

## Lesson 9: Program Definition Supporting Processes

Based on *PMBOK® Guide* – Fifth Edition  
and  
The Standard for Program Management – Third Edition

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## Agenda

- ✓ Integration Management Processes
- ✓ Scope Management Processes
- ✓ Schedule Management Processes
- ✓ Financial Management Processes
- ✓ Quality Management Processes
- ✓ Resource Management Processes
- ✓ Risk Management Processes
- ✓ Communications Management Processes
- ✓ Procurement Management Processes

## Integration Management Processes

- ✓ Integration management processes in program definition:
  - Program Initiation
  - Program Management Plan Development
  - Program Infrastructure Development

## Program Initiation

- ✓ Purpose is to define the program, secure financing, and demonstrate how the program will deliver the desired organizational benefits.
- ✓ Activities:
  - Program sponsor selection and financing;
  - Program manager assignment;
  - Estimation of scope, resources, and cost;
  - Initial risk assessment; and
  - Business case update.
- ✓ Program roadmap and program charter development:
  - Program roadmap is a program's intended direction, depicted in chronological order.
  - Charter is an official authorization to go ahead with the program.



## Program Selection Methods

### Why a new program?

- ✓ Contract
- ✓ Business Case
- ✓ What additional benefits a program gives over a project

- ✓ **Benefit measurement methods** – This is a comparative approach.
  - Murder Board – a panel of experts try to shoot down a new project idea
  - Peer review
  - Scoring models
  - Economic models
  - Benefit compared to cost
- ✓ **Constrained optimization methods** – This is a mathematical approach.
  - Linear Programming

## Cost-Benefit Analysis

- ✓ Present value;
- ✓ Net present value;
- ✓ Internal rate of return;
- ✓ Payback period;
- ✓ Benefit cost ratio; and
- ✓ Return on investment.

✓ Present Value: Present value means value today of future cash flows.

✓ Net Present Value (NPV): Present value of the total benefits (income or revenue) less the costs over a time period.

Q: You have two projects to choose from. Project X will take 2 years to complete and has a NPV of \$35,000. Project Y will take 5 years to complete and has an NPV of \$95,000. Which one will you take up?

A: The answer is Project Y because it has a higher NPV. Don't get confused with the longer duration of the project. What is important is that the NPV should be greater.

## Cost-Benefit Analysis (Contd.)

- ✓ **Internal Rate of Return (IRR):** IRR is the rate of discounting (used to reduce future cash flows to their present value) at which the present value of costs match the present value of benefits. In other words, it is the rate of return internal to the project.

**Example:** If you have to choose between Project A with an IRR of 25% or Project B with an IRR of 15%, the answer is Project A. The IRR for Project A is greater than the one for Project B.

- ✓ **Payback Period:** It is the number of time periods it takes to recover your investment in the project before you start accumulating profits.

**Example:** You have two projects to choose from. Project A with a payback period of 5 months or Project B with a payback period of 12 months. Which one would you go for?  
The answer is Project A.

## Cost-Benefit Analysis (Contd.)

- ✓ **Benefit Cost Ratio:** The benefit cost ratio compares the present value of benefits to the present value of costs. A Benefit Cost Ratio (BCR) of more than 1 means that the benefits are greater than the costs.  
**Example:** If the benefit cost ratio of Project A is 2.5 and benefit cost ratio of Project B is 1.5, which project would you select?  
The answer is Project A as the benefit cost ratio is higher for Project A.
- ✓ **Return on Investment (ROI):** ROI is the rate of return on the project normalized by the initial investment. For example, if a project involves an initial investment of \$100,000 and on an average, it results in benefits of \$20,000 per year, the ROI is  $20,000/100,000$  or 20%.
- ✓ **Opportunity Cost:** Opportunity cost is termed as the cost associated with the next best option that is available to someone who has picked among various mutually exclusive choices. It is therefore the opportunity given up by selecting one project over another.

## Program Management Plan Development

- ✓ Integrates a program's subsidiary plans and establishes management controls and an overall plan for integrating and managing the program's individual components.
- ✓ Comprises the following and may be others:
  - Benefits realization plan;
  - Stakeholder engagement plan;
  - Governance plan;
  - Communications management plan;
  - Financial management plan;
  - Program management plan;
  - Procurement management plan;
  - Quality management plan;
  - Resource management plan;
  - Risk management plan;
  - Schedule management plan; and
  - Scope management plan.

## Planning for Programs

- ✓ Planning for programs is an iterative process:
  - Component plans impact each other.
  - Different aspects of planning (e.g. cost vs. time) impact each other.
- ✓ Remember:
  - Program manager is the owner of the plan and has accountability for it.
  - Program manager will usually delegate detailed component planning.
  - Need to decide what level of detail is needed for the program.
  - The plan once approved should be baselined.
  - Changes to baseline should be controlled.

## Program Infrastructure Development

- ✓ Investigate, assess, and plan the support structure to achieve program goals.

- ✓ Activities:

- Program organization and core team assignments;
- Program resource plan development (people, machinery, etc.);
- Program management activity definition;
- Program management office support is established; and
- Program management information systems are put in place.

Example:

- Document, data and knowledge repositories;
- Tools – Software, configuration management, risk database and analysis, EVM, and requirement management;
- Change management system; and
- Any other activities and tools required.

- ✓ Due to the complex nature of the program, setting up infrastructure may be a time-consuming and complex task.

