Business Telecommunications

Telecommunication and Networks

Businesses and organizations that rely on management information systems may find the need to incorporate telecommunication and networking as part of their operations process.

What is Telecommunication?

Telecommunication, in the business sense, involves sharing information over a distance; this allows businesses and organizations to have a broad, possibly global reach. This may include electronic and/or digital resources such as telephony, fax, e-mail, and the Internet itself.

Types of Telecommunication

Business telecommunication can have different types, depending on the sender of the information, the intended recipient of that information, how the data gets to its respective recipients, and how the information is distributed.

- **Internal, Downward** – Information of this type is circulated within the business/organization; the information comes from managers and superiors and is cascaded down through the different departments until it reaches its recipient/s. An example is a memo from executives cascaded to an enterprise's various departments.
- **Internal, Upward** – This is the opposite of downward communication, wherein subordinates are the ones sending information up the hierarchy to their intended recipient/s in the managerial/executive level. An example would be a budget approval document requested by a finance employee to his/her manager.
- **Internal, Lateral** – This type involves telecommunication between co-workers or co-members; it encompasses cross-department communication, as well as communication between members/workers of the same level or department in the organizational hierarchy. A very simple example would be e-mail correspondence between employees of the same department.
- **External** – This type involves any telecommunication that leaves the business or organization; it mostly deals with customers, prospects, vendors, or partners. An example would be documents used for a business pitch.

What is Networking?

Telecommunication Networking pertains to employable methods that a business or organization can use to disseminate information. Putting the definition in a business or organizational sense, it is communication connectivity of a business or organization to its other aspects, such as prospective clients, branches, and departments, to further streamline specific processes or tasks.

Types of Telecommunication Networks

Networks involving telecommunication can be built using existing network topologies, but may also follow different types of information distribution topologies:

- **Wheel Network** – This is a network type where the only one (1) member in the network (possibly someone from the managerial or executive level) is allowed to send or receive communication. Though direct and efficient, it has its disadvantages and may not be appropriate for some situations or companies with a higher number of people. If the leader is not responsible, dedicated, or communicative, the whole business will suffer. Likewise, a company with many employees needs more decision-makers or nothing would get done.
- **Chain Network** – This network type allows members to communicate in a set sequence. It may follow an organizational hierarchy, e.g., the CEO at the top-level working its way down to different departments and employees. This allows the communication to follow the chain of command and opens possible applications of quality control. However, this network type may also suffer from misinformation, especially if the network is built for very large organizations, due to the length of communication that the information must pass through.
- **Circle Network** – This network type represents a three-level hierarchy in which there is communication between superiors and subordinates, with cross-communication at the operative level. While this allows quick and open collaboration between superiors and subordinates, this network type also suffers the same problems as the chain network, where information may move slowly and may be distorted.
- **Star Network** – Also called the **All-Channel Network**, this type is similar to the circle network, except that each member in the topology may communicate to **ALL** members and not just the ones designated above, beneath, or beside their location. This allows for the highest participation and/or collaboration between members and has little

to no disadvantages.

Applications on E-Business

What is an E-Business?

E-business, or electronic business, refers to the organizational system in an enterprise that applies electronically-controlled technologies and resources in its operational system to facilitate more efficient execution of business activities, from selling products and services to customer service and support. It involves the application of information technology and IT professionals, as well as the Internet, to traditional business processes.

Benefits of Using E-Business

There are notable advantages for businesses and organizations that select to use e-business systems in their operations:

- **Operation Cost Reduction** – Applying telecommunications and networking provides a business/organization the opportunity to reduce operational costs. Machines can be used to automate processes that usually require manual labor to accomplish. Additionally, online connectivity allows the use of some convenient technologies, such as e-mail and messaging, which saves the enterprise from incurring charges usually present in traditional means of communication and transaction.
- **Customer Service Efficiency** – Application of e-business technologies allows an enterprise to improve customer service due to its reach, speed, and reliability. Entities offering services can be allowed to reach more customers and service them in a short amount of time, while entities offering products can streamline their delivery process and digitize their modes of payment, possibly even through the use of Internet connectivity.
- **Wider Market Access** – Using e-business allows a broader reach to a target market. A business or organization can tailor its services and processes to suit a variety of clients. In addition, an enterprise can either design a marketing strategy to center on particular locations to establish a stronger presence or reach out on an international level via the Internet.

