appraisal and know the techniques to use to appraise the finances of a potential project.
- Know how to Control and Implement an E-marketing plan.

3.0 Main Content

3.1 Financial Appraisal

Finance is a key resource of any organization. The availability of finance underpins the operational capability of the enterprise. A second key requirement of the process of strategic analysis is therefore the appraisal of the financial condition in which the enterprise currently finds itself. This chapter summarizes some of the criteria by which the process of financial

appraisal may be carried out. It also analyzes and illustrates the concept of zero based budgeting.

3.1.1 Finance as a Key Resource and Capability

Finance is a key *resource* of any organization. Finance is rarely if ever unlimited. It may constitute a *constraint* on, or a *limiting factor* for decision-making in the organization (the concepts of the "constraint" and the "limiting factor"). *The enterprise can only do what its available financial resources (and the quality of its financial management) will permit it to do.*

Finance as a resource underpins the operational *capability* and *capacity* of the enterprise. That is, it may determine what the enterprise is able to afford to do, and is therefore able to achieve. This is because the available funds will determine what kind of assets and people the enterprise can afford to use, and therefore what kind of output it can produce. Wealthier football clubs for instance can afford to build bigger stadiums (which can hold more paying customers), and can pay the salaries of the best managers and the more expensive international players (who together should win more games for the club, win championships, and attract big crowds who will be prepared to pay higher entrance charges than anywhere else because they are seeing the best and most successful teams in the land).

The *financial performance* of the organization is crucial. *Financial performance means the financial results achieved by the enterprise,* for instance in terms of profitability, cash flow, budgetary and cost management, dividends paid (and so on). Financial performance is a *critical success factor* (the concept of the "critical success factor"). It is for example a critical success factor from the viewpoint of the providers of finance. Investors will expect a proper return on their investment. Banks will require interest and the repayment of loans. Family members will depend for their livelihoods on the financial performance of a family business. The state will expect public agencies, schools, or hospitals to act as efficient stewards of the taxpayers' money they receive in order to meet their obligations.

The financial state of the enterprise (and the capability and capacity it represents) may be analyzed by the technique of the "financial health check".

3.1.2 The Financial Health Check

The financial health check is used (i) to analyze the financial condition of the organization, and (ii) to analyze the capability and capacity that this financial condition represents. It comprises:

- the analysis of published accounts and accounting ratios.
- the analysis of the margin of safety.

The financial health check is likely to be used to augment the process of internal corporate appraisal.

a. Analyzing Published Accounts and Accounting Ratios

Where the financial accounts of a business are available in the public domain, the process of financial appraisal may be based upon the analysis of *accounting ratios*. These ratios can be categorized under a number of appraisal headings, as follows.

b. Performance, Profitability and Asset Utilization

The analysis of financial data under this heading is used to show how well a business is being run. These ratios indicate the level of return being generated by the assets and people being employed by the organization. They show how fixed assets are used to generate profit, and how working capital is used in the process of generating sales and cash flow. They also show the speed and efficiency with which the business completes its transactions with customers.

3.1.3 Solvency and Liquidity

Indicators of solvency and liquidity are vital to the process of financial appraisal. These indicators show whether the enterprise can pay its suppliers (creditors) for goods and services received. They show whether it is in a position to pay interest on loan finance, or to repay loan capital. They show whether it has adequate working capital upon which to base its current or planned level of business activity. And they indicate whether the enterprise is generating its own funds for investment and business development.

The appraisal process under this heading will also be used to identify management actions that may overstretch the organization's finances and lead it into conditions of "overtrading". Overtrading means trying to operate a level of business activity, which exceeds the financial capacity of the organization to operate that business. Any business or service organization

must ensure that it has adequate cash resources by which to pay its way, and a proper cash flow on which to base its operations.

Where the acid test indicates that liquid assets do not cover the cash debts implicit in the figures for current liabilities, the appraisal process should seek some kind of compensating factor, such as a high level of cash sales (as in retailing or the fast moving consumer goods sectors). Otherwise, the appraisal process may have to look very closely at the organization in case there is any risk of insolvency.

3.1.4 Ownership, Capital Structure and Debt Management

Published accounts are required to show information about capital structure, which comprises the various sources of finance used in a business. Funds may come from shareholders, institutional investors or trusts, banks, or the state. The process of corporate appraisal examines the relative importance of, or balance between these different sources, and how the expectations of their providers can be met.

The analysis of ownership and debt management is an important element of the appraisal process. Shareholders will expect dividends and capital growth. The use of debt and credit entails fixed obligations. Interest must be paid. Debt must be repaid.

Companies borrow money at a given interest rate and invest it in their business. They hope that it will yield a return greater than the cost of the interest. This process may "gear up" or "leverage" the business activity. It *may* increase the return to shareholders if a positive differential between the cost and the return results from the investment.

This form of financing, however, contains significant risk. The process can go into reverse. A combination of high or increasing interest rates, declining returns from the business activity, and recession may lower returns to shareholders. This may have the effect of lowering share valuations as well as dividends. And the greater the debt burden, the less the profit there is to distribute to shareholders in the form of dividends, and the less attractive the shares become to investors. A downward spiral or "vicious circle" may be the result, leading to the loss of confidence or potential for hostile acquisition or takeover described in a later chapter.

The working of this vicious circle was brutally illustrated in the UK and USA in the late 1980s and early 1990s when companies became too highly geared. They had become

dangerously over-dependent on large sums of debt finance at a time of high interest rates, deep recession, and emerging global competition.

3.1.5 Stock Market Requirements

Stock Market assessment of a company's trading performance will be based on an interpretation of the trends over time of the following ratios:

Analysis of these four ratios is used, among other things, to indicate:

- stock market evaluation and acceptance of the company as an investment.
- the relationship between earnings retained in the business, and dividends paid to investors.
- the degree to which retained earnings are being used to provide funds by which to finance the business. A low payout from a healthy firm may indicate that earnings are being reinvested for growth, or that the business wishes to minimize its dependence on other sources of capital.

3.1.6 Cover

The analysis of cover deals with the adequacy of the margin of profit over and above a required rate of dividend payment, or the ability to pay interest on loan finance, thus:

In this case, the appraisal process looks at the capacity of the organization to meet its immediate commitments to shareholders and lenders.

The analysis of cover is also extended to the capacity of the organization to repay the capital of the loan by the due date. Similarly, banks and institutional investors are interested in the value of the assets against which a loan may be secured. This is a particular issue for the small to medium sized enterprise (the SME), the private company, or for the riskier venture.

3.1.7 Financial Strength and Capability

The financial appraisal of the organization may reveal something about the strength of its financial capability and capacity. For instance, it may indicate the degree to which it already possesses funds for use in the business; or is instead likely to be able to obtain new monies, from whichever source. It may indicate how easy (or otherwise) it would be to obtain these

additional funds. The analysis of financial strength may therefore demonstrate such features of capability and capacity as:

- the feasibility of growth or development strategies, since the availability of finance is essential to their implementation.
- the capacity of the organization to self-finance itself, without the need for additional share issues or external borrowing, whilst at the same time meeting shareholder dividend expectations, debt service commitments (etc).

3.1.8 Trends, Growth Rates, and Comparisons

The use of published accounting information and ratio calculations is likely to be most effective when taken over a number of years. The analysis of a series of ratios will reveal *trends over time.* These trends will show whether the company is growing, stagnating, or declining. They may confirm the existence of the strengths or weaknesses. They might instead hint that the company is ripe for hostile acquisition or takeover.

Similarly, the use of accounting ratios as a tool of corporate appraisal may be at its most effective where comparisons can be made with other organizations in the same operational or industry sector. These comparisons are used as *benchmarks* by which to evaluate current levels of performance. Interfirm or inter-organization comparisons are for instance available on commercially available databases, from "benchmarking clubs" or benchmarking groups, or from subscription services such as PIMS.

3.1.9 Different Appraisal Viewpoints

The interpretation placed upon published financial information, accounting ratios, trends, and interfirm or benchmarking comparisons may depend on the particular viewpoint of the person carrying out the appraisal. For instance:

- *the investor* may focus on trends in annual or short-term performance and profitability, share and asset valuation, cash flow, and growth potential.
- *the supplier* as creditor is interested in short-term cash flow, the ability to pay debts, long term enterprise viability, and evidence of the systematic avoidance of conditions of overtrading.

- *the potential acquirer* monitors trends in relative performance, efficiency and profitability (for instance against industry benchmarks), potential for growth and efficiency gains, and share valuation (especially if the present stock market valuation is perceived to be too high or too low). So-called "asset strippers" or "corporate raiders" will instead be looking for undervalued assets whose real value they think they can realize at a profit if they can acquire them.

- *Management and employees* are concerned with short and long-term viability and performance, with comparisons with competitors and benchmark companies in the sector, and with the potential for unwelcome or hostile takeover bids.

- *The state* will be concerned with the effectiveness and efficiency with which public sector organizations use the financial resources that they have been allocated, relative to the objectives set. In recent years in the UK this has meant a requirement to demonstrate the achievement of "Best Value" performance against pre-established service targets, performance benchmarks, and Performance Indicators ("PI's"). It has also meant adapting to rigorous government policies of the "resource stretch and leverage" process. Published accounting data and ratio calculations are variously used as an appraisal guide, to identify issues, and to provoke questions. They augment and enhance the picture of the organization being built up as the process of corporate appraisal takes shape. (Barbera, 2017)

Self-assessment Exercise

Explain the concept of Financial Appraisal

3.1.10 Analyzing the Margin of Safety

Margin of safety calculations may be an important part of the *internal* appraisal of the enterprise. Data on a company's margin of safety is normally never made available on an external basis. The appraisal value of the margin of safety calculations stems from knowing that *the greater the margin of safety, the less the company is vulnerable to a decline in sales of that product or product line.* In the case given above, the Elliott Company can withstand a 40 per cent drop in sales and still achieve break-even. The reverse is also true. The smaller the margin of safety, the more the company is vulnerable to a decline in sales and the closer it is pushed towards its break-even point. Two implications follow from this reasoning. These are that:

- the company needs to monitor the gap between actual and break-even sales on a continuing basis.
- it may need to control (or to reduce) its fixed cost burden to keep its break-even point as low as possible.

The operation of assets such as hotels and commercial passenger aircraft are for instance particularly sensitive to margin of safety calculations. These assets represent a high fixed cost and need a certain minimum level of occupancy to break even. Once they are (say) 70 percent full then virtually every unit of extra revenue represents contribution to profit. Variable costs per customer are marginal; most of the costs are fixed irrespective of volume. The hotel or aircraft costs a certain amount of money to operate whether it is full.

The analysis of margin of safety calculations is also of importance where information technology-based systems of *direct product profitability analysis* and *customer profitability analysis* are in use. These systems facilitate the close or "real-time" monitoring of sales to customers of individual products or product lines. They for instance permit the frequent adjustment or fine-tuning of distributor or retailer stockholding levels and inventory. Such systems can as a result produce erratic and unpredictable movements in channel purchasing and manufacturing volume patterns. They can erode the profit buffer represented by the margin of safety.

Given the uncertainty and requirement for flexibility implied by these systems, and their widespread use, the appraisal process may focus on the degree to which the enterprise (and a supplier) pursues strategies which have the effect of maximizing its margin of safety, minimizing its fixed cost burden, and minimizing its break-even points.

3.1.11 Zero Based Budgeting (ZBB)

Zero based budgeting (ZBB) is a formalized system for reviewing the process of setting budgets for the activities of an organization. *Zero based budgeting examines each activity as if it were being performed for the first time, that is from a "zero base".* Several alternative levels of provision for each activity are identified, costed, and evaluated in terms of the benefits to be obtained from them. Zero based budgeting is sometimes also called "priority-based budgeting".

ZBB may be used within the appraisal process because it is based on the belief *that management should be required to justify existing activities and existing resource allocations* in the same way as new proposals. The appraisal process will compare established activities with alternative potential applications of the resources that are to be committed during the planning period in view. Implicit in ZBB, therefore, are the concepts of:

- *opportunity cost* – how may the available resources now best be used?
- *priority* – do past and current commitments of resources reflect or match present strategic priorities?

Business organizations and public sector institutions normally use *incremental budgeting* over time. Budgetary planning is based on current or immediate past practice. Existing budgets are updated for the planning period ahead by applying expected price, volume, inflation or operational changes. The main justification for next year's expenditure is last year's expenditure. The fact of the allocation of resources to the activity is taken for granted. It is assumed that the activity will continue its right to a claim on resource allocation because it is already there. The use of ZBB within the process of corporate appraisal challenges these assumptions. It can be used to question the implied right of existing activities to receive a continuing allocation of resources. It may be used to ask such questions as:

- what are the current objectives of the activity being appraised?
- to what extent are these objectives being achieved, and how relevant are they know to today's circumstances?
- is the activity now necessary?
- is there now an alternative way of achieving the same objective, for instance by re-engineering or outsourcing the processes involved in it?
- are any of the alternatives more cost-effective?
- what would be the consequences (in terms of costs and benefits) if the activity were now to be discontinued?

3.1.12 Implementing ZBB

The organization and its departments must be divided into identifiable and manageable locations of activity, for which costs can clearly be identified and allocated, operating benefits and results described, and meaningful comparisons made.

An analysis of costs, results, and benefits is then undertaken for each identified sphere of activity. This analysis is carried out *from a zero base,* on the assumption that no activity has an established right to command the use of resources. The process may call for the development of a series of alternatives for each decision area, based on the following:

- a description of the activity, function or department.
- a statement of the objectives of the activity.
- performance assessment and measurement criteria for the activity.
- the alternative methods and costs of performing the activity.
- the potential results and benefits to be achieved at different levels of funding.
- the consequences of *not funding* the activity.

The effect of this process for corporate appraisal can be illustrated by an example. Assume that a railway network has four operating divisions. These are illustrated in Figure 3.1. Each division may be funded at any one of five levels, from "high" to "low". It can currently afford to spend a total of 14 units of resource. As Figure 3.1 shows, the priorities of this railway network are clearly concerned with "track and signaling" and "intercity" passenger.

The use of ZBB in the process of corporate appraisal can however, in this case, focus management attention on the consequences of:

- an upward shift in the gross available resource level, say from 14 to 17.
- desired changes in the priority of resource allocation within the total service provision, say towards "intercity freight", given a static level of resource availability (that is, 14 units).
- new priorities, such as customer demand for new electrification schemes or urban rapid transit systems, neither of which are allowed for in the current budget allocation.
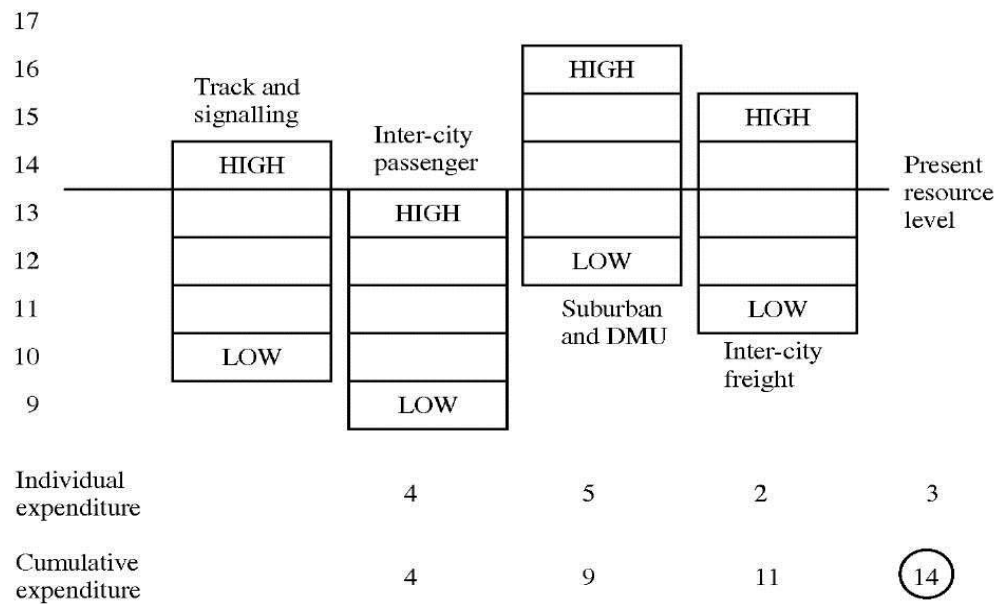
Figure 3.1 Implementing ZBB (Lohrey, 2017)

The use of ZBB within the appraisal process can therefore be used to clarify the consequences of decisions on funding, whether current or planned. It forces the organization to review the basic reasons underlying what it is currently doing; to confront the consequences of continuing as it is; or to make changes to its priorities.

Self-Assessment Exercise

Discuss how an organization can implement ZBB

The Uses of Financial Appraisal Within Strategic Management

The process of financial appraisal analyzes:

- the financial state and health of the enterprise.
- financial capability and capacity (what the enterprise can afford to do).
- financial strengths and weaknesses.
- performance gaps.
- the application of the zero-base concept.

This process of corporate appraisal may then be used to:

- concentrate the choice of strategies in areas of financial capability and strength. *Example:* the exploitation of high margins of safety and low break-even points in markets subject to wide or cyclical variations in demand and profitability, such as those for capital equipment or building construction.

- select strategies that exploit, build upon or develop financial capability and strength. *Example:* the trend for companies to re-purchase their shares to reduce commitments to paying dividends and to offer the smaller number of remaining shareholders a better return, thereby boosting shareholder value.