## Scope Management Processes

- ✓ Scope management processes in program definition:
  - Program Scope Planning



## Program Scope Management

- ✓ Defines work required to deliver a benefit at program level.
- ✓ Includes all the activities involved in planning and managing a program's scope, and work decomposition into deliverable component products.
- ✓ Program scope should be aligned with the program's goals and objectives.
- ✓ The objective is to develop a detailed scope statement, deliverable components, and plan for managing the scope throughout the program.

## Program Scope Planning

- ✓ Program manager develops program scope statement and gets it approved by program stakeholders.
- ✓ Program scope is in the form of expected benefits.
- ✓ Program scope is further decomposed to program WBS.
- ✓ Program WBS:
  - Does NOT replace the project-level WBS.
  - Serves as framework for schedule development and program control points.
- ✓ Program-level deliverables should focus on activities associated with stakeholder engagement, program level management, component oversight, and integration.
- ✓ Outputs:
  - Program scope statement;
  - Program scope management plan; and
  - Program work breakdown structure (WBS).

## Schedule Management Processes

- ✓ Schedule management processes in program definition:
  - Program Schedule Planning

## Program Schedule Management

- ✓ Determines the:
  - Order and timing of the components needed to produce program benefits;
  - Estimated amount of time required to accomplish each component;
  - Significant milestones;
  - Overall program roadmap; and
  - Sets up the program-level tracking mechanism.
- ✓ Program master schedule is maintained and updated as and when there is a change in the schedule at component level.
- ✓ Program manager coordinates with all the component schedules within the program and integrates them to ensure program completion on schedule.
- ✓ Dependencies among components have significant impact on the overall program schedule.
- ✓ Early or late completion of any component from the planned schedules calls for the program manager's attention.

## Important Terms in Time (Schedule) Management

**Leads and Lags:** A successor activity is said to have a LEAD when it can start in advance of the predecessor. Example: Activity B can start 2 days before the completion of activity A.

A successor activity is said to have a LAG when it needs to be delayed with respect to the predecessor. Example: Activity B can start 2 days after the completion of activity A.

**Rolling wave planning:** An iterative planning technique in which the work to be accomplished in the near term is planned in greater detail while the work to be done in the future is planned at a higher level.

**Analogous estimating:** This estimating is based on previous projects (or activities). The last 5 similar projects took 6 months, so this one should also take 6 months.

**Parametric Estimating:** This uses a mathematical model to calculate projected times for an activity based on historical records from previous projects and other information.

**Effort v/s Duration:** Effort – Total amount of work required to complete an activity (e.g., 10 person days); and  
Duration – Calendar (elapsed) time required to complete an activity (e.g., 5 days).

## Schedule Network Analysis Techniques

### Schedule Network Analysis:

It is a technique that generates the project schedule model.

This technique includes:

- ✓ Critical path method;
- ✓ Critical chain method;
- ✓ What-if scenario analysis; and
- ✓ Resource optimization techniques.

### PERT:

Utilizes 3 point estimates:

P = Pessimistic estimate;

M = Most likely estimate; and

O = Optimistic estimate.

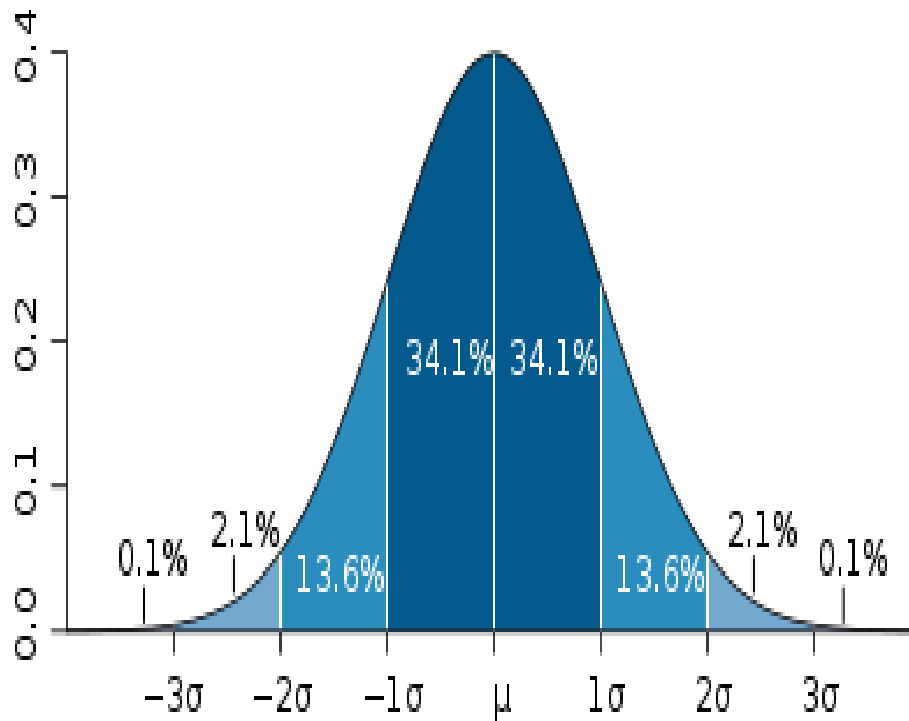
Expected duration ( $\mu$ ) =  
 $(P+4M+O)/6$

Standard deviation of an activity  
( $\sigma$ ) =  $(P-O)/6$

Variance of an activity =  $\sigma^2$

## PERT Example

You can apply the expected value and standard deviation to derive useful information about the likely range for values as shown below.



