

# Unity University

College of Engineering, Technology and Computation Sciences

## Department of Computer Science

Communication organizer (Webook)

### Chapter one

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## Introduction

*"Although we live in an information technology age, we often find ourselves in failure to communicate situations. "*

*Johnny Tan*

The word communication is basically a process of interaction with the people and their environment. Through such type of interactions, two or more individuals influence the ideas, beliefs, and attitudes of each other.

Such interactions happen through the exchange of information through words, gestures, signs, symbols, and expressions. In organizations, communication is an endless process of giving and receiving information and to build social relationships.

**Webook** is our brand name that we build a platform about organized communication in advanced modern way for organization's that improves their custom method of communication.

Employees in an organization communicate with different methods and improving their communication will make better work performance, effective time management, can reduce cost and can save a lot of paper work. Good communication in a task can have an impact on what will be executed in quality, quantity and effectiveness.

Communication in an organization can happen in different ways. Employees can communicate with letters, verbal communication like meetings and normal conversation. They also share files, accept letters and approve letters. They manage their tasks by communicating each other. **Webook** can organize those activities on one platform with easy integration and simplified platform.

### 1.1 Background Information

Many methods of communication take place in both large and small business settings. Understanding the availability, benefits and drawbacks of the various options can help businesspeople choose the communication tools most likely to resonate with audiences. Today communication can occur in a variety of ways – in person, **through print documents** (letters and reports), through broadcast messages and meetings.

**Letters-** is formal way of communication that employees communicate with each other in written format. Inside an organization letters can play an important role expressing what is done and what to be done. Managers can start, end and abort a task by a letter. They also sent letters for approval and reports. Generally, letters serve as the back bone of formal communication in an organization.

Letters can be written from a specific department, employee to all employees and departments. In traditional way of letter management if the audience of the letter is multiple it takes multiple documents to print out and distribute it. It is also hard which department has received and react to it. So, the manager assistants are responsible for collecting the data in which department has seen the letter and react to it

For Integration in to our system we classified the letters in to letters who need approval and who don't need approval. Letter who need approval are called terms of reference or **TOR** in short. For Tor letters there can have different steps to approve approval stages can be linear, iterative or both.

**Linear Approval methods-** is approval method when letters are approved on simultaneous level

**Iterative Approval method** - is approval method when letters approved step by step.one step comes from another step

We can take an example of terms of reference this type of letter is iterative which one manager approves it in different approval stages

Letters also have different participant, those who read but passed to the whom it may concern it and those who have upper hand on approving the letter's request. For instance, in asking allowance, the request of the letter need to follow some chain until it is reach on the one who may/not give it recognition or approval. Letter are given to them for their recognition and awareness of what is going.

Definitely, organizing letters for approval and keeping track with manager asks some time. **Also, participants who received those letters can lack of efficiency on organizing and time take in passing it lack of efficiency on organizing.**

**Verbal communication-** Verbal communication is the act of sharing information between individuals by the use of speech. Any interaction that

makes use of spoken words is considered as verbal communication. It is an integral part of the business world. Oral communication used within an organization includes personal discussions, staff meetings, telephone discourse

In the current pandemic verbal communication are done in distant manner to prevent the spread. Reducing verbal communication is now mandatory in an organization.

Nonverbal communication is becoming mandatory way of communication, that employees can communicate using texts and email.

Communication is often not so much what we write or say but how we write and often what we do not say. Thus, meaning in real-world chat messages depends not only on the words we use but also on how we express meaning through nonverbal cues. Online chat is simple, direct, and unrestrained. While it contains many of the elements of face-to-face conversation, it differs from ordinary chat in that it is a textual representation of conversation.

*At the Open Polytechnic of New Zealand conducted a study involving a chat group specifically set up for a course in computer concepts. Chat provided a nonthreatening environment to enhance the existing asynchronous forums. The facilitator actively encouraged student networking as an essential part of creating a learning community similar to the real-time student common room. The chat room functioned as a place where students could "meet," ask questions, talk about the course, and generally get to know their classmates. Because of the chat group's voluntary and informal nature, with no incentives for participation, usage numbers fluctuated throughout the 17-week semester. By analysing student online messages, we determined students were using textual elements to express feelings.*

Educause, A. (2021). The Importance of Nonverbal Elements in Online Chat <https://er.educause.edu/articles/2005/1/the-importance-of-nonverbal-elements-in-online-chat>

**File sharing** – file sharing is method of exchanging computer files with different methods. Traditionally, Employees exchange files through portable devices using hard disks. The importance of developing file sharing platform is an important for organization communication

A file-sharing app is the kind of application program that enables and equips effective collaboration and file sharing within the organization. With file-sharing applications, you get to save, share, manage, and collaborate on business-critical files and documents in one place.