- select strategies that address or remedy financial weaknesses which would otherwise place the enterprise at a disadvantage. *Examples:* taking steps to improve cash flow; reducing costs; increasing company profitability; lowering the level of corporate indebtedness by reducing long-term borrowing; seeking Best Value performance enhancements that will offset the need for a local government authority to seek higher local taxes.

3.2 Implementation

To ensure that a product, service(s) and business get in front of the right people at the most opportune times, a company must implement and stick to a well thought out marketing plan. If the firm happened to have skipped the step of plotting out their marketing plan, then it is recommended that the firm does this first before thinking about spending any money on marketing. If the firm have already ironed out its marketing plan (at least for the coming quarter), then here is some useful information on how to successfully implement its **marketing plan**.

a. **Communicate Your Marketing Plan;** The first step in implementing a marketing plan is to communicate it to the rest of the company. Obviously, if it is a single entrepreneur, then proceed to step 2. Now the management must get everyone else behind them and create a rallying point behind your marketing plan. New marketing efforts can be motivational for any business. People like to feel a part of something new and exciting so make sure to include those around the firm to create this sense of involvement and enthusiasm. The firm may find that some of the best ways to get exposure for its new product or service that they are marketing is through some of the people right

around them. The sales team is a perfect example – if you get them excited about how you are going to strategically and effectively market what you are asking them to sell then they will create a higher sense of confidence and pride for themselves in what they are selling.

b. **Know the End Goal for Your Marketing Plan;** Business, like life, is unpredictable for the most part. It is important that you remain confident in the research and planning you did to carry out your marketing plan. If you have a particular set of goals in mind that you are continuously striving to reach then you are on the right path to success. Just know that outside factors will create kinks in your plan and may cause you to get off track. This is normal, just stay true to what you are shooting for and being a few degrees or dollars off here or there will not hurt you in the long run. However, if you are implementing your marketing plan with no end goal in mind, then these outside factors will most definitely prove to be detrimental to your business and its bottom line.

c. **Chart the Success of Your Marketing Plan;** One of the most important things you can do during the implementation of your new marketing plan is to track as much of it as possible. One of the benefits of online marketing, which should make up at least 70% of your marketing plan, is that you can literally track your Return on Ad Spend (ROAS) and Return on Investment (ROI) down to the penny. Traditional marketing methods, like newspaper advertising, make it extremely difficult to do this as accurately or effectively. The data that you collect during the implementation of your marketing plan will not only prove extremely useful during the implementation, but also for future marketing efforts. Companies pay lots of money for this data so make sure to chart it, analyze it and utilize it effectively.

d. **Adjust Your Marketing Plan;** As previously stated, business can be very unpredictable so be ready to adjust your marketing efforts to accommodate the highs and lows of the market. It is important to stick to your marketing plan as much as possible, but in cases where an outside factor affects the implementation of your plan you need to be able to make precise, strategic moves on the fly. One thing you do not

want to do is panic. This is the easiest thing to do. Perhaps the economy slows or some news event negatively impacts the acceptance of your offer…don't panic, these things can be used to your advantage. The last thing you want to do is get scared and turn things off in fear of wasting money. This will kill your business. You need to be more aggressive during slow markets as this is usually the best time to get the most exposure and branding for the lowest possible price. When the market picks back up, which it will, your company will be positioned nicely while most other companies will be scrambling to get the same exposure. You also need to use all press, negative or positive, to your advantage. One of the greatest things about the media is that they will provide you with some of the best advertising and exposure and if you position your company and marketing right.

e. **Marketing Plan Success;** By following the steps above and truly investing yourself into your marketing plan, your product, service, business and company will receive the exposure, branding and positioning it needs to be successful. There are so many ways to market a business these days and if you are not creative and strategic with how you market your business, then success rate will drop exponentially. Don't get stuck in the old-fashioned ways of marketing you may have learned in school or from your first boss. The Internet alone holds so many ways to market your business that are cheaper, have a much further reach, and are much more cost effective. The biggest advantage with Internet Marketing is that people are constantly using the Internet to find information or products they want to buy. In other words, they are specifically asking for someone to advertise their services to them and prove that they should go with them. This is called Inbound Marketing and it generates the best type of customer. Take advantage of the methods that the Internet offers and your business will grow faster than you could ever realize.

3.3 Control

To maximize the return on a marketing plan, there need to be controls in place to monitor the plan's progress. As a marketing plan moves along, the controls are constantly analyzed to

determine how the plan's actual performance compares to the projections. Any changes that need to be made are done based on the analysis of marketing controls. Understanding what the controls in a marketing plan are will help you develop effective performance measurement indicators.

3.3.1 Control Phase Levels

The control phase of a marketing plan includes three distinct levels of control. The first level includes strategic controls that determine the overall effectiveness of a marketing plan in terms of markets, products and channels. The second level includes operational controls that assess whether positive results are being achieved. The third level includes profit and efficiency controls that determine whether the business is making or losing money and whether funds allotted to the marketing plan are being spent in the most efficient way.

      i.   **Marketing Plan Controls;** many control mechanisms are quantitative in nature, assessing performance and cost effectiveness according to hard facts and mathematical calculations. Examples include sales analysis, market share analysis and assessments that compare marketing expenses to sales ratios. Just as important, however, are qualitative controls such as a suggestion box, customer surveys or an in-house customer panel. These control techniques provide ways to evaluate how customers feel not only about the business's products and services, but about the business.

      ii.   **Performance Benchmark Standards;** Marketing plan controls include performance benchmark standards that relate to marketing plan objectives. Performance benchmarks can only provide value, however, if marketing plan objectives are clear, well-written and well-defined. For example, it would be difficult to set an accurate benchmark standard for direct mail response rates if the marketing plan objective states only that the plan should improve response rates. An objective that aims to improve response rates by 25 percent, however, sets the stage for creating an effective performance standard.

      iii.   **Control Phase Timing;** The conclusion of a marketing plan or campaign is a poor time to discover the plan or campaign wasn't as successful as it could've been or wasn't cost effective. Monthly and

quarterly evaluations throughout the implementation phase can help the marketing team identify red flags requiring further investigation or immediate action and monitor trends as they develop. The objective is to find out what's happening and why it's happening and then decide what corrective actions are necessary -- up to and including implementing a contingency plan -- to eliminate marketing plan issues.

4.0 Conclusion

At the end of this unit, we discussed the importance of financial appraisals, implementation and control of marketing plan. We also discussed the techniques on how to carry them out and the overall concept.

5.0 Summary

- The financial health check is used (i) to analyze the financial condition of the organization, and (ii) to analyze the capability and capacity that this financial condition represents.

- To ensure that a product, service(s) and business get in front of the right people at the most opportune times, a company must implement and stick to a well thought out marketing plan.

- To maximize the return on a marketing plan, there need to be controls in place to monitor the plan's progress.

- The control phase of a marketing plan includes three distinct levels of control. The first level includes strategic controls that determine the overall effectiveness of a marketing plan in terms of markets, products and channels. The second level includes operational controls that assess whether positive results are being achieved. The third level includes profit and efficiency controls that determine whether the business is making or losing money and whether funds allotted to the marketing plan are being spent in the most efficient way.

Answer to Self-Assessment Exercise

See 3.2 and 3.1.12

6.0 **Tutor-marked assessment**

a. Identify and explain the control phase levels.

7.0 References/Further reading

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MODULE 4; E-BUSINESS SECURITY

UNIT 1; INTRODUCTION TO E-BUSINESS SECURITY

UNIT 2; BUSINESS SECURITY CHALLENGES

UNIT 3; NETWORK SECURITY AND MANAGEMENT

UNIT 4; COPYRIGHT LAW AND ELECTRONIC ACCESS TO INFORMATION

UNIT 5; INTERNET FIREWALL AND FRAUD PREVENTION

UNIT 1: INTRODUCTION TO E-BUSINESS SECURTIY

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1.0 INTRODUCTION

In the previous module, we discussed the concept and nature of the e-marketing plan. In this unit, we are going to discuss the concept and nature of E-Business Security. Highlight the Security methods, setting up security, the relationship between security and websites, is it necessary, tracking customers and consequences of having no security on your website.

2.0 OBJECTIVES

At the end of this unit, the student is expected to:

• List the various types of security measures for e-commerce

• Assess security measures

• Identify some security measures for a web site

• Explain the relevance of security measures

• Explain the basic principles for customer security

• Track a customer as a security measure.

3.0 MAIN CONTENT

3.1 Computers and Security

Before the Internet, computer security was limited to 'closed systems' or network computers such as offices or banks, where only people physically in the office could use the computer system. It was quite easy for the network supervisor to set up user names and passwords, since at that time people have become used to logging on before they can use these types of computers or resources.

With the advent of the Internet, computers users can now work in an 'open system' and security has become much more complicated. Even though you can now connect your home or office computer to the Internet and perform remote transactions without leaving the building you still want to be sure that the transaction is secure. The transaction takes place through the Internet by bouncing the information through various computers before it reaches, for example, the bank's computer. You want to be sure that no one observes the transaction along the way and collects or modifies your transaction information. This is where computer security comes in. There are many different types of security systems, though most use a process called encryption.

When you connect to your bank or other service to make a transaction you are often required to send your account number or user name as well as a Personal Identification Number (PIN) or password for verification. This information should only be sent after establishing a secure connection. If you are using an Internet browser you will see a small closed lock appear in the window of the browser. Once you are connected to a secure server any information you send or receive is scrambled or encrypted using a mathematical formula and then

reassembled or decrypted at the other end. The computer user usually will not notice this happening as they perform their secure transaction.

Anyone with criminal intent who intercepts your transaction will be treated to a stream of garbled nonsense. If this is the first time you use a new service you most often will need to setup an account and possibly download a small piece of software called a plug-in, which allows your computer to create the secure connection or link. The transaction often involves the exchange of a small file that keeps track of the transaction and can act as flag or bookmark when you next visit that website. These small files are called cookies and are set by the website you are visiting. They can contain information such as the type of server you are connecting from, the type of browser you are using, the last site you visited and any information you volunteer. You can view the information stored in the cookie. Try a search for 'cookie' to find the cookies folder. Windows users can view any cookies they are storing in the folder

Self-assessment Exercise

Discuss the relationship between Computers and Security

3.2 Security Methods

Encryption;

Privacy is handled by encryption. In PKI (public key infrastructure) a message is encrypted by a public key, and decrypted by a private key. The public key is widely distributed, but only the recipient has a key. For authentication (proving the identity of the sender, since only the sender has the key) the encrypted message encrypted again, but this time with a private key. Such procedures form the basis of RSA (used by banks and governments) and PGP (Good Privacy, used to encrypt emails). Unfortunately, PKI is not an efficient way of sending large amounts of information, and is often used only as a first step — to allow two parties to agree upon a key for symmetric secret key encryption. Here sender and recipient use keys that are generated for the message by a third body: a key distribution center. The keys are not identical, but each is shared with the key distribution center, which allows the message to be read. Then the symmetric keys are encrypted in the RSA manner, and rules set under various protocols. Naturally, the private keys should be kept secret, and most security lapses indeed arise here. Encryption also involves using the key pair but in reverse. Once your message is completed you encrypt the file using the recipient's public key ensuring that only the recipient can ever access that message with their private key

Digital Signatures and Certificates;

Digital signatures meet the need for authentication and integrity. To vastly simplify matters (as throughout this page), a plain text message is run through a hash function and so given a value: the message digest. This digest, the hash function and the plain text encrypted with the recipient's public key is sent to the recipient. The recipient decodes the message with their private key, and runs the message through the supplied hash function to that the message digest value remains unchanged (message has not been tampered with). Very often, the message is also times tamped by a third-party agency, which provides non-repudiation.

What about authentication? How does a customer know that the website receiving sensitive information is not set up by some other party posing as the e-merchant? They check the digital certificate. This is a digital document issued by the CA (certification authority: VeriSign, Thawte, etc.) that uniquely identifies the merchant. Digital certificates are sold for emails, e-merchants and web-servers. Digital signature shall be discussed in detail in subsequent units of this course.

Secure Socket Layers;

SSL stands for Secure Sockets Layer. This is the technique in which web servers and web browsers encrypt and decrypt all the information that they transmit and receive. Secret decoder rings time. Both ends establish and use the same scheme for making sure that no one else is listening to their conversation. Information sent over the Internet commonly uses the set of rules called TCP/IP (Transmission Control Protocol / Internet Protocol). The information is broken into packets, numbered sequentially, and an error control attached. Individual packets are sent by different routes. TCP/IP reassembles them in order and resubmits any packet showing errors.

SSL uses PKI and digital certificates to ensure privacy and authentication. The procedure is something like this: the client sends a message to the server, which replies with a digital certificate. Using PKI, server and client negotiate to create session keys, which are symmetrical secret keys specially created for that transmission. Once the session keys are agreed, communication continues with these session keys and the digital certificates.

PCI, SET, Firewalls and Kerberos;

Credit card details can be safely sent with SSL, but once stored on the server they are vulnerable to outsiders hacking into the server accompanying network. A PCI (peripheral component interconnect: hardware) card is often added for protection, therefore, an approach altogether is adopted.

Developed by Visa and MasterCard, SET (Secure Electronic Transaction) uses PKI for privacy, and certificates to authenticate the three parties: merchant, customer and bank. More importantly, sensitive information is not seen by the merchant, and is not kept on the merchant's server. Firewalls (software or hardware) protect a server, a network and individual PC from attack by viruses and hackers. Equally important is protection from malice or carelessness within the system, and companies use the Kerberos protocol, which uses symmetric secret key Cryptography to restrict access to authorized employees.

3.3 Setting up Security

As most people will not be setting up their own secure server the scope of this section is limited to the topics of protecting e-mail and small business or organizational transactions. E-mail can be protected using a service or an application (program).

There are others but the two that stand out currently are S/MIME and **PGP. S/MIME requires the user to register with a 3-party service which** issues a digital id that you attach to your message. Though this is usually a commercial service there is often a free introductory period. PGP is free for personal use or a commercial application for business use and is run from your own computer. Both methods allow users to sign or attach a digital identification to the email message which verifies, to the recipient, that the message is from the original person or organization and that the information is with in transit. These methods also allow the user to encrypt their message so that anyone intercepting the message wouldn't be able to read it. You can also decide the level of encryption from low; in which a nerd with some good software and enough time on their hands could possibly decrypt to high (128 bit) which would take a whole lot of experts weeks to decrypt if even then. Most of us will choose somewhere in between as this process involves increased time and file size.

Both methods use key pairs of public and private keys. Your public keys are sent to everyone that you communicate through email with.

Your public key can be sent through various methods including posting it to an internet service or sending it as part of an email message. Public keys can also be post on your website in a file. Your friends associated can add your public key to a file called a key ring). When someone wants to send you a secure email the sender encrypts their messages with your public key. When you receive the email, you must decrypt it using your private key. Many email programs will automatically verify that the message is authentic. You will need to type in your password to view the message.

Small businesses and organizations that wish to offer transactions over the Internet or e-business can take their chances and set up an unsecured system, set up their own secure server or purchase a service from a third party. There are various types including service that take a percentage of the transaction and/or charge a service fee and/or charge for each transaction. Some organizations are more reliable and you should always shop around before committing to a service. Because this type of service is so new the length of time a company has been operating is not always a way to decide. Things to watch for are downtime. If your company's website is operating properly yet the customer or user can't access the transaction server because it is down, too busy or misconfigured they will easily be put off perhaps entirely. Watch for contracts that lock you in as the market is still developing and prices tend to fluctuate. It is easy to switch services by simply changing the address on your website's order forms.

3.4 Security and Websites

As stated at the beginning of this unit, the nature of the Internet is an open system, having said that, there are many reasons and many ways to set up a secure or closed system within this open framework. Private or member-based discussion groups, private files or folders, protected databases, copyright material to name a few all need some way of allowing them to be distributed to the intended recipient only. Also, many businesses are creating Intranets which are closed systems only accessible to registered users. An Intranet can provide a way of making company information easily accessible and allow branch offices to communicate with each other easier.

Account Security

Your website itself is protected by your ISP's software. When trying to access your web space to change or modify a file using a shell or ftp you are challenged to send your username and password. This is the first line of protection and adequate for many website administrators.

Server Security

The server that your website is installed on is the second protection. Most servers have security features built in to them allowing users to password protect folders or build scripts to send a username/password challenge to a user trying to access a file or folder. This allows website administrators the ability to create discussion groups within their site or to place confidential documents or information that is made available only to registered users on their own website. Unfortunately, some ISP either doesn't make this option available, charge a premium to use them or only allow their own employees to set them up.

Third Party Security

Another option includes contracting the protection of private files to a separate service, pay a third party to hosting a private discussion group or obtain web space on another server that allows access to security options. The entire Internet is as close as your computer connection and whether the file the user is viewing is stored in your own current web space or on another server is usually immaterial. When your customers, employees or members moves from one page to another the consistency of the website is the maintained by the design, not the address of the separate pages. It is also possible to control the address that is displayed if required.

Software Security

Another option is to use JavaScript or Java applets to control customers or members access secure features. This option is available to users who are using Java enabled browsers. Scripts and applets can control access to documents and databases, create content on the fly based on user input, detect the browser the visitor is using and direct them to the proper page, retrieve cookies and use that information to determine whether a user has access to a certain area or not, as well as many other uses.