Possible Applications of E-Business Solutions

- **Internet Business Models** – Through the use of websites, an enterprise can conduct business with a variety of target clients on a local, national, or global scale. Companies can develop their solutions for their processes, and may even revolutionize an industry because of the number of possibilities of online commerce.
- **Customer-Centered Retailing** – Consumers will usually want information about the products and services they plan on getting; to address this concern, some companies may opt to incorporate reviews from websites and/or services that offer review services. This service, a phenomenon known as reintermediation, introduces other customers and businesses as possible middlemen that can help make an enterprise flourish.
- **E-Commerce Support Systems** – Companies can opt to offer backend services from other enterprises, such as credit-card transaction processing/e-payment systems, etc. Some application suites can be purchased by businesses and organizations that will help them set up a formidable presence online.

Transaction Processing System (TPS)

What is a Transaction Processing System (TPS)?

Transaction processing systems were among the earliest computerized systems. Their primary purpose is to record, process, validate, and store transactions that take place in the various functional areas/of business for future retrieval and use. It can record company transactions, as well as process data resulting from the occurrence of business transactions.

Type of Transactions

To understand how TPSs work, one must first understand the types of transactions that can be done for an enterprise:

- **Internal** – This type of transaction is done from within the company and is usually related to the internal processes of any organization. Examples are Recruitment Policy Systems for human resource and Approval Systems for record keepers.
- **External** – This transaction type is external to any organization and is related to external sources. Typical examples are Purchasing Systems for supply chains and Sales Systems for product sellers.

Characteristics of TPS

For an information system to be classified as a TPS, it must have the following characteristics:

- It can record internal and external transactions for a company. It is a repository of data that is frequently accessed by other systems.
- It can perform routine, repetitive tasks. It is mostly used by lower-level managers to make operational decisions.
- Transactions can be recorded in batch mode or online. In batch mode, the files are updated periodically; in online mode, each transaction is recorded as it occurs.
- It can perform the six (6) main steps in processing a transaction: data entry, data validation, data processing and revalidation, storage, output generation, and query support.

Processes of TPS

- **Data Entry** – Transaction data must first be entered into the system so it can be processed. There are several input devices for entering data, including the keyboard and the mouse. Documents generated at the point where a transaction occurs are called source documents and become input data for the system. For example, when a customer returns an item at a store, the sales receipt becomes the source document for a transaction that refunds a customer for a returned item.
    - **Data Capture** – A data entry subprocess; transaction data must be captured as close as possible to the source that generates the data. For example, managers of supermarkets can capture data that rarely changes (such as recorded transactions for the day) by prerecording it on machine-readable media, or by storing it on the computer system.
- **Data Validation** – The system must be able to use the two (2) steps in validation: **error detection and error correction.** Some commonly used error detection procedures are checking the data for appropriate font (text, numbers, etc.), checking for aberrations (values that are too low or too high), and checking for missing data, invalid data, and inconsistent data.
- **Data Processing and Revalidation –** Once the accuracy and reliability of the data are validated, the data is ready for processing. There are two ways to process the transactions: online (almost instantaneous processing due to Internet connectivity) and batch mode (transactions are accumulated over time and processed).
- **Data Storage –** Processed data must be carefully and properly stored for future use. Data storage is a critical consideration because the value and usefulness of data diminish if data is not stored correctly. The kind of processing and the type of storage medium are, to some extent, related issues. For example, flash drives are often used to store data that is batch-processed, however online transaction processing cannot be done on flash drives because the accumulated data needs a much bigger disk capacity than what flash drives offer.
- **Output Generation** – Once data has been input, validated, processed, revalidated, and stored, the output can be communicated to decision-makers, and other relevant partied in two (2) common ways: documents/reports (physical copies of data) and forms (digital, soft copies).
- **Query Support** – Query facilities allow users to process data and information that may otherwise not be readily available, such as previously stored data. Query systems provide data in demand, provided that a systems user gives the proper parameters for data that will be retrieved.

Operational Information System

What is an Operational Information System?

It is a type of information system that can record, process, and report all routine and repetitive activities of an organization. The processes may occur across various departments.

Advantages of Using Operational Information Systems

An enterprise will reap the following benefits for using an operational information system:

- Reduced Cost – Operational costs will be reduced due to the system's capacity to streamline processes, specifically those that use manual labor to accomplish.
- Increased Speed – Routine processes that are automated by the system take advantage of the system's processing power to accomplish the tasks quickly.
- Increased Accuracy – The margin for human error is reduced, if not eliminated, as the system is capable of accomplishing the tasks using a fool-proof process algorithm.
- Increased Customer Service – Systems can also streamline customer service processes to ensure that it is delivered

efficiently.

- Increased Data for Decision Making – Operational information systems, like TPS, can store and generate relevant data for reports, documents, and forms, which can be used by managers and/or executives for decisions concerning the future of the enterprise.

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