

M03

Operation Management Skills for

SMEs

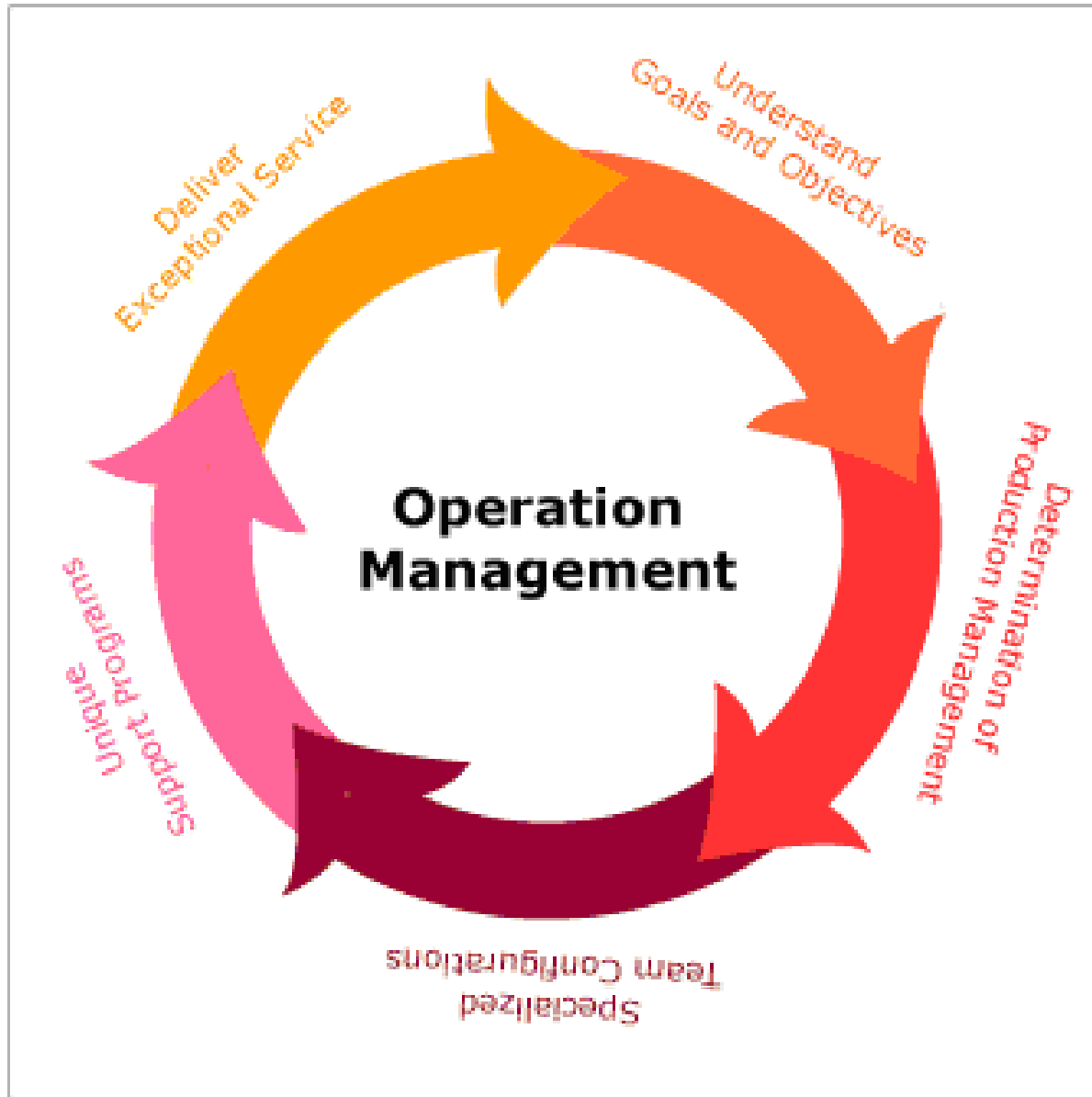
Course Duration: 16 hours

Course Content



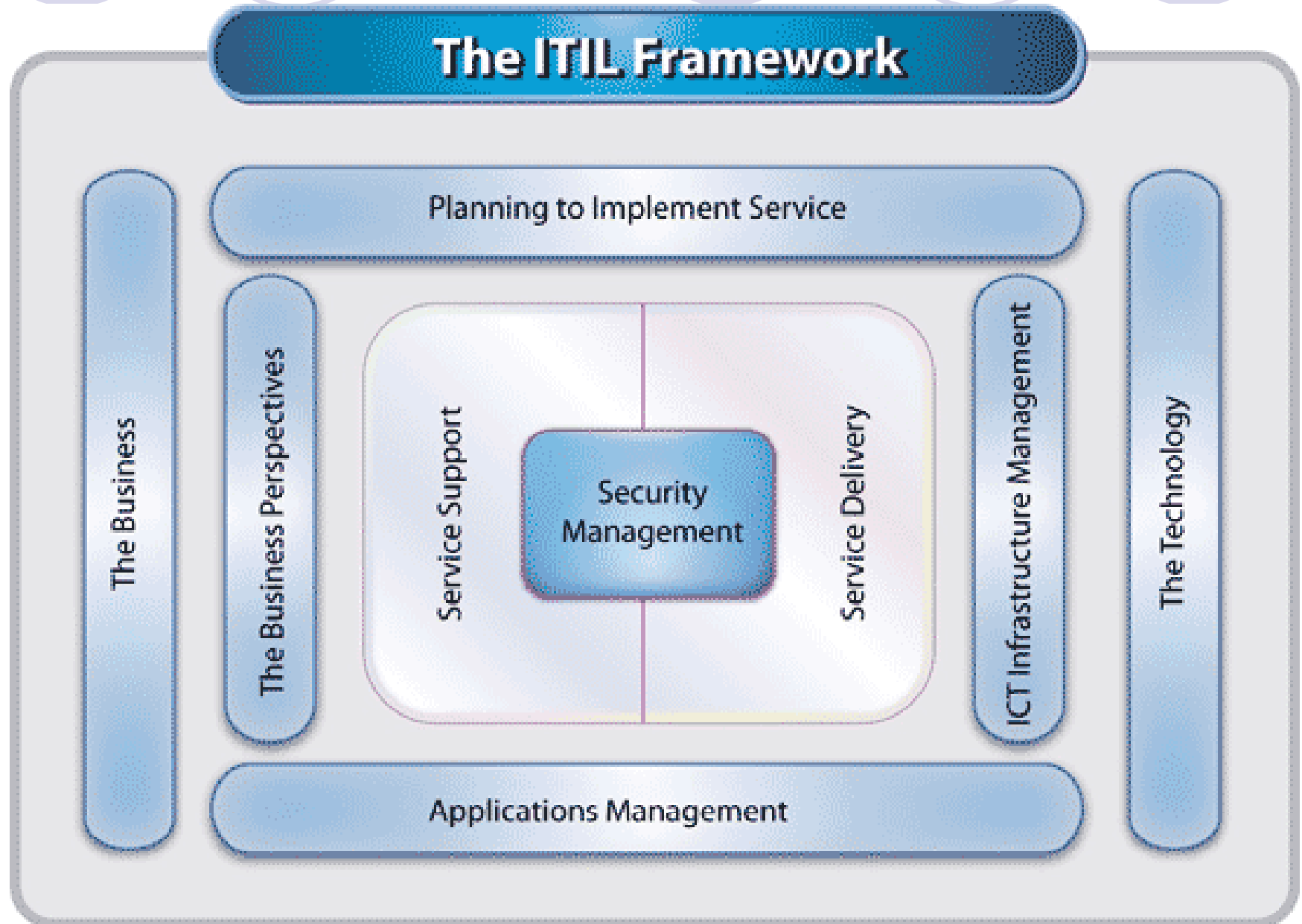
- **Intro. of Operation Management Skills for SMEs**
- **Causal Analysis**
- **Decision Making**
- **Planning / Strategic Planning**
- **Situational Audit**
- **SWOT Analysis**
- **Intro. of related software**

Operation Management



- Understand Goal & Objectives
- Determination of Production Management
- Specialized Team Configurations
- Unique Support Programs
- Deliver Exceptional Service

Operation Management Skills



Causal Analysis



- **Effective tool for Quality Control**
- **“Monitoring specific project results to determine if they comply with relevant Quality standards and identifying ways to eliminate causes of unsatisfied performance.” – PMBOK**

Causal Analysis (Con't)



- Quality can be defined in different ways.
 - Quality is absence of defects
 - Quality is the Degree to which a set of inherent characteristics fulfils requirements
- Each one of us is responsible for the Quality of individual work units / work products.

Basic Principle of causal analysis

- To find causes that you can treat rather than treating symptoms.