Copyright

Copyright is a protect using the same process as any original material (books, artwork, film, etc...). Anything that a user gets off the Internet should be treated as privately owned information unless otherwise noted. Anyone posting private information to the Internet should be aware that copyright law is not the same in every country and may be difficult to enforce. It is possible to set up a page that won't be stored on the user's computer once they leave the site but that will only slow down not stop users who want to obtain information posted on a website. Notices of copyright are often added to the main page of a website sometimes with a link to a page describing the details of how the content can be used.

Updating Software

It is very important to update your software periodically. When a program is released, internet browsers, it may contain flaws usually referred to as bugs. These bugs may not appear to be a problem but criminals will attempt to use these flaws for their own use. Keeping your software up to date will help keep your computer secure.

3.5 Is Security Necessary?

Though you may think that it is not necessary to setup security systems there are many reason to consider it. I have come across several examples of people forging documents and email. A digital signature will be the only way to verify whether a document is genuine or not. Many organizations need to discuss draft articles, changes to bylaws and other documents that could cause problems if they were made public before they are approved. A secure directory within your website is an ideal spot to store sensitive material making it available for members and people who have the proper password. I would be remiss to not point out and as all discussions on the subject also point out mining the Internet with malicious intent is also possible. One common malicious act is to search websites for email addresses and then add them to spam distribution lists. Unfortunately, there is very little that can be done to counter this other than removing your email address from your web site but this makes it difficult for your customers to contact you.

Whether you decide to add a security component to your web site project initially it is a good idea to think about or discuss web site security when planning the site. You should also review your security systems periodically whether that is changing your password or reviewing and updating your security system.

3.6 Customer Security: Basic Principles

Most e-commerce merchants leave the mechanics to their hosting company or IT staff, but it helps to understand the basic principles. Any system should meet four requirements:

• Privacy: information must be kept from unauthorized parties.

• Integrity: message must not be altered or tampered with.

• Authentication: sender and recipient must prove their identities to each other.

• Non-repudiation: proof is needed that the message was indeed received.

Transactions

Sensitive information should be protected through at least three transactions:

• Credit card details supplied by the customer, either to the merchant or payment gateway, handled by the server's SSL and the merchant/server's digital certificates.

• Credit card details passed to the bank for processing, handled by the complex security measures of the payment gateway.

• order and customer details supplied to the merchant, either directly or from the payment gateway/credit card processing company, handled by SSL, server security, digital certificates (and payment gateway sometimes).

3.7 Practical Consequences

1. The merchant is always responsible for security of the Internet connected PC where customer details are handled. Virus protection and a firewall are the minimum requirement to be safe, store sensitive information and customer details on zip-disks, a physically separate PC or with a commercial file storage service. Always keep multiple back-ups of essential information, and ensure they are stored safely off-site.

2. Where customers order by email, information should be encrypted with PGP or similar software. Or payment should be made by specially encrypted checks and ordering software.

3. Where credit cards are taken online and processed later, it's the merchant's responsibility to check the security of the hosting company's webserver. Use a reputable company and demand detailed replies to your queries.

4. Where credit cards are taken online and processed in real time, four situations arise:

i. You use a service bureau. Sensitive information is handled entirely by the service bureau, which is responsible for its security. Other customer and order details are your responsibility as in 3 above.

ii. You possess an e-business merchant account but use the digital certificate supplied by the hosting company, a cheaper option acceptable for smallish transactions with SMEs. Check out the hosting company, and the terms and conditions applying to the digital certificate.

iii. You possess an e-business merchant account and obtain your own digital certificate (costing some hundreds of dollars). Check out the hosting company, and enter a dialogue with the certification authority: they will certainly probe your credentials.

iv. You possess a merchant account, and run the business from your own server. You need trained IT staff to maintain all aspects of security-firewalls, Kerberos, SSL, and a digital certificate for the server (costing thousands or tens of thousands of dollars).

Security is a vexing, costly and complicated business, but a single lapse can be expensive in lost funds, records and reputation. Do not wait for disaster to strike, but stay proactive, employing a security expert where necessary. Sites on our resources page supplies details.

3.8 Tracking the Customer

Of primary importance in any transaction is that the customer feels comfortable with your communication. To make it seem like the website is talking to each customer individually you must track who the customer is and what he is interested in. The most common way this is achieved on the web is with the shopping cart concept. This allows many different people to be shopping on your site and all have their own sets of items in their cart. In our fax back example, you would have to use something like the fax number to keep track of each customer. The equivalent with the web would be the IP number (known as IP tracking).

The one major difference is that a customer's fax number doesn't change very often, while a customer's IP number can change every time that they connect to the Internet -- for those people using dial up accounts or other dynamic addressing situations -- so IP numbers are not an able way to track customers. Another common tracking technique is cookies. You can have your website put a cookie onto the customer's machine so that it maintains important information, like the contents of their shopping cart. A better technique that I have found is tag propagation. This is a technique in which the first page that someone hits when they enter the site assigns a unique number, something like the number of seconds since 1904. This number is in turn passed thru every page on the site and the shopping cart information is stored in a file with that number on the server. This allows a customer to disconnect (by choice or happenstance) from the Internet and not lose the shopping cart information. This

can be very important in situations where buying approval from someone else required for the purchase. Most of the commercial products include a way of doing this. With Web Catalog, you insert a cart =[cart] parameter into every HREF and form on your site.

Tracking the customer is very useful not just for the convenience of a shopping cart, but for things like tracking down people that you think are using stolen cards and, more importantly for that all allusive goal, to make the site more usable. Correlating this tracking information with the general web server logs can be used to determine trends of the people visiting your site, are they getting all the information they need to make a buying decision, are they understanding the buying process, are they losing interest after a certain amount of time. One big advantage of this tracking log is to look for all the searches that people are doing on your site and were they are not finding any products. Maybe you can subscribe to the products more effectively. These answers can help you understand ways to change your site to make it more useful.

3.9 Security Concerns

Areas That Need Security

As mentioned in the section about SSL, we do want to protect transmission of sensitive information with something like SSL to keep the eavesdroppers away, but another equally important issue for security is protection from attacks on your web server. People trying to find credit card numbers in accounting logs or just trying to steal products, to buy at ridiculously low or free prices. Prevention of this type of security breach is the most overlooked area. Much of the information on the machine should not be allowed any access.

The first obvious area to secure is the accounting files. Let's say the web server is doing a great job of keeping people out of sensitive areas, but the same machine is also your ftp server. People are prevented by the web server from getting to your accounting log, but maybe there is a security hole because your ftp server software allows access to this log, so my first advice, limit the access protocols to all sensitive data -- 1) store your accounting logs and other sensitive files outside of the web server folder, Web Star and many other web server products will not serve files outside of their folder tree, 2) don't run ftp and other protocol services on the same machine. Also, make sure that if you are delivering electronic

product, only the person that bought it, gets it. For this you should either be copying the product to some unique place only that person is given access to or have a onetime password scheme allowing only one shot at downloading the product. The concern of the web server allowing access to files that are sensitive is best taken care of by your disk organization. Below is a screen shot of a sample organization of your web server folder structure using Web Star and Web Catalog.

Areas That Do Not Need Security

There are many areas within the selection and buying process that are considered public information and therefore don't need security. In fact, the whole process would be slowed down if it sent everything through a SSL server. Imagine if you received a mail-order catalog from Mac Warehouse or Club-Mac and you had to put a decoder ring over each letter to figure out what it really was, that would take you hours just to read one page. That is what your browser is doing with SSL data. So, big picture, you only want to use SSL when you are expecting sensitive data from the customer, like a credit card number. Protect that from eavesdroppers with SSL, everything else should go thru the non-SSL server.

4.0 CONCLUSION

At the end of this unit, we were able to discuss the concept and nature of E-Business Security. Highlight the Security methods, setting up security, the relationship between security and websites, is it necessary, tracking customers and consequences of having no security on your website.

5.0 SUMMARY

• There are a lot of discussions these days about e-commerce security as more people use email and more services such as banking and retail subscriptions become available through the Internet

• Digital signatures meet the need for authentication and integrity. To vastly simplify matters (as throughout this page), a plain text message is run through a hash function and so given a value: the message digest

• Email can be protected using a service or an application (program). There are others but the two that stand out currently are S/MIME and PGP. S/MIME requires the user to register with a 3-party service which issues a digital id that you attach to your message

• As was stated at the beginning of this unit, the nature of the Internet is an open system. Having said that there are many reasons and many ways to set up a secure or closed system with in this open framework

• Though you may think that it is not necessary to setup security systems, there are many reasons to consider it. I have come across several examples of people forging documents and email. Digital signature will be the only way to verify whether a document is genuine or not.

• Before the Internet, computer security was limited to 'closed systems' or network computers such as offices or banks where only people physically in the office could use the computer system. It was quite easy for the network supervisor to set up user names and passwords and since that time people have become used to logging on before they can use these types of computers or resources.

• Most e-commerce merchants leave the mechanics to their hosting company or IT staff, but it helps to understand the basic principles.

• Of primary importance in any transaction is that the customers feel comfortable with your communication. To make it seem like the website is talking to each customer individually you must track who the customer is and what they are interested in

• The first obvious area to secure is the accounting files. Let's say the web server is doing a great job of keeping people out of sensitive areas, but the same machine is also your ftp server.

Answer to self-assessment exercise

See 3.1

6.0 TUTOR-MARKED ASSIGNMENT

1. Mention 5 security methods for e-commerce security

2. Mention 4 basic requirements of any system to secure a customer within the context of this unit.

7.0 REFERENCES/FURTHER READINGS

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UNIT 2: BUSINESS SECURITY CHALLENGES

CONTENTS

1.0 INTRODUCTION

In the previous unit, we discussed the relationship between computers and security. In this unit we are going to discuss the challenges that businesses face with e-security.

The new millennium brought with it new possibilities in terms of formation access and availability, simultaneously introducing new challenges in protecting sensitive information from some eyes while making it available to others. The Internet allows businesses to use information more effectively, by allowing customers, suppliers, employees, and partners to get access to the business information they need, when they need it. These Internet-enabled services all translate to reduced cost: there are less overhead, greater economies of scale, and increased efficiency. E-business' greatest promise is timelier, more valuable information accessible to more people, at reduced cost information access. With the changes in business operations because of the Internet era, security concerns move from computer labs to the front page of newspapers. The promise of e-business is offset by the security challenges associated with the disintermediation of data access.

One security challenge results from "cutting out the middleman," that too often cuts out the information security the middleman knows, for example the expansion of the user community from a small group of known, vetted users accessing data from the intranet, to thousands of users accessing data from the Internet. Application service providers (ASP) and exchanges

offer especially stringent—and sometimes contradictory—requirements of per user and per customer security, while allowing secure data sharing among communities of interest.

E-business depends on providing customers, partners, and employees with access to information, in a way that is controlled and monitored. Technology must provide security to meet the challenges encountered by e-businesses. Virtually all software and hardware vendors claim to build secure products, but what assurance does an e-business have of a product's security? E-businesses want a clear answer to the conflicting security claims they hear from vendors. How can you be confident about the security built into a product? Independent security evaluations against internationally-established security criteria provide assurance of vendors' security claims.

2.0 OBJECTIVES

At the end of this unit, you should be able to:
• explain the greatest promises of e-business
• understand the needs for the security of e-business
• discuss cases of problems encountered in e-business transactions.

3.0 MAIN CONTENT

3.1 The Needs of E-Business Security

While putting business systems on the Internet offers potentially unlimited opportunities for increasing efficiency and reducing cost, it also offers potentially unlimited risk. The Internet provides much greater access to data, and to more valuable data, not only to legitimate users, but also to hackers, disgruntled employees, criminals, and corporate spies.

Increased Data Access

One of the chief e-business benefits of the Internet is "disintermediation." The intermediate information processing steps that employees typically perform in "brick and mortar" businesses, such as typing in an order received over the phone or by mail, are removed from the e-business process. Users who are not employees and are thus outside the traditional

corporate boundary, including customers, suppliers, and partners, can have direct and immediate online access to business information which pertains to them.

In a traditional office environment, any access to sensitive business information is through employees. Although employees are not always reliable, at least they are known, their access to sensitive data is limited by their job function, and access is enforced by physical and procedural controls. Employees who pass sensitive information outside the company contrary to policy may be subject to disciplinary action; the threat of punishment thus helps prevent unauthorized access. Making business information accessible via the Internet vastly increases the number of users who may be able to access that information. When business is moved to the Internet, the environment is drastically changed. Companies may know little or nothing about the users (including, in many cases, employees) who are accessing their systems.

Even if they know who their users are, it may be very difficult for companies to deter users from accessing information contrary to company policy. It is therefore important that companies manage access to sensitive information, and prevent unauthorized access to that information before it occurs.

Much More Valuable Data

E-business relies not only on making business information accessible outside the traditional company, it also depends on making the best, most up-to-date information available to users when they need it. For example, companies can streamline their operations and reduce overhead by allowing suppliers to have direct access to consolidated order information. This allows companies to reduce inventory by obtaining exactly what they need from suppliers when they need to streamline information flow through the business system allows users to obtain better information from the system. Now, businesses that allow other businesses and consumers to submit and receive information directly through the Internet can expect to get more timely, accurate, and valuable information, at less expense than if traditional data channels were used.

Formerly, when information was entered a business system, it was often compartmentalized. Information maintained by each internal department, such as sales, manufacturing, distribution, and finance, was kept separate, and was often processed by physically separate incompatible databases and applications—so-called "islands of information." Companies

have found that linking islands of information and consolidating them where possible, allows users to obtain better information, and to get more benefit from that information, which thus makes the information more valuable. Improving the value of data available to legitimate users increases its value to intruders as well, increasing the potential rewards to be gained from unauthorized access to that data, and the potential damage that can be done to the business if the data were corrupted. In other words, the more effective an e- business system is, the greater the need to protect it against unauthorized access.

Scalability with Large User Communities

The sheer size of the user communities which can access systems via the Internet not only increases the risk to those systems, it also constrains the solutions which can be deployed to address that risk. The Internet creates challenges in terms of scalability of security mechanisms, management of those mechanisms, and the need to make them standard and interoperable. Security mechanisms for Internet enabled systems must support much larger communities of users than systems that are not Internet-enabled. Whereas the largest traditional enterprise systems typically supported thousands of users, many Internet-enabled systems have millions of users.

Manageability

Traditional mechanisms for identifying users and managing their access, such as granting each user an account and password on each system he accesses, may not be practical in an Internet environment. It rapidly becomes too difficult and expensive for system administrators to manage separate accounts for each user on every system.

Interoperability

Unlike traditional enterprise systems, where a company owns and controls all components of the system, Internet-enabled e-business systems must exchange data with systems owned and controlled by others: customers, suppliers, partners, etc. security mechanisms deployed in e-business systems must therefore be standards based, flexible, and interoperable, to ensure that they work with others' systems. They must support browsers, and work in multi-tier architectures with one or more middle tiers such as web servers and application servers.

Hosted Systems and Exchanges

The principal security challenge of hosting is keeping data from different hosted user communities separate. The simplest way of doing this is to create physically separate systems for each hosted community. The disadvantage of this approach is that it requires a separate computer, with separately installed, managed, and configured software, for each hosted user community, providing little economies of scale to a hosting company. Mechanisms that allow multiple different user communities to share a single hardware and software instance, keep data for different user communities separate, and allow a single administrative interface for the hosting provider, can greatly reduce costs for the hosting service provider. Exchanges have requirements for both data separation and data sharing. For example, an exchange may ensure that a supplier's bid remains unviable by other suppliers, yet allow all bids to be evaluated by the entity requesting the bid. Furthermore, exchanges may also support "communities of interest" in which groups of organizations can share data selectively, or work together to provide a joint bid, for example. Assurance E-businesses need some form of assurance of the security provided in the technology products they purchase. For such assurance, there are international standards used to validate vendors' security claims against established criteria in formal evaluations.

Security evaluations are carried out by independent, licensed and accredited organizations. The evaluation process, from inception to certificate, often lasts up to a full year (and sometimes longer). Vendors who have undergone evaluations of their products learn to improve upon their development, testing and shipping processes because of completing the demanding process. Security evaluations are perhaps the most effective way to qualify a vendor's assertions about its security implementations. Is a product that has not completed such evaluations secure enough to run an e-business? Is it securing enough to protect an organization's most sensitive data? E-businesses demand that the software and hardware vendors they select ship certified provably secure products. Assurance afforded by independent security evaluations lets E-businesses'' be assured of the products they purchase and deploy.

Self-assessment exercise

Identify and explain the need for e-business security

2. Information Systems Breakdowns

Businesses that depend on computer face lots of threats and breakdown. The following incidents and cases illustrate representative cases of breakdowns in the information systems of e-businesses.