**Tasks management –Projects** are made up of a bunch of tasks. Right from the development of an idea, you need to plan, track, test, monitor,

and report all the tasks that are involved in the project. Task management comes in handy with all these, helping you complete the project efficiently and in the most effective way possible.

Task management, a part of project management is a pretty simple idea. It's how you break complex projects into simple, bite-sized tasks so you can manage them quite easily. it enables teams to coordinate among themselves and to effectively complete tasks and eventually projects.

Task management is defined as the process of handling the entire life-cycle of a task, right from planning to tracking to execution. It helps teams track tasks from the beginning, setting deadlines, prioritizing tasks, and assigning them to the right people. It ensures projects stay on track and get completed on time.

Good and organized communication on tasks will facilitate the project execution rate. Developing communication platform on tasks in an organization can save a lot of time and better project efficiency in organized way

## 1.2 statement of the problem

In organization announcing a certain activity to all employees takes to collect them and announcing what is needed or you have to tell to their managers and their managers will distributed the announcement. This type of communication is costly. When we collect all employees to one place, they are terminating their tasks and respond to an event. Miscommunication can also happen the original information will be lost and there will be misunderstanding as one employee will take that information to its own perspective. It also hard remembering what is told about and many employees take notes in order to tackle this problem.

Letters in an organization will serves, as the backbone for formal communication but organizing and keeping flow is difficult task for managers and employees. Written letters can be lost or forgotten.

Letters can also have different approval stages. Traditional letter management do not tell automatically When some manager approves a letter, you have to go manually to get information about what is happened and how the manager is respond to it.

One letter can also touch many departments. Distributing the letters to all departments and asking their opinion about the letter makes it challenging.

Relying only on oral communication may not be sufficient, as business and organization communication is formal and very organized. There is no timestamp when somebody say something and someone will understand the information transferred to its own perspective. It requires attentiveness and great receptivity on part of the receivers/audience.

Lack of efficient communication in tasks may lead us misunderstanding and employees can misinterpret the task objective. Employee must have good communication with their managers and some managers value their work based on their relation. This will lead us to inefficient project execution.

Generally, Poor communication with customers can result from the poor internal communication as well as poor coaching of front-line workers. Regardless of the direct causes, poor communication between employees and customers limits a company's ability to build a loyal customer base. The problems are magnified when an organization doesn't solicit customer feedback to identify what is missing in the communication process or customer experience

## 1.3 Objective

### 1.3.1 General objective

Our main goal is building smart way of communication between employees in simplified way. Reducing a lot paper work and saving a lot of time when communicating is Webook's intention.

As mentioned in the problem of statement poor communication will limit company capability. Boosting the communication power of the company is number one priority of Webook.

### 1.3.2 specific objective

As communication in an organization have different sub systems, we want to make

- Letter system which employees can rely and prefer on
- Chat system that users communicate
- Group discussions between employee's for further communication
- Easy file and document' sharing platform

- Easy task communication system
- Easy and reliable interface
- Protected secured communication's
- Real time communication system
- Notification's when an event is occurred
- Manager's announce to their group's when an event is occurred
- System admin interface which registers, edit, delete, activate and deactivate employees

## 1.4 Scope of the project

As communication, a wide concept we make to a narrow that is to implement to organizational level. Communication in organization is vast by itself mainly we want to focus on

- Letter management system which employees can create, update, delete, search, select approval stages and make participants
- Notification's when managers take actions on the letter
- Chat communication system with file sharing and group discussion
- Integrated task communication and management system
- Manager can create task, assign employee, communicate using chat, evaluate their jobs
- Dashboard interface for announcement to whom employee that concern it.
- As communication is sensitive information data security is also implemented with encryptions
- System admin interface with creating, registering, updating, deleting and searching employees, department, managerial position's

