

# **Fundamentals of Networking**

**Example of Today's Popular Communication**

# What is Communication

- Focuses primarily on communication technologies. This includes the [Internet](#), wireless networks, cell phones, and other communication mediums.
- In the past few decades, information and communication technologies have provided society with a vast array of new communication capabilities.
- For example, people can communicate in [real-time](#) with others in different countries using technologies such as [instant messaging](#), voice over IP ([VoIP](#)), and video-conferencing.
- [Social networking](#) websites like [Facebook](#) allow users from all over the world to remain in contact and communicate on a regular basis.
- Modern information and communication technologies have created a "global village," in which people can communicate with others across the world as if they were living next door.



# Examples of Different Forms of Technology-Mediated Communication

## Email

You must answer your email or hire someone to do it for you. Email has become a standard form of business communication, especially for short messages that require action. This kind of technology-based communication allows you to take care of a lot of customers, as well as partners and other stakeholders without lengthy conversations. In fact, modern software allows you to send the same email to all interested parties so that you can keep your message, name and products in the forefront of their minds.

## Texting

Texting has become the most personal form of business communication. Whereas you might give your email address to many people, your personal text number is reserved for a few close associates. Your communications by text tend to be more urgent than email. If your business is moving too slowly, you should examine whether you are taking full advantage of texting.

## Instant Messaging

Instant messaging through websites or instant-messaging applications can contribute to the success of your negotiations. Instant messaging tends to be for longer discussions than texting. You can engage someone in another city, state or country in a conversation that can lead to a lucrative business deal. The advantage of this electronic conversation is that you can take time to think before you respond. In face-to-face conversations, it can be difficult to pause long enough to gather your thoughts.

# Examples of Different Forms of Technology-Mediated Communication

## Social Networking

Social network sites such as Facebook and MySpace can be essential to getting your message out. You will have to adjust your communication style to a more informal approach. You gather “friends” on these sites. These are places to do relationship marketing. Instead of sales pitches, place messages on these sites that sound like you have a good deal for your friends.

## Tweeting

The website Twitter allows you to broadcast very short messages called “tweets” to people who have elected to follow your posts. This is not the place for a long treatise. Instead, briefly refer to a new product, message or development your company is excited about. This may not result in immediate sales, but it will result in awareness of your company in the marketplace.

## Blogs

The word “blog” is short for “web log.” These sites are often written by amateurs, but getting a blogger to review a product or service can be a good way to spread the word about your small business. Contact bloggers by email, usually listed on their blogs, and ask them to take a look at your product or service. You can spread the word informally and quickly through this technology-based communication. Many companies, from sole proprietorships to large corporations, have established their own blogs as a primary communication channel to the public.

## Video Conferencing

You can save travel money by using video-conferencing. If you and another person both have cameras and the right software, you can see each other and talk to each other on your computers. This gives you the face-to-face meeting you need without having to be in the same location. When you want to convey your message with physical gestures and facial expressions, this form of technology can be an effective communication tool.

# Synchronous Communications

If all the parties to the communication are taking part in the exchange at the same time, the communication is ***synchronous***

- ***Live meeting***

Gathering of team members at the same location.

- ***Conference call***

A telephone call between two or more individuals where several people participate.

- ***Audio conference***

Like a conference call, but conducted online using software like Skype.

- ***Computer-assisted conference***

Audio conference with a connection between computers that can display a document or spreadsheet that can be edited by both parties.

- ***Video conference***

Similar to an audio conference but with live video of the participants. Some laptop computers have built-in cameras to facilitate video conferencing.

- ***IM (instant messaging)***

Exchange of text or voice messages using pop-up windows on the participants' computer screens.

- ***Texting***

Exchange of text messages between mobile phones, pagers, or personal digital assistants (PDAs)—devices that hold a calendar, a contact list, a task list, and other support programs

# Asynchronous Communications

Getting a team together at the same time can be a challenge, especially if they are spread out across time zones. Many types of communication do not require that the parties are present at the same time. This type of communication is **asynchronous**.

- **Mail and Package Delivery**

Many companies prefer that final contracts are personally signed by an authorized representative of each party to the agreement. If several signatures are required, this can take weeks to get all the signatures if the contracts are transferred by a postal service. If this process is holding up the start of the project, you can use an overnight delivery service to minimize the time spent transferring the documents.

- **Fax**

Fax machines have been around a long time and enjoy a high level of trust for transmitting documents accurately. Although it might seem archaic to still use fax transmissions, in many countries a fax of a signed contract is legal, but a computer-scanned image is not.