Incident 1

For almost two weeks in 1993, a seemingly legitimate automated teller machine (ATM) operating in a shopping mall near Hartford, Connecticut gave consumers apologetic notes that said "sorry, transactions are possible". Meanwhile the machine recorded the card numbers and the personal identification numbers that hundreds of customers entered in their vain attempt to make the machine dispense cash. On May 8, 1993, while the dysfunctional machine was resulting in the shopping mall, thieves started tapping into the 24-hour automated teller network in New York City. Using counterfeit bank cards encoded with the numbers stolen from the Hartford customers, the thieves removed almost $100,000 dollars from the accounts of innocent customers. The criminals were successful in making an ATM machine do what it was supposedly not designed to do, breach its own security by recording bank card numbers together with personal security codes. (Lord et al, 2002)

Incident 2

In 1994, a Russian hacker who did not know English broke Citibank electronic fund transfer system and stole more than $10 million by wiring it into accounts around the world. Since then, Citibank, a giant bank that moves half a trillion dollars a day, increased its security, requiring customers to use electronic devices that create new passwords very frequently. (Lord et al, 2002)

Incident 3

According to Wall Street Journal, the Bank of Tokyo–Mitsubishi branch in New York and the National Westminster Bank in the UK reported losses of tens of millions of dollars in 1996v due to errors in their options and derivatives trading models. I both cases, the losses went undetected for a long time. In the first case the trading model was found to be inaccurate, in the second case the model was fed inaccurate data. (Lord et al, 2002)

Incident 4

Netscape security is aimed at scrambling sensitive financial data such as credit card numbers and sales transactions so they would be safe from break-ins, by using a powerful 128-bit program. However, using 120 powerful workstations and two supercomputers, in 1996 a French student breached the encryption program in eight days, demonstrating that no program is 100 percent secure. (Lord et al, 2002)

Incident 5

In 1996, the Los Angeles Times reported "Computer makes $850 million error in Social Security". The glitch shortchanged about 700,000 Americans in retirement benefits and had been undetected for almost 23 years until it was discovered during an audit in 1994. While the newspaper blamed the computer, the fault is that of the programmers who were unable to properly automate the complex computations of the benefits. It took more than three years to fix the problem. (Lord et al, 2002)

Incident 6

A Tarrant County, TX jury found Donald Burleson guilty of harmful access to a computer, a third-degree felony with a maximum penalty of 10 years in prison and a $5,000 fine. Jurors were told that the man planted a virus in a computer system that was used to store records by an insurance and brokerage firm. The virus was programmed like a time bomb and was activated two days after the man was fired from his job. The virus eliminated 168,000 payroll records, which resulted in a one month delay in issuing employee's payroll checks. (Lord et al, 2002)

Incident 7

In 1999, a fire disabled a major Illinois Bell switching center. The outage affected the voice and data communications of more than one half million residents and hundreds of businesses during a period ranging from two days to three weeks. The major effects on business were the following:
• Dozens of banks were hindered in cashing checks and transferring funds.
• At least 150 travel agencies were hindered in their ability to make reservations and print tickets
• About 300 automated teller machines were shut down
• Most of the cellular phones and paging systems in the area were disrupted

• Hundreds of companies were hindered in their communications, both inside and outside the immediate area. (Lord et al, 2002)

4.0 CONCLUSION

E-business depends on providing customers, partners, and employees with access to information, in a way that is controlled and monitored. E-business security is a multifaceted challenge and requires the coordination of business policy and practice with appropriate technology. In addition to deploying standards bases, flexible and interoperable systems, the technology must provide assurance of the security provided in the products. As technology matures and secure e-business systems are deployed, companies will be better positioned to manage the risks associated with disintermediation of data access. Through this process businesses will enhance their competitive edge while also working to protect critical business infrastructures from malefactors like hackers, disgruntled employees, criminals and corporate spies.

5.0 SUMMARY

• The new millennium brought with it new possibilities in terms of information access and availability, simultaneously introducing new challenges in protecting sensitive information from some eyes while making it available to others.

• While putting business systems on the Internet offers potentially unlimited opportunities for increasing efficiency and reducing cost, it also offers potentially unlimited risk.

• The principal security challenge of hosting is keeping data from different hosted user communities separate

• Businesses that depend on computer face lots of threats and breakdown.

• For almost two weeks in 1993, a seemingly legitimate automated teller machine (ATM) operating in a shopping mall near Hartford, Connecticut gave consumers apologetic notes that said "sorry, no transactions are possible".

• In 1999, a fire disabled a major Illinois Bell switching center. The outage affected the voice and data communications of more than one-half million residents and hundreds of businesses during a period ranging from two days to three weeks.

• E-business depends on providing customers, partners, and employees with access to information, in a way that is controlled and secure.

6.0 TUTOR-MARKED ASSIGNMENT

Briefly discuss the valuing of data as a need for e-business security.

Answer to self-assessment exercise

See 3.1

7.0 REFERENCES/FURTHER READINGS

Okereke. G.C. (2009) *BHM733 E-Business Security.* National Open University of Nigeria; Lagos. ISBN: 978-058-439-0

Lord, P. Davidson, M.A. and Browder, K. (2002). Managing e-business *Security Challenges. U.S.A: Oracle Corporation World* Headquarters.

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UNIT 3; NETWORK SECURITY AND MANAGEMENT

CONTENTS

1.0 INTRODUCTION

In this unit, we are going to discuss the concept of Network Security and Management. We will highlight the attributes of a secure network, levels of security management, management functional areas, common implementations and case requirements for e-businesses.

2.0 OBJECTIVES

At the end of this unit you should be able to:

• define network security and management

• identify the attributes of a secure network

• identify the components of a functional architecture of network management

• explain the levels of network management and how they differ from one another

• Identify the constituents of Management Functional Areas (MFAs)

• define how to implement network security and management.

3.0 MAIN CONTENT

3.1 Attributes of a Secure Network

Network security starts from authenticating any user, most likely a username and a password. Once authenticated, a state firewall enforces access policies such as what services are allowed to be accessed by the network users. Though effective to prevent unauthorized access, this component fails to check potentially harmful contents such as computer worms being transmitted over the network. An intrusion prevention system (IPS)[2] helps detect and prevent such malware. IPS also monitors for suspicious network traffic for contents, volume and anomalies to protect the network from attacks such as denial of service.

Communication between two hosts using the network could be encrypted to maintain privacy. Individual events occurring on the network could be tracked for audit purposes and for a later high level analysis. Honeypots, essentially decoy network-accessible resources, could be deployed in a network as surveillance and early-warning tools. Techniques used by the attackers that attempt to compromise these decoy resources are studied during and after an attack to keep an eye on new exploitation techniques. Such analysis could be used to tighten security of the actual network being protected by the honeypot.
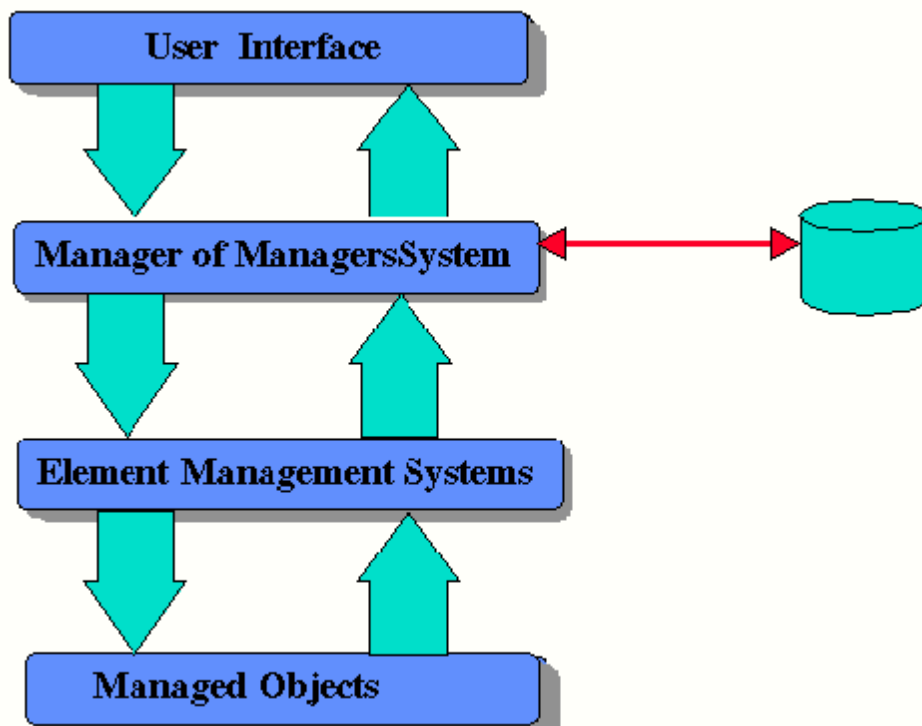
3.2 Functional Architecture

Figure 8 Defining the Pieces (Kellogg, 2007)

Network management systems have four basic levels of functionality. Each level has a set of tasks defined to provide, format, or collect data necessary to manage the objects. Figure 1 illustrates these four levels of functionality.

Managed Objects

Managed Objects are the devices, systems and/or anything else requiring some form of monitoring and management. Most implementations leave out the "anything else" clause because they usually don't have the business case requirements before the design, therefore they design as they go.

Some examples of managed objects include routers, concentrators, hosts, servers and applications like Oracle, Microsoft SMS, Lotus Notes, and MS Mail. The managed object does not have to be a piece of hardware but should rather be depicted as a function provided on the network.

Element Management Systems (EMS)

An EMS manages a specific portion of the network. For example Sun Net Manager, an SNMP management application, is used to manage SNMP manageable elements. Element Managers may manage a sync lines, multiplexers, PABX's, proprietary systems or an application.

Manager of Managers Systems (MoM)

MoM systems integrate the information associated with several element management systems, usually performing alarm correlation between EMS's. There are several different products that fall into this category to include Boole & Babbage's Command Post, Nynex All Link, International Telematics MAXM, OSI Net Expert and others. The actual data to be collected comes from the managed object, in most cases. This data is collected by the EMS systems which in turn consolidates the data in a database for processing and retrieval.

User Interface

The user interface to the information, whether real time alarms and alerts or trend analysis graphs and reports, is the principal piece to deploying a successful system. If the information gathered cannot be distributed to the whole MIS organization to keep people informed and to enable team communications, the real purpose of a Network

Management system is lost in the implementation. Data doesn't mean anything if it is not used to make informed decisions about the optimization of systems and functions.

These systems components are, in turn, mapped back to what is called Management Functional Areas (MFAs). These MFAs are the wish list of which areas in which management applications as a system focus their attention.

3.3 Levels of Security Management

Security Management for networks is different for all kinds of situations. A small home or an office would only require basic security while large businesses will require high maintenance and advanced software and hardware to prevent malicious attacks from hacking and spamming.

Small Homes

• A basic firewall

• For Windows users, basic Antivirus software like McAfee, Norton Anti-Virus, AVG Antivirus or Windows Defender, others may suffice if they contain a virus scanner to scan for malicious software.

• When using a wireless connection, use a robust password.

Medium Businesses

• A fairly strong firewall

• A strong Antivirus software and Internet Security Software.

• For authentication, use strong passwords and change it on a bi- weekly/monthly basis.

• When using a wireless connection, use a robust password.

• Raise awareness about physical security to employees.

• Use an optional network analyzer or network monitor.

Large Businesses

• A strong firewall and proxy to keep unwanted people out.

• A strong Antivirus software and Internet Security Software.

• For authentication, use strong passwords and change it on a weekly/bi-weekly basis.

• When using a wireless connection, use a robust password.

• Exercise physical security precautions to employees.

• Prepare a network analyzer or network monitor and use it when needed.

• Implement physical security management like closed circuit television for entry areas and restricted zones.

• Security fencing to mark the company's perimeter.

• Fire extinguishers for fire-sensitive areas like server rooms and security rooms.

• Security guards can help to maximize security.

School

• An adjustable firewall and proxy to allow authorized users access from the outside and inside.

• A strong Antivirus software and Internet Security Software.

• Wireless connections that lead to firewalls.

• CIPA compliance.

• Supervision of network to guarantee updates and changes based on popular site usage.

• Constant supervision by teachers, librarians, and administrators to guarantee protection against attacks by both Internet and sneaker net sources.

Large Government

• A strong firewall and proxy to keep unwanted people out.

• A strong Antivirus software and Internet Security Software.

• Strong encryption, usually with a 256 bit key.

• Whitelist authorized wireless connection, block all else.

• All network hardware is in secure zones.

• All hosts should be on a private network that is invisible from the outside.

• Put all servers in a DMZ, or a firewall from the outside and from the inside.

• Security fencing to mark perimeter and set wireless range to this.

3.4 Management Functional Areas (MFAs)

The most common framework depicted in Network management designs is centered on the Open Systems Interconnect (OSI) "FCAPS" model of MFAs. However, most network management implementations do not really cover these areas. Other areas that may be important to the e-business/MIS function and to specific business units within the company may not be addressed at all.

FCAPS is an acronym explained as follows:

• Fault Management

• Configuration Management

• Accounting

• Performance Management

• Security Management

Some of the other areas covered under Management Functional Areas include:

• Chargeback

• Systems Management

• Cost Management

• Fault Management

Fault management is the detection of a problem, fault isolation and correction to normal operation. Most systems poll the managed objects search for error conditions and illustrate the problem in either a graphic format or a textual message. Most of these types of messages are setup by the person configuring the polling on the Element Management Systems. Element Management Systems collect data directly from a log printer type output receiving the alarm as it occurs.

Fault management deals most commonly with events and traps as they occur on the network. Keep in mind though, that using data reporting mechanisms to report alarms or alerts is the best way to accomplish health checks of specific managed object's performance without having to double the amount of polling being accomplished.

Configuration Management

Configuration management is probably, the most important part of network management in that you cannot accurately manage a network unless you can manage the configuration of the

network. Additions and deletions from the network need to be coordinated with the network management systems personnel. Dynamic updating of the configuration needs to be accomplished periodically to ensure the configuration is known.

Accounting

The accounting function is usually left out of most implementations in that LAN based systems are said to promote accounting type functions until one gets into the Hosts such as IBM Mainframe or Digital VAX's. Others rationalize the accounting is a server specific function and should be managed by the System administrators.

Performance Management

Performance is a key concern to most MIS support people. Although, it is high on the list, it is considered difficult to be factual about some LAN performance issues unless employing RMON technology. (This is one of those examples of throwing money at a problem.) RAM Pods are very useful, one should carefully weigh what's pertinent to what can be accomplished in other ways without having to spend a bundle. Performance of Wide Area Network (WAN) links, telephone trunk utilization, etc, are areas that must be revisited on a continuing basis as these are some of the areas easiest to optimize and realize savings.

Systems or applications performance is another area in which optimization can be accomplished but most network management applications don't address this in a functional manner.

Security Management

Most network management applications only address security applicable to network hardware such as someone logging into a router or bridge. Some network management systems have alarm detection and reporting capabilities as part of physical security (contact closure, fire alarm interface, etc.) None really deal with system security as this is a function of System administration.

Chargeback

Chargeback has been done for years in the large mainframe environments and will continue to be accomplished as it is a way to charge the end user for only the specific portion of the service that he or she uses. Chargeback on Local Area Networks presents new challenges in that so many services are provided. In many implementations, chargeback is accomplished on

the individual Server providing the service. While chargeback is very difficult on broadcast based networks such as Ethernet, it is realizable on networks that dynamically allocate bandwidth as the end users' needs dictate (ATM). As technology associated with monitoring LAN and WAN networks evolves, chargeback will be integrated into more and more systems.

Systems Management

Systems Management is the management and administration of services provided on the network. A lot of implementations leave out this very crucial part in that this is one of the areas in which management systems can show significant capabilities, streamline business processes, and save the customer money with just a little work. There are many good COTS products available to automate system administration functions and these products can be easily integrated into the overall Network Management system very easily.

Cost Management

Cost management is an avenue in which the reliability, operability and maintainability of managed objects are addressed. This one function is an enabler to upgrade equipment, delete unused services and tune the functionality of the Servers to the services provided. By continuously addressing the cost of maintenance, Mean Time Between Failure (MTBF), and Mean Time to Repair (MTTR) statistics, costs associated with maintaining the network as a system can be tuned. This area is an MFA that is driven by I/T management to address getting the most performance from the money allocated.

3.5 Common Implementations

Most implementations of medium and large network management systems center on a Network Management Center of some sort. From this location, all data is sent and processed. While several EMS's are used to manage their specific areas, all the data comes back to the Manager of Managers application. Most fault detection, isolation and troubleshooting is accomplished in the Network Management Center and technicians dispatched when the problem has been analyzed as far as possible. Several company locations may be involved in the overall network spanning thousands of miles and around the globe.

Management Focus

The management focus for this scenario is on the Network Management Center driving the total operation. Detection, troubleshooting and dispatching is accomplished from the NMC. This operational focus is a carryover from the old Net view days in that the center of the picture was a huge IBM Mainframe that did all the work. If you don't have a Network Management Center today, consider what it will cost not only for the hardware and software, but the people to accomplish this and their level of expertise.

The Right Implementation

If you, as an MIS Manager, are looking at the benefits of Network management to reduce downtime and overall cost to your business, make sure that the business case requirements drive the implementation and not the implementation drive the business cases.

As a systems integrator, make sure the requirements are accomplished before any implementation. When the requirements are put in place, it is your job as an Engineer to make sure management is informed as to what each implementation segment will cost along with what that capability brings to the overall MIS function.

3.6 Business/E-Business Case requirements

In today's world, any implementation must follow the business case associated with what will be implemented. The implementation must solve a business problem or increase efficiency of the current methods of accomplishing work while reducing overall costs. If the solution does not save money while providing a better service, it probably is not worth accomplishing.

