Computer Networking of Cybercafés in Delta State, Nigeria

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INTRODUCTION

The convergence of information and communication technology as embodied in the Internet has transformed the present day society into a knowledge society. Earlier, information and knowledge were passed by word of mouth or through manuscripts, and communication was a slow process, but today information is passed from one individual to an infinite number of other users through a number of media and formats which makes rapid and widespread dissemination of information possible (Preeti, 2006). This information dissemination has been so easy today due to the advent of computer network. Computer network is the interconnection of two or more computers for the purpose of sharing resources; this may involve the sharing of common database, software, printer etc. In networking, one may use peer-to-peer model or the client/server model. The peer-to-peer model is a decentralized networking model, which means all account administration is local to each machine and each machine maintains its own account database. In this model, each computer is equal or "peer" of the others. None of the members has total control over the others. This networking may involve the use of hub if the systems are more than two but none of the workstation has total control of the others. However, client/server type of network model is the type of network model, which is defined by the presence of server on the network that provides security and administration of the network. The server enables centralized database security and backup (Adogbeji & Adomi, 2005). In order for the cyber cafés in Nigeria to be able to have access to the entire world and give access to users, there comes the need to network their computers. This they do using client/server model and star topology. This chapter investigates networking patterns in cybercafes in Delta state. It explores the types of network adopted locally, types of networking model adopted in the cafes, reasons for adopting the models, types of networking topology adopted and problems inherited in the networking pattern adopted. Recommendations for improvement are also set forth.

BACKGROUND

Cybercafes are places where Internet services are rendered to users for payment of little token (Adogbeji & Akporhonor, 2005; Adomi, Okiy, & Ruteyan, 2003). They enable people without home/office Internet access or those traveling to access and use the Net

Networks are the means for sharing common resources (hardware, software, data etc.) among various computerized systems. They also constitute an efficient medium for communication. For over three decades now, their use has become widespread in organizations such as universities, corporations, etc (Djamen, Ramazani & Some, 1995). Keogh (1996) recorded that communications with the rest of the world could be in form of such hardware protocols as the Token Ring or Ethernet. Be it as it may, many cyber cafés are adopting the Ethernet hardware protocol and TCP/IP (transmission control protocol/Internet protocol) in their networking. Networking of computers has become so necessary as this enables the transfer of files and remote access to information that is available in databases through terrestrial and satellite connections (Rao, 1999). These are two major hardware protocols that are being used in computer networking. Ethernet has gain much stand in Nigeria as many cyber cafés adopt it as their hardware protocol. Jebaraj and Devadoss (2004) categorized networking into three: local area network (LAN), metropolitan area network (MAN) and wide area network (WAN). He further noted that the main limitations in network development is that, the network may fail in the early stages if there is no proper plan-

ning or if adequate funds is not available. This is also the situation in developing nations including Nigeria. A lot of networks fail due to lack of funds available to run the system. This study therefore examines the computer networking patterns of cyber cafés in Delta state, Nigeria. The essence is to uncover the networking model, network topology (cabling style or pattern), and the hardware and software protocols adopted by the cyber cafés. Also the study examines the inherent problems in the cyber cafés among others.

Delta State is one of the 36 states of Nigeria. It is perhaps the secret jewel of Nigeria, located within 25 local government areas in rural and urban settings running along the delta of the River Niger and the shores of the Atlantic. It is a state in which the oil (petroleum) industry has a vest presence, with Asaba as its capital (Adomi, Ogbomo, & Inoni, 2003; Maltek Resources Limited, 1998).

About 70 percent of the inhabitants live in the rural areas (Adomi, 2005) most of whom are illiterate and practice subsistence farming. Most of the educated population live in the urban areas.

Computers and information technology components and materials are still very expensive to the average Nigerians (including those living in Delta State), to institutive which need them and even to the government of Nigeria whose networking vision covers a larger part of the country (Iwe, 2005). This has made it difficult for most dwellers to have home and office/institutional access to the Internet, which is described by Djamen, Ramazani and Some (1995) as an indispensable tool that African countries can utilize for required regional integration, participation in world activities and complete mastery of their development. Most inhabitants therefore rely on cybercafés as places where they can have access to the Internet on payment of a fee (Adomi, Okiy, & Ruteyan, 2003; Jidaw Information Systems, n.d.; Nwagwu, 2006)

Cybercafés are found in different parts of the world. The ubiquity of these cybercafés suggests this network of access to the contemporary, always evolving tools and the wealth of information they access constitute a resource for personal and community empowerment and poverty alleviation, as well as the dominant information functions we all observe and no doubt practice (Robinson, 2004).

METHOD OF DATA COLLECTION

Questionnaires were used to gather data for the study. A total of 40 questionnaires were designed and administered in 40 cybercafés in Delta state, Nigeria. A total of 26 copies were returned and used for this study. Data were calculated using percentages while results were presented in tables. The authors decided to investigate the networking patterns in Delta state cybercafés in order to ascertain the level of networking operations in the cafes so as to recommend how their network can meet with the current needs and be beneficial to user community. The study is significant in that its findings will enable cyber cafés operators and other stake holders to be aware of current trends in cyber cafés networking as well as problems of their network. This will definitely enable them to improve their networks/services.

FINDINGS

The Table 1 show that more of the cyber cafés adopted wired local area network than the wireless local area network. 21 (80.8 percent) of the cyber cafés used the wired local area network in the connection of their computer locally and then connected to the net using the wide area network technology in order to have access to the Internet (Internet service provider).

The study shows as display in the Table 2 that all the cybercafés used for the study adopted the client/server networking model due to some reasons as indicated in Table 3 below.

The reasons while the cyber cafés used the client / server network model includes strong security, central files storage, easy manageability of large number of users, easy sharing of printer/Internet software and central administration of systems by the systems administrator.

It shows from the study that all the surveyed cyber cafés used the star topology as a pattern of network cabling of their systems. In star topology, individual workstation cable is run from the workstation to the central hub where all the systems will be connected. This implies that a breakdown of any of the workstation cannot breakdown the entire network.

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