- **E-Mail**

Electronic mail (e-mail) is widely used to coordinate projects and to communicate between team members. It has several valuable characteristics for project management: Information can be sent to a list of team members. Messages can be saved to document the process in case of a misunderstanding or miscommunication. Files can be attached and distributed.

# Asynchronous Communications

- **Project Blog**

A **blog** is an online journal that can be private, shared by invitation, or made available to the world. Some project managers keep a journal in which they summarize the day's challenges and the decisions they made. They return to this journal at a later date to review their decision-making process after the results of those decisions are known to see if they can learn from their mistakes. Many decisions in project management are made with incomplete knowledge, and reflecting on previous decisions to develop this decision-making skill is important to growth as a project manager.

- **Really Simple Syndication (RSS)**

Some projects are directly affected by external factors such as political elections, economic trends, corporate mergers, technological or scientific breakthroughs, or weather. To keep informed about these factors, you can subscribe to online news sources. A technology that facilitates this process is Really Simple Syndication (RSS). Web pages with RSS news feeds have labeled links.

If the user clicks on the RSS feed, news from the website is automatically sent to the user's news reader, such as Google Reader. The news reader can be set to filter the news for key words to limit the stories to those that are relevant to the project.

# Component of Communication

- Communication may be defined as a process concerning exchange of facts or ideas between persons holding different positions in an organization to achieve mutual harmony.
- The communication process is dynamic in nature rather than a static phenomenon.
- Communication process as such must be considered a continuous and dynamic inter-action, both affecting and being affected by many variables.
- We know that **communication is a process of transmitting and receiving messages (verbal and non-verbal)**. Communication is a dialogue not a monologue. So, a communication is said to be effective only if it brings the desired response from the receiver.
- Communication consists of six components or elements.
  - 1) Context
  - 2) Sender/Encoder
  - 3) Message
  - 4) Medium
  - 5) Receiver/Decoder
  - 6) Feedback

## Context

- Every message (Oral or written), begins with context. **Context is a very broad field that consists different aspects.** One aspect is country, culture and organization. Every organization, culture and country communicate information in their own way.
- Another aspect of context is external stimulus. The sources of external stimulus includes; meeting, letter, memo, telephone call, fax, note, email and even a casual conversation. This external stimuli motivates you to respond and this response may be oral or written.
- Internal stimuli is another aspect of communication. Internal Stimuli includes; You opinion, attitude, likes, dis-likes, emotions, experience, education and confidence. These all have multifaceted influence on the way you communicate you ideas.
- A sender can communicate his ideas effectively by considering all aspects of context mentioned above.

## Sender/Encoder

- **Encoder is the person who sends message.** In oral communication the encoder is speaker, and in written communication writer is the encoder. An encoder uses combination of symbols, words, graphs and pictures understandable by the receiver, to best convey his message in order to achieve his desired response.

## Message

- **Message is the information that is exchanged between sender and receiver.** The first task is to decide what you want to communicate and what would be the content of your message; what are the main points of your message and what other information to include. The central idea of the message must be clear. While writing the message, encoder should keep in mind all aspects of context and the receiver (How he will interpret the message).  
Messages can be intentional and unintentional.

## Medium

- **Medium is the channel through which encoder will communicate his message.** How the message gets there. Your medium to send a message, may be print, electronic, or sound. Medium may be a person as postman. The choice of medium totally depends on the nature of you message and contextual factors discussed above. Choice of medium is also influence by the relationship between the sender and receiver.