Definition

The hardest part of building a business case is the gathering of the information. One must define the problem at hand in a general sense so that you can look for specific problems network management can address in that area. The developer of the business case must look at the current way each section accomplishes its day to day work. The case for network management can be defined by documenting current work processes that may be automated by the system. Each of the work processes to be automated need to be documented and addressed in the system design and implementation. Look for ways to save the organization money. Keep addressing getting the MIS organization and the services they provide, more efficient.

Levels of Activity

There are four levels of activity that one must understand before applying management to a specific service or device. These four levels of activity are as follows:

• Inactive

This is the case when no monitoring is being done and if you did receive an alarm in this area, you would ignore it.

• Reactive

This is where you react to a problem after it has occurred and monitoring has been applied.

• Interactive

This is where you are monitoring components but must interactively troubleshoot to eliminate the side effect alarms and isolate to a route.

• Proactive

This is where you are monitoring components and the system provides a root cause alarm for the problem at hand and automatic routes are in place where possible to minimize downtime.

These four levels of activities outline exactly how your support organization is dealing with problems today and where you, as an MIS manager want them to be in terms of goals. Within the organization are teams with different goals and focuses (i.e. proxy support, desktop support, network support, etc.). Keep in mind that a specific alarm may warrant an inactive approach by one team, to another team it may demand a proactive approach. Keep these goals in mind when gathering requirements for network management. Today's Implementations of the network management implementations done today, very few really address the needs of the business. Most are implemented with good intentions but are focused away from increasing efficiency.

In a multiple site network, there are technicians, engineers and support personnel at each major location as required. No one knows those local environments better than the people having to do the work. No one knows the people of the organization better than the Help Desk staff as they are the first line of communication between the people and the MIS support organization.

Network management elements are considered, among other things, tools in which troubleshooting can be accomplished. The local support staff could benefit greatly from the

use of these systems as a tool. As such, most implementations give read-only access to these systems. The ability to focus these tools at a local level is paramount to increasing the effectiveness to the local support staff. In some implementations, where read/write access is provided, it is accomplished through X-Windows which doesn't work very well across low speed links. Most implementations focus these tools at a global level in that they are in the Network Command Center. When a trouble ticket is generated from the NCC, it reflects a problem or symptom generated by the network management elements and/or the Manager of Managers.

Sometimes, the local technician cannot relate to this symptom because he or she doesn't understand where this message came from or why. Without access to the management element and familiarity with the product, they usually start off problem isolation in a "cloud" looking for the problem. When a global problem occurs, in these scenarios, the information is concentrated and orchestrated by the Network Command Center. Additionally, an outage can black out management of a geographic location by centralizing the management resources

System Focus

The ideal network management system should be designed and implemented around the real work processes. It should focus the tools toward those staff members supporting the managed area in a manner which makes their job easier and faster. Information associated with a problem or symptom should mean something to the support personnel.

If they see the problem at a glance, they should know which specific area that problem belongs and what to do to get started in the trouble isolation process. Other personnel in the organization should know that a specific technician is considering the problem as the problem may be affecting other areas. Help Desk personnel should know what is happening and who is working on what at a glance. If they are not familiar with the system in question, they should have adequate information at their fingertips to guide them in what to do, who to call, and what steps to take, even what questions to ask. Additionally, the problems that affect other sites should be available to those personnel at a glance. The information must be at the fingertips of the other sites' Help Desk personnel so that they know, in near real time, what is going on. See how the focus of information should be; local when it is a local problem and

global when it is a global problem. Also, the associates are more focused on the local situation and not the global picture.

Network management across low speed wide area links doesn't really make sense. Bandwidth of this type is costly compared to LAN bandwidth in that there are the monthly charges for the links. Consider also that most WAN links are interconnected by bridges or routers. On the back side of these devices are networks capable of 10 Mbps, 16 Mbps or even 100 Mbps. On the link side you see 1.544 Mbps, 512kbps or even 19.2kbps links. Actual polling of network management elements (SNMP) could consume these links drastically reducing the operational capabilities of the link. The question to ask is Do you want to increase *the bandwidth across these links just for network management or do you want to distribute the management polling to local area concentrations and just pass the real alarm information?*

4.0 CONCLUSION

At the end of this unit, we were able to discuss the concept of Network Security and Management. We highlighted the attributes of a secure network, levels of security management, management functional areas, common implementations and case requirements for e-businesses.

5.0 SUMMARY

• Network security consists of the provisions made in an underlying computer network infrastructure, policies adopted by the network administrator to protect the network and the network-accessible resources from unauthorized access and the effectiveness (or lack) of these measures combined.

• Network security starts from authenticating any user, most likely a username and a password. Once authenticated, a stately firewall enforces access policies such as what services can be accessed by the network users.

• Network management systems have four basic levels of functionality. Each level has a set of tasks defined to provide, format, or collect data necessary to manage the objects.

• Security Management for networks is different for all kinds of situations. A small home or an office would only require basic security while large businesses will require high maintenance and advanced software and hardware to prevent malicious attacks from hacking and spamming.

• The most common framework depicted in Network management designs is centered on the Open Systems Interconnect (OSI) "FCAPS" model of MFAs.

• Most implementations of medium and large network management systems center on a Network Management Center of some sort. From this location, all data is sent and processed. While several EMS's are used to manage their specific areas, all of the data comes back to the Manager of Managers application.

• In today's world, any implementation must follow the business case associated with what will be implemented. The implementation must solve a business problem or increase efficiency of the current methods of accomplishing work while reducing overall costs.

6.0 TUTOR-MARKED ASSIGNMENT

1. List 5 security management for a medium-scale business.

2. Briefly discuss the Levels of Activity in Business/e-business Case Requirements.

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UNIT 4; COPYRIGHT LAW AND ELECTRONIC ACCESS TO INFORMATION CONTENT

1.0 INTRODUCTION

In the previous unit, we discussed the concept of Network Security and Management. In this unit, we are going to discuss the nature of copyright laws and electronic access to information. We will also discuss obtaining and enforcing copyright, gaining exclusive rights, the limitations and exceptions to copyrights and highlighting the Anti-Counterfeiting Trade Agreement.

2.0 OBJECTIVES

At the end of this unit you should be able to:

• define and know the concept of copyright

• trace the history and development of copyright

• answer the question of the scope and justification in applying copyright

• understand how to obtain and enforce copyright

• explain the limit and exceptions to copyright.

3.0 MAIN CONTENT

3.1 History

Copyright was invented after the advent of the printing press and with wider public literacy. As a legal concept, its origins in Britain were from a reaction to printers' monopolies at the beginning of the eighteenth century. Charles II of England was concerned with the unregulated copying of books and passed the Licensing Act of 1662 by Act of Parliament, which established a register of licensed books and required a copy to be deposited with the Stationer's Company, essentially continuing the licensing of material that had long been in effect.

The British Statute of Anne (1710) further alluded to individual rights of the author, beginning: "Whereas Printers, Booksellers, and other Persons, have of late frequently taken the Liberty of Printing Books, and other Writings, without the Consent of the Authors... to their very great Detriment, and too often to the Ruin of them and their Families:..." A right to benefit financially from the work is articulated, and court rulings and legislation have recognized a right to control the work, such as ensuring that the integrity of it is preserved. An irrevocable right to be recognized as the work's creator appears in some countries' copyright laws.

The Statute of Anne was the first real copyright act. The copyright has grown from a legal concept regulating copying rights in the publishing of books and maps to one with a significant effect on nearly every modern industry, covering such items as sound recordings, films, photographs, software, and architectural works. The Copyright Clause of the United States Constitution (1787) authorized copyright legislation: "To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries." That is, by guaranteeing them a period of time in which they alone could *profit from their works, they would be enabled and encouraged to invest* the time required to create them, and this would be good for society as a whole. A right to profit from the work has been the problem for much legislation extending the duration of copyright, to the life of the creator and beyond, to his heirs. The 1886 Berne Convention, first established recognition of copyrights among sovereign nations, rather than merely bilaterally. Under the Berne Convention, copyrights for creative works do not have to asserted or declared, as they are automatically in force at creation: an author need not "register" or "apply for" a copyright in adherence to the Berne Convention. As soon as a

work is "fixed", that is, written or recorded on some physical medium, its author is automatically entitled to all copyrights in the work, and to any derivative works unless and until the author explicitly disclaims them, or until the copyright expires. The Berne Convention also resulted in foreign authors being treated equivalently to domestic authors, in any country signed onto the Convention. The UK signed the Berne Convention in 1887 but did not implement large parts of it until 100 years later with the passage of the Copyright, Designs and Patents Act of 1988. The USA did not sign the Berne Convention until 1989.

The United States and most Latin American countries instead entered into the Buenos Aires Convention in 1910, which required a copyright notice (such as "all rights reserved") on the work, and surrounding nations to limit the duration of copyrights to shorter renewable terms. The Universal Copyright Convention was drafted in 1952 as another less demanding alternative to the Berne Convention, and ratified by nations such as the Soviet Union and developing nations.

The regulations of the Berne Convention are incorporated into the World Trade Organisation's TRIPS agreement (1995), thus giving the Berne Convention effectively near-global application. The 2002 WIPO Copyright Treaty enacted greater restrictions on the use of technology to copy works in the nations that ratified it.

3.2 Scope

Copyright may apply to a wide range of creative, intellectual, or artistic forms, or "works". Specifics vary by jurisdiction, but these can include poems, theses, plays, other literary works, movies, dances, musical compositions, audio recordings, paintings, drawings, sculptures, photographs, software, radio and television and broadcasts. Copyright does not cover ideas and information themselves, only the form or manner in which they are expressed. For example, the copyright to a Mickey Mouse cartoon restricts others from making copies of the cartoon or creating derivative works based on Disney's particular anthropomorphic mouse, but doesn't prohibit the creation of other works about anthropomorphic mice in general, so long as they are different enough not to be judged copies of Disney's. In many jurisdictions, copyright law makes exceptions to these restrictions when the work is copied for the purpose of commentary or other related uses. Meanwhile, other laws may impose additional restrictions that copyright does not — such as trademarks and patents.

Copyright laws are standardized somewhat through international conventions such as the Berne Convention and Universal Copyright Convention. These multilateral treaties have been ratified by nearly all countries, and international organisations such as the European Union or World Trade Organisation requires their member states to comply with them.

3.3 Justification

As with patents for physical objects, the granting of a copyright was ensured by governments to promote innovation and guarantee first-to market protection for the owner of the copyright (historically, more likely the publisher than the creator). This government-sponsored monopoly thus provides innovation and general benefit to society as a whole, but allows for capitalistic pressures after the first-to-market advantage has been provided as a reward (and effort to cover R&D time for such works to be developed). With the modern emergence of massive mass-media conglomerates however, the first-to-market advantage can be recouped within weeks instead of years. This point is highlighted easily by noting the millions of dollars investment in blockbuster movies are typically recouped within mere days, and the studios themselves even stop collecting ticket sales income after typically one, though sometimes two weeks (which is when local theater owners finally start to collect revenue on ticket sales).

Likewise, with the increasing use of technology such as Digital Rights Management to maintain studio control of content the time of monopolistic control of content is extended even beyond that guaranteed by law. This post-copyright restriction planning has come under fire as being disingenuous and even unethical use of the government awarded protection.
The solution to this criticism has been the heavy lobbying by Disney and artist unions to continually extend copyright protections, thus making DRM appear to be protecting copyrights that for all intents affectively permanent extending 25 years past the authors/artists death.

The most recent extension of this corporate protection was provided by the bill sentimentally named the Sonny Bono Copyright Term Extension Act of 2000, which targeted Senator Bono's artistic heritage and recent death in an appeal to his colleges and the public support for such an act. Copyright lawyers commonly refer to this act as the Mickey Mouse

Protection Act due to the hundreds of millions of lobby dollars spent by the Walt Disney Corporation to ensure its passing. Disney's interest in this act was due to the pending release of Steamboat Willie, the first Mickey Mouse cartoon whose success created the mega-cartoon corporation. Releasing Steamboat Willie to the public domain was seen as a slippery slope that Disney refused to allow due to their belief that copyrights should be indefinite and that they were entitled to society's granting of their monopoly.

Another widely debated issue is the relationship between copyrights and other forms of "intellectual property", and material property. Most scholars of copyright agree that it can be called a kind of Property Consensus; it involves the exclusion of others from something. But there is disagreement about the extent to which that fact should allow the transportation of other beliefs and intuitions about material possessions. This philosophical difference was highlighted by the Sony vs Disney case regarding record-able CDs and tape. At the time, Disney was attempting to ban VHS-recording machines as illegal devices attempting to impinge on their copyright. The United States Supreme Court disagreed and allowed the sale of VHS recording machines, and in a later, similar suit by Disney the US Supreme Court allowed the sale of recordable CDs and Mini-Discs. This repeated failure to gain government support of their position is what led Disney to try new tactics and lobby for increasing the length of copyright protection and eventually Digital Rights Management. There are many other philosophical questions that arise in the jurisprudence of copyright. They include such problems as determining when one work is "derived" from another, or deciding when information has been placed in a "tangible" or "material" form.

Some critics claim copyright law protects corporate interests while criminalizing legitimate use. Of particular concern is the increasing mound of orphaned works. Orphaned works are those that were protected for so long that the original artist is no longer alive, and although the work may now be in the public domain, is no longer available due to physical decay of the paper, film, or physical form due to aging and lack of maintenance. The fact remains that less than 1% of all artistic works created in the United States belong to Disney or other corporations who will maintain their art for commercial gain. The bulk of artistic works do NOT generate any appreciable income after 5 years and due to copyright restrictions provide no motivation for museums, clearing houses, or enthusiast organisations to maintain records of the owner or a copy of the work.

These orphaned works may not provide commercial benefit to the artists anymore; however they are fundamental to the fabric of society. As the orphan works disappear, historians lose valuable documents that hold insights into the evolution of phrases, social structure, and even the original source of new forms of art and genres that develop from them. Orphaned works are seen as justifiable losses to modern copyright lobbyists, equating them to an old chair or other form of property that has served its purpose and even if no longer economically viable, the copyright should be maintained in principle. This argument avoids the ethical implications of society losing the very art that it solicited by guaranteeing first-to-market rights.

3.4 Obtaining and Enforcing Copyright

Typically, a work must meet minimal standards of originality in order to qualify for copyright, and the copyright expires after a set period of time (some jurisdictions may allow this to be extended). Different countries impose different tests, although generally the requirements are low; in the United Kingdom there has to be some ''skill, labour and judgment,' that has gone into it. In Australia and the United Kingdom it has been held that a single word is insufficient to comprise a copyright work. However, single words or a short string of words can sometimes be registered as a trademark instead. Copyright law recognizes the right of an author based on whether the work actually is an original creation, rather than based on whether it is unique; two authors may own copyright on two substantially identical works, if it is determined that the duplication was coincidental, and neither was copied from the other.

In all countries where the Berne Convention standards apply, copyright is automatic, and need not be obtained through official registration with any government office. Once an idea has been reduced to tangible form, for example by securing it in a fixed medium (such as a drawing, sheet music, photograph, a videotape, or a computer file), the copyright holder is entitled to enforce his or her exclusive rights. However, the registration isn't needed to exercise copyright, in jurisdictions where the laws provide for registration, it serves as prima facie evidence of a valid copyright and enables the copyright holder to seek statutory damages and attorney's fees. (In the USA, registering after an infringement only enables one to receive actual damages and lost profits.)

The original holder of the copyright may be the employer of the author rather than the author himself, if the work is a "work for hire". For example, in English law the Copyright, Designs and Patents Act 1988 provides that if a copyrighted work is made by an employee of that employment, the copyright is automatically owned by the employer as a "Work for Hire."

Copyrights are generally enforced by the holder in a civil law court, but there are also criminal infringement statutes in some jurisdictions. While central registries are kept in some countries, which aid in proving claims of ownership, registering does not necessarily prove ownership, ignores the fact of copying (even without permission) necessarily prove that copyright was infringed. Criminal sanctions are generally aimed at serious counterfeiting activity, but are now becoming more commonplace as copyright collectives such as the RIAA are increasingly targeting the file sharing home Internet user. Thus most such cases against file sharers have been settled out of court Copyright Notices in the U.S. Prior to 1989, use of a copyright notice — consisting of the copyright symbol (©, the letter C inside a circle), the abbreviation "Copr.", or the word "Copyright", followed by the year of the first publication of the work and the name of the copyright holder — was part of United States statutory requirements. Several years may be noted if the work has gone through substantial revisions. The proper copyright notice for sound recordings of musical or other audio works is a sound recording copyright symbol (, the letter P inside a circle), which indicates a sound recording copyright. Similarly, the phrase. All rights reserved was once required to assert copyright.

In 1989, the U.S. enacted the Berne Convention Implementation Act, amending the 1976 Copyright Act to conform to most of the provisions of the Berne Convention. As a result, the use of copyright notices has become optional to claim copyright, because the Berne Convention makes copyright automatic. However, the lack of notice of copyright using these marks may have consequences in terms of reduced damages in an infringement lawsuit—using notices of this form may reduce the likelihood of a defense of "innocent infringement" being successful.

"Poor Man's Copyright"

A widely circulated strategy to avoid the cost of copyright registration is referred to as the "poor man's copyright." It proposes that the creator send the work to himself in a sealed envelope by registered mail, using the postmark to establish the date. This technique has not been recognized in any published opinions of the United States courts. The United States

Copyright Office makes clear that the technique is no substitute for actual registration. The United Kingdom Intellectual Property Office discusses the technique but does not recommend its use.