**Assume:** O = 20; M = 30; and P = 70  
Now,  $\mu = (20 + 30 * 4 + 70)/6 = 35$   
And  $\sigma = (70 - 20)/6 = 8$  (approx)

**Using the normal curve:**

Likelihood of actual time lying between:

- 1  $\sigma$ ; i.e. 27 and 43 is 68.2%;
- 2  $\sigma$ ; i.e. 19 and 51 is 95.4%; and
- 3  $\sigma$ ; i.e. 11 and 59 is 99.7%.

What about Six Sigma?

## Critical Path Method

- ✓ **Critical Path:** It is the longest duration path through a network diagram and determines the shortest time to complete the project.
- ✓ **Float (Slack):**
  - **Total Float (Slack):** The amount of time that a schedule activity can be delayed or extended from its early start date without delaying the project completion date or violating a schedule constraint.
  - **Free Float (Slack):** The amount of time that a scheduled activity can be delayed without delaying the early start date of any immediate successor or violating a schedule constraint.
  - **Independent Float (slack):** The amount of time an activity can be delayed if all the immediate predecessors finish their latest completion dates and we want all immediate successors to start on the earliest start dates.

\*Definitions taken from the glossary of the Project Management Institute, A Guide to the Project Management Body of Knowledge, (*PMBOK®Guide*) – Fifth Edition, Project Management Institute, Inc., 2013.



## Other Techniques Used in Scheduling

**What-if Scenario Analysis:** In this method, the following question is asked to produce a realistic schedule:

- ✓ What if a particular scenario is changed on the project? Will that produce a shorter schedule?

**Monte Carlo Analysis:** This method of analysis uses a computer modeling program to simulate the outcomes, making use of input values selected at random from probability distributions.

**Resource Optimization Technique:** Resource optimization techniques are also used to produce a resource-limited schedule. Resource optimization results in more stable number of resources used.

**Critical Chain Method:** This is another technique used to develop the schedule. It takes into account both the activity and resource dependencies.

## Program Schedule Planning

- ✓ Begins with the scope management plan and the program WBS.
- ✓ Program-level milestones and order of components are determined.
- ✓ Program master schedule is a top-level program document.
- ✓ Schedule management plan is part of a program management plan.
- ✓ Program schedule management plan sets program schedule standards which can be used by the program team/stakeholders.
- ✓ Program scheduling does NOT replace project-level scheduling activities.
- ✓ Program schedule risk inputs are incorporated into the program risk register.
- ✓ Program roadmap should periodically be assessed and updated in alignment with program master schedule.
- ✓ Outputs:
  - Program schedule management plan;
  - Program schedule standards;
  - Program master schedule;
  - Inputs to the program risk register; and
  - Updates to the program roadmap.

## Financial Management Processes

- ✓ Financial management processes in program definition:
  - Program Cost Estimation
  - Program Financial Framework Establishment
  - Program Financial Management Plan Development

## Program Financial Management

- ✓ Program financial management is all about:
  - Identifying a program's financial sources and resources;
  - Integrating the budgets of the program components;
  - Developing the overall program budget; and
  - Controlling costs throughout the duration of the program.
- ✓ Remember programs (unlike projects) may also have operational elements and hence programs need to deal with revenues as well.
- ✓ Program manager needs a high-level of understanding of budgets and finances.

## Program Cost Estimation

- ✓ Estimation is performed throughout the program:
  - To begin with, order of magnitude estimates are used.
  - Estimates are then refined as more information becomes available.
- ✓ Top-down and bottom-up approaches are used for estimation:
  - Projects provide bottom-up estimates.
- ✓ Remember the following about estimates:
  - Milestones need to be defined for sanctioning funds.
  - Estimates may have a “confidence factor” established based on risk.
  - Program should consider full lifecycle cost – total cost of ownership.
- ✓ Output of this process is program cost estimates.

## Program Financial Framework Establishment

- ✓ Funding structure defines financial environment.
- ✓ Funding models:
  - Complete funding within a single organization;
  - Managed within a single organization but funded separately;
  - Funded and managed entirely from outside parent organization; and
  - Supported with internal and external sources of funding.
- ✓ Program financial framework is developed and analyzed, and changes are managed by considering the impact on business case.
- ✓ The expectations of the financiers need to be understood and there should be a clear plan on how to fulfill them.
- ✓ Output:
  - Program financial framework;
  - Business case updates; and
  - Updates to the communications management and stakeholder engagement plan.

## Program Financial Management Plan Development

- ✓ Program financial management plan documents:
  - Funding schedules and milestones;
  - Initial budget and later revisions;
  - Contract terms, payments, and schedules;
  - Financial metrics, reporting activities, and mechanisms; and
  - Operational and infrastructure cost.
- ✓ The plan needs to take into consideration:
  - Maintaining solvency of the program; and
  - Creation and management of reserves.
- ✓ Outputs:
  - Program financial management plan with contents described above.

## Some Financial Terminology

- ✓ Financial statements:
  - Balance sheets:
    - Assets vs. liabilities; and
    - Current vs. long term.
  - Profit and loss:
    - Revenue vs. expense;
    - Gross and operating margin; and
    - Net profit and apportioning of profits.
- ✓ Managing the impact of economic parameters on program finances:
  - Currency of inflows and outflows, and fluctuations;
  - Matching of inflows and outflows; and
  - Effect of inflation.



