

IT 311

# BUSINESS PROCESS OUTSOURCING 102

Dr. Josephine R. Bayonito

Mr. Eddinel B. Valentino

*IT 311 Professors*



BULACAN STATE UNIVERSITY | COLLEGE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY

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# LESSON 01

INTRODUCTION TO QUALITY  
MANAGEMENT SYSTEM  
AND PROCESS  
IMPROVEMENT

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# LEARNING OBJECTIVES

*At the end of this lesson, you should be able to:*

**01** Define what processes and business processes are

**02** Explain what Quality Management System is

**03** Explain what process improvement is

**04** Identify common process improvement methodologies

**05** Explain the importance of using process improvement methodologies



DURATION: 3hrs

# PAIRED ACTIVITY (PART 1)

- ❑ Work with your classmate as your partner for this activity.
- ❑ Open IT 311 Activity No. 1 in the Assignment Tab of your MS Teams. Click and access the **Canva link** to create an **INFOGRAPHIC as specified**. **You may choose your preferred template**. Save your file with the proper filename in the folder link provided to you.
- ❑ Using the template, list down the detailed **steps/processes for the COVID-19 vaccination**. You and your partner may share your personal experience during vaccination.
- ❑ Arrange and number your steps/processes chronologically.
- ❑ Be ready to share your output to the rest of the class.
- ❑ You have 15 minutes to do your Activity #1.

# PROCESSES

- A collection of activities that takes one or more kinds of input and creates an output
- A sequence of interdependent and linked steps which, at every stage, consume one or more inputs (time, energy, money) to create outputs (data, material)



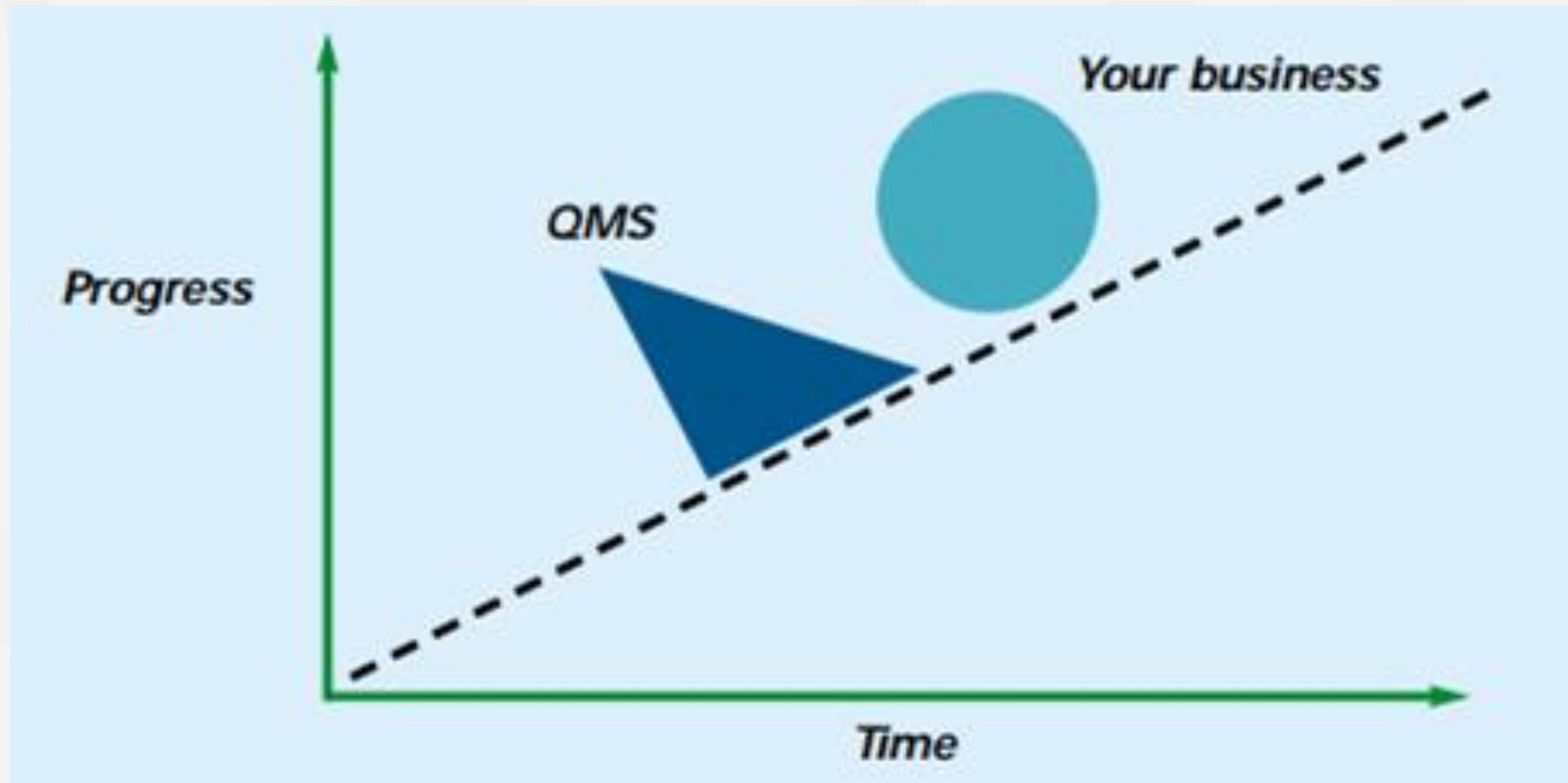
# BUSINESS PROCESSES

- A business process is a series of steps specifically designed to produce a product or service
- A business process begins with an organizational objective and ends with achievement of the business objective

# QUALITY MANAGEMENT SYSTEMS (QMS)

- QMS is an organization's collective documentation of processes, policies, plans, and practices
- Enables achievement of the goals and objectives set by providing consistency and satisfaction in terms of methods, materials, equipment, etc.
- Think of QMS as a “**wedge**” that both holds the gains achieved along the quality journey, and prevents good practices from slipping.

# QUALITY MANAGEMENT SYSTEMS (QMS)



## PAIRED ACTIVITY (PART 2)

- ❑ Work with your partner to review the steps/processes you have identified earlier. Open the **Canva template** you worked on earlier.
- ❑ Ask yourself, does the process guarantee results that will always meet expectation and satisfaction/convenience?
- ❑ Identify and highlight those steps/processes that may benefit from an improvement effort. Highlight the identified steps/processes. Duplicate the template and modify the second copy to integrate the process innovations can you make to improve them.
- ❑ Be prepared to share your output to the rest of the class
- ❑ You have another 15 minutes to accomplish your tasks.

# PROCESS IMPROVEMENT

- Is a series of actions taken to identify, analyze and improve existing processes within an organization if it is not performing up to expectations, error prone, has too much defects and variation – **Your goal is to make things better!**
- These actions often follow and use specific methodologies, standard and tools which aim to reduce and eventually eliminate defects and disconnects in your processes



# COMMON PROCESS IMPROVEMENT METHODOLOGY

1. **Total Quality Management (TQM)** involves all stakeholders as well as the customers in continuously improving product quality. A key TQM activity is process management where, using a set of tools, process performance is measured, analyzed and improved.
1. **Lean Six Sigma** aims to eliminate the seven kinds of wastes: Defects, Overproduction, Transportation, Waiting, Inventory, Motion and Over-Processing. It follows the DMAIC framework and analysis tools such as Run Charts, Pareto Charts, Scatter Plots, RCA to identify, analyse and improve process performance.

# COMMON PROCESS IMPROVEMENT METHODOLOGY

## 3. Quality Management System Standards and Certifications

- **International Organization for Standardization (ISO)** is a worldwide federation of national standards bodies. ISO 90001:2008 contains eight quality management principles, upon which to base an efficient, effective and adaptable QMS.
- **Customer Operations Performance Center Inc. (COPC)** is a private international customer service support company (US). Designs business processes for customer support centers and business process organizations.

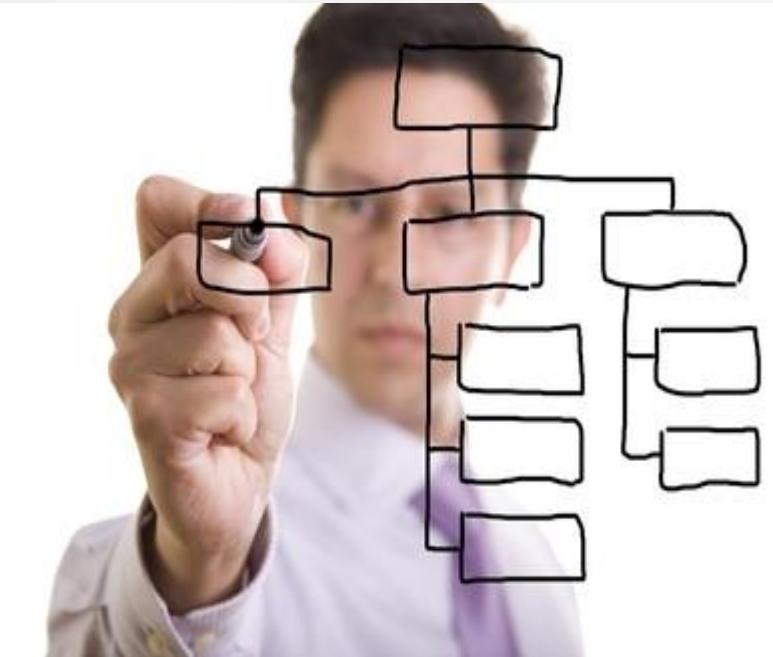
# COMMON PROCESS IMPROVEMENT METHODOLOGY

## 3. Quality Management System Standards and Certifications

- **Capability Maturity Model Integration (CMMI)** - Identifies your organization's process strengths and weaknesses. Make process changes to turn weaknesses into strengths. Applies to teams, work groups, projects, divisions, and entire organizations
- **eSourcing Capability Model for Service Providers (eSCM-SP)**  
It helps sourcing organizations manage and reduce their risks

# WHY USE A PROCESS IMPROVEMENT METHODOLOGY?

- Provides a framework which includes the steps to be completed, resources required, team composition, tollgates and other project management requirements
- Provides a checklist to prevent skipping critical steps which may impact results

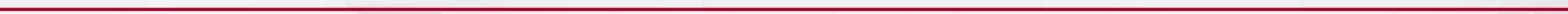


**Allows you to improve how you improve!**

# Session Summary

In this session, we discussed the following:

- Processes
- Business Processes
- Process Improvement
- Process Improvement Methodologies
- Importance of using Process Improvement Methodologies



# GLOSSARY



- Define, Measure, Analyze, Improve, Control (DMAIC)** - DMAIC refers to a data-driven quality strategy for improving processes, and is an integral part of the company's Six Sigma Quality Initiative. DMAIC is an acronym for five interconnected phases: Define, Measure, Analyze, Improve, and Control.
- Eradicate**  
To remove (something) completely: to eliminate or destroy (something harmful)
- Fool Proof**  
Designed to be impervious to human incompetence, error, or misuse
- Functional Silos**  
A term used within business process re-engineering (BPR) to denote areas within an organization where managers occupy a privileged position in terms of resources and influence, and where they use this for their own, self-interested, functionally-oriented motives rather than for the wider benefit of the business.
- ITSqc** - Information Technology Services Qualification Center
- Pareto Chart** - A chart used to graphically summarize and display the relative importance of the differences between groups of data.
- Root cause Analysis** - A collective term that describes a wide range of approaches, tools, and techniques used to uncover causes of problems.

# REFERENCES

- ✓ <http://asq.org/learn-about-quality/root-cause-analysis/overview/overview.html>
- ✓ <http://www.answers.com/topic/functional-silo#ixzz2rcvp7SbG>
- ✓ <http://www.businessdictionary.com>
- ✓ <http://www.copc.com>
- ✓ <http://www.isixsigma.com/methodology/dmaic-methodology/what-dmaic/>
- ✓ <http://www.isixsigma.com/tools-templates/pareto/pareto-chart-bar-chart-histogram-and-pareto-principle-8020-rule/>
- ✓ <http://www.gov.uk>
- ✓ <http://www.ISO.org>
- ✓ <http://www.itsqc.org>
- ✓ <http://www.sqa.net/cmmi-scampi>
- ✓ <http://www.sei.cmu.edu>
- ✓ <http://www.thefreedictionary.com/foolproof>

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LESSON  
02

# BUSINESS PROCESS MAPPING AND NOTATION

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# LEARNING OBJECTIVES

*At the end of this lesson, you should be able to:*

01

Describe key elements of BPMN

02

Create process maps for selected processes



DURATION: 2 Hours

# DEFINITION

## Lifecycle of Outsourced Operations

- Transitions: process documentation and work shadowing, internal and regulatory requirements
- Production: contract, performance reporting, issue and change management, risk management
- Continuous Improvement: process improvement, root cause analysis

# BUSINESS PROCESS MAPPING AND NOTATION

**“standard notation readily understandable by all business stakeholders”**

- Crafted by business analysts
- Reviewed by business managers and performers who will manage and execute the processes
- Implemented by technical developers

# BASIC SHAPES



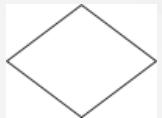
Event

Start, intermediate, end events



Activity

Task, subprocess



Gateway

Forking (decision) or merging of paths

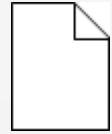


Flow

Sequence flow

Submissions in this course will be limited to the shapes in these 2 pages

# BASIC SHAPES



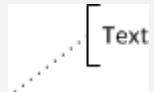
Data

Input data, output data



Group of tasks

Used to visually designate a group of tasks



Annotation

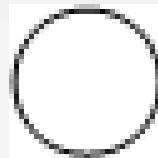
Comments



Pool or Lane

Scope of the role of a performer; hand-offs to other performers/units are shown as arrows going out of the lanes

# EVENT



Event

**Start, intermediate, end events**

- “Something that happens” [Wikipedia]

Examples:

- Month-end date is an event that can start the month-end reporting process
- Email with an invoice attachment requesting payment can start the accounts payable process
- Student grades arriving at registrar is an end event to the semester teaching process

# ACTIVITY



## Activity

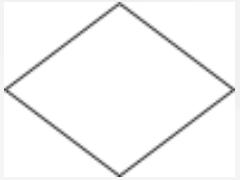
## Task, sub process

- “Something that is done” [Wikipedia]
- Leads with an action verb, describes the work done in the task as a clear/action instruction

Examples:

- Extract account balances in SAP is an activity that will be performed at the start of month-end
- Check for duplicate invoice is a task done at the first stage of the accounts payable process
- Explain syllabus is a task performed by the teacher at the start of the semester

# GATEWAY



**Gateway**

**Forking (decision) or merging of paths**

- May be exclusive forking ("or") depending on the answer to the question indicated by the label. An "X" can be placed inside the diamond to denote a forking of paths
- May be parallel flow ("and"), marked by a "+" sign inside the diamond, denoting concurrent activities

Examples:

- Exclusive: Is invoice a duplicate?: if yes, reject; if no, create accounts-payable entry
- Parallel: After billing template is received,
  - Accounts receivable entry is created in service center, AND
  - Accounts payable entry is created in the Onshore unit

# FLOW



**Flow**

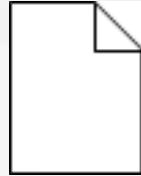
**Sequence Flow**

- Connects the tasks, shows the flow direction

Examples:

- Check for duplicate invoice is ***followed*** by generate accounts payable entry

# DATA



**Data**

**Input data, output data**

- Represents an input; can be via a submitted template or data in a storage repository
- Can also represent an output; can be a report to be sent to a recipient, can be a filled-up template to be used by the next process

Examples:

- Flash or interim P&L (profit and loss) report
- Email notice to a recipient
- Generated physical invoice

# GROUP OF TASKS



## Group of Tasks

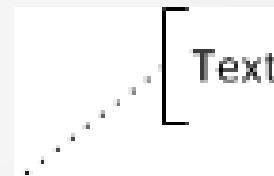
**Used to visually designate a group of tasks**

- Just a visual indicator that the included tasks are within a logical group

### Examples:

- Pay supplier group can include
  - Generate balance sheet entries (credit cash, debit accounts payable)
  - Issue check-payment request
  - Pay supplier
  - Get official receipt

# ANNOTATION



## Annotation

## Comments

- Repository for explanatory comments for any of the shapes (process, flow, tasks)

### Examples:

- “Check payment requests are processed only every Thursday”
- “Same as Onshore process”

# SWIM LANE



**Pool or Lane**

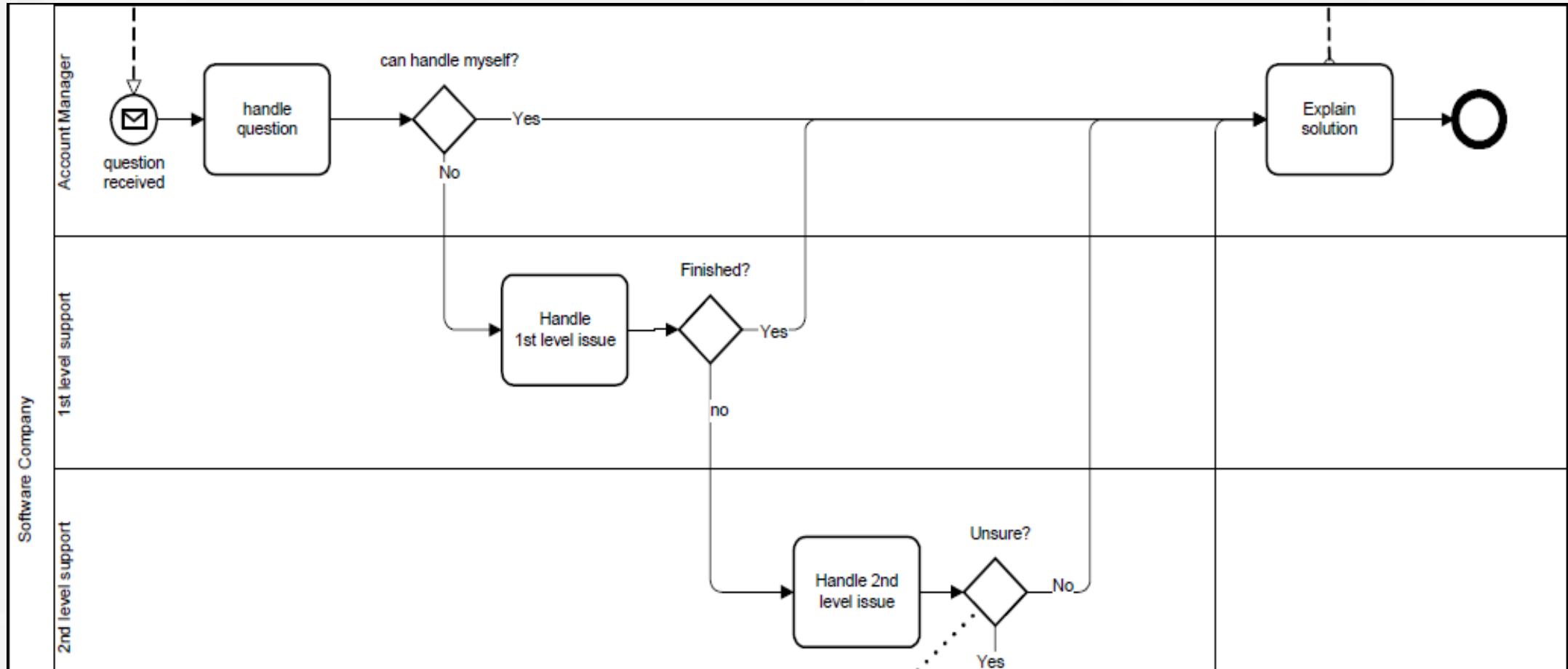
**Scope of the role of a performer; hand-offs to other performers/units are shown as arrows going out of the lanes**

- Activities performed by the same individual (or role or team) will be noted inside the lane

Examples:

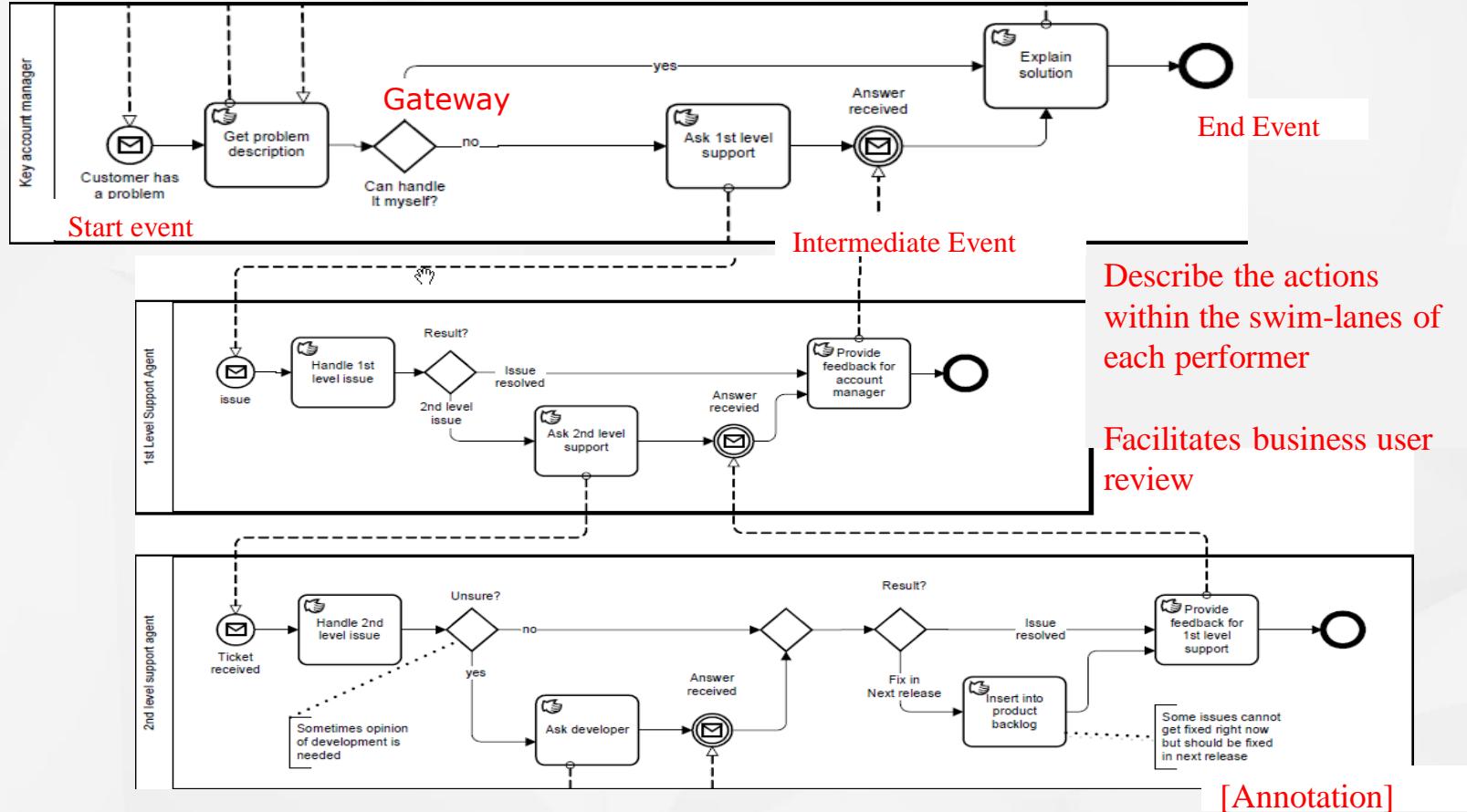
- Accountant checks for duplicate invoice and requests check payment. These two activities are within the Accountant's lane
- Approval by company head is done by a different person, hence in a different swim lane (the company head's lane)

# EXAMPLE: CUSTOMER SUPPORT



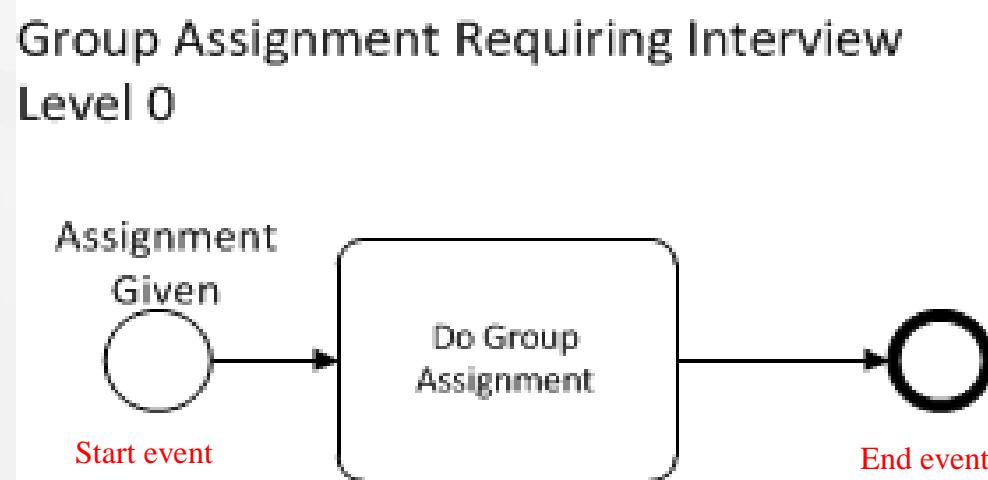
Source: BPMN 2.0 by Example

# CUSTOMER SUPPORT EXPANDED



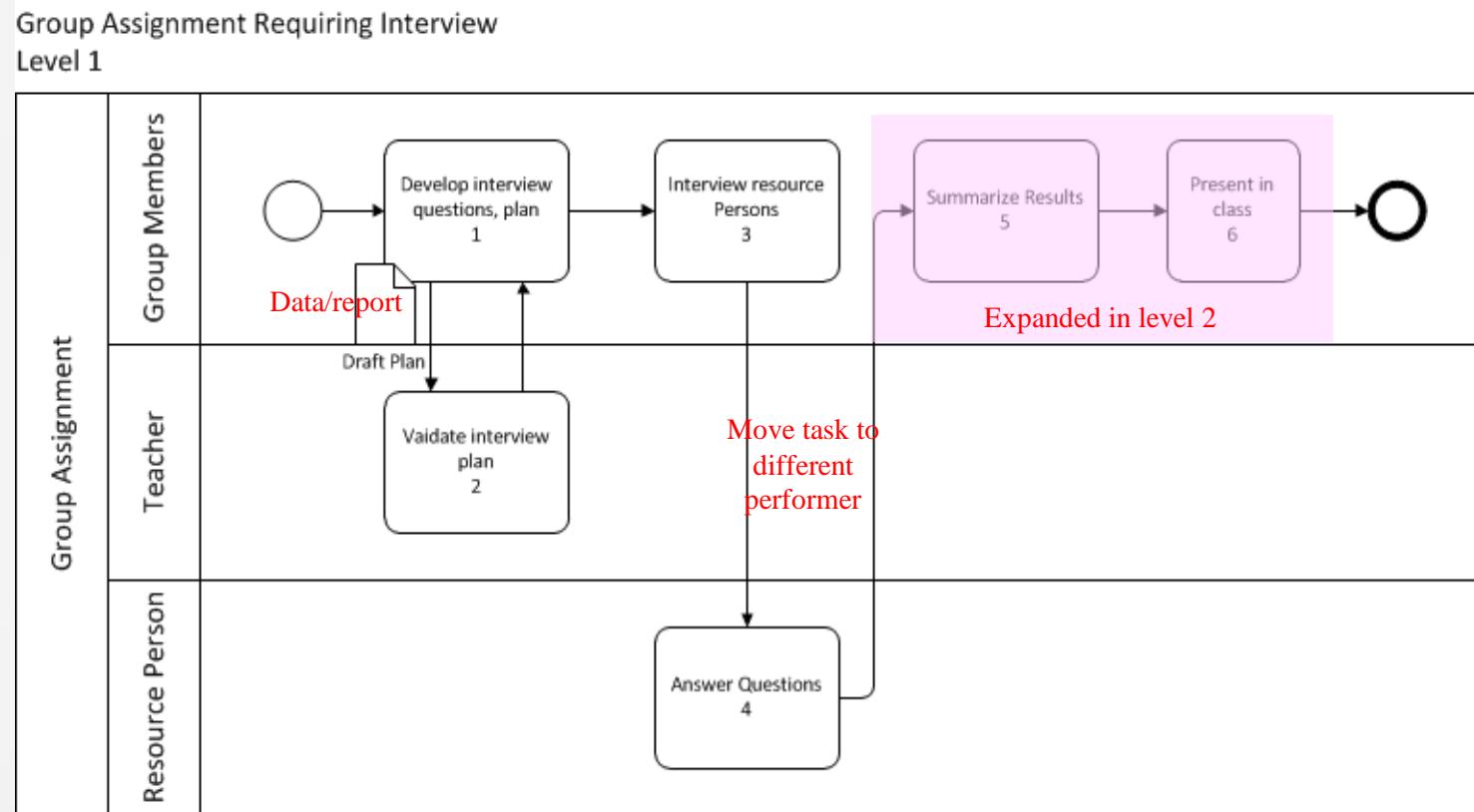
# GROUP ASSIGNMENT: LEVEL 0

Defines the scope. Show the boundary of the process being presented.