3.5 Exclusive Rights

Several exclusive rights typically attach to the holder of a copyright:

- to produce copies or reproductions of the work and to sell those copies (mechanical rights; including, sometimes, electronic copies: distribution rights)
- to import or export the work
- to create derivative works (works that adapt the original work)
- to perform or display the work publicly (performance rights)
- to sell or assign these rights to others
- to transmit or display by radio or video (broadcasting rights)

The phrase "exclusive right" means that only the copyright holder is free to exercise those rights, and others are prohibited from using the work without the holders permission. Copyright is sometimes called a "negative right", as it serves to prohibit certain people (e.g., readers, viewers, or listeners, and primarily publishers and would be publishers) from doing something they would otherwise be able to do, rather than *permitting people (e.g., authors) to do something they would otherwise* be unable to do. In this way it is similar to the unregistered design right in English law and European law. The rights of the copyright holder also permit him/her to not use or exploit their copyright, for some or all of the term.

There is, however, a critique that rejects this assertion as being based on a philosophical interpretation of copyright law that is not universally shared. There is also debate on whether copyright shuld be considered a property right or a moral right. Many argue that copyright does not exist merely to restrict third parties from publishing ideas and information, and that defining copyright purely as a negative right is incompatible with the public policy objective of encouraging authors to create new works and enrich the public domain. The right to adapt a work means to transform the way in which the work is expressed. Examples include developing a stage play or film script from a novel, translating a short story, and making a new arrangement of a musical work.

3.6 Limits and Exceptions to Copyright

Idea-Expression Dichotomy

Immanuel Kant in his 1785 essay Von der Unrechtmäßigkeit des *Büchernachdrucks distinguishes the physical from the ideational, the* thought involved from the book. This distinction is of critical importance to the near constant wrangling between publishers, intermediaries, and the original, creative authors. The First-Sale Doctrine and Exhaustion of Rights Copyright law does not restrict the owner of a copy from legitimately obtained copies of copyrighted works, provided that those copies were originally produced by or with the permission of the copyright holder. It is therefore legal, for example, to resell a copyrighted book or CD. In the United States this is known as the first sale doctrine, and was established by the courts to clarify the legality of reselling books in second-hand bookstores. Some countries may have parallel importation restrictions that allow the copyright holder to control the aftermarket. This may mean for example that a copy of a book that does not infringe copyright in the country where it was printed **does infringe copyright in a country into which it is imported.** The first sale doctrine is known as exhaustion of rights in other countries and is a principle that also applies, though somewhat differently, to patent and trademark rights. It is important to note that the first-sale doctrine permits the transfer of the particular legitimate copy involved. It does not permit making or distributing additional copies.

In addition, copyright, in most cases, does not prohibit one from acts such as modifying, defacing, or destroying his or her own legitimately obtained copy of a copyrighted work, so long as duplication is involved. However, in countries that implement moral rights, a copyright holder can in some cases successfully prevent the mutilation or destruction of a work that is publicly visible.

Fair Use and Fair Dealing

Copyright does not prohibit all copying or replication. In the United States, the fair use doctrine, codified by the Copyright Act of 1976 as 17 U.S.C. § 107, permits some copying

and distribution without permission of the copyright holder or payment to same. The statute does not clearly define fair use, but instead gives four non-exclusive factors to consider in a fair use analysis. Those factors are:

- the purpose and character of the use;

- the nature of the copyrighted work;

- the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and

- the effect of the use upon the potential market for or value of the copyrighted work.

In the United Kingdom and many other Commonwealth countries, a similar notion of fair dealing was established by the courts or through legislation. The concept is sometimes not well defined; however in Canada, private copying for personal use has been expressly permitted by statute since 1999. In Australia, the fair dealing exceptions under the *Copyright Act 1968 (Cth) are a limited set of circumstances under which* copyrighted material can be legally copied or adapted without the copyright holder's consent. Fair dealing uses are research and study; review and critique; news reportage and the giving of professional advice (i.e legal advice). Under current Australian law it is still a breach of copyright to copy, reproduce or adapt copyright material for personal or private use without permission from the copyright owner. Other technical exemptions from infringement may also apply, such as the temporary reproduction of a work in machine readable form for a computer.

In the United States the AHRA (Audio Home Recording Act Codified in Section 10, 1992) prohibits action against consumers making noncommercial recordings of music, in return for royalties on both media and devices plus mandatory copy-control mechanisms on recorders. *'Section 1008. Prohibition on certain infringement actions No action may be brought under this title alleging infringement of copyright based on the manufacture, importation, or distribution of a digital audio recording device, a digital audio recording medium, an analog recording device, or an analog recording medium, or based on the noncommercial use by a consumer of such a device or medium for making digital musical recordings or analog musical recordings.'*

Later acts amended US Copyright law so that for certain pages 10 copies or more is construed to be commercial, but there is no general rule permitting such copying. Indeed

making one complete copy of a work, or in many cases using a portion of it, for commercial purpose will not be considered fair use. The Digital Millennium Copyright Act prohibits the manufacture, importation, or distribution of devices whose intended use, or only significant commercial use, is to bypass an access or copy control put in place by a copyright owner. An appellate court has held that fair use is not a defense to engaging in such distribution. Educational use is regarded as "fair use" in most jurisdictions, but the restrictions vary wildly from nation to nation.

Transfer and Licensing

A copyright, or aspects of it, may be assigned or transferred from one party to another. For example, a musician who records an album will often sign an agreement with a record company in which the musician agrees to transfer all copyright in the recordings in exchange for royalties and other considerations. The creator (and original copyright holder) benefits, or expects to, from production and marketing capabilities far beyond those of the author. In the digital age of music, music may be copied and distributed at minimal cost through the Internet; however the record industry attempts to provide promotion and marketing for the artist and his or her work so it can reach a much larger audience. A copyright holder need not transfer all rights completely, though many publishers will insist. Some of the rights may be transferred, or else the copyright holder may grant another party a nonexclusive license to copy and/or distribute the work in a particular region for a specified period of time. A transfer or license may have to meet particular formal requirements in order to be effective; section 239 of the Australia Copyright Act 1968 (Cth). Under Australian law, it is not enough to pay for a work to be created in order to also own the copyright. The copyright itself must be expressly transferred in writing.

Under the U.S. Copyright Act, a transfer of ownership in copyright must be memorialized in a writing signed by the transferor. For that purpose, ownership in copyright includes exclusive licenses of rights. Thus exclusive licenses, to be effective, must be granted in a written instrument signed by the grantor. No special form of transfer or grant is required. A simple document that identifies the work involved and the rights being granted is sufficient. Non-exclusive grants (often called non-exclusive licenses) need not be in writing under U.S. law. They can be oral or even implied by the behavior of the parties. Transfers of copyright ownership, including exclusive licenses, may and should be recorded in the U.S. Copyright Office. (Information on recording transfers is available on the Office's web site.) While

recording is not required to make the grant effective, it offers important benefits, much like those obtained by recording a deed in a real estate transaction.

Copyright may also be licensed. Some jurisdictions may provide that certain classes of copyrighted works be made available under a prescribed statutory license (e.g. musical works in the United States used for radio broadcast or performance). This is also called a compulsory license, because under this scheme, anyone who wishes to copy a covered work does not need the permission of the copyright holder, but instead merely files the proper notice and pays a set fee established by statute (or by an agency decision under statutory guidance) for every copy made. Failure to follow the proper procedures would place the copier at risk of an infringement suit. Because of the difficulty of following every individual work, copyright collectives or collecting societies and performing rights organisations (such as ASCAP, BMI, and SESAC) have been formed to collect royalties for hundreds (thousands and more) works at once. Though this market solution bypasses the statutory license, the availability of the statutory fee still helps dictate the price per work collective rights organisations charge, driving it down to what avoidance of procedural hassle would justify.

Similar Legal Rights

Copyright law covers the creative or artistic expression of an idea. Patent law covers inventions. Trademark law covers distinctive terms, marks, and names that are used in relation to products or services as indicators of origin, as does (in a similar fashion), Trade dress. Registered designs law covers the look or appearance of a manufactured or functional article. Trade secret law covers secret or sensitive knowledge or information. Although copyright and trademark laws are theoretically distinct, more than one type of them may cover the same item or subject matter. For example, in the case of the Mickey Mouse cartoon, the image and name of Mickey Mouse would be the subject of trademark legislation, while the cartoon itself would be subject to copyright. Titles and character names from books or movies may also be trademarked while the works from which they are drawn may qualify for copyright. Another point of distinction is that a copyright (and a patent) is generally subject to a statutorily-determined term, whereas a trademark registration may remain in force indefinitely if the trademark is periodically used and renewal fees continue to be duly paid to the relevant jurisdiction's trademarks office or registry. Once the term of a copyright has expired, the formerly copyrighted work enters the public domain and may be freely used or exploited by anyone. Courts in the United States and the United Kingdom have rejected the

doctrine of a common law copyright. Public domain works should not be confused with works that are publicly available. Works posted in the internet for example, are publicly available, but are not generally in the public domain. Copying such works may therefore violate the author's copyright.

Duration

Copyright subsists for a variety of lengths in different jurisdictions. The length of the term can depend on several factors, including the type of work (e.g. musical composition, novel), whether the work has been published or not, and whether the work was created by an individual or a corporation. In most of the world, the default length of copyright is the life of the author plus either 50 or 70 years. In the United States, the term for most existing works is a fixed number of years after the date of creation or publication. Under most countries' laws, copyrights expire at the end of the calendar year in question.

The length and requirements for copyright duration are subject to change by legislation, and since the early 20th century there have been a number of adjustments made in various countries, which can make determining the duration of a given copyright somewhat difficult. For example, the United States used to require copyrights to be renewed after 28 years to stay in force, and formerly required a copyright notice upon first publication to gain coverage. In Italy and France, there were post-wartime extensions that could increase the term by approximately 6 years in Italy and up to about 14 in France. Many countries have extended the length of their copyright terms (sometimes retroactively). International treaties establish minimum terms for copyrights, but individual countries may enforce longer terms than those. In the United States, all books and other works published before 1923 have expired copyrights and are in the public domain. In addition, works published before 1964 that did not have their copyrights renewed 28 years after first publication year also are in the public domain, except that books originally published outside the US by non-Americans are exempt from this requirement, if they are still under copyright in their home country.

But if the intended exploitation of the work includes publication (or distribution of derivative work, such as a film based on a book protected by copyright) outside the U.S., the terms of copyright around the world must be considered. If the author has been dead more than 70 years, the work is in the public domain in most, but not all, countries. Some works are covered by copyright in Spain for 80 years after the author's death. In 1998 the length of a

copyright in the United States was increased by 20 years under the Copyright Term Extension Act. This legislation was strongly promoted by corporations that had valuable copyrights that otherwise would have expired, and has been the subject of substantial criticism on this point. As a curiosity, the famous work Peter Pan, or The Boy Who Wouldn't *Grow Up has a complex – and disputed – story of copyright expiry.*

Typefaces

In the United States, the Copyright Office maintains that type faces are not covered by copyright, and it will not accept applications for their registration. See 37. C.F.R. § 202.1(e). In Tufenkian *Import/Export Ventures, Inc. v. Einstein Moomjy, Inc., 338 F.3d 127,*

132 (2nd Cir. 2003), the United States Court of Appeals for the Second Circuit recognized this rule when it held, "the public domain includes, for example, both the generic shape of the letter 'L' and all alphabets more specific 'L's' from the hundreds of years of font designs that have fallen into the public domain." However, if a design is novel and "non-obvious," it may be covered by design patent. See, for example, U.S. Des. Patent No. 289,773, May 12, 1987), Charles Baigelow and Kris A. Holmes inventors. Germany (in 1981) passed a special extension (Schriftzeichengesetz) to the design patent law (Geschmacksmustergesetz) for protecting them. This permits typefaces being registered as designs in Germany, too. So far, the United States courts have not published any opinions discussing whether a computer program creating a particular font might be intellectual property protected by the copyright laws. England recognized copyright in typeface at least as early as 1916. The current United Kingdom copyright statute, enacted in 1989, expressly refers to copyrights in typeface designs. The British law also applies to designs produced before 1989.

Accessible Copies

It is legal in several countries including the United Kingdom and the United States to produce alternative versions (for example, in large print **or** braille) of a copyrighted work to provide improved access to a work for blind and visually impaired persons without permission from the copyright holder.

3.7 Anti-Counterfeiting Trade Agreement (ACTA)

The Anti-Counterfeiting Trade Agreement (ACTA) is a proposed multinational trade agreement that would impose strict enforcement of intellectual property rights related to Internet activity and trade information-based goods. The agreement is being secretly negotiated by the governments of the United States, Japan, Switzerland, Australia, New Zealand, South Korea, Canada, and Mexico, and the European Commission. If adopted the treaty would establish an international coalition against copyright infringement, imposing strong and top-down enforcement of copyright laws in developed nations. The proposed agreement would allow border officials to search laptops, MP3 players, and cellular phones for copyright-infringing content. It would also impose new cooperation requirements upon Internet service providers (ISPs), including perfunctory disclosure of customer information, and restrict the use of online privacy tools. The proposal specifies a plan to encourage developing nations to accept the legal regime, as well.

Self-assessment Exercise

Discuss the Anti-Counterfeiting Trade Act

4.0 CONCLUSION

Copyright is one of the oldest legislative schemes instituted to deal with crime, especially intellectual property crimes. However, this legal cover is not often utilized, especially in developing countries, because of the seemingly delays of legal battles. So, the challenge before copyright is more of awareness and implementation. At the end of this unit, we discussed the nature of copyright laws and electronic access to information. We also discussed obtaining and enforcing copyright, gaining exclusive rights, the limitations and exceptions to copyrights and highlighting the Anti-Counterfeiting Trade Agreement.

5.0 SUMMARY

• Copyright is a legal concept, enacted by governments, giving the creator of an original work of authorship exclusive rights to control its distribution, usually for 70 years after the author's death, after which the work enters the public domain.

• Copyright was invented after the advent of the printing press and with wider public literacy. As a legal concept, its origins in Britain were from a reaction to printers' monopolies at the beginning of the eighteenth century

• Copyright may apply to a wide range of creative, intellectual, or artistic forms, or "works". Specifics vary by jurisdiction, but these can include poems, theses, plays, other literary

works, movies, dances, musical compositions, audio recordings, paintings, drawings, sculptures, photographs, software, radio and television and broadcasts.

• As with patents for physical objects, the granting of a copyright was ensured by governments to promote innovation and guarantee first to- market protection for the owner of the copyright (historically, more likely the publisher than the creator).

• Typically, a work must meet minimal standards of originality to qualify for copyright, and the copyright expires after a set period (some jurisdictions may allow this to be extended).

• There are several exclusive rights typically attach to the holder of a copyright:

• Copyright law does not restrict the owner of a copy from reselling legitimately obtained copies of copyrighted works, provided that those copies were originally produced by or with the permission of the copyright holder.

• The Anti-Counterfeiting Trade Agreement (ACTA) is a proposed plurilateral trade agreement that would impose strict enforcement of intellectual property rights related to Internet activity and trade in information-based goods.

6.0 TUTOR-MARKED ASSIGNMENT

1. Discuss briefly the scope of copyright
2. Identify 4 non-exclusive factors to consider in a fair deal analysis

Answer to Self-assessment exercise
See 3.7

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UNIT 5; INTERNET FIREWALL AND FRAUD PREVENTION

CONTENT

1.0 INTRODUCTION

Security has become one of the primary concerns when an organisation connects its private network to the Internet. Regardless of the business, an increasing number of users on private networks are demanding access to Internet services such as the World Wide Web (WWW) and File Transfer Protocol (FTP). In addition, corporations want to offer WWW home pages and FTP servers for public access on the Internet.

Network administrators have increasing concerns about the security of their networks when they expose their organization's private data and networking infrastructure to Internet crackers. To provide the required level of protection, an organisation needs a security policy to prevent unauthorized users from accessing resources on the private network and to protect against the unauthorized export of private information. Even if an organisation is not connected to the Internet, it may still want to establish an internal security policy to manage user access to portions of the network and protect sensitive or secret information.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

• explain the concerns of network security administrators

• define Internet firewalls

• identify the benefits and limitations associated with Internet firewalls

• identify the tools used by hackers as way of knowing how to counter their operations

• identify the kind of decisions to make in design of firewalls

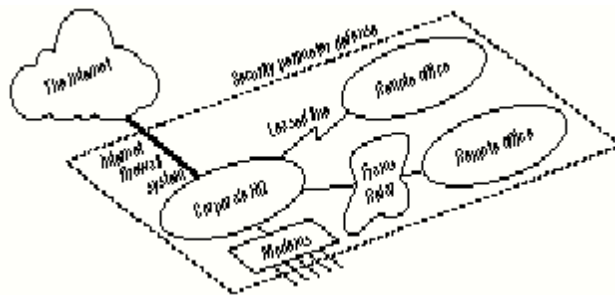• identify and differentiate the types of firewalls.

Figure 1. Security Policy Creates a Perimeter Defense (DaSilva, 1996)

3.0 MAIN CONTENT

3.1 Internet Firewalls

An Internet firewall is a system or group of systems that enforces a security policy between an organisation's network and the Internet. The firewall determines which inside services may be accessed from the outside, which outsiders are permitted access to the permitted inside services, and which outside services may be accessed by insiders. For a firewall to be effective, all traffic to and from the Internet must pass through the firewall, where it can be inspected (Figure 1). The firewall must permit only authorized traffic to pass, and the firewall itself must be immune to penetration. Unfortunately, a firewall system cannot offer any protection once an attacker has gotten through or around the firewall.