## Quality Management Processes

✓ Quality management processes in program definition:

- Program Quality Planning

## Program Quality Management

- ✓ Determine quality policies, objectives, and responsibilities to make a program successful.
  - ✓ Quality management system is implemented through policy and procedure with continuous improvement activities which are conducted throughout and as appropriate.
  - ✓ Every component contributes to program quality and overall program quality activities should be monitored and controlled.
- 
- ✓ **Quality:** It is the degree up to which a group of inherent characteristics satisfies the requirement. It is the responsibility of everyone in the organization.
  - ✓ **Grade:** As a design intent, grade is a category assigned to deliverables having the same functional use but different technical characteristics.
  - ✓ **Accuracy:** It is the degree of closeness to the actual value; precision is the granularity of measurement.

## What is Quality Management

- ✓ Quality management includes creating and following policies and procedures that meet a program's needs.
- ✓ The aim of quality management is to provide oversight and ensure that the specified approach to quality is implemented on the program.
- ✓ The three aspects to quality management are:
  - Quality planning;
  - Quality assurance; and
  - Quality control.

### **Concepts in quality management:**

- ✓ Total quality management: An integrated management philosophy around quality and continuous improvement.
- ✓ Kaizen: Japanese for “Change for better”; implies small, continuous improvements.
- ✓ Deming cycle: Plan-Do-Check-Act; a framework for process control and improvement.
- ✓ Kanban: A “pull-based” inventory management system based on the principle of Just-In-Time (JIT).

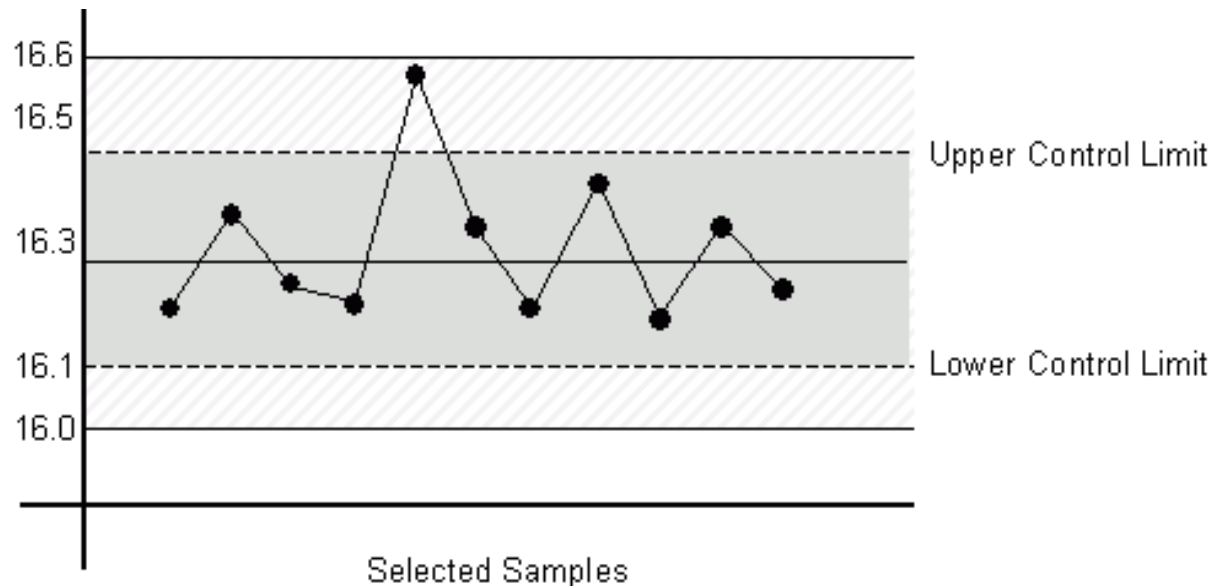
## Seven Basic Quality tools

✓ The seven basic quality tools are:

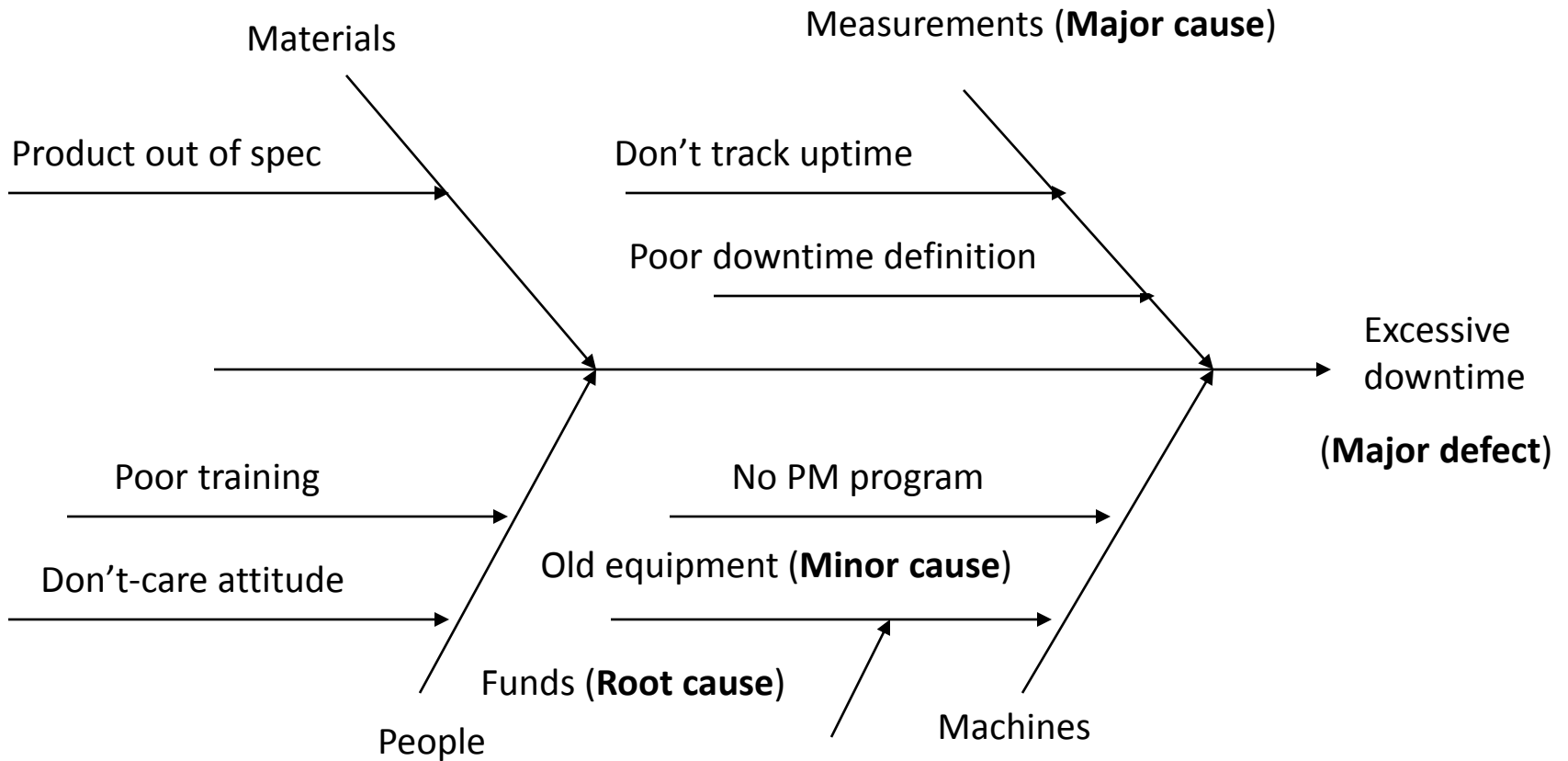
- Control charts;
- Cause and effect diagram;
- Flowcharting;
- Histogram;
- Pareto diagram;
- Check sheets; and
- Scatter diagram.

✓ Control charts:

- Control charts graphically help you to determine if the process is within acceptable limits.
- A control chart can be used to monitor project performance figures such as cost or schedule variance.



## Cause and Effect Diagram (Fishbone Diagram or Ishikawa Diagram)

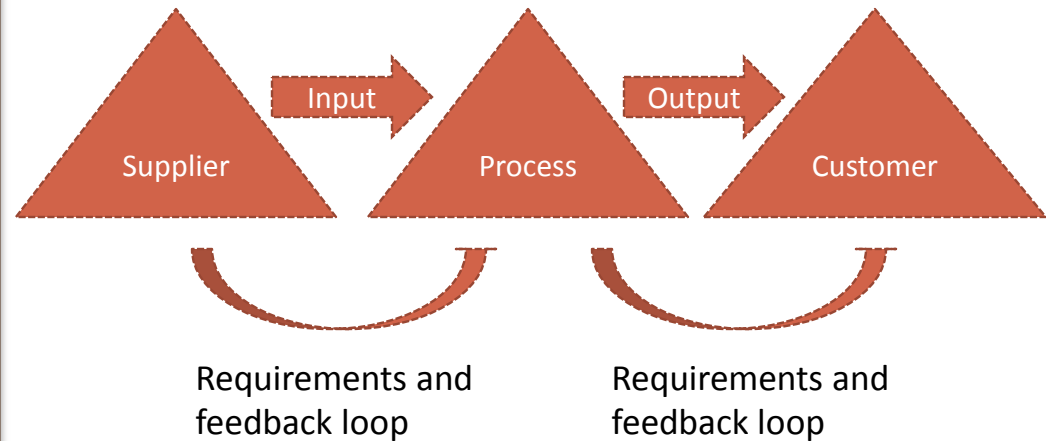


- ✓ Used to find the root cause of a defect.
- ✓ Helps stimulate thinking and organizes thoughts.
- ✓ Can be used in quality planning, as well as quality control.