As the scope of mentioned in above is vast, we can classify into 5 sub-systems in order to generalize and know their property as well

- Letter management system
- Chat real time communication and file sharing
- Dashboard and announcement page
- Task management system
- Admin controlling page

Webook generalize those sub systems on integrated one communication system. We develop a web app for integrating the tasks

## 1.5 Tools and Methodologies

### 1.5.1 Data Collection Methodologies

In data collection methodology, the subjects are aware of the fact that they are being studied, which can influence their response or behaviour. Examples of direct data collection methods is interviews.

Interviews are used to collect data from a small group of subjects on a broad range of topics. We can use structured or unstructured interviews. Structured interviews are comparable to a questionnaire, with the same questions in the same order for each subject and with multiple choice answers. For unstructured interviews questions can differ per subject & organization and can depend on answers given on previous questions, there is no fixed set of possible answers.

In case interviews cannot be done face-to-face, besides a normal phone call, video conferencing tools can be used to interview participants/respondents in our project. You can safely use the following video conferencing tools like

- Microsoft Teams (for employees & managers) (recording possible)
- Skype for Business (for employees only) (recording possible)
- Google Hangouts (for employees) (recording possible)
- PILOT SURF Videoconferencing for max 6 persons (only for employees to set up a conference; an employee can invite anyone)

Here are some sample questions we consider asking for data collection

- ✚ Please tell me about yourself and your type of employment?
- ✚ Describe your typical day at role in the organization?
- ✚ Describe how you send letters to departments and employees
- ✚ Tell me how managers approve accept a letter
- ✚ Describe how you communicate each other and share files
- ✚ Describe how your manager controls your task's and so on...



## 1.5.2 System Development Methodology

### WHAT IS AGILE?

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Agile software development refers to a group of software development methodologies based on iterative development, where requirements and solutions evolve through collaboration between self-organizing cross-functional teams. Agile methods or Agile processes generally promote a disciplined project management process that encourages frequent inspection and adaptation, a leadership philosophy that encourages teamwork, self-organization and accountability, a set of engineering best practices intended to allow for rapid delivery of high-quality software, and a business approach that aligns development with customer needs and company goals.

### WHAT ARE THE BENEFITS OF AGILE?

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-Face to face communication Agile method give more emphasis on having the face to face communication between the user/customer and project team to make sure there is no room left for any kind of confusion in understanding requirement and inputs.

-The agile methods function effectively for the development of high quality software, reducing the comprehensive documentation and avoiding the standardised and static procedures, while at the same time, they pursue and focus on the close collaboration and communication among the team members and the frequent interaction with the customer.

### WHAT IS SCRUM?

Scrum is a subset of Agile. It is a lightweight process framework for agile development, and the most widely-used one.

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- A “process framework” is a particular set of practices that must be followed in order for a process to be consistent with the framework. (For example, the Scrum process framework requires the use of development cycles called Sprints, the XP framework requires pair programming, and so forth.)

- “Lightweight” means that the overhead of the process is kept as small as possible, to maximize the amount of productive time available for getting useful work done.

A Scrum process is distinguished from other agile processes by specific concepts and practices, divided into the three categories of Roles, Artifacts, and Time Boxes. These and other terms used in Scrum are defined below. Scrum is most often used to manage complex software and product development, using iterative and incremental practices. Scrum significantly increases productivity and reduces time to benefits relative to classic “waterfall” processes. Scrum processes enable organizations to adjust smoothly to rapidly-changing requirements, and produce a product that meets evolving business goals. An agile Scrum process benefits the organization by helping it to

- Increase the quality of the deliverables
- Cope better with change (and expect the changes)
- Provide better estimates while spending less time creating them
- Be more in control of the project schedule and state

As practically we want to follow scrum development method in this project when we do work break down structure scrum has it own scrum board, which classifies each task to stories, on progress, testing, reviewed and completed.

Classifying each task based on their compilation status will make system developers good overview and understanding how the system is proceeding. They also know what are the given tasks, which tasks are on progress, testing and completed. And also which task should be reviewed again.