It is important to note that an Internet firewall is not just a router, a bastion host, or a combination of devices that provides security for a network. The firewall is part of an overall security policy that creates a perimeter defense designed to protect the information resources of the organisation. This security policy must include published security guidelines to inform users of their responsibilities; corporate policies defining network access, service access, local and remote user authentication, dial-in and dial-out, disk and data encryption, and virus protection measures; and employee training. All potential points of network attack must be

protected with the same level of network security. Setting up an Internet firewall without a comprehensive security policy is like placing a steel door on a tent.

Benefits of an Internet Firewall

Internet firewalls manage access between the Internet and an organisation's private network. Without a firewall, each host system on the private network is exposed to attacks from other hosts on the Internet. This means that the security of the private network would depend on the "hardness" of each host's security features and would be only as secure as the weakest system.

Internet firewalls allow the network administrator to define a centralized "choke point" that keeps unauthorized users such as hackers, crackers, vandals, and spies out of the protected network; prohibits potentially vulnerable services from entering or leaving the protected network; and provides protection from various types of routing attacks. An Internet firewall simplifies security management, since network security is consolidated on the firewall systems rather than being distributed to every host in the entire private network. Firewalls offer a convenient point where Internet security can be monitored and alarms generated. It should be noted that for organisations that have connections to the Internet, the question is not whether but when attacks will occur. Network administrators must audit and log all significant traffic through the firewall. If the administrator doesn't take the time to respond to each alarm admin logs on a regular basis, there is no need for the firewall, since the network administrator will never know if the firewall has been successfully attacked.

For the past few years, the Internet has been experiencing an address space crisis that has made registered IP addresses a less protected means. This means that organisations wanting to connect to the Internet may not be able to obtain enough registered IP addresses to meet the demands of their user population. An Internet firewall is a logical place to deploy a Network Address Translator (NAT) that can help alleviate the address space shortage and eliminate the need to remember when an organisation changes Internet service providers (ISPs). (Denning, 1999)

An Internet firewall is the perfect point to audit or log Internet usage. This permits the network administrator to justify the expense of the Internet connection to management,

pinpoint potential bandwidth bottlenecks, and provide a method for departmental charge-backs if this fits the organisation's financial model.

An Internet firewall can also offer a central point of contact information delivery service to customers. The Internet firewall is the ideal location for deploying World Wide Web and FTP servers. The firewall can be configured to allow Internet access to these services, while prohibiting external access to other systems on the network. Finally, some might argue that the deployment of an Internet firewall creates a single point of failure. It should be emphasized that if the connection to the Internet fails, the organisation's private network will still continue to operate--only Internet access is lost. If there are multiple points of access, each one becomes a potential point of attack that the network administrator must firewall and monitor regularly.
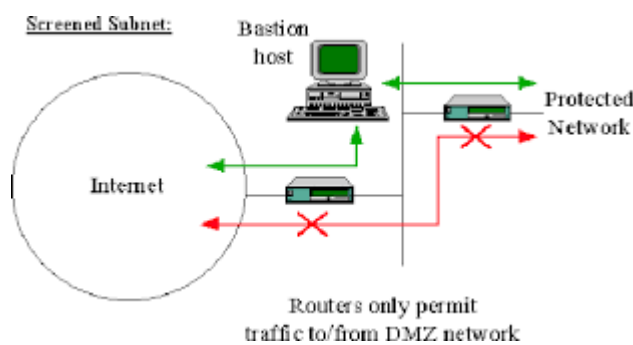

Figure 3. A Connection Circumventing an Internet Firewall (Source; Hansell, 1996)

Limitations of an Internet Firewall

An Internet firewall cannot protect against attacks that do not go through the firewall. For example, if unrestricted dial-out is permitted from inside the protected network, internal users can make a direct SLIP or PPP connection to the Internet. Savvy users who become irritated with the additional authentication required by firewall proxy servers may be tempted to circumvent the security system by purchasing a direct SLIP or PPP connection to an ISP. Since these types of connections bypass the security provided by the most carefully constructed firewall, they create a significant potential for back-door attacks (Figure 3). Users must be made aware that these types of connections are not permitted as part of the organisation's overall security architecture. Internet firewalls cannot protect against the types

of threats posed by traitors or unwitting users. Firewalls do not prohibit traitors or corporate spies from copying sensitive data onto floppy disks or PCMCIA cards and removing them from a building. Firewalls do not protect against attacks where a hacker, pretending to be a supervisor or a befuddled new employee, persuades a less sophisticated user into revealing a password or granting them "temporary" network access. Employees must be educated about the various types of attacks and about the need to guard and periodically change their passwords. Internet firewalls cannot protect against the transfer of virus-infected software or files. Since there are so many different viruses, operating systems, and ways of encoding and compressing binary files, an Internet firewall cannot be expected to accurately scan each file for potential viruses. Concerned organisations should deploy anti-viral software at each desktop to protect against their arrival from floppy disks or any other source.

Finally, Internet firewalls cannot protect against data-driven attacks. A data-driven attack occurs when seemingly harmless data is mailed or copied to an internal host and is executed to launch an attack. For example, a data-driven attack could cause a host to modify security related files, making it easier for an intruder to gain access to the system. As we will see, the deployment of proxy servers on a bastion host is an excellent means of prohibiting direct connections from the outside and reducing the threat of data-driven attacks.

3.2 The Hacker's Toolbox

It is difficult to describe a typical hacker attack because intruders have different levels of technical expertise and many different motivations. Some hackers are intrigued by the challenge, others just want to make life more difficult for others, and still others are out to steal sensitive data for profit. (Carter, 1996)

Information Gathering

Generally, the first step in a break-in is some form of information gathering. The goal is to construct a database of the target organisation's network and gather information about the hosts residing on each of the networks. There are a number of tools that a hacker can use to collect this information:

  • The SNMP protocol can be used to examine the routing table of an unsecured router to learn intimate details about the target organisation's network topology.

• The Trace Route program can reveal intermediate network numbers and routers in the path to a specific host.

• The Who is protocol is an information service that can provide data about all DNS domains and the system administrators responsible for each domain. However, this information is usually out of date.

• DNS servers can access a list of host IP addresses and the corresponding host names.

• The Finger protocol can reveal detailed information about the users (login names, phone numbers, time they last logged in, etc.) of a specified host.

• The Ping program can be employed to locate a host and determine its reachability. This simple tool can be used in a short scanning program that pings every possible host address on a network to construct a list of the hosts residing on the network.

Probing Systems for Security Weaknesses

After information about the targeted organisation's network is gathered, the hacker attempts to probe each host for security weaknesses. There are several tools that a hacker can use to automatically scan the individual hosts residing on a network; for example:

• Since the list of known service vulnerabilities is rather short, a knowledgeable hacker can write a small program that attempts to connect to specific service ports on a targeted host. The output of the program is a list of hosts that support services that are exposed to attack.

• There are several publicly available tools, such as the Internet Security Scanner (ISS) or the Security Analysis Tool for Auditing Networks (SATAN), that scan an entire domain or subnetwork and look for security holes. These programs determine the weaknesses of each system with respect to several common system vulnerabilities. Intruders use the information collected from these scans to gain unauthorized access to the targeted organisation's systems. A clever network administrator can use these tools within their private network to discover potential security weaknesses and determine which hosts need to be updated with new software patches.

Accessing Protected Systems

The intruder uses the results of the host probes to target a specific system for attack. After gaining access to a protected system, the hacker has many options available:

• The intruder can attempt to destroy evidence of the assault and open new security holes or back doors in the compromised system to have continued access even if the original attack is discovered.

• The intruder can install packet sniffers that include Trojan horse binaries that hide the sniffing activity on the installed systems. The packet sniffers collect account names and passwords for Telnet and FTP services that allow the hacker to spread the attack to other machines.

• The intruder can find other hosts that trust the compromised system. This allows the hacker to exploit the vulnerabilities of a single host and spread the attack across the entire organisation's network.

• If the hacker can obtain privileged access on a compromised system, he or she can read mail, search private files, steal private files, and destroy or corrupt important data.

3.3 Basic Firewalls Design Decisions

When designing an Internet firewall, there are several decisions that must be addressed by the network administrator:
• The stance of the firewall
• The overall security policy of the organisation
• The financial cost of the firewall
• The components or building blocks of the firewall system

i.   Stance of the Firewall

The stance of a firewall system describes the fundamental philosophy of the organisation. An Internet firewall may take one of two diametrically opposed stances:

• Everything not Specifically Permitted is denied. This stance assumes that a firewall should block all traffic, and that each desired service or application should be implemented on a case-by-case basis. This is the recommended approach. It creates a very secure environment, since only carefully selected services are supported. The disadvantage is that it places security ahead of ease of limiting the number of options available to the user community.

• Everything not Specifically Denied is permitted; This stance assumes that a firewall should forward all traffic, and that potentially harmful service should be shut off on a basis. This

approach creates a more flexible environment, with more services available to the user community. The disadvantage is that it puts ease of use ahead of security, putting the network administrator in a reactive mode and making it increasingly difficult to provide security as the size of the protected network grows.

Security Policy of the Organisation

As discussed earlier, an Internet firewall does not stand alone--it is part of the organisation's overall security policy, which defines all aspects of its perimeter defense. To be successful, organisations must know what they are protecting. The security policy must be based on a carefully conducted security analysis, risk assessment, and business needs analysis. If an organisation does not have a detailed security policy, the most carefully crafted firewall can be circumvented to expose the entire private network to attack.

Cost of the Firewall

How much security can the organisation afford? A simple packet filtering firewall can have a minimal cost since the organisation needs a router to connect to the Internet, and packet filtering is included as part of the standard router feature set. A commercial firewall system provides increased security but may cost from U.S.$4,000 to $30,000, depending on its complexity and the number of systems protected. If an organisation has the in-house expertise, a home-brewed firewall can be constructed from public domain software, but there are still costs in terms of the time to develop and deploy the firewall system. Finally, all firewalls require continuing support for administration, general maintenance, software updates, security patches, and incident handling.

Components of the Firewall System

After making decisions about firewall stance, security policy, and budget issues, the organisation can determine the specific components of its firewall system. A typical firewall is composed of one or more of the following building blocks:

• Packet-filtering router
• Application-level gateway (or proxy server)
• Circuit-level gateway

Self-assessment exercise

Explain the several decisions that must be addressed by the network administrator:

3.4 Types of Firewalls

Firewall Example #1: Packet-Filtering Router

The most common Internet firewall system consists of nothing more than a packet-filtering router deployed between the private network and the Internet (Figure 1). A packet-filtering router performs the typical routing functions of forwarding traffic between networks as well as using packet-filtering rules to permit or deny traffic. Typically, the filter rules are defined so that hosts on the private network have direct access to the Internet, while hosts on the Internet have limited access to systems on the private network. The external stance of this type of firewall system is usually that everything not specifically permitted is denied.
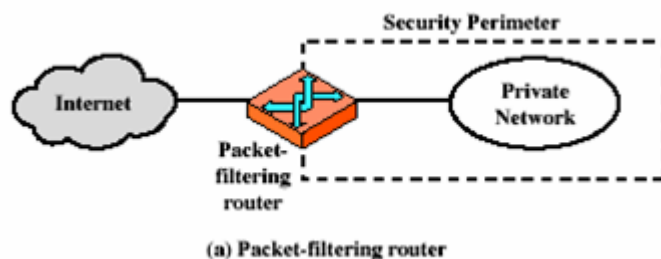

Figure 1. Packet-Filtering Router Firewall
Source; Holland, 1995

Although this firewall system has the benefit of being inexpensive and transparent to users, it possesses all of the limitations of packet-filtering router such as exposure to attacks from improperly configured filters and attacks that are tunneled over permitted services. Since the direct exchange of packets is permitted between outside systems and inside systems, the potential extent of an attack is determined by the total number of hosts and services to which the packet-filtering router permits traffic. This means that each host directly accessible from the Internet needs to support sophisticated user authentication and needs to be regularly examined by the network administrator for signs of an attack. Also, if the single packet-filtering router is penetrated, every system on the private network may be compromised.

Firewall Example #2: Screened Host Firewall

The second firewall example employs both a packet-filtering router and a bastion host (Figure 2). This firewall system provides a higher level of security than the previous example because it implements both network layer security (packet-filtering) and application-layer security (proxy services). Also, an intruder should penetrate two separate systems before the security of the private network can be compromised.

For this firewall system, the bastion host is configured on the private network with a packet-filtering router between the Internet and the bastion host. The filtering rules on the exposed router are configured so that outside systems can access only the bastion host; traffic addressed to all other internal systems is blocked. Since the inside hosts reside on the same network as the bastion host, the security policy of the organisation determines whether inside systems are permitted direct access to the Internet, or whether they are required to use the proxy services on the bastion host. Inside users can be forced to use the proxy services by configuring the router's filter rules to accept only internal traffic originating from the bastion host.

One of the benefits of this firewall system is that a public information server providing Web and FTP services can be placed on the segment shared by the packet-filtering router and the bastion host. If the strongest security is required, the bastion host can run proxy services that require both internal and external users to access the bastion host before communicating with the information server. If a lower level of security is adequate, the router may be configured to allow outside users direct access to the public information server. (Bellcore, 1996)
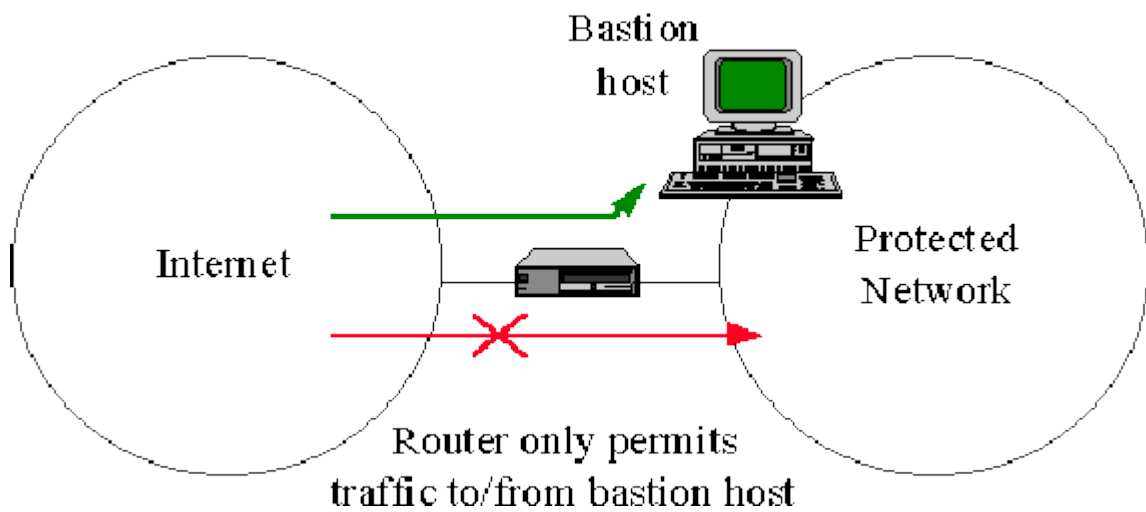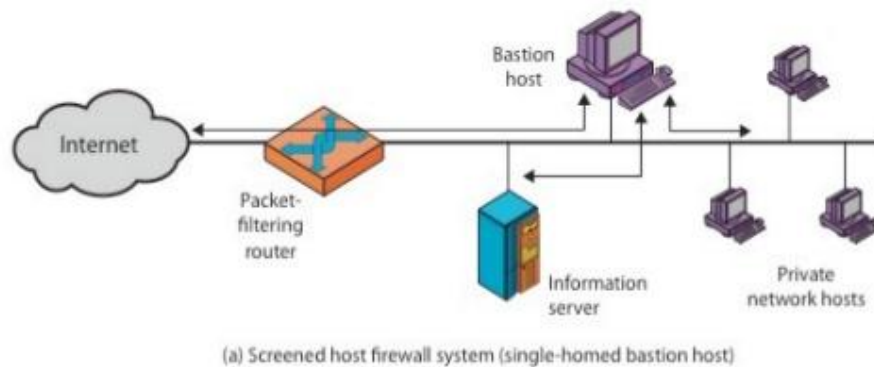
Screened Host Firewall:

Figure 10. Screened Host Firewall System (Single-Homed Bastion Host)
Source: Denning, 1999)

An even more secure firewall system can be constructed using a dual homed bastion host system (Figure 10). A dual-homed bastion host has two network interfaces, but the host's ability to directly forward traffic between the two interfaces bypassing the proxy services is disabled. The physical topology forces all traffic destined for the private network through the bastion host and provides additional security if outside users are granted direct access to the information server.

Screened host firewall system (single-homed bastion host)

(a) Screened host firewall system (single-homed bastion host)

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Figure 3. Screened Host Firewall System (Dual-Homed Bastion Host)

Source; Carter, 1996)

Since the bastion host is the only internal system that can be directly accessed from the Internet, the potential set of systems open to attack is limited to the bastion host. However, if users can log on to the bastion host, the potential set of threatened systems expands to include the entire private network, since it is much easier for an intruder to compromise the bastion host if they are allowed to log on. It is critical that the bastion host be hardened and protected from penetration and that users never be allowed to log on to the bastion host.