## Flowcharting and Histogram

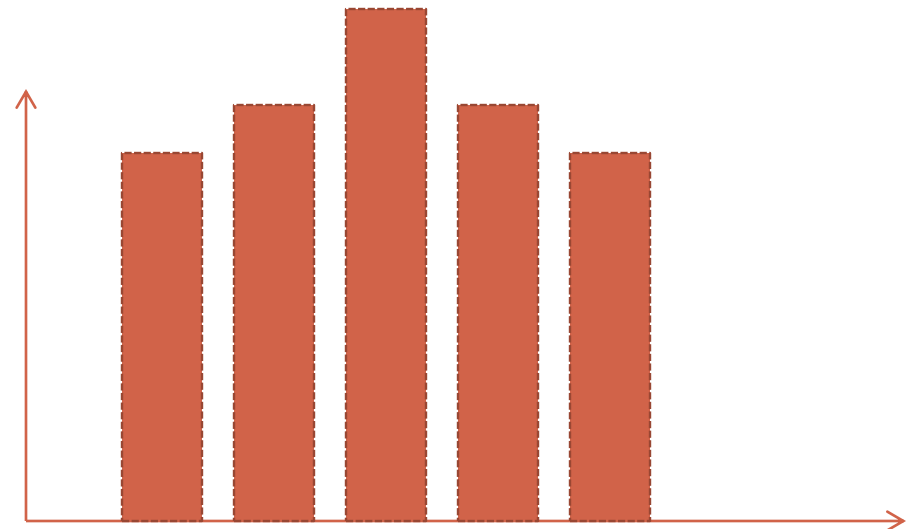
### Flowcharting:

- ✓ Flowchart shows how a process or system flows from beginning to end and how the elements interrelate.
- ✓ Graphically represents the process and helps analyze how the problems occur.
- ✓ Used to identify redundancies and bottlenecks.

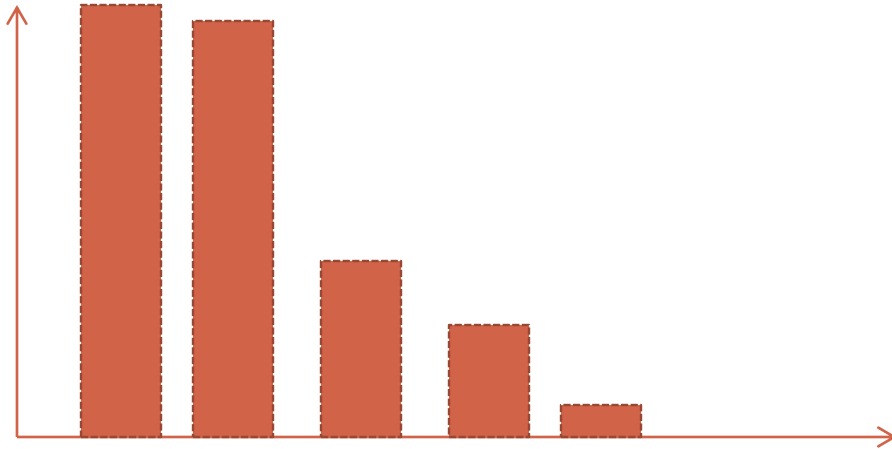


### Histogram:

- ✓ It is a vertical bar chart showing how often a particular variable occurred.
- ✓ The height of each column represents the relative frequency of the variable.



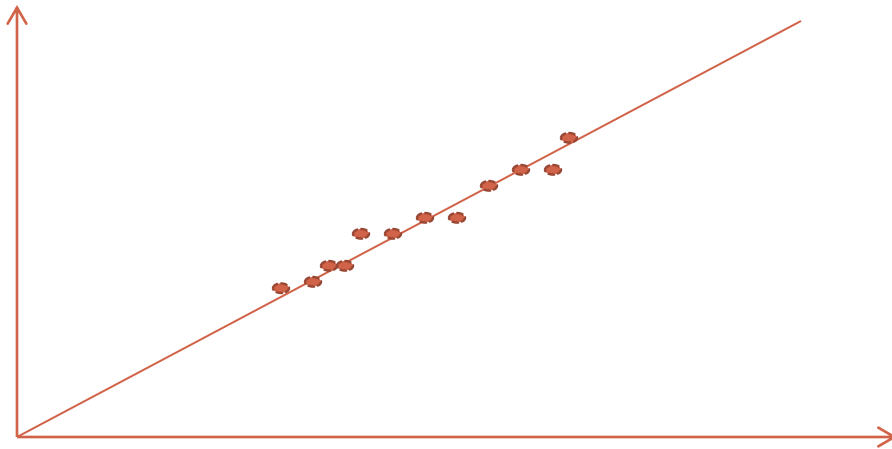
## Pareto Diagram, Check Sheet, and Scatter Diagram



Pareto Diagram example

### Pareto diagram:

- ✓ Also called 80/20 rule.
- ✓ Helps focus attention on the most critical issues.
- ✓ Prioritizes potential causes of the problem.
- ✓ Helps identify the critical few from the uncritical many.



Scatter Diagram example

### Check sheet:

- ✓ Also called tally sheet; it is as useful as checklist while gathering data.
- ✓ Especially useful during inspections.

### Scatter diagram

- ✓ Tracks two variables to see if they are correlated.

## Program Quality Planning

- ✓ Identifies standards relevant to a program and specifies how to satisfy them.
- ✓ Delegates project-level quality decisions, while providing oversight and governance, and sets up policies.
- ✓ Outputs:
  - Program quality policy;
  - Program quality standards;
  - Program quality estimates of cost;
  - Quality metrics, service level agreements, or memorandums of understanding, etc.;
  - Quality checklists; and
  - Quality assurance and control specifications.