Every team member can constantly visualize project progress with a scrum board. It is easy to see what tasks are done and what still needs to be finished. Visual representation helps teams not only hear about progress but see it as well. Supports commitment from every team member.

### 1.5.3 **Development Tools**

we’re going to use some of the best JavaScript Development Tools and libraries here is why

JavaScript is a highly versatile scripting language that is used in a massive number of applications – whether its powering website pages, Android apps or being used as a game framework, JavaScript can just about do it all. Of course, the real power of

the language is unlocked by the sheer limitless number of tools and libraries available to complement it.

Before the development Node.js JavaScript was only web browser programming language but after the development of Node.js JavaScript can run in any environment.

Node.js is a platform built on Chrome's JavaScript runtime for easily building fast and scalable network applications. Node.js uses an event-driven, non-blocking I/O model that makes it lightweight and efficient, perfect for data-intensive real-time applications that run across distributed devices.

Node.js is an open source, cross-platform runtime environment for developing server-side and networking applications. Node.js applications are written in JavaScript, and can be run within the Node.js runtime on OS X, Microsoft Windows, and Linux.

Node.js also provides a rich library of various JavaScript modules which simplifies the development of web applications using Node.js to a great extent. For instance react (developed by Facebook), express, socket-io, mongoose are the frameworks of node.js

Since we are developing web, application there is client-side web application, server-side and database. This clear separation is useful for extending our project to multiple devices for instance if we want to develop mobile app we can access the server with same restful api also we can make desktop with the same server.

**RESTful API** is an architectural style for an application program interface (API) that uses HTTP requests to access and use data. That data can be used to GET, PUT, POST and DELETE data types, which refers to the reading, updating, creating and deleting of operations concerning resources.

An API for a website is code that allows two software programs to communicate with each other. The API spells out the proper way for a developer to write a program requesting services from a web server.

As we mentioned earlier the client side web app access the server side using api the library of JavaScript we use one the client side will get the data send from the server. The data is json format and will interpret as intended

## Client-side technologies

**Bootstrap css-** is css library that contains a lot of classes the classes are grouped based on the functions they do. Using bootstrap will minimize to write many classes with the same function.

**React.Js** - is node.js library allows us to create large web applications that can change data, without reloading the page. The main purpose of React is to be fast, scalable, and simple.

**Socket-io-client-** is JavaScript library which has two parts client-side and server-side. When opening the web app it will connect automatically to the server socket, which will serve as real-time data communication.

## Server side technologies

**Expres.js** – it is node.js framework useful for making api's and server port's which the server application will start on

**Mongoose** – is node.js framework useful for connecting to mongo db inorder to modify the database.

**Socket-io** – is server side node.js framework for real-time communication

## Database

We use non-structured database called mongo dB. Because it is non-structured database is useful for flexibility. It also save many queries with simple Jason format query.

Generally, this technologies are called Mern stack technology which stands for Mongo dB, express, react and node.js. They are now leading technologies in software development based on GitHub website

## 1.6 Beneficiaries

❖ **benefits of effective organizational communication**  
[effective communication has a significantly positive effect](#) on an organization

- increased productivity
- higher quality of services and products
- greater levels of trust and commitment
- increased employee engagement and higher levels of creativity
- greater employee job satisfaction and morale of employees

- better workplace relationships
- greater acceptance of change
- decreased absenteeism
- reduced staff turnover
- less industrial unrest
- reduced costs

## 1.6 **schedule**

	Start date(dd-mm-yy)	End date (dd-mm-yy)	Duration days
Data collection	7/2/21	13/2/21	7
Project planning	14/2/21	23/2/21	10
Resource planning	14/2/21	18/2/21	5
Financial planning	18/2/21	20/2/21	3
Risk MM planning	21/2/21	23/2/21	2
Setting requirements	24/2/21	1/2/21	6
Subsystem Decomposition	1/3/21	7/3/21	7
Design phase model	8/3/21	17/3/21	10
Data base modelling	18/3/21	24/3/21	7
Client side modelling	25/3/21	1/4/21	7
Server side modeling	2/4/21	8/4/21	7
Scrum board making	9/4/21	18/4/21	10
Implementation	19/4/21	1/6/21	43
testing	2/6/21	11/6/21	10
deployment	12/6/21	15/6/21	4