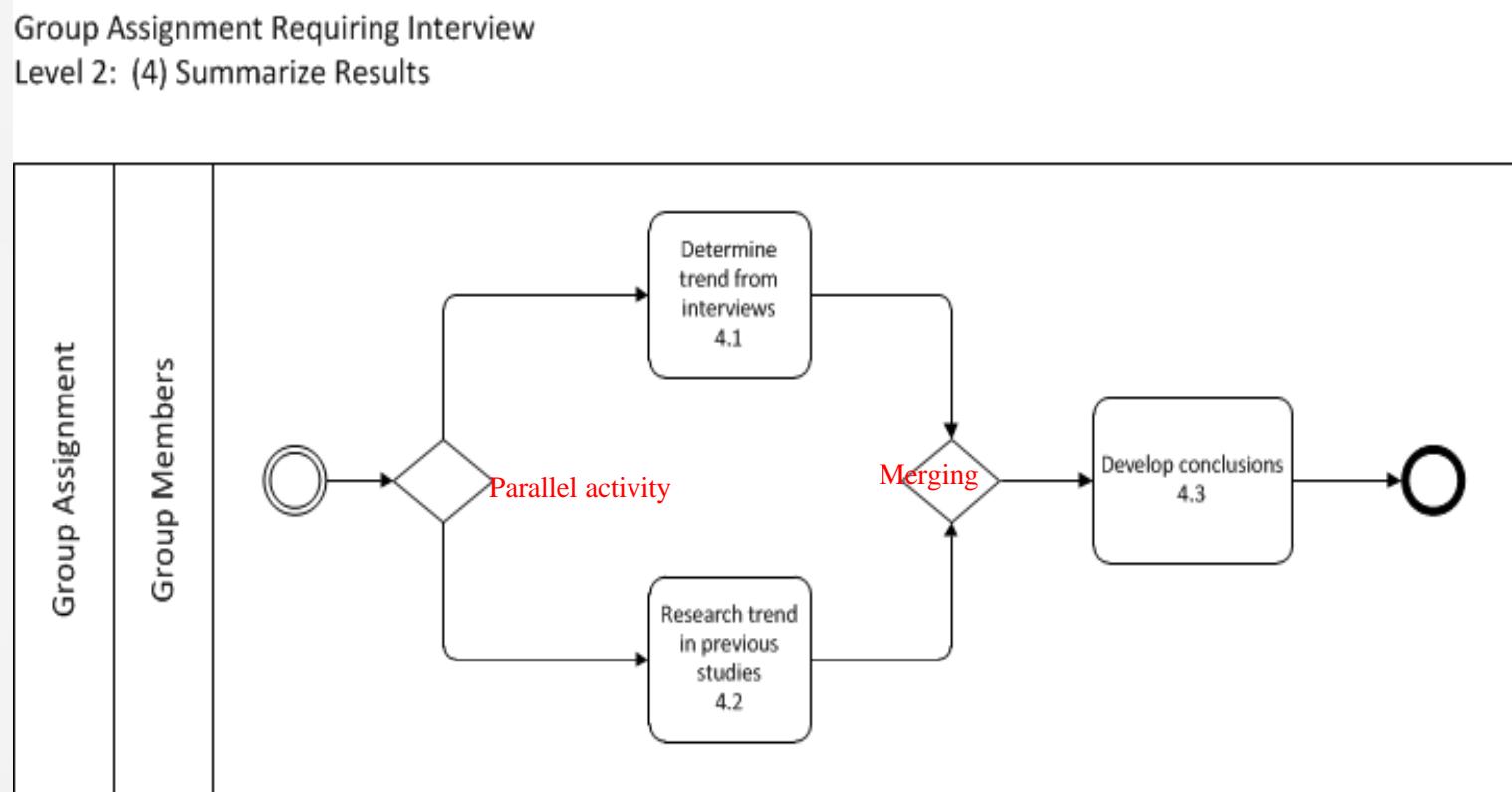
# GROUP ASSIGNMENT: LEVEL 1

Shows the big tasks within the process



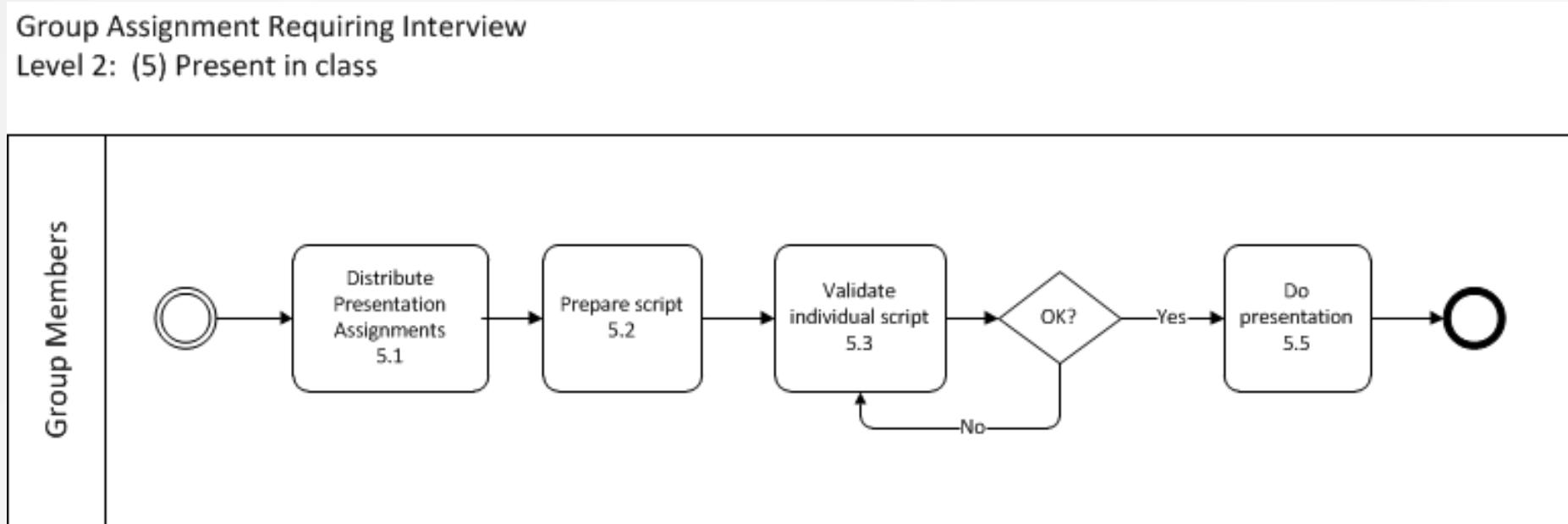
# GROUP ASSIGNMENT: LEVEL 2.4

Shows activities within selected “complex” tasks



# GROUP ASSIGNMENT: LEVEL 2.5

Shows activities within selected “complex” tasks



# ACTIVITY #2: GROUP WORK/COLLABORATION

## Instructions:

- ❑ Consider the same groupings for IT 306 BPO 101 last semester, do process maps levels 0, 1, and 2. Identify a specific business process to illustrate using process mapping.
- ❑ Objective of the activity is to visually present reasonably complex process using basic BPMN.
  - ✓ All basic shapes must be used
  - ✓ Number properly to facilitate navigation
- ❑ The professor will be giving you the instructions and will tell you what collaborative tool are you going to use.

# GROUP WORK

- ❑ Teams will be presenting their outputs.
- ❑ They will then post the maps and explain verbally.
- ❑ Rest of the class should critique, ask questions, give suggestions for changes.
- ❑ The discussion will be graded.

# GROUP WORK

## Present Level 0 Process Map

1. Level 0. Select a reasonably complex process that has tasks done by 3 to 4 different performer roles (not individuals)
  - A process that is so complex will be challenging to sufficiently and completely presented in 3 and only 3 levels
  - A process that is so simple is presented in less than 3 levels. This will not get a good grade
  - What are your start and end events

# GROUP WORK

## Present Level 1 Process Map

2. Level 1. Show the flows across the 3 to 4 different performer roles

## Present Level 2 Process Map

### 3. Level 2. Show flows and use all of the basic shapes

- Show levels 0 and level 1 maps again.
- Update levels 0 and 1 maps if necessary
- Present all the level 2 maps required
- Number properly to facilitate navigation

## Key Elements of BPMN

- Event, Activity, Gateway, Flow
- Data, Groups of tasks, Annotation, Pool or Swim Lane

# REFERENCES

- ✓ <http://www.bpmn.org/>
- ✓ <http://www.investopedia.com/terms/d/deliverables.asp>
- ✓ <http://www.omg.org/bpmn/Documents/FAQ.htm>
- ✓ <http://www.omg.org/cgi-bin/doc?dtc/10-06-02>

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# LESSON 03

## INTRODUCTION TO QUALITY MANAGEMENT SYSTEMS IN THE IT -BPM INDUSTRY

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# LEARNING OBJECTIVES

*At the end of this lesson, you should be able to:*

01

Describe globally recognized Quality Management

02

Describe the Philippine Quality Award



DURATION: 2 Hours

# ADVANCED PREPARATION FOR THIS SESSION (HOMEWORK)

- Discuss at least 3 differences among following Quality Management Systems / Standards / Recognitions:
- ISO 9001: 2008 Standards and Certification process
- COPC Standards and Certification process
- CMMI Capability Model and Certification Process
- eSCM-SP Capability Model and Certification Process
- Philippine Quality Award

## Introduction to ISO (International Organization for Standardization)

- Worldwide federation of national standards bodies
- International Standards are formulated by ISO technical committees
  - Draft International Standards% adopted by the technical committees are circulated to the member national standards bodies for voting
- Publication as an International Standard requires approval by at least 75 % of the member bodies voting.

# ISO 9001:2008 DEFINITION

- Defines the elements of a quality management system.
- Can be used by any organization, large or small, regardless of its field of activity
- Implemented by over a million companies/orgs in over 170 countries
- 8 Principles
  - Customer Focus
  - Leadership
  - Involvement of people
  - Process approach
  - System approach to management
  - Continual improvement
  - Factual approach to decision making
  - Mutually beneficial supplier relationships

# ISO 9001:2008 AUDIT

- Internal or external checking to verify if quality management system is implemented properly
- Internal audit done by quality team independent of the operations organization: are the principles of quality management system followed
  - An organization may decide to invite an independent certification body to verify that it is in conformity to the standard--but there is no requirement for this.

# ISO 9001:2008 AUDIT

- A company may decide to seek certification for various reasons:
  - May be required by contract with buyers or regulators: utility companies, hospitals
  - May give a commercial advantage—a certified firm can command a premium
  - Within the context of a risk management programme, and
  - Provides a defined/unambiguous set of requirements
  - Motivates staff towards an end point in a “never-ending” goal of quality management
- ISO is not involved in certification to any of the standards it develops
  - Certification is performed by external certification bodies, generally private
  - Therefore a company or organization is not “certified by ISO”

# COPC® FAMILY OF STANDARDS

- Customer Operations Performance Center Inc., a private international customer service support company (US)
- Designs business processes for customer support centers and business process organizations
- Provides training, consulting, certifications
- COPC® Family of Standards is the most rigorous and prestigious performance management system in the customer contact industry:
  - COPC Customer Service Providers Standard, established 1996
  - COPC Vendor Management Organization Standard, established 2002
  - COPC Outsource Service Provider Standard, established 2011
  - COPC Healthcare Service Provider Standard, established 2011

# COPC® FAMILY OF STANDARDS

## *COPC® Standards Committee*

- Original CSP Standard developed in 1996, based on Malcolm Baldridge National Quality Award criteria and framework
- Standards Committee meets twice a year, and the entire COPC Family of Standards is reviewed annually

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# COPC® CERTIFICATION

- Full certification: comprehensive system for (a) managing leadership and planning, (b) processes, (c) people, and (d) performance
- Enables measurement and improvement efforts on all of its activities around the customer experience
- Key areas
  - Balancing service, quality and cost
  - Setting high-performance benchmark targets
  - Using objective data to monitor results
  - Setting and striving for realistic goals
  - Consistently meeting performance requirements and client expectations

# COPC® CERTIFICATION

- Allows organizations to quickly implement a specific process from one of the COPC Family of Standards—to address a particular performance issue
- Four critical work processes that can be certified by COPC are:
  - ✓ Quality
  - ✓ Customer satisfaction
  - ✓ Workforce management
  - ✓ Recruiting, hiring and training

# CMMI (CAPABILITY MATURITY MODEL INTEGRATION)

- Identify your organization's process strengths and weaknesses
- Make process changes to turn weaknesses into strengths.
- Applies to teams, work groups, projects, divisions, and entire organizations
- CMMI Models
  - CMMI-ACQ (Acquisition)
  - CMMI-SVC (Service)
  - CMMI-DEV (Development)

# CMMI MATURITY LEVELS

- CMMI Maturity Levels
  - ✓ Level 1: Initial
  - ✓ Level 2: Managed
  - ✓ Level 3: Defined
  - ✓ Level 4: Quantitatively Managed
  - ✓ Level 5: Optimizing
- Over 20 years of ongoing work by the CMMI Product Team
  - ✓ Members from industry, government, and the Software Engineering Institute (SEI)

# CMMI: SCAMPI

- Standard CMMI Appraisal Method for Process Improvement (SCAMPI)
- Appraisal method for organization process evaluation and grant of ratings
- Benefits of SCAMPI:
  - ✓ Identifies strengths and weaknesses of processes
  - ✓ Assesses how closely the processes follow CMMI practices.
  - ✓ Mitigates risks for product/acquisition, development, and monitoring
  - ✓ Public presentation of results of appraisal—at Published Appraisal Results (PARS) site:
  - ✓ Assures customers of continued soundness of one's processes
  - ✓ Facilitates assessment of prospective supplier and partners
  - ✓ Facilitates assessment of competitors for more effective competition

# ESOURCING CAPABILITY MODEL FOR SERVICE PROVIDERS (eSCM-SP)

- Helps sourcing organizations manage and reduce their risks
- Helps improve capabilities across the entire sourcing life-cycle
- Addresses IT-enabled sourcing (eSourcing) for both outsourced and in-sourced (shared services) arrangements
- Service providers use the eSCM-SP and Capability Determination methods to evaluate their eSourcing capabilities
- 84 Practice dimensions: Sourcing Life-cycle, Capability Area, and Capability Level.

# ESCM-SP CAPABILITY LEVELS

- **Level 1 organization:** base, provides a service
- **Level 2 organization:** has procedures to enable consistent meeting of client requirements
- **Level 3 organization:** manages performance consistently across engagements
- **Level 4 organization:** adds value to its services through innovation
- **Level 5 organization:** sustains excellence over a period of at least two years

# PQA (PHILIPPINE QUALITY AWARD)

- Created by Executive Order 448 on October 3, 1997 (Pres. Fidel Ramos)
- Institutionalized through Republic Act 9013 in February 28, 2001 (Philippine Quality Award Act)
- Sets a standard of excellence to help Filipino organizations achieve world-class performance and serves as a "template" for competitiveness based on the principles of Total Quality Management (TQM)
- A national quality award comparable with the Malcolm Baldrige National Quality Award (MBNQA) of the US and those in Europe and Asia

# PQA OBJECTIVES

- Establish standards. Promote global competitiveness by establishing organizational performance standards comparable with globally recognized standards
- Formulate assessment process. Establish a national system for assessing quality and productivity performance
  - ✓ Provides local organizations (regardless of size, sector and maturity) with criteria and guidelines for self-assessment to guide their quality and productivity improvement efforts
- Recognize champions. Recognize organizations in both the private and public sector which excel in quality management and overall organizational performance, thus providing Philippine industries with benchmarks and models to emulate

# PQA LEVELS OF RECOGNITION

- Philippine Quality Award for Performance Excellence
- Recognition for Mastery in Quality Management
- Recognition for Proficiency in Quality Management
- Recognition for Commitment to Quality Management

# PQA CRITERIA

1. Leadership
2. Strategic Planning
3. Customer and Market Focus
4. Information and Analysis
5. Human Resource Focus
6. Process Management
7. Business/Organizational Results

# SUMMARY

- Quality Management Systems / Standards:
  - ✓ ISO 9001: 2008 Standards. Defined by ISO technical committees and approved by national bodies
    - 8 Principles: Customer Focus, Leadership, Involvement of people, Process approach, System approach to management, Continual improvement, Factual approach to decision making, Mutually beneficial supplier relationships
  - ✓ COPC Standards. Formulated by private US company
    - Customer Service Providers Standard
    - Vendor Management Organization Standard
    - Outsource Service Provider Standard
    - Healthcare Service Provider Standard