## Resource Management Processes

✓ Resource management processes in program definition:

➤ Resource Planning

## Resource Planning

- ✓ Determining resources in terms of type, duration, time, and quantity to allow effective components execution;
- ✓ Identifying existing and additional resources;
- ✓ Program manager optimizes the resource utilization to avoid over-commitment or under-utilization;
- ✓ Historical data from similar projects and programs used to find the type of resources required; and
- ✓ If resources are unavailable, the program manager uses larger organizations for assistance to develop SOW to contract.
- ✓ Outputs:
  - Program resource requirements; and
  - Program resource plan.

## Risk Management Processes

✓ Risk management processes in program definition:

- Program Risk Management Planning

## What is Risk

\* Risk is an uncertain event or condition that has a positive or negative effect on a project's objectives when it occurs.

### Example: Positive Events

- ✓ You were forced to order new software, which is cheaper than your old software, because of budget constraints. However, the new software turns out to be more efficient.

### Example: Negative Events

- ✓ The government mandates a compulsory holiday due to an outbreak of swine flu. The project gets delayed.

- ✓ Positive events or conditions are also called opportunities or “good risks”. A risk that can have a positive or negative consequence is called business risk. A risk that can only have a negative consequence is called pure risk.
- ✓ One who does not take risks is called risk averse.
- ✓ **Risk Tolerance:** The degree of risk one is willing to accept.
- ✓ **Risk Threshold:** This helps to identify the level of risk beyond which specific responses are needed. For example, a company may have a policy that a risk which increases the project cost by 10% or less is okay, but not more than that.

\* Definition taken from the glossary of the Project Management Institute, A Guide to the Project Management Body of Knowledge, (*PMBOK® Guide*) – Fifth Edition, Project Management Institute, Inc., 2013.

## Program Risk Management Planning

- ✓ Should be conducted early in the program definition phase.
- ✓ Identifies how to approach and conduct risk management activities for a program by considering its components, resources, and time required for risk management activities.
- ✓ Ensures that the level, type, and visibility of risk management are appropriate for the risks and importance of the program to the organization.
- ✓ Establishes an agreed-upon basis for evaluating risks.
- ✓ Should consider organization culture, stakeholder influence, market condition, risk policy, threshold, tolerance, and sensitivity.
- ✓ Program-level risk management does NOT replace project-level risk management.
- ✓ Output:
  - Program risk management plan

## Communications Management Processes

✓ Communications management processes in program definition:

➤ Communications Planning

## Communications Planning

- ✓ Facilitate timely and appropriate generation, collection, distribution, storage, retrieval, and ultimate disposition of program information.
- ✓ Program managers spend significant time and effort on communication with stakeholders.
- ✓ Program communications management and program stakeholder engagement are closely related.
- ✓ Considerations for program communication:
  - Program manager is the key communicator for the program.
  - Program manager should have general management skills related to communications, like written and oral presentation skills.
  - Define, maintain, and update communication strategy document.
  - You can never “over-communicate”.

## Communications Planning (Contd.)

- ✓ **Communications Planning:**
  - Is vital to the success of any program.
  - Determines the information and communication needs of program stakeholders. Some of the considerations might be:
    - What information
    - At what frequency
    - Mode of communication
    - Time zones
    - Cultural sensitivities
- ✓ **Outputs:**
  - Communication plan
  - Stakeholder register and corresponding communication requirements



## Procurement Management Processes

✓ Procurement management processes in program definition:

➤ Program Procurement Planning

## Program Procurement Management

- ✓ Addresses activities necessary to acquire products and services.
- ✓ Acquisitions, procurement, and contract management are specialized skills.
- ✓ Program manager should ensure that organization policies and standards are followed during procurement.
- ✓ Procurement departments work closely with financial and legal departments to ensure that laws, regulations, and statutes are followed.

## Centralized vs. Decentralized Contracting

- ✓ In centralized contracting, a single contract manager handles multiple programs and functions. Whereas in decentralized contracting, a contract manager is assigned to the program full time, and reports to the program manager.

### Centralized

Advantages	Disadvantages
Standardized company practices	Difficult to get contracting help as the person may be busy on multiple programs
Increased expertise in contracting	

### Decentralized

Advantages	Disadvantages
More loyalty to the program	Duplication of expertise
Easier access to contracting experience	Less standardization of contracting practices from one program to another

## Different Types of Contract

Contract Types	Details
<b>Cost Reimbursable (CR) or Cost Plus</b>  Example: Cost plus a fee of \$50,000	<ul style="list-style-type: none"> <li>✓ Cost Plus Fee (CPF)</li> <li>✓ Cost Plus Percentage of Costs (CPPC)</li> <li>✓ Cost Plus Fixed Fee (CPFF)</li> <li>✓ Cost Plus Incentive Fee (CPIF)</li> <li>✓ Cost Plus Award Fee (CPAF)</li> </ul>
<b>Time and Material (T&amp;M) or Unit Price</b>  Example: \$25 per hour + material cost.	<ul style="list-style-type: none"> <li>✓ Generally used for smaller projects</li> </ul>
<b>Fixed Price (FP) or Lump sum</b>  Example: \$2.5 million + \$10,000 per week for early completion	<ul style="list-style-type: none"> <li>✓ Fixed Price Incentive Fee (FPIF)</li> <li>✓ Firm Fixed Price (FFP)</li> <li>✓ Fixed Price – Economic Price Adjusted (FP - EPA)</li> </ul>

- ✓ What are the advantages and disadvantages of each type?
- ✓ In what form of contract is the risk highest for the buyer/seller?

## Advantages and Disadvantages of Contract Types

### Cost Reimbursable

Advantages	Disadvantages
✓ Less costly than fixed price because seller does not have to account for their risk.	✓ Requires the auditing of all the seller invoices and thus increases buyer efforts.
✓ Such contracts are simple to draft.	✓ Seller has less incentive to control cost; thus these contracts are inefficient, i.e., riskier for the buyer/project manager.

### Fixed Price

Advantages	Disadvantages
✓ Seller has strong incentive to control cost; thus these contracts are efficient.	✓ Seller may under quote initially and later try to make high margins on change requests.
✓ Requires less effort by buyer to manage contracts as cost risk is associated with the seller.	✓ Not having a proper SOW can result in seller not providing some of the deliverables.

## Advantages and Disadvantages of Contract Types (Contd.)

### Time and Material

Advantages	Disadvantages
✓ Easy to create.	✓ Seller has no incentive to control costs.
✓ Good for resource augmentation assignments where cost risk is shared by buyer and seller.	✓ Requires monitoring of daily output.
	✓ Good for small projects only.

## Some Key Terms in Procurement Management

- ✓ RFI: Request for Information
- ✓ RFP: Request for proposal
- ✓ RFB: Request for bids
- ✓ RFQ: Request for quotation

- ✓ PO: Purchase order
- ✓ SOW: Statement of work
- ✓ Quotation

- ✓ NDA: Non-disclosure agreement
- ✓ LOI: Letter of intent
- ✓ T and C: Terms and conditions

- ✓ Force majeure
- ✓ Doctrine of waiver
- ✓ Privity of contract
- ✓ Dispute resolution
- ✓ Termination for convenience of buyer

## Program Procurement Planning

- ✓ Program manager should consider “make or buy” decision based on program WBS and funding.
- ✓ Considerations:
  - Centralized vs. decentralized models;
  - Selecting type of contracts; and
  - Best program-wide approach to optimize procurements.
- ✓ Program manager must safeguard the interest of the program while meeting contractual obligations.
- ✓ Outputs:
  - Program procurement standards;
  - Program procurement plan; and
  - Program budget/financial plan updates.



## Summary

### Processes in program definition phase:

#### ✓ Integration Management Processes

- Program Initiation
- Program Management Plan Development
- Program Infrastructure Development

#### ✓ Scope Management Processes

- Program Scope Planning

#### ✓ Schedule Management Processes

- Program Schedule Planning

#### ✓ Financial Management Processes

- Program Cost Estimation
- Program Financial Framework Establishment
- Program Financial Management Plan Development

## Summary (Contd.)

- ✓ Quality Management Processes
  - Program Quality Planning
- ✓ Resource Management Processes
  - Resource Planning
- ✓ Risk Management Processes
  - Program Risk Management Planning
- ✓ Communications Management Processes
  - Planning Communications
- ✓ Procurement Management Processes
  - Program Procurement Planning

## Quiz – 1

A program manager is preparing the program WBS. She finds that the WBS overlaps with the project-level WBS. To what level should the PWBS be decomposed?

- a) It should only contain the highest level of breakdown and then link to the project WBS
- b) It depends upon the level of control desired by the program manager
- c) It should contain all the project-level WBS underneath
- d) Down to the work package level until the work packages can be reliably estimated

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**Answer:** b. It depends upon the level of control desired by the program manager.

**Explanation:** The decomposition of the deliverables in the PWBS should only be to the level of control that the program manager requires. It should not intend to replace or supersede the project-level WBS.

## Quiz – 2

What kind of resources are covered under the program resource plan?

- a) Human resources
- b) Resources other than people
- c) People, equipment, tools, raw materials, etc.
- d) Intangible assets like goodwill, skill sets, etc.

## Quiz – 2

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- c) People, equipment, tools, raw materials, etc.
- d) Intangible assets like goodwill, skill sets, etc.

**Answer:** c. People, equipment, tools, raw materials, etc.

**Explanation:** The program level resource plan includes people as well as other resources, but does not get into the details of the intangible assets.

## Quiz – 3

Which of the following best describes the role of program manager in planning quality for the program?

- a) Program manager is accountable and responsible for the quality of output across all the components of the program
- b) Program manager monitors the quality of program management activities and delegates the product quality to the components
- c) Program manager puts in the quality policies and audit mechanisms to make sure they are being followed
- d) Program manager should appoint a program quality czar to handle all quality matters

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**Answer:** c. Program manager puts in the quality policies and audit mechanisms to make sure they are being followed.

**Explanation:** Program manager puts in place the policies and governance mechanisms. They do not get involved in the quality management activities across all components.



## Quiz – 4

Which of the following is likely to be included in the program management plan, but not in the project management plan?

- a) Goals and objectives
- b) Risk register and risk management plan
- c) Stakeholder register and stakeholder management plan
- d) Plan for managing interfaces and integrations

## Quiz – 4

Which of the following is likely to be included in the program management plan, but not in the project management plan?

- a) Goals and objectives
- b) Risk register and risk management plan
- c) Stakeholder register and stakeholder management plan
- d) Plan for managing interfaces and integrations

**Answer:** d. Plan for managing interfaces and integrations

**Explanation:** The program's focus is usually on integrating the output of projects to deliver the intended benefits of the program. This is why option d is more likely to be present in the program management plan. The first three choices are likely to be present in both plans.

**Thank You**