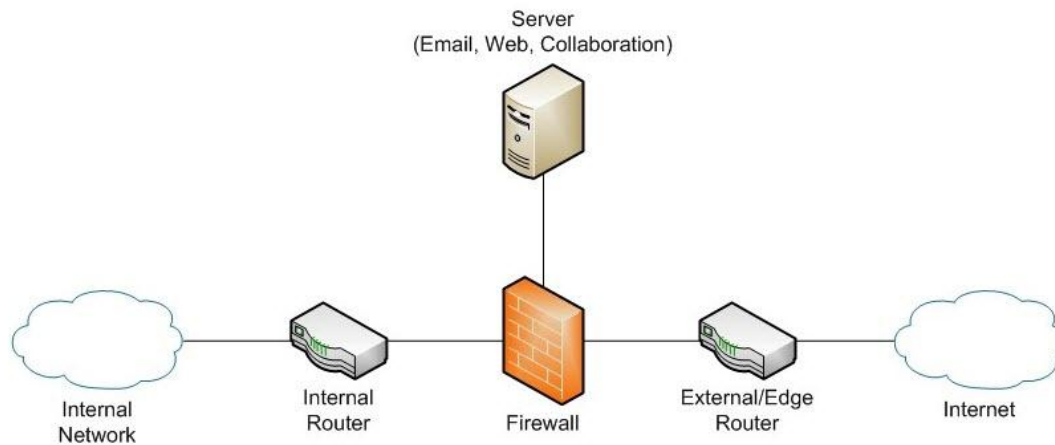**Firewall Example #3: "Demilitarized Zone" or Screened-Subnet Firewall**

Figure 3. Demilitarized Zone" or Screened-Subnet Firewall

Source: Holland, 1995)

The final firewall example employs two packet-filtering routers and a bastion host (Figure 3). This firewall system creates the most secure firewall system, since it supports both network- and application-layer security while defining a "demilitarized zone" (DMZ) network. The network administrator places the bastion host, information servers, modem pools, and other public servers on the DMZ network. The DMZ network functions as a small, isolated network positioned between the Internet and the private network. Typically, the DMZ is configured so that systems on the Internet and systems on the private network accessed only a limited number of systems on the DMZ network, but the direct transmission of traffic across the DMZ network is prohibited. For incoming traffic, the outside router protects against the standard external attacks (source IP address spoofing, source routing attacks, etc.) and manages Internet access to the DMZ network. It permits external systems to access only the bastion host (and possibly the information server). The inside router provides a second line of defense, managing DMZ access to the private network by accepting only traffic originating from the bastion host.
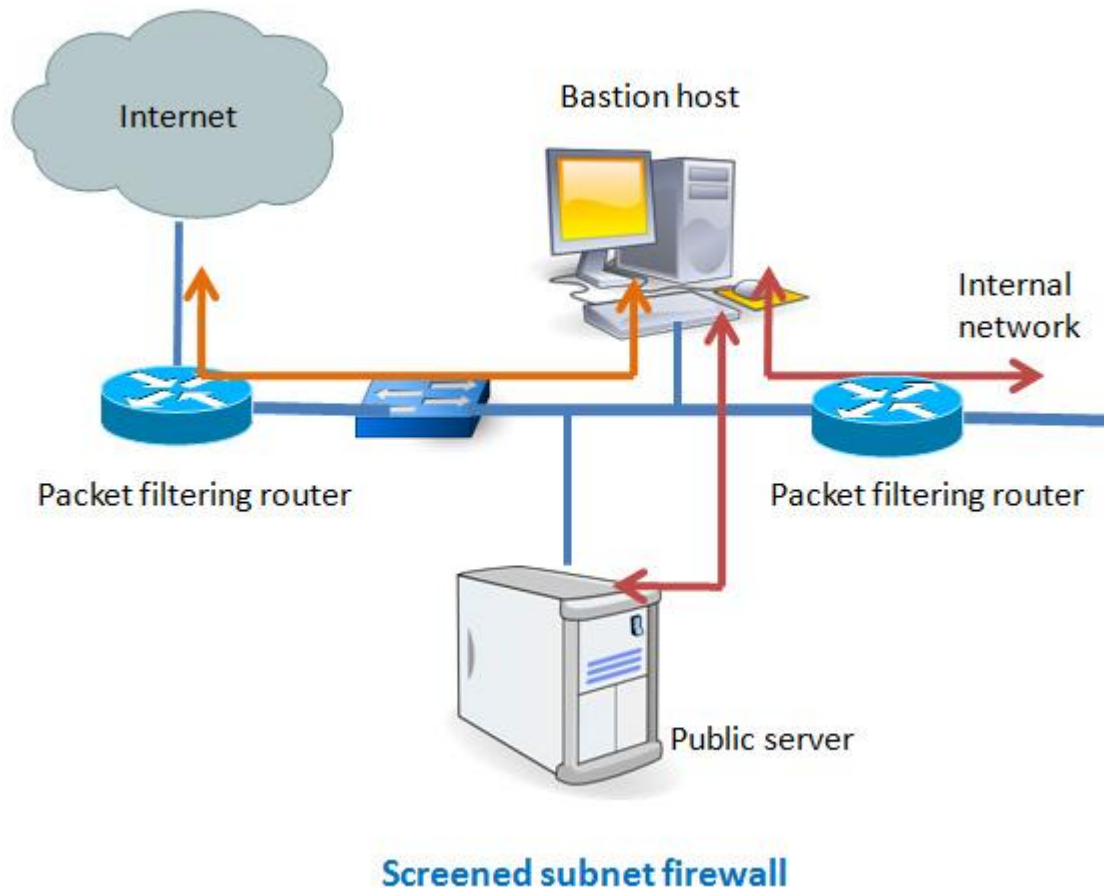
Figure 4. Screened-Subnet Firewall System

Source: DaSilva, 1996

For Internet-bound traffic, the inside router manages private network access to the DMZ network. It permits internal systems to access only the bastion host (and possibly the information server). The filtering rules on the outside router require use of the proxy services by accepting only Internet-bound traffic from the bastion host. There are several key benefits to the deployment of a screened subnet firewall system:

- An intruder must crack three separate devices (without detection) to infiltrate the private network: the outside router, the bastion host, and the inside router.

- Since the outside router advertises the DMZ network only to the Internet, systems on the Internet do not have routes to the protected private network. This allows the network manager to ensure that the private network is "invisible," and that only selected systems on the DMZ are known to the Internet via routing table and DNS information exchanges.

- Since the inside router advertises the DMZ network only to the private network, systems on the private network do not have direct routes to the Internet. This guarantees that inside users must access the Internet via the proxy services residing on the bastion host.

- Packet-filtering routers direct traffic to specific systems on the DMZ network, eliminating the need for the bastion host to be dual-homed.

- The inside router supports greater packet throughput than a dual-homed bastion host when it functions as the final firewall system between the private network and the Internet.

- Since the DMZ network is a different network than the private network, a Network Address Translator (NAT) can be installed on the bastion host to eliminate the need to renumber or re-subnet the private network.

Electronic Signature

The digital signature algorithm (DSA) is another form of firewall. It is a digital signature and verification mechanism used for digital, rather than written signature. DSA enables the verification of signature, message origin, and message integrity without giving away information that would make signature forgery possible. DSA achieves this by allotting two different digital keys to each signature bearer a secret private key for encrypting the message and a public key for decrypting it. Only the signature bearer knows this private key, while the entire network user knows the public key.

3.5 Fraud Prevention Solutions

A wide range of solutions have been devised to reduce the security risks associated with conducting on-line business.

Hardware Security

To provide a safe system for electronic commerce, computer hardware needs to be adequately secured. This extends from computer terminals used in homes, businesses, and public kiosks through servers operated by ISPs, to the hardware maintained by merchants and financial institutions. The extent of the security precautions used will be determined by the risks present. Terminals located in Internet kiosks may need only basic access controls such as using passwords or smartcard tokens, whilst servers maintained by banks might need to be shielded against electro-magnetic radiation (EMR) scanning.

The threat of EMR scanning should not be taken lightly. Although the risk is remote, the possibility exists. In one case in England, for example, a computer eavesdropper scanned electronic transaction information transmitted by a bank. Even though the information was encrypted, the code was defeated and the individual successfully obtained £350,000 by blackmailing the bank and several customers by threatening to reveal certain information to the Inland Revenue (Nicholson, 1989). If payment systems are used which make use of digital signatures and encrypted data transmissions, then the need to protect computer cables from interception would not arise as any data would not travel in clear text. At present, however, a good deal of sensitive information travels across networks in unencrypted form making it vulnerable to interception and subsequent disclosure. The adequacy of encryption as a security measure depends, of course, upon the strength of the encryption system used and the determination of the attacker. (Denning, 1998)

Terminal Safeguards

Crime prevention needs to be focused on areas of weakness in electronic systems and the most obvious target for electronic fund transfer systems is the computer terminal at which transactions are carried out. As is the case with telephone kiosks, ATM and EFTPOS terminals need to be manufactured in such a way as to ensure that access cannot be gained to cables or to electro-magnetic radiation (Tyree 1990). Computer terminals should be in secure places where users are protected both physically, as well as against shoulder surfing, to obtain PINs.

Card Security

Plastic cards may be used in conjunction with on-line transactions in a variety of ways. Primarily they will be used to store access devices such as cryptographic keys or other user authentication devices. They may also be used to store value in Mondex-type smart card systems. The most sophisticated security features should be built into plastic cards to prevent counterfeiting, alteration or un-authorized access to the data which they hold. Newton (1995) describes various crime prevention strategies which have been used to prevent plastic card counterfeiting including the use of security printing, micro-printing, holograms, embossed characters, tamper-evident signature panels, magnetic stripes with improved card validation technologies, and indent printing. Smart cards, of course, are much more difficult to copy than ordinary magnetic stripe cards. Unfortunately, these card security features have been overcome by organised criminals including computer chip circuitry in smart cards. On-line payment systems which do not rely upon plastic cards, should be much more secure and it may also be possible for these to operate in conjunction with biometric user identification systems.

Value Restrictions

As an alternative to target hardening, it has been suggested that the risk of large-scale fraud and money laundering using Internet-based funds transfer systems could be restricted by placing limits on the size of transactions. Mackrell (1996), for example, has suggested that stored value cards should have a modest limit placed on the maximum value that can be stored on them, especially if they are to be used for card-to-card transfers. There could also be a limit on the life of the cards which would restrict their usefulness for hoarding and money laundering. Self-expiring cards have also been developed which automatically deteriorate after a certain period. In the case of on-line commerce, electronic restrictions could be placed on the value of transactions to avoid the possibility of large scale fraud, although this may be an unwarranted intrusion into freedom of electronic commerce.

Password Protection

Passwords used as a means of restricting access to computer technologies are popular at present and frequently misused and abused. It is possible to guess passwords, particularly if little or no thought has been given to their selection, or to use various forms of social engineering to trick users into revealing their passwords for subsequent improper use.

The use of brute computing force has also been used to break passwords. Password cracking programs are available by which computers are able systematically to search entire dictionaries in search of a password. Even if passwords are encrypted to prevent them from direct exposure, encryption keys have been broken using massive computing resources. Denning (1998: 40) reports, for example, that in 1994 a 129 digit RSA key was broken through combining the power of 1,600 computers linked through the Internet globally working for eight months at the rate of one million instructions per second. If additional information or cracks within the system are known, it is possible to break encryption keys even more quickly, which has also been documented. There are various ways of enhancing access security using passwords (see Alexander 1995).

Appropriate education of users is an initial first step in which information is given concerning ways of ensuring that passwords are not disclosed, guessed, or otherwise compromised by the user in question. Systems should be used which change passwords regularly, or which deny access after a specified number of consecutive tries using invalid passwords. Terminals should have automatic shutdown facilities when they have not been used for specified periods, such as five minutes. Single use passwords, where the password changes with every successive login according to an agreed protocol known to the user and system operator, could also be used. The Secure ID card, for example, generates a new password every sixty seconds which is a function of the time and a secret 64-bit seed that it unique to the card (Denning 1998: 44).

Challenge-response protocols may also be used as a means of carrying out user authentication. The server generates a random number which is sent to the card. In a public key system, the card digitally signs the number and returns it to the server. The server then validates the digital signature. Alternatively, call-back devices may be used. After the user dials into a computer through a modem and gives his or her identity, the system disconnects the user and then telephones the user on a number previously registered with the server. After the user is verified, the transaction can then proceed (see, for example, NetCrusader 1S9u9ch8) A system is, however, able to be overcome through the use of call forwarding arrangements (Denning 1998: 45).

Cardholder Verification

One of the greatest areas of risk associated with electronic funds transfer systems relates to the way users' identities are verified. Some of the most recent suggestions for improving security in this area include the use of various biometric means of verifying identity such as signature, fingerprint, palm, lip, ear or retina scanning (Sullivan 1987). Masuda (1996) provides an examination of a credit card crime prevention strategy employed since 1993 by Tops Appliance City Inc. in New York called 'Cardwatch'. This involves a computer network in a chain of retail stores in which credit card applications are checked by photographing the applicant digitally, recording the applicant's signature and other identifying information such as driver's license, telephone and social security numbers, present address and current or last place of employment. This information is then used for future purchases and when the customer collects merchandise.

Such an approach employs two fundamental checks on identity: something an account holder possesses (the card) and something that an account holder is (photograph etc). Because information is recorded about the individual, offenders are reluctant to take out accounts fraudulently. Cardwatch resulted in a ninety per cent reduction in credit card fraud losses over a seventeen-month period following introduction of the scheme, with a fifty-seven per cent reduction in per fraud loss.

Value Restrictions

As an alternative to target hardening, it has been suggested that the risk of large-scale fraud and money laundering using electronic funds transfer systems could be restricted by placing limits on the size of transactions. Mackrell (1996), for example, has suggested that stored value cards should have a modest limit placed on the maximum value that can be stored on them, especially if they are to be used for card-to-card transfers. There could also be a limit on the life of the cards which would restrict their usefulness for hoarding and money laundering. In the case of Internet commerce, electronic restrictions could be placed on the value of transactions to avoid the possibility of large scale fraud, although this may be seen as an unwarranted intrusion into freedom of electronic commerce

Protections against Card Counterfeiting

Newton (1995) describes various crime prevention strategies which have been used to prevent plastic card counterfeiting. These include the use of security printing; micro-printing; holograms; embossed characters; tamper-evident signature panels; magnetic stripes with

improved card validation technologies and indent printing. Smart cards, of course, are much more difficult to copy than ordinary magnetic stripe cards. Unfortunately, these card authentication devices have been overcome by organized criminals except for computer chip circuitry in smart cards, which has yet to be fully counterfeited successfully. Internet payment systems which do not rely upon plastic cards will, presumably, be much more secure and it may also be possible for these to operate in conjunction with biometric user identification systems.

Biometrics

One way in which problems of password and token security may be overcome, is for users to identify themselves biometrically. Already there are a wide variety of such systems being used which make use of an individual's unique physical properties. Common biometric identifiers today include fingerprints, voice patterns, typing patterns, retinal images, facial or hand geometry, and even the identification of a person's subcutaneous vein structures or body odours (Johnson 1996). The body odour system called 'Scentinel' was developed by the British firm Blood house Sensors and requires that you pass your hand under a sensor which records your unique smell and compares it with one registered in the database (Alexander 1995). It ignores extraneous smells such as perfume. Fingerprint identification systems are now being used in retail stores and for access to ATMs (Anonymous 1996

4.0 CONCLUSION

There is no single correct answer for the design and deployment of Internet firewalls. Many different factors such as their corporate security policy, the technical background of their staff, cost, and the perceived threat of attack will influence each organisation's decision. This paper focused on many of the issues relating to the construction of Internet firewalls, including their benefits, limitations, building blocks, and examples of firewall system topologies. Since the benefits of connecting to the global Internet probably exceed its costs, network managers should proceed with an awareness of the dangers and an understanding that, with the proper precautions, their networks can be as safe as they need them to be.

5.0 SUMMARY

- Security has become one of the primary concerns when an organisation connects its private network to the Internet. Regardless of the business, an increasing number of users on private networks are demanding access to Internet services such as the World Wide Web (WWW), Internet mail, Telnet, and File Transfer Protocol(FTP).

- An Internet firewall is a system or group of systems that enforces a security policy between an organisation's network and the Internet. The firewall determines which inside services may be accessed from the outside, which outsiders are permitted access to the permitted inside services, and which outside services may be accessed by insiders.

- It is difficult to describe a typical hacker attack because intruders have different levels of technical expertise and many different motivations. Some hackers are intrigued by the challenge, others just want to make life more difficult for others, and still others are out to steal sensitive data for profit.

- After information about the targeted organisation's network is gathered, the hacker attempts to probe each host for security weaknesses.

- When designing an Internet firewall, there are several decisions that must be addressed by the network administrator

- As discussed earlier, an Internet firewall does not stand alone--it is part of the organisation's overall security policy, which defines all aspects of its perimeter defense.

- The most common Internet firewall system consists of nothing more than a packet-filtering router deployed between the private network and the Internet

- A wide range of technological solutions have been devised to reduce the security risks associated with conducting on-line business.

6.0 TUTOR-MARKED ASSIGNMENT

1. Mention firewall basic design consideration in decision.
2. What are the basic components of the firewall system?

Answer to Self-assessment exercise

See 3.3

7.0 REFERENCES/FURTHER READINGS

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