## Receiver/Decoder

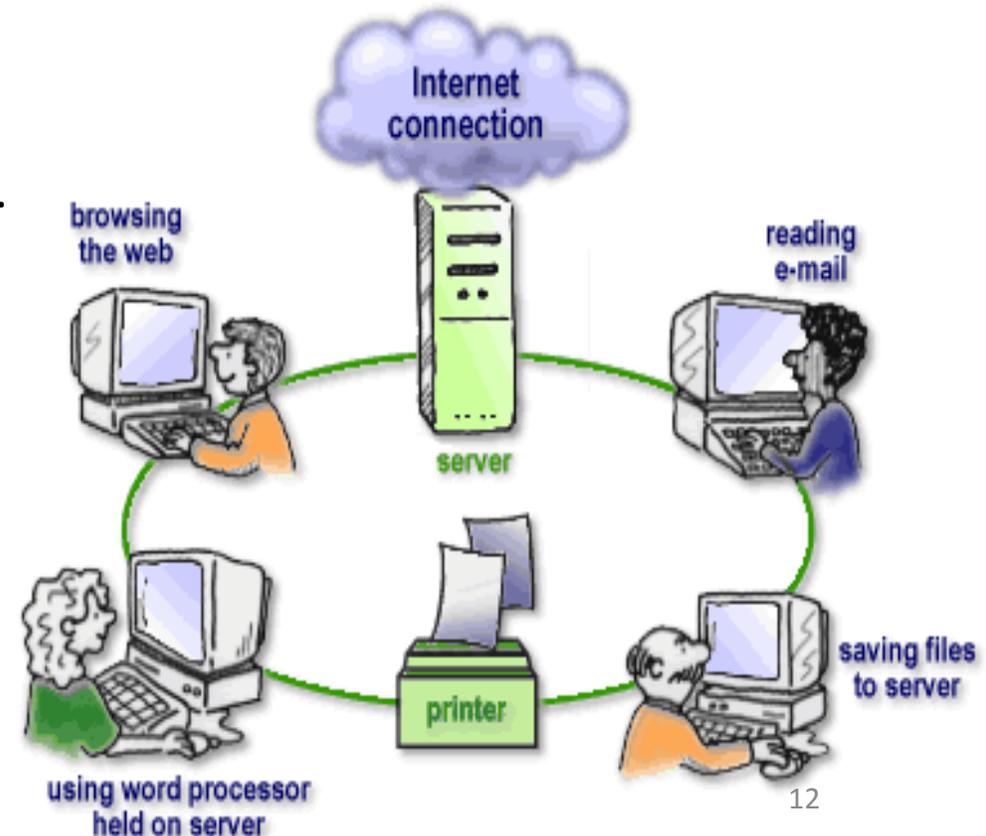
- The person to whom the message is being sent is called 'receiver'/'decoder'. Receiver may be a listener or a reader depending on the choice of medium by sender to transmit the message. **Receiver is also influenced by the context, internal and external stimuli.**
- **Receiver is the person who interprets the message**, so higher the chances are of miscommunication because of receivers perception, opinion, attitude and personality. There will be minor deviation in transmitting the exact idea only if your receiver is educated and have communication skills.

## Feedback

- Response or reaction of the receiver, to a message, is called 'feedback'. Feedback may be written or oral message, an action or simply, silence may also be a feedback to a message.
- **Feedback is the most important component of communication in business.** Communication is said to be effective only when it receives some feedback. Feedback, actually, completes the loop of communication.

# What is Network

- A **network** is a collection of computers, servers, mainframes, network devices, peripherals, or other devices connected to one another to allow the sharing of data. A excellent example of a network is the [Internet](#), which connects millions of people all over the world.
- A network is a set of technologies that is used to connect computers
- The network allows communication and collaboration between users.
- The network technology includes
  - 1) **Media** : is the wiring to connect network devices
  - 2) **Hardware** : Needs to be installed to connect media
  - 3) **Software**: Needs to be written to handle the network



# Elements of a Network

## Hardware

The backbone of any network is the hardware that runs it. Network hardware includes network cards, routers or network switches, modems and Ethernet repeaters.

Without this hardware, computers have no means of accessing a network. Network cards give computers direct access to network media and enable them to connect to other equipment, including routers, switches, modems and repeaters.

Routers or switches allow a single network connection from a modem to be divided between several computers. Repeater refresh the network signal between Ethernet cable segments, allowing Category 5 cables to reach beyond their 300-foot maximum length without signal loss.

# Software

In order for the hardware to interact with the network, it needs software to issue commands.

The primary form of networking software is protocols, software that instructs network devices on how to connect to the network and how to interact with one another.

Other examples of networking software include connection monitoring software, networking clients and other tools designed to further facilitate your computer's ability to connect to the network.

## Client Devices

Client devices are the computers and mobile devices connected to the network.

Client devices are vital components of a network, as without clients requiring access the network is essentially pointless.

In order to classify as a client device, a computer or mobile device must be able to connect to the network and utilize it.

Depending on the network, client devices may also require specialized software to establish a connection.

## Connection Media

Without connections, a network cannot function. The medium used to connect the nodes of a network varies with the type of network.

Wired networks will often use network cables like Category 5 Ethernet cables, while wireless networks make direct connections between devices using radio signals as the medium.