# SUMMARY

- Quality Management Systems / Standards:
  - CMMI Capability Model
    - Level 1: Initial
    - Level 2: Managed
    - Level 3: Defined
    - Level 4: Quantitatively Managed
    - Level 5: Optimizing
  - e-SCM Capability Model
    - Level 1: base, provides a service
    - Level 2: has procedures to enable consistent meeting of client requirements
    - Level 3: manages performance consistently across engagements
    - Level 4: adds value to its services through innovation
    - Level 5: sustains excellence over a period of at least two years

# SUMMARY

- Philippine Quality Award
  - Philippine Quality Award for Performance Excellence
  - Recognition for Mastery in Quality Management
  - Recognition for Proficiency in Quality Management
  - Recognition for Commitment to Quality Management

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# LESSON 04

## BASIC QUALITY TOOLS: ROOT CAUSE ANALYSIS

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# LEARNING OBJECTIVES

*At the end of this lesson, you should be able to:*

01

Explain the steps in root cause analysis

02

Conduct brainstorming activities

03

Conduct a Root Cause Analysis using a Fishbone diagram

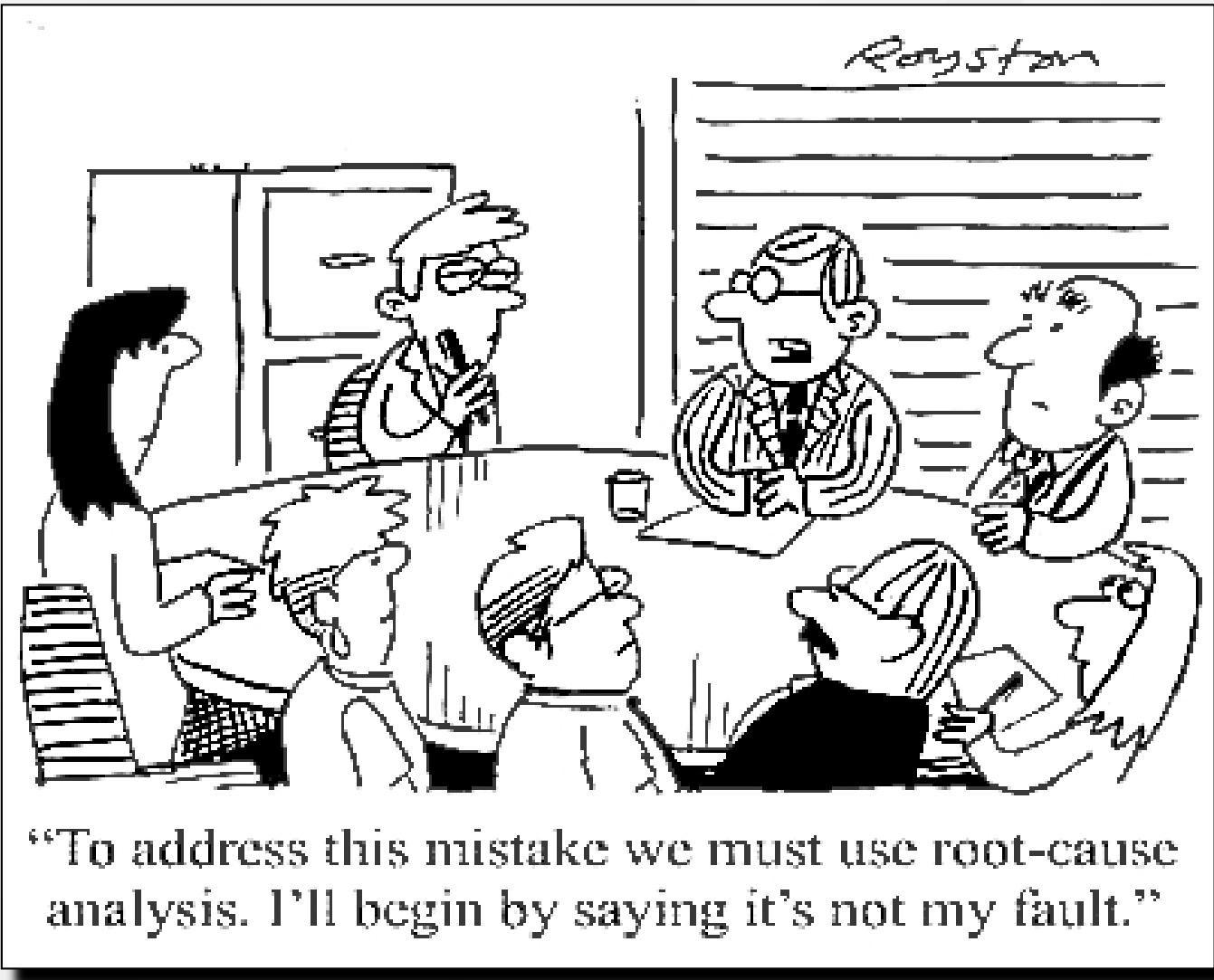
04

Apply 5-why's to determine root cause



DURATION: 3hrs

# ROOT CAUSE ANALYSIS



# OVERVIEW

- RCA determines the most important root cause (known or hidden), where data may not always be available.
- RCA analyzes the importance and relationship of the root causes to the problem.
- RCA corrects or eliminates the cause and prevent the problem from recurring.



# APPLICATION

- Resolving customer complaints
- Correcting result findings from internal audit
- Recurring problems

# STEPS

RCA involves 4 critical steps:

1. Define the problem and identify team
2. Determine main causes
3. Select best solutions
4. Create action plans

# DEFINE PROBLEM AND IDENTIFY TEAM

## Define problem

- When, What, How Much, Who, Where
- Without complete information and understanding of the problem, the causal causes and then the root causes associated with the problem cannot be identified

## Identify team

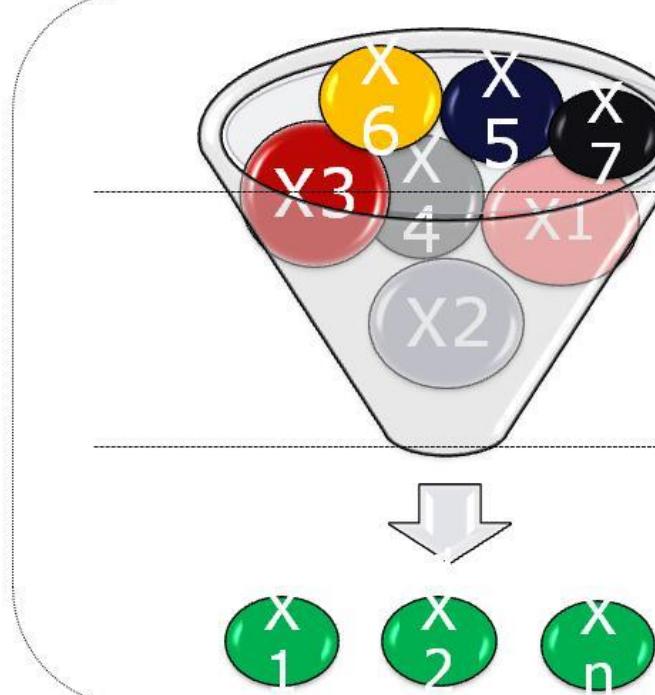
- Project lead
- Core team members
- Additional resources

# DETERMINE MAIN CAUSES

- The second step in the analysis is to determine main causes by using data gathering techniques.
  - Brainstorming
  - Fishbone Diagram
  - 5 Why's

# DETERMINE MAIN CAUSES

Purpose of using the data gathering techniques:



Brainstorming

# BRAINSTORMING

- Process in which a group quickly generates as many ideas as it can on a particular problem and/or subject
  - No judgments, no filtering
- Utilize collective brainpower (and diversity) to generate many ideas in a short period of time
  - Stimulates creativity and promotes inclusion

# BRAINSTORMING – HOW?

- Identify a topic, problem or issue, have clear understanding of task and objective. Write the topic on a flip chart
- Each person presents one idea going in sequence (Round Robin)
  - All ideas are recorded on a flipchart. Encourage free-wheeling
  - No criticism is allowed, either positive or negative. There is no evaluation or discussion during the session. Keep idea generation separate from the evaluation or analysis of ideas
  - If a person doesn't have an idea, pass and move on to the next person. Equal opportunity to participate.
- Focus is on quantity of ideas, not the quality
- When all ideas are exhausted, take a break. When you come back, people may have more ideas to add to the list

# FISHBONE DIAGRAM

- Created by Kaoru Ishikawa to organize possible causes of a problem
- Helps arrive at common understanding of problem
- Used when there is need to explore many possible causes of a problem
- Helps systematically analyze cause and effect

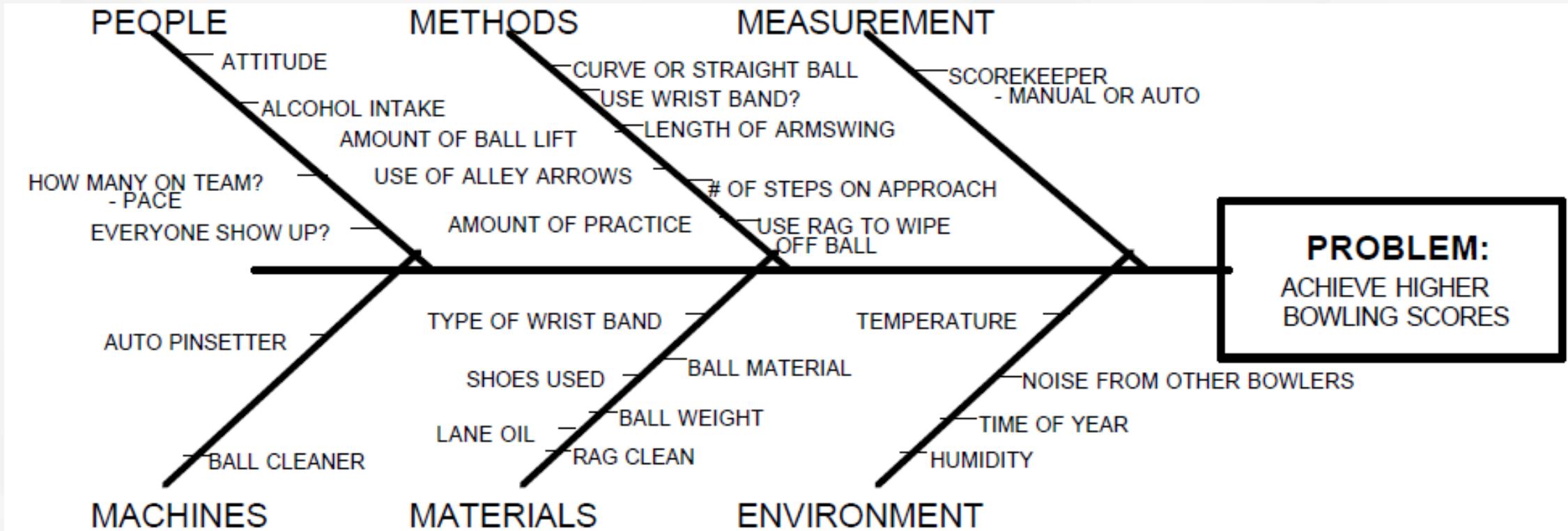
# FISHBONE DIAGRAM – HOW?

- Name the effect (problem to be analyzed). Put in a box at the end of the long bone
- Decide major categories of causes: (people, machines, measurement, materials, methods, environment, policies, etc.)
- Brainstorm all possible causes, place them in right category
  - Make diagram available for others to add causes (experts, affected people, process owners)
  - Eliminate trivial/frivolous ideas/causes
- Rank causes, circle the likely ones for further study, investigate circled causes

# FISHBONE DIAGRAM: CATEGORIES

- **Measurement** – seeking root causes from by measurement devices
- **People** – seeking root causes from people involved directly or indirectly
- **Machine** – seeking root causes from machine(s) involved.
- **Method** – seeking root causes from the procedure used or done
- **Material** – seeking root causes from direct or indirect materials used
- **Environment** – seeking root causes from surroundings

# FISHBONE DIAGRAM



# 5 WHY'S

- Start with the problem, analyze what caused the problem, ask WHY until root cause is found
- Repeat this process five times (notional 5) until you get to the root cause
- It can take greater or fewer questions and sometimes it may branch off in two or more directions. Keep drilling down until the real root cause(s) is found.

# 5 WHY'S – THE WASHING MACHINE

## Problem Description

“Machine is 2 weeks old (Serial #2345017). When doing the fourth load of clothes, I heard a loud noise and the machine stopped! It wouldn't re-start.”

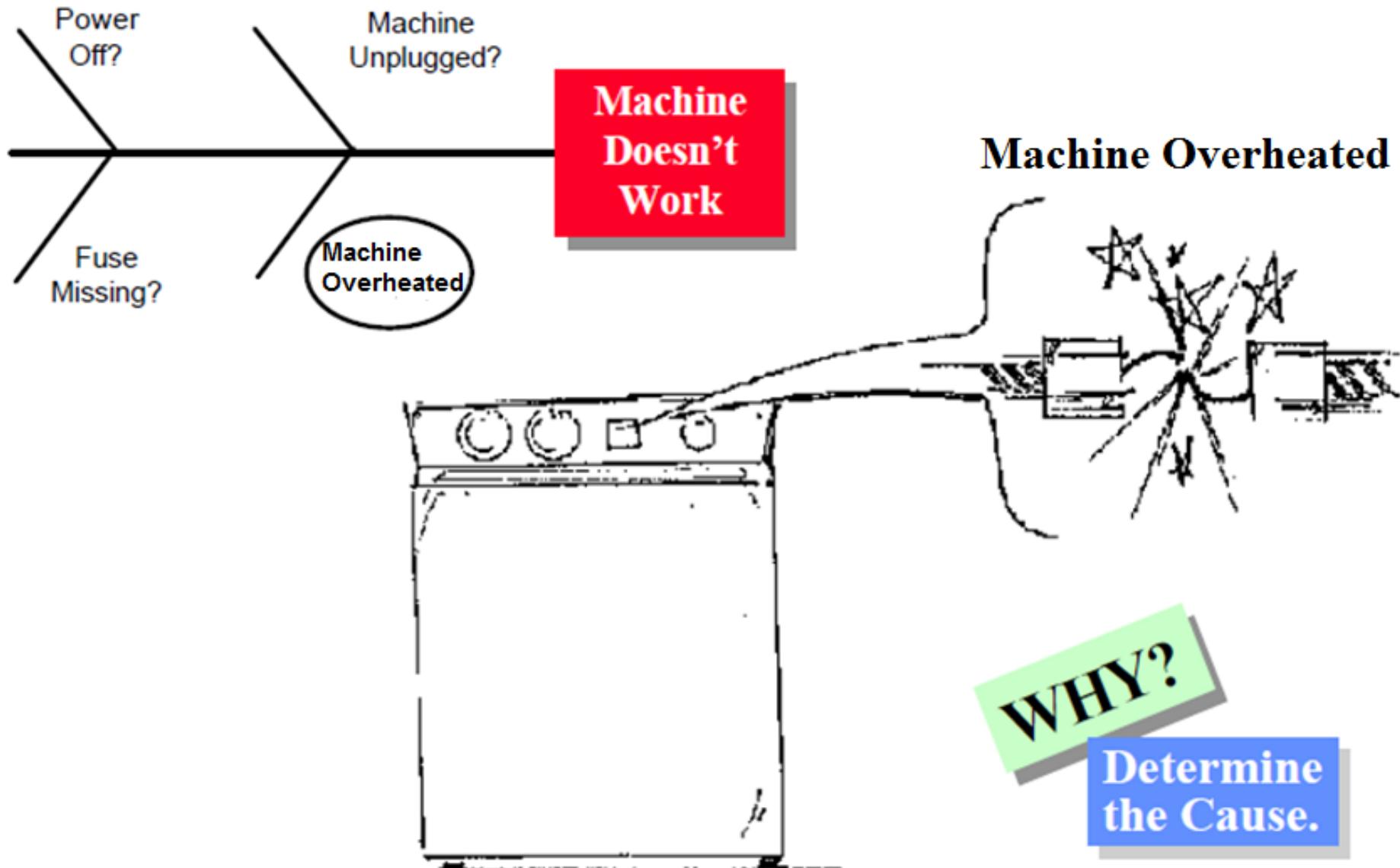


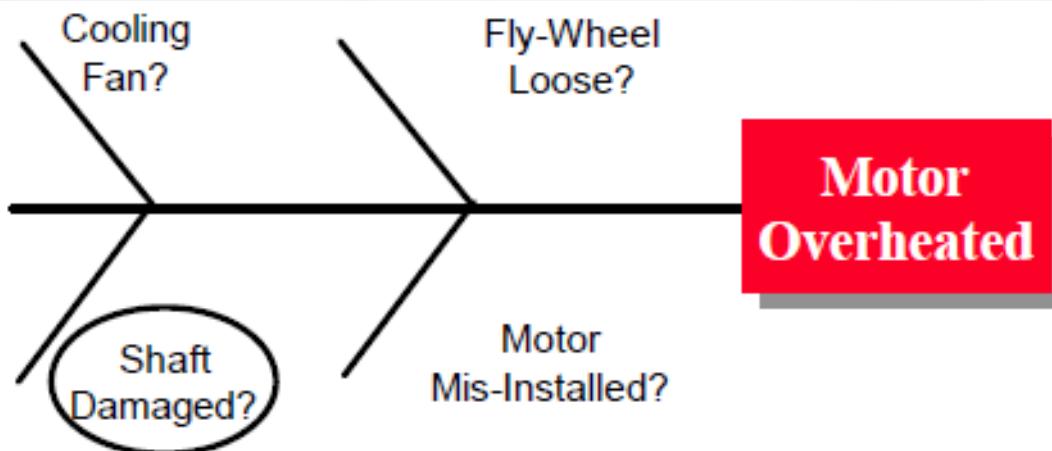
# INVESTIGATE WHY...

## Problem Verification

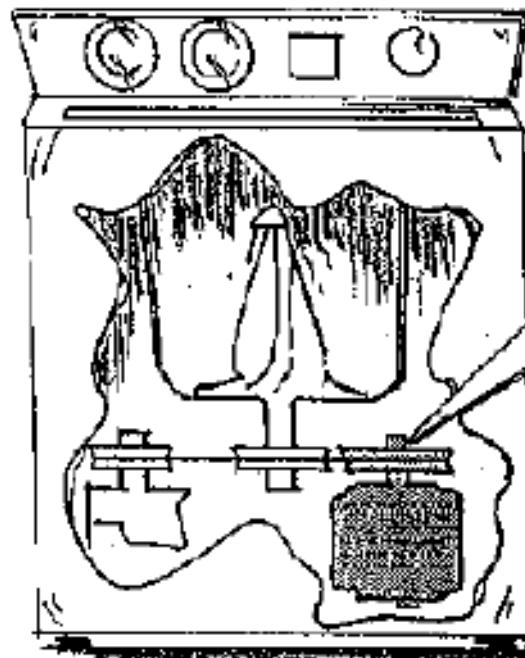
Service technician checks washing machine operation to test procedure (#8496). The machine does not operate.





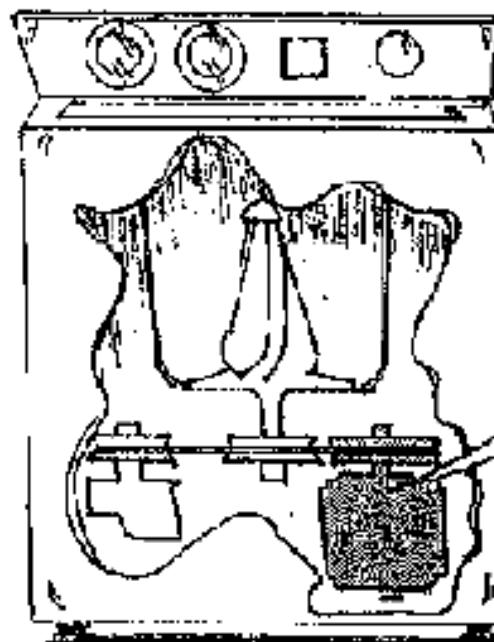
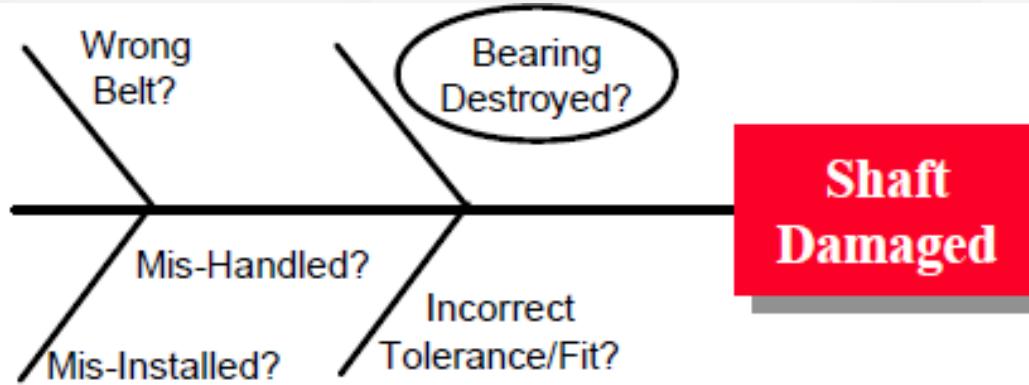


## Shaft Damaged

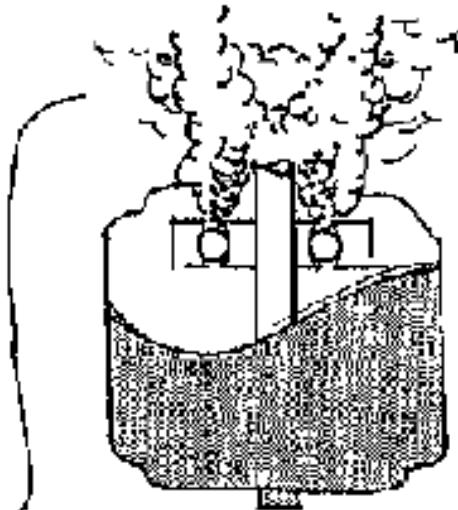


WHY?

Determine  
the Cause.

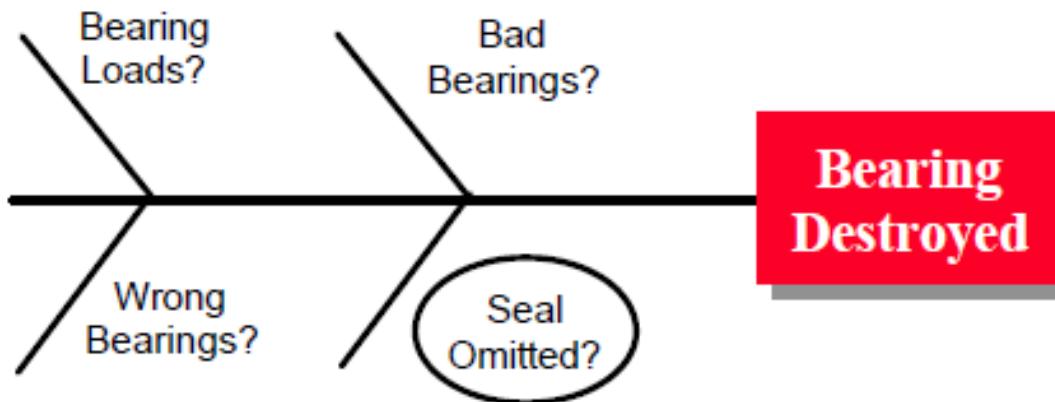


## Bearing Destroyed

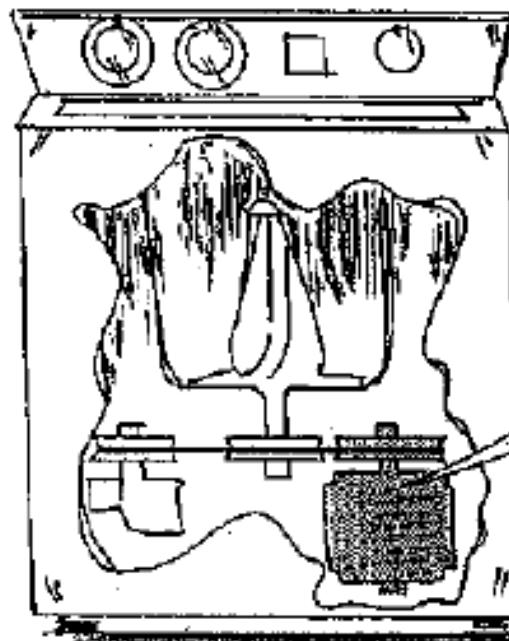


**WHY?**

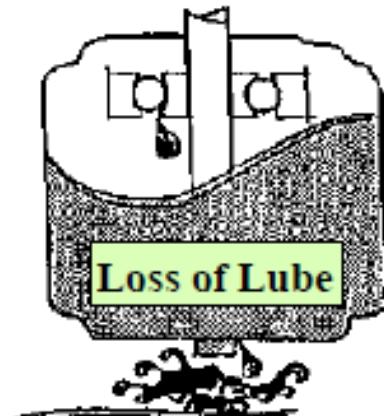
**Determine  
the Cause.**



**Corrective Action for  
Specific Deficiency:  
Replace the Motor**



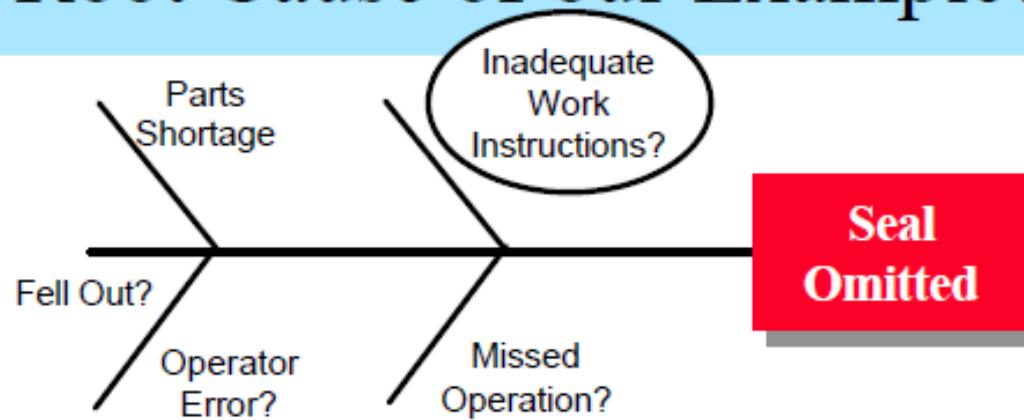
## Cause of Failure: Seal Omitted



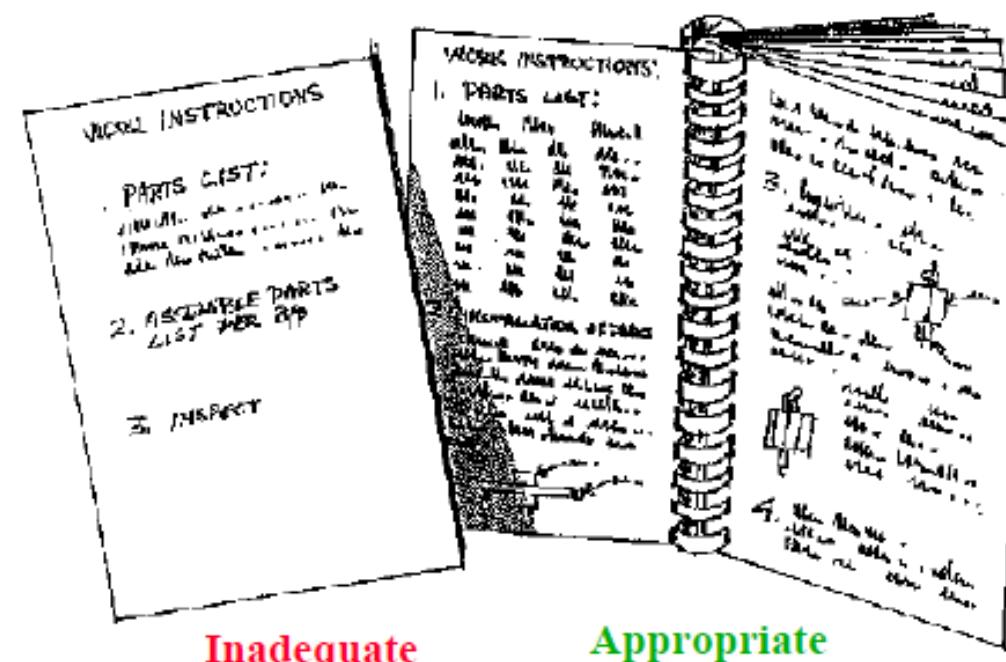
**WHY?**

**Was Seal  
Omitted??**

# Root Cause of our Example?

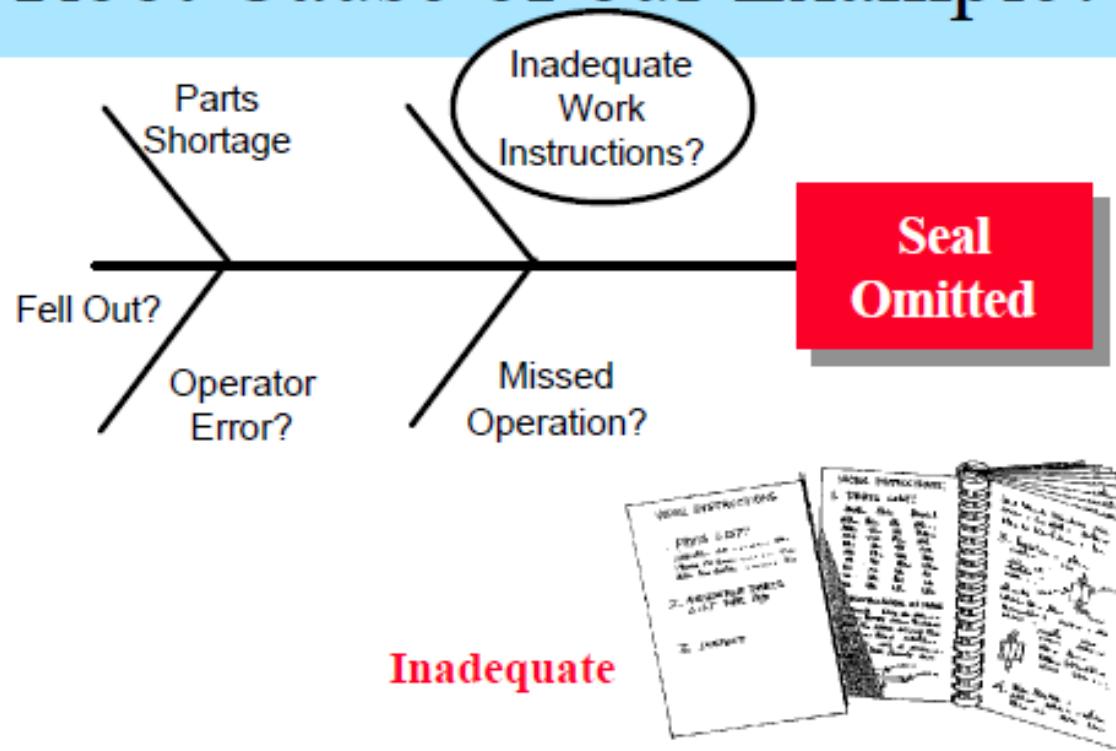


**Root Cause -  
Inadequate  
Work Instructions**



But.....  
is it?

# Root Cause of our Example?



**Root Cause -  
Inadequate  
Work Instructions**

Appropriate

But.....  
is it?

Can the design be changed to eliminate the need for a seal?

Can the design be changed to make it impossible to omit the seal?

Can a fixture be made to make it impossible to omit the seal?

# EXERCISE ON THE 5 WHY – GROUP WORK: ROOT CAUSE ANALYSIS

- We will consider the same IT 311 groups/teams.
- Identify a **problem** and use the **5 Whys** to determine **Root Cause of the Problem**
- 30 minutes group work and 30 minutes group presentation
- Specific instructions will be given by your professor.

Determine Main Cause(s)	Select Best Solution(s)	Detailed Action/s
		1
		2
		3
		4
		5
		6
		7
		8
		9
		10

# SUMMARY

- Steps in root cause analysis:
  - Define the problem and identify team
  - Determine main causes
  - Select best solutions
  - Create action plans
- Brainstorming steps
  - Identify problem or issue
  - Each person presents one idea going in sequence, all ideas are recorded on a flipchart, no criticism is allowed, either positive or negative, focus on quantity of ideas

# SUMMARY

- Root Cause Analysis using a Fishbone diagram. Problems from:
  - Measurement devices/methods
  - People
  - Machine
  - Method/procedures used
  - Materials used
  - Environment
- 5-why's to determine root cause. Start with the problem, keep asking why

IT 311

# BUSINESS PROCESS OUTSOURCING 102

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Dr. Josephine R. Bayonito

Mr. Eddinel B. Valentino

*IT 311 Professors*



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# LESSON 05

## PROJECT MANAGEMENT - INTRODUCTION

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# LEARNING OBJECTIVES

*At the end of this lesson, you should be able to:*

01

Define a project and project management

02

Describe the goals of project management

03

Explain the project phases



DURATION: 3 Hours

# WHAT IS A PROJECT

- Specific output
  - A project is a set of tasks to achieve a specific output (goal)
  - Goal is defined by a set of “requirements.” Delivering the project is akin to delivering the requirements of the goal
  - Output can have physical attributes (system, report, product, a school, a course), an intangible (process), or an activity (party, concert)
- Unique
  - Output is unique (a custom product, process)
  - A process that produces a recurring output is an “operation”

# WHAT IS A PROJECT

- Phases
  - A project proceeds in stages. It is NOT a one-action activity
  - “Progressive elaboration” [PMBOK], has multiple steps to complete the output

**Progressive Elaboration** is a characteristic of projects that means:

- Developing in steps
- Continuing by increments

An example of progressive elaboration is when the project scope (start and end points) will be broadly described early in the project and made more explicit and detailed as the project team develops a better and more complete understanding of the objectives and deliverables.

**PMBOK** stands for **Project Management Body of Knowledge**. It is a set of standard terminology and guidelines for project management published and updated by The Project Management Institute (PMI).

# WHAT IS A PROJECT

- Phases
  - Each project phase has a deliverable, “a tangible, verifiable work product” [PMBOK]
  - At the end of each phase, there is a formal sign-off/acceptance of the deliverables and phase performance review
  - Changes in the plan for the succeeding phases may be decided upon after phase-end review

**Project Scope** is the definition of what the project is supposed to accomplish and the budget of both time and money that has been allotted to the project.

# PROJECT MANAGEMENT

**Project management** - is the application of knowledge, skills, tools and techniques to in order to meet the project requirements.

**Project manager** - is the person responsible for ensuring that the project is successful and integrates the project management process of initiating, planning, executing, monitoring and controlling, and closing.



# PROJECT MANAGEMENT

- Using tools/techniques at each stage to deliver the project
  - Application of tools/techniques in the performance of the processes to deliver the requirement
- Process Groups (PMBOK)
  1. Initiation
  2. Planning
  3. Execution
  4. Controlling
  5. Closing

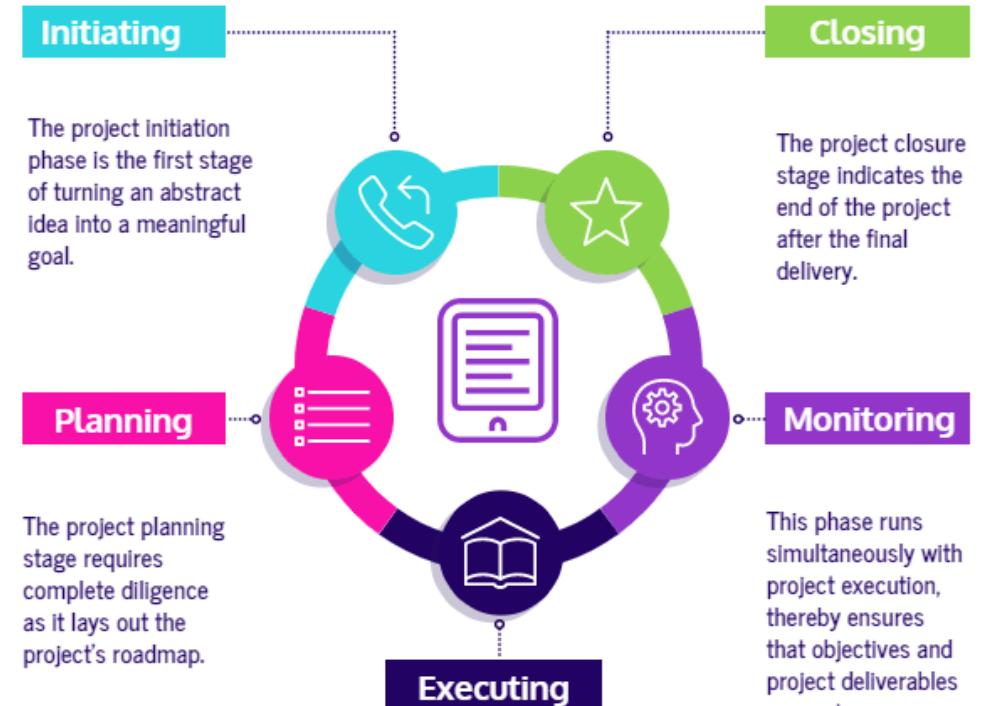


# PROCESS GROUPS

- Initiation
  - Definition of project goal, named project sponsor, clear approval, definition of project scope, business areas impacted, start and finish dates, cost projection and benefit commitment
- Planning
  - Project charter, activity plan, project organization, resource plan, cost plan, communication plan, test plan, implementation plan, risk management plan

## Basic Elements of Project Management & Project Management Processes

Project management processes can be classified under five headings: Initiating, Planning, Executing, Monitoring and Controlling, Closing.



# PROCESS GROUPS

- Execution
  - Execution of all plans (e.g., activity, cost, resource, communication, testing implementation), quality assurance activities
- Controlling/Monitoring
  - Scope change management, scope verification, schedule control, cost control, risk review, quality assurance review, project status reporting
- Closing
  - Cost-benefit assessment, project performance review (success or failure review, lessons learned)

# GOALS OF PROJECT MANAGEMENT

- Meet requirements. Deliver the output as defined/required by the client
- Achieve efficient delivery. Deliver the output with the least cost in time, resources, and money
- Minimize risk. Deliver the output with least uncertainty in scope, timeliness, quality, and cost

# GOAL: MEET REQUIREMENTS

The first goal of Project Management is Meet Requirements.

When a project is initiated, goals and expectations are set. As mentioned, this is what your stakeholders will use to judge the success of your project. There are three things you need to ensure are achieved:

1. Requirements
2. Initiation
3. Quality

A project has to be completed within the cost and time allotted and must have addressed all tasks within the established scope.

A project has to have been initiated properly by establishing and acquiring approval for cost, time and other resources.

Brainstorming is very important in initiating a project.

# GOAL: MEET REQUIREMENTS

- Requirements
  - **Scope.** Output must be well-defined, agreed, authorized
  - **Cost.** Expenditure to achieve output must be understood, agreed, authorized
  - **Time.** Time required to deliver output must be agreed
  - **Resource.** Resources to be dedicated/provided must be agreed
- Initiation
  - Clear approval to start project
  - Approvals for scope, cost, time, resource
  - Approvals to continue as phases are completed
- Quality
  - **Structure** of work to assure adherence to requirements
  - **Review** process to verify output per requirement

# GOAL: ACHIEVE EFFICIENT DELIVERY

The second goal of Project Management is **Achieve Efficient Delivery**.

There are three things you need to be on top off to ensure the project is managed within the timeline established:

- 1.Plan
- 2.Execution Management
- 3.Change Control

A solid plan must be created at the onset of the project. This must include plans for cost, resources tools and all tasks that need to be completed.

# GOAL: ACHIEVE EFFICIENT DELIVERY

- **Plans**
  - Must have complete project plans for activities, cost, and resources so that the right resources and tools are available when needed
  - Must have testing and quality assurance plans to minimize rework
  - Must have risk management plans to avoid disruptions or minimize impact if they occur
  - Must have communication and implementation to marshall resources at the user side and to minimize negative noise

# GOAL: ACHIEVE EFFICIENT DELIVERY

- Execution management
  - Must have the right tools, right resources for the task
  - Must have candid/transparent reviews to catch errors and issues before they have significant adverse impact
- Change control
  - Must have governance to approve changes in scope, various activities, schedule, resources, cost

# GOAL: MINIMIZE RISK

The third goal of Project Management is Minimize Risk

There are three things you need to be on top off to ensure the project is managed with as little risk as possible:

- 1.Quality Management
- 2.Change Governance
- 3.Communication

There must be plans to test out improvement actions or new solutions before full roll out to ensure that they will perform as expected.

There must be an approving body that will review and approve any changes in scope, schedule etc.

# GOAL: MINIMIZE RISK

- Quality management
  - Implement processes to review output against requirements minimize output function gaps
  - Develop test plans and create independent/dedicated test organization minimize risk of function gaps and errors
- Change governance
  - Control changes in scope, schedule, resource, and other elements to minimize risk
  - Provide clear transparency on impact of changes on project and on risk level
- Communication
  - Have clear plan to communicate activities and status to stakeholders
  - Provide structured communication of expected changes in post-delivery processes to minimize transition risk and noise

# CONCEPTUAL PROJECT PHASES

## 1. Approval and scope

- Definition of scope of project, target output in general terms, explicit project objective declared by the stakeholder
- General parameters on time, cost, and resources
- Approval must be formal/written
- Also called “feasibility phase” or “initial phase”

## 2. Plans/design

- Functional and technical design of what will be done
- One does not build a mansion without architectural, plumbing, electrical plans

# DISCUSSION: PLANS/DESIGN

## 2. Plans/design

- Case 1. Think about building a big house without a plumbing plan (no definition at the start where the toilets will be, where the septic tank will be, where the water piping will pass, whether there will be flowing hot water). Describe impact to cost and time
- Can a house be constructed without a plumbing plan?
- Are houses constructed without plumbing plans?

# CONCEPTUAL PROJECT PHASES

## 2. Plans/design

- Case 2. Think about an electrical plan that was not signed off by yourself as the homeowner.
- You want 5 additional 220-volt outlet in the toilet. What is the impact to cost and time?
- You want 110-volt outlet beside every 220-volt outlet. What is the impact to cost and time, why?
- You decide that there will be a box-type 5 horsepower air conditioner package in 3 areas. Please describe what needs to be done in the electrical and impact to cost and time

# CONCEPTUAL PROJECT PHASES

## 3. Construction

- Development of the system or implementing the process change
- Includes manufacturing, unit testing
- Signing the contracts with the concert venue, musicians, security agency, lighting contractor
- Spending the real money
- What happens if the requirements change? --big storm requires change in open-air concert venue, market changes and central bank requires different reporting?
- Suppose it is so rush (concert is tomorrow) that you cannot stop to plan? What will you do?

# CONCEPTUAL PROJECT PHASES

## 4. Testing

- Independent review of output against requirements
- Integration test: test over-all flow, performance with plan volume, peak volume test
- Development of user documentation
- Why test? Just correct when the users flag the error?
- Announcement go-live already made. Can we just go-live without integration test?

# CONCEPTUAL PROJECT PHASES

## 5. Implementation/Benefits Review/Go-Live

- Full process to manage the user adjustment/transition
- Review of planned benefits versus actual benefits after the period of stabilization
- Formal switch to “live” status so that any changes/fixes are part of maintenance
- Releasing the development team
- Benefits review is often forgotten. What is the effect of not validating whether the promised savings were met?
- Project promised to save P10 million in cost. What is the impact of not checking

# SUMMARY

- Definition of project and project management
  - Project: specific output, temporary for a unique result, stages
  - Project management: Application of tools/techniques in the performance of the processes to deliver the requirement
- Goal of project management
  - Delivery that meets requirements, efficient in time, scope, resources, and with least risk
- Project phases
  - Approval, plans/design, construction, testing, implementation

IT 311

# BUSINESS PROCESS OUTSOURCING 102

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Dr. Josephine R. Bayonito

Mr. Eddinel B. Valentino

*IT 311 Professors*



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# LESSON 06

## PLANNING PROCESSES

---

# LEARNING OBJECTIVES

*At the end of this lesson, you should be able to:*

01

Enumerate the critical elements in a project plan

02

Define core planning processes

03

Define facilitating planning processes



DURATION: 3 Hours

# WHAT IS A PROJECT PLAN

- Project plan is an “approved document to manage project execution” [PMBOK]
- Can and will change over time as the environment, output scope, inputs, resources change
- A good project plan will help the project manager and the project organization respond to changes with least delivery (time, cost) risk

# PROJECT PLANNING PROCESS



## Project Planning Process

Project planning involves a lot of steps that can be challenging to organize. Process infographics make it easy to break down big goals into smaller, actionable tasks.



Project People

Here is the process for project planning:



Process infographics make it easy to brainstorm and jumpstart your project, gather ideas, and inspire everyone to get to work.

[www.projectpeople.com](http://www.projectpeople.com)

## QUICK GUIDE 12 Steps to Project Planning

- 1. DEFINE SCOPE**  
Determine what tasks need to be completed.
- 2. IDENTIFY SUPPORT**  
Establish connection with key stakeholders.
- 3. FIND AVAILABLE RESOURCES**  
Determine in-house and outsourced teams.
- 4. CHECK TIMELINE**  
Assess realistic schedules and impacts.
- 12**  
**5. LIST BIG STEPS**  
Capture big picture of your project.
- 6. BREAKDOWN FURTHER**  
Define deliverables.
- 7. DEVELOP DRAFT PLAN**  
Don't forget dependencies at this stage.
- 8. CREATE BASELINE PLAN**  
Gather feedback from your team.
- 9. REFINE PLAN**  
Check inputs based on reality.
- 10. MONITOR PROGRESS**  
Track your plan daily with the right tools.
- 11. DOCUMENT EVERYTHING**  
Capture changes in the project, too.
- 12. KEEP EVERYONE LOOPED IN**  
Don't leave communication to chance.



[PROJECTMANAGER.com](http://PROJECTMANAGER.com)

# CRITICAL PLANNING ELEMENTS

## Time

Time is always short. “Time needed” tends to expand towards “time available.” Hence need to keep buffers low

Project timeline. Initially agreed final delivery date is expanded to show the delivery dates of the phases and sub phases

Critical path. Flow and timing/completion of prerequisite activities will determine the critical path in terms of time

Buffers. Project leaders provide buffers between activities to cover unexpected external events (resources getting sick, “acts of God” (typhoons, floods)

# CRITICAL PLANNING ELEMENTS

- Resources
  - Resource is always scarce; most scarce resource is generally people
  - Project plans help visualize realistic assignment of scarce resources across multiple activities (and projects)
  - Resource plans surface potential contention for resources up front than to face the later problem of unrealistic deadlines due to lack of resources

# CRITICAL PLANNING ELEMENTS

- Cost
  - Money is always not enough (generally). But between time and resource (people), money is often easier to get
  - One can get more money but a project cannot normally be hurried by mere throwing bodies into it
  - In global projects, resource costs account for the bulk of project budgets

# CORE PLANNING PROCESSES

- Planning processes that must be done for all projects
- Answer the questions:
  - What output must be delivered: scope plan (scope definition, work breakdown)
  - What activities to produce it and how long: activity plan (activity definition, activity sequencing, activity and total duration)
  - Who will do the activities: resource plan (resource requirements, resource-activity scheduling)
  - How much will it cost: cost plan (cost estimation)

# FACILITATING PLANNING PROCESSES

- Planning processes that are not performed all the time but well-managed projects have them
- Answer the questions:
  - Who manages the project, who reports to whom: organization plan (reporting lines, project roles and responsibilities)
  - What resources (staff) need to be hired or contracted and by when: staffing plan (also called “recruitment plan”)
  - Which quality standards to follow: quality plan (standards, measures, transparency)
  - How will risk be identified, managed: risk management plan

# FACILITATING PLANNING PROCESSES

- Answer the questions: (Continued)
  - What will be communicated, to whom, when, how, by whom: communications plan
  - What services, goods, materials need to be bought and when: procurement plan (what to buy, when, from which potential sources, estimate of how much)

# SUMMARY

- Critical elements in a project plan
  - Time, resources, and cost
- Core planning processes
  - Planning processes that must be done for all projects
  - Scope plan, activity plan, resource plan, cost plan
- Facilitating planning processes
  - Not performed always but well-managed projects have them
  - Organization plan, staffing plan, risk management plan, quality plan, communication plan and procurement plan

IT 311

# BUSINESS PROCESS OUTSOURCING 102

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**Dr. Josephine R. Bayonito**

**Mr. Eddinel B. Valentino**

*IT 311 Professors*



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# LESSON 07

## ACTIVITY AND GANTT CHART

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# LEARNING OBJECTIVES

*At the end of this lesson, you should be able to:*

01

Connect the Work Breakdown Structure (WBS) and the activity list

02

Create a Gantt chart



DURATION: 3 Hours

# WORK BREAKDOWN STRUCTURE

**Work Breakdown Structure (WBS)** organizes and defines the total scope of the project. The Project is broken down into hierarchical ordered levels (1-3)

The WBS subdivides the project work into smaller, more manageable pieces of work, with each descending level of the WBS representing an increasingly detailed definition of the project work. Level 3 represents the most detailed deliverable description.

# WORK BREAKDOWN STRUCTURE

When creating a WBS, decompose a deliverable into sub-deliverables by project phase .You may include all the project phases or focus on certain areas depending on the scale and complexity of the project.

- **Approval and Scope**
- **Design**
- **Construction**
- **Testing**
- **Implementation**

**Decomposition** is the subdivision of project deliverables into smaller, more manageable components until the work and deliverables are defined to the work package level. The work package, Level 3 is the lowest level in the WBS, and is the point at which the cost and schedule for the work can be reliably estimated. Again, the level of detail for work packages will vary with the size and complexity of the project.

# WORK BREAKDOWN STRUCTURE

- From scope statement, constraints, assumptions, the big deliverable for the project can be fully defined
- Decompose the deliverables into sub-deliverables by phase:
  1. Design
  2. Construction
  3. Implementation

# WORK BREAKDOWN STRUCTURE

- Design
  - What sub-deliverables are required in terms of design to prepare for the construction
  - Functional design document, detailed design documents, Request for Proposal
    - E.g., interior design, electrical plans, lighting design

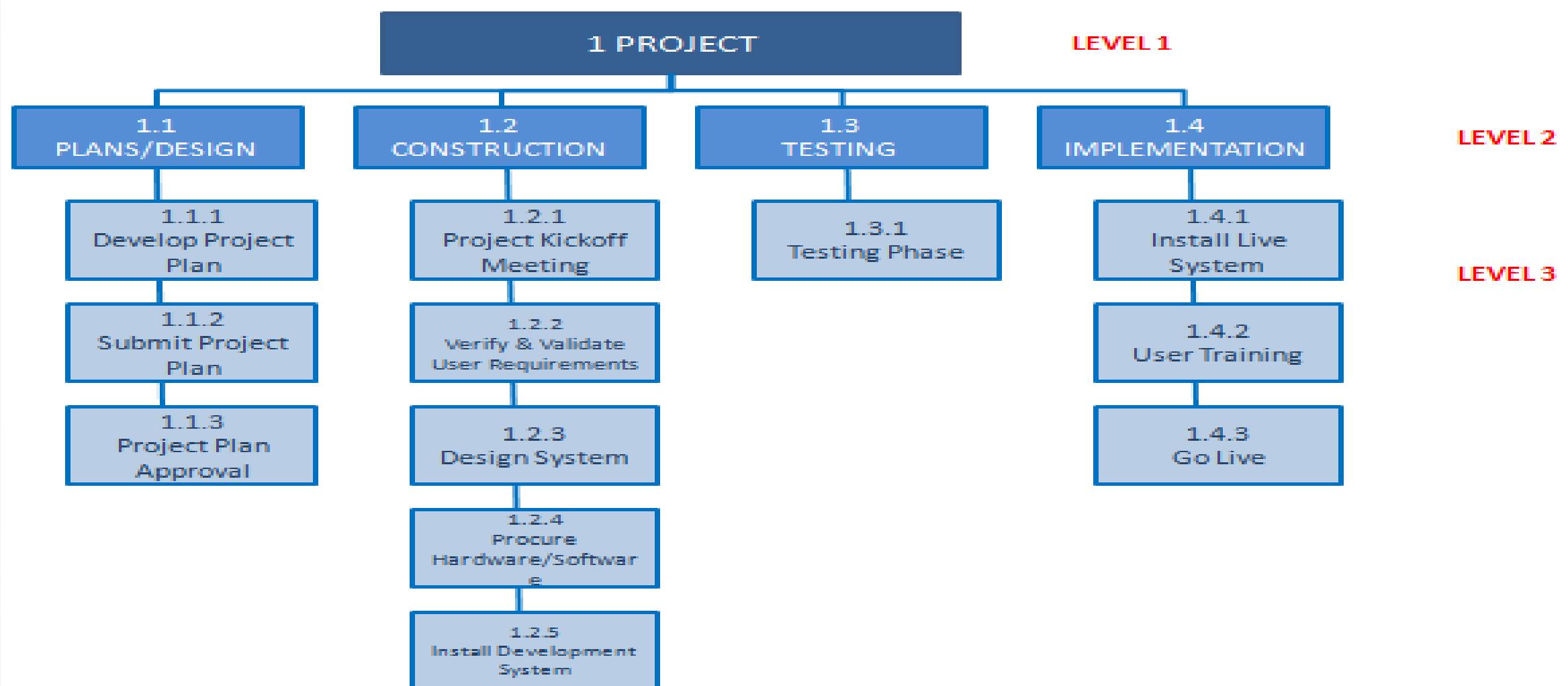
# WORK BREAKDOWN STRUCTURE

- Construction
  - What sub-deliverables to be made to contribute to the overall delivery
    - E.g., building project: external fencing, street cover (screen), foundation hole, external glazing
    - E.g., school concert project: tickets, posters, website, band contracts, seats, sponsors, school approvals, etc.

# WORK BREAKDOWN STRUCTURE

- Implementation
  - What sub-deliverables to be made to manage transition, communication, and execute roll-out
    - E.g., restaurant: soft launch event, menu finalization and food tasting, hiring of chefs, hiring and training of crew, press release, web site creation, blog solicitation

# WORK BREAKDOWN STRUCTURE



# ACTIVITY PLANNING

- Each sub-deliverable is a deliverable for that phase
  - Some deliverables are pre-requisites of other deliverables
- List the activities required to achieve the deliverable
  - Sequence the activities. Electrical plan can only be made when the requirements for lighting and other equipment are documented
  - Pre-requisite activities. Some activities are required before others can be performed. E.g., candidate interviews, selection, offer, on-boarding are required before staff training can start

# THIS HAS AN EXAMPLE LIST FOR AN IT/SOFTWARE PROJECT.

Level 1	Level 2	Level 3	Activity Definition
PROJECT NAME	1.1 Planning/Design	1.1.1 Develop Project Plan	Project Manager creates a Preliminary Scope Statement.
		1.1.2 Submit Project Plan	The Project Manager determines the project team and requests the resources.
		1.1.3 Project Plan Approval	The project plan is approved
	1.2 Execution		Project Manager has permission to proceed to execute the project according to the project plan.
		1.2.1 Project Kickoff Meeting	Project Manager conducts a formal kick off meeting with the project team, project stakeholders and project sponsor.
		1.2.2 Verify & Validate User Requirements	The original user requirements is reviewed by the project manager and team
			The original user requirements is validated with the users/stakeholders. This is where additional clarification may be needed.
	1.3 Testing	1.2.4 Procure Hardware/Software	The procurement of all hardware, software and facility needs for the project.
		1.2.5 Install Development System	Team installs a development system for testing and customizations of user interfaces.
		1.3.1 Testing Phase	The system is tested with a select set of users.
	1.4 Implementation	1.4.1 Install Live System	The actual system is installed and configured.
		1.4.2 User Training	All users are provided with a four hours training class.
		1.4.3 Go Live	Managers are provided with an additional two hours class to cover advanced reporting.
			System goes live with all users.

# GANTT CHART

Gantt Chart is a tool for graphically presenting:

- Deliverables
  - Activities will have deliverables
  - Delivery dates can be represented as “milestones”
  - Examples of deliverables:
    - detailed design document
    - project plan
    - test criteria
    - summary of test results
    - communication template

# GANTT CHART

Gantt Chart is a tool for graphically presenting:

- Activities
  - For each large deliverable, one can have preparatory activities, design tasks, execution, review/testing, implementation
  - Examples of activities:
    - Prepare project plan
    - Validate project plan
    - Get approval
    - Create process maps
    - Get approval for process maps

# GANTT CHART

Gantt Chart is a tool for graphically presenting:  
Scheduling

Start and end dates for various activities. Examples:

- Start as soon as possible, end as soon as possible
- Start and end on fixed dates: start 17 July, end 28 July
- Start after defined date: start after 17 July

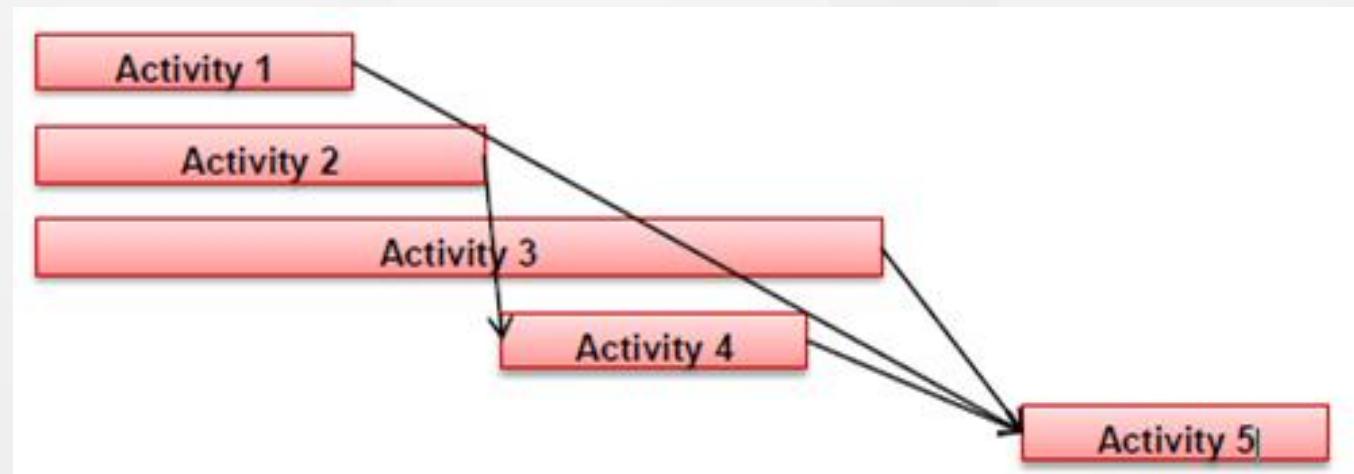
Resource use for each activity (full or part time).  
Examples:

- Activity duration 2 weeks, with resource use 50%. This can mean that the resource is only available half-time

# GANTT CHART

Gantt Chart is a tool for graphically presenting:

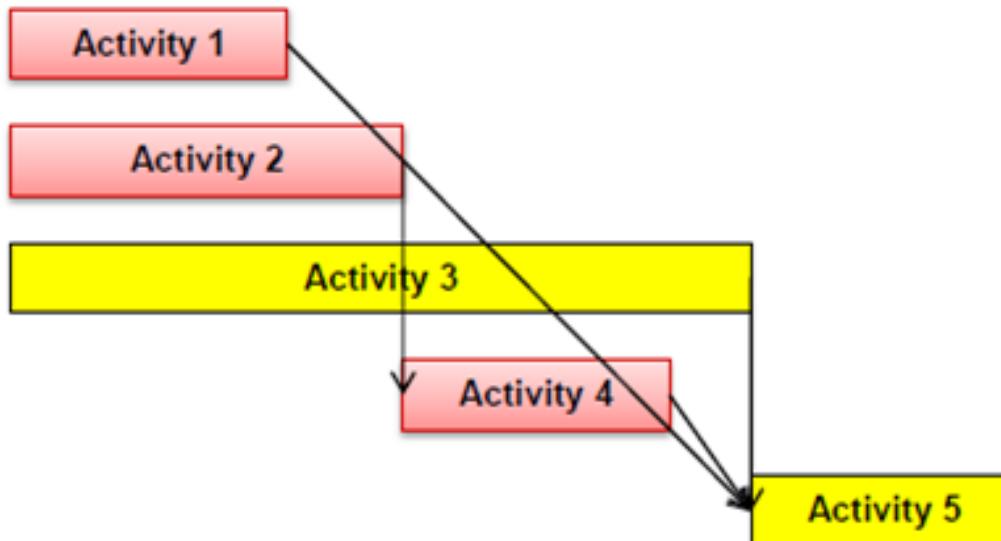
- Scheduling
  - Activity sequencing. Example
    - Activities 1, 2, and 3 can start at the same time, prerequisite for activity 4 is activity 2, prerequisites for activity 5 are activities 1, 3, and 4



# GANTT CHART

Gantt Chart is a tool for graphically presenting:

- Scheduling
  - Activity sequencing. Example
    - Critical Path:



In this example, the yellow shaded activities (3 and 5) form the critical path

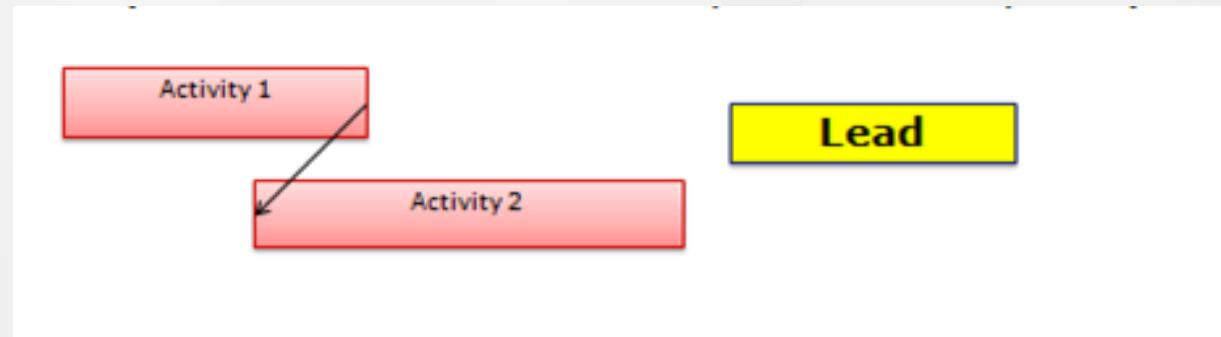
Activities 1 and 5 are shorter than the selected critical path

Activities 2, 4 and 5 are also shorter

# GANTT CHART

Gantt Chart is a tool for graphically presenting:

- Scheduling
  - Lead (activity 2 can start a few days before activity 1 ends, near concurrent)
  - Next activity can start as soon as the first part of the pre-requisite activity has started
  - Example: program specifications review process can start as soon as the first program specs are completed (does not have to wait for all specs to be completed)



# GANTT CHART

Gantt Chart is a tool for graphically presenting:

- Scheduling
  - Lag (activity 2 can only start X days after the end of activity 1, gap)
    - Next activity can only start several days after the completion of the pre-requisite activity has started
    - Example: Concert will be held on a defined date. Prerequisite activities should be completed at least a few days before

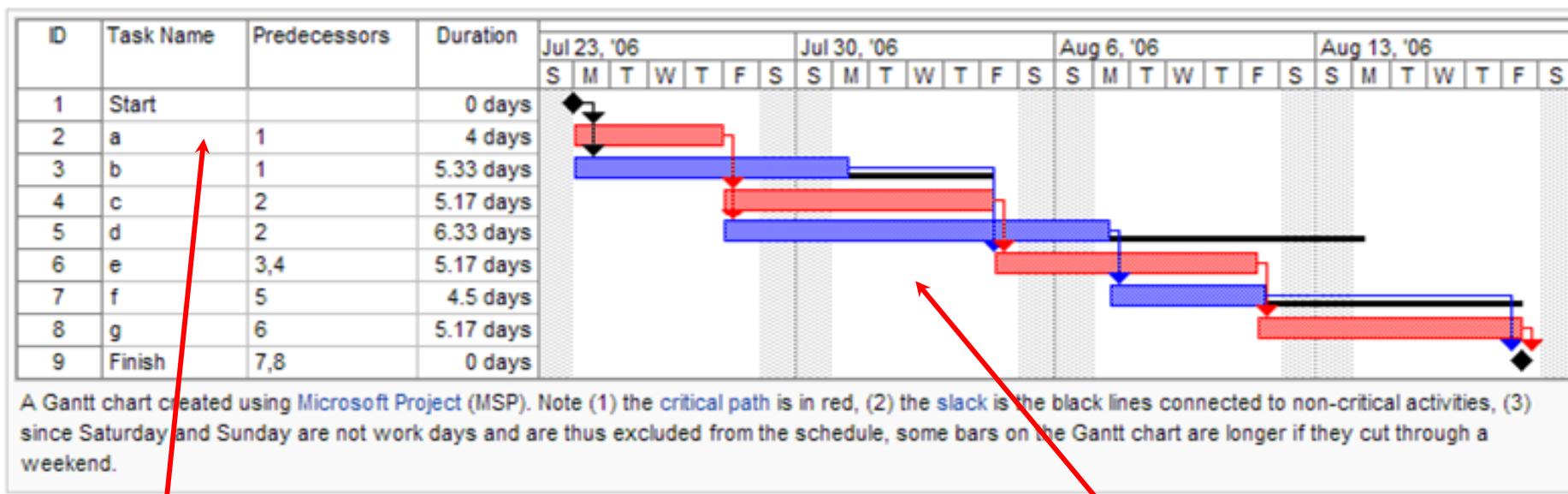


# GANTT CHART

Gantt Chart is a tool for graphically presenting:

- Scheduling
  - Individual activity reasonability check. Can visualize reasonability of time estimate for each activity and for groups of activities for an intermediate deliverable
    - Example: Allocating only 1 day for approval of multiple stakeholders is not reasonable
  - More important: over-all duration reasonability check
    - Example: Project to develop a mid-size application taking 12 months is too long; review the critical path

# GANTT CHART



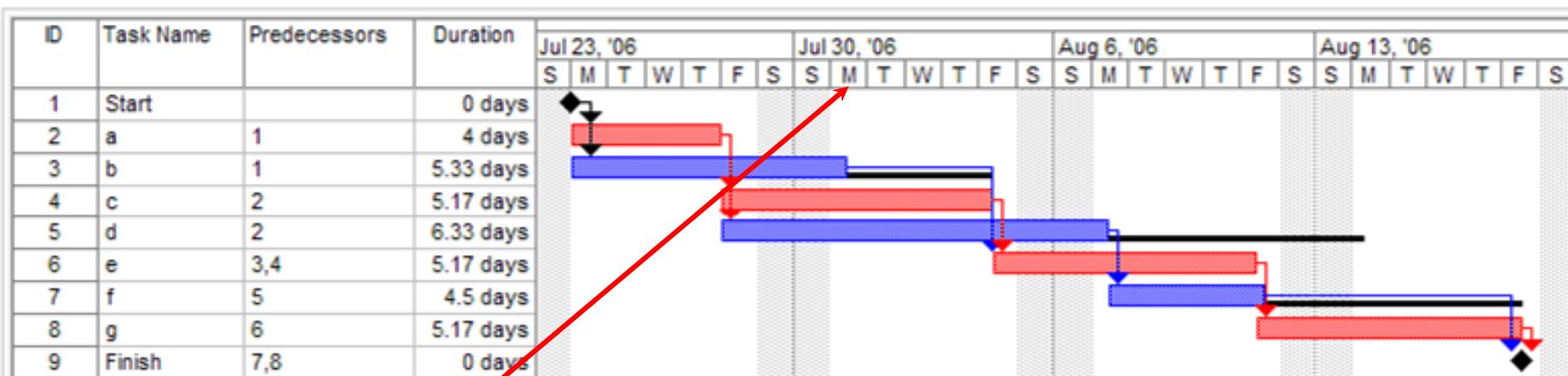
Left side

1. Activity description
2. Start and end date
3. Resource doing the work

Right side

1. Graphical view of activity period
2. Resource name
3. Lines to show critical path
4. Milestones

# GANTT CHART



## Periods

- Short projects (3 to 4 weeks): days
- Mid-size projects (3 months): weeks

- Large projects (6 to 12 months): high level activities presented in months, next level activities presented in weeks

# SUMMARY

- Work Breakdown Structure (WBS)
  - Contains deliverables and sub-deliverables for each phase
  - Multiple activities to plan, design, construct each deliverable
- Gantt chart
  - Contains deliverables, shows activities, scheduling of activities
  - Sequence of activities, critical path, lead and lag between pre-requisite activities
  - Visual tool for assessing reasonability of estimates for individual activities and sub-deliverables, as well as reasonability of total duration

IT 311

# BUSINESS PROCESS OUTSOURCING 102

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**Dr. Josephine R. Bayonito**

**Mr. Eddinel B. Valentino**

*IT 311 Professors*



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# LESSON 08

## PROJECT PLAN

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# LEARNING OBJECTIVES

*At the end of this lesson, you should be able to:*

01

Describe the common parts of good project plan

02

Explain when project plans can be simplified



DURATION: 3 Hours

# WHAT IS A PROJECT PLAN

- Project plan is an “approved document to manage project execution” [PMBOK]
- Can and will change over time as the environment, output scope, inputs, resources change
- A good project plan will help the project manager and the project organization respond to changes with least delivery (time, cost) risk

# COMMON PARTS

- 1. Project charter.** High-level description of objectives, who approved it, start and finish requirement dates, cost and benefit
- 2. Scope plan.** Detailed definition of scope, deliverables
- 3. Project organization.** Project manager, individual leads, roles and responsibilities
- 4. Resource Plan**
  - Required staff skills, hiring or contracting plan, by when; where to hire/contract, estimated cost
  - Required equipment, tools, facilities, by when, where to purchase, cost

## 5. Activity plan

- a. Work Breakdown Structure (intermediate and final deliverables)
- b. Definition of activities to produce the WBS elements
- c. Activity sequencing, start and finish dates
- d. Resource-activity assignment

## 6. Cost plan

## 7. Risk management plan. Initial identified risk and risk mitigation, risk reporting and frequency

# COMMON PARTS

## 8. Test Plan

- Identification of independent test lead, test team
- Statement of how scope/functions will be reviewed and by whom, how detailed design testing will be reviewed and validated

9. Communication plan. Communications lead, communication elements, timing

10. Implementation plan. Implementation lead, implementation strategy (big-bang or incremental, pilot or in phases)

11. Quality Plan. Involves identifying which quality standards are relevant to the project and determining how to satisfy them

# ORIGINAL PARTS

- There are no generically defined “optional” parts
  - Certain parts of a project plan may be simplified depending on project size, scope, requirements for project resources, scheduling risk
  - Good discipline to include the part but have only limited statements; this confirms that you have assessed the requirement for the plan component

# DISCUSSION: “OPTIONAL” PARTS

- Describe the kind of projects where the following plan component can be simplified
  1. Risk management plan
  2. Quality plan
  3. Communication plan
  4. Test plan
  5. Activity plan
  6. Resource plan

# DISCUSSION: “OPTIONAL” PARTS

- Risk Management – Can be simplified if project classed as “low risk”—i.e., long schedule, small scope, 3 to 6 month project, available resources for construction, testing, and implementation, good support from client, single-unit client organization (client is controlled by one manager)
- Quality plan – is always required but can be simplified
- Communications plan is required—even though the Project Manager may be the same as the communications lead
- Test plan is always required but can be simplified
- Activity plan is always required but can be simplified
- Resource plan can be simplified if the resource requirements are limited (2 man effort), skill required is commonly available internally or from existing service providers, equipment/facilities are available

# SUMMARY

- Common parts of good project plan
  - Project charter, scope plan, project organization, resource, activity plan, cost plan, risk plan
  - Test plan, communication plan, implementation plan
- When can project plans be simplified
  - Parts addressing elements which have least risk can be simplified (not removed)

IT 311

# BUSINESS PROCESS OUTSOURCING 102

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# LESSON 09

## PROJECT REPORTING

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# LEARNING OBJECTIVES

*At the end of this lesson, you should be able to:*

01

Describe the parts of a project report

02

Explain “days to completion” as a method to assess percentage completed

03

Describe the contents of “project risk” section



DURATION: 3 Hours

# PARTS OF A PROJECT REPORT

- 1.** Status Report. “Where the project now stands” . You can refer to your Gantt chart for information on the schedule
  - Schedule, budget status
  - Percentage completed against plan
  - Current open issues and challenges
- 2.** Progress Report. “what the project team has accomplished”. You can refer to the Gantt Chart or your Activity List for the tasks
  - Tasks completed, tasks in flight
  - Issues and challenges handled

# PARTS OF A PROJECT REPORT

3. Forecast. Prediction of “future status”. This is the statement on whether you will be on schedule by the next project report, if there is a foreseen delay, explain why.
  - Projected time and budget to completion
4. Risk Section. These are specific risks and mitigations. Any event which may prevent the project from moving forward and your plans on how to prevent or address.

# CHALLENGES ON ESTIMATED % COMPLETED

- How to get a reasonably accurate estimate of percentage completed
- Challenges:
  - Most people over-estimate the work they have done. “50% completed” is difficult to verify
  - Most will add buffers when asked for “time to completion;” conservative (lowest) estimate of percentage completed
  - “Hours spent” versus total man-hours may not be an accurate basis for actual work done

# CONSERVATIVE MEASURES

Goal of measure: good basis for assessing remaining work

Possible approaches:

- “Task-binary” measure

- If work is completed, task is marked 100%. If task is not yet completed, it is marked 0%. Add the hours for unfinished tasks, calculate against total project hours
- Easy judgment whether task is done or not—versus subjective “% done”

# CONSERVATIVE MEASURES

Possible approaches:

- “Time to completion”
  - Project manager is asked to estimate man-hours needed to completion
  - Essentially a “re-forecast” of effort required given all factors—resource skill, availability of inputs, effectiveness of tools, quality of work
  - Conservative because most PMs will add a buffer
  - Stringent and good measure if the project manager is highly experienced and professional

# RISK TO PROJECTS

- Risks are events that could have adverse effect “IF” they occur
  - Risks that the project will not be completed, not completed on time, on budget, and with the right quality and scope
  - If the risk events have already occurred (e.g., “not enough programmers”), that is a weakness which needs correction
- Identified risks can be mitigated
  - Mitigation actions minimize negative effect if risk event occurs
  - Example: “cross-training” mitigates effect of loss of critical resources

# SOURCES OF RISK

- Internal: resources, equipment, facilities
  - Unexpected attrition
  - Unexpected equipment failure
  - Loss of facilities

# SOURCES OF RISK

- External: suppliers, client stakeholders, market, political events, acts of God
- External risk is anything that is caused by sources outside the organization. These are usually more difficult to mitigate than internal risks.
  - Supplier failure to deliver right inputs/resources on time at right price and with right quality
  - Unexpected change in client senior management, unexpected loss of support, change in executive direction for the project
  - Severe market downturn leading to change in project value
  - Unexpected political disruptions, strikes, coup, rebellion, severe crime wave
  - Storms, typhoons, fire leading to project disruption

# RISK SECTION

- When putting together the project report, you have to identify specific mitigation action for each risk identified. This will allow the project stakeholders to assess if the mitigations are correct or sufficient.
- Lists specific internal and external risks to the project
  - Stakeholders (sponsor, business leaders) assess if the significant risks have been considered by the project team
- For each risk, state the mitigation action
  - Stakeholders assess if the mitigations are correct/sufficient
  - Stakeholders assess if the amount spent for mitigations is commensurate to the cost of the risk

# SUMMARY

- Parts of a project report
  - Status report, progress report, forecast, risk section
- “Days to completion”
  - Goal is a conservative measure for effort required to complete the project
  - Task-binary measure (count hours for unfinished tasks)
  - Man-hours to complete (refreshed estimate of time to complete)
- “Project risk” section
  - Specific internal and external risks to the project
  - Mitigation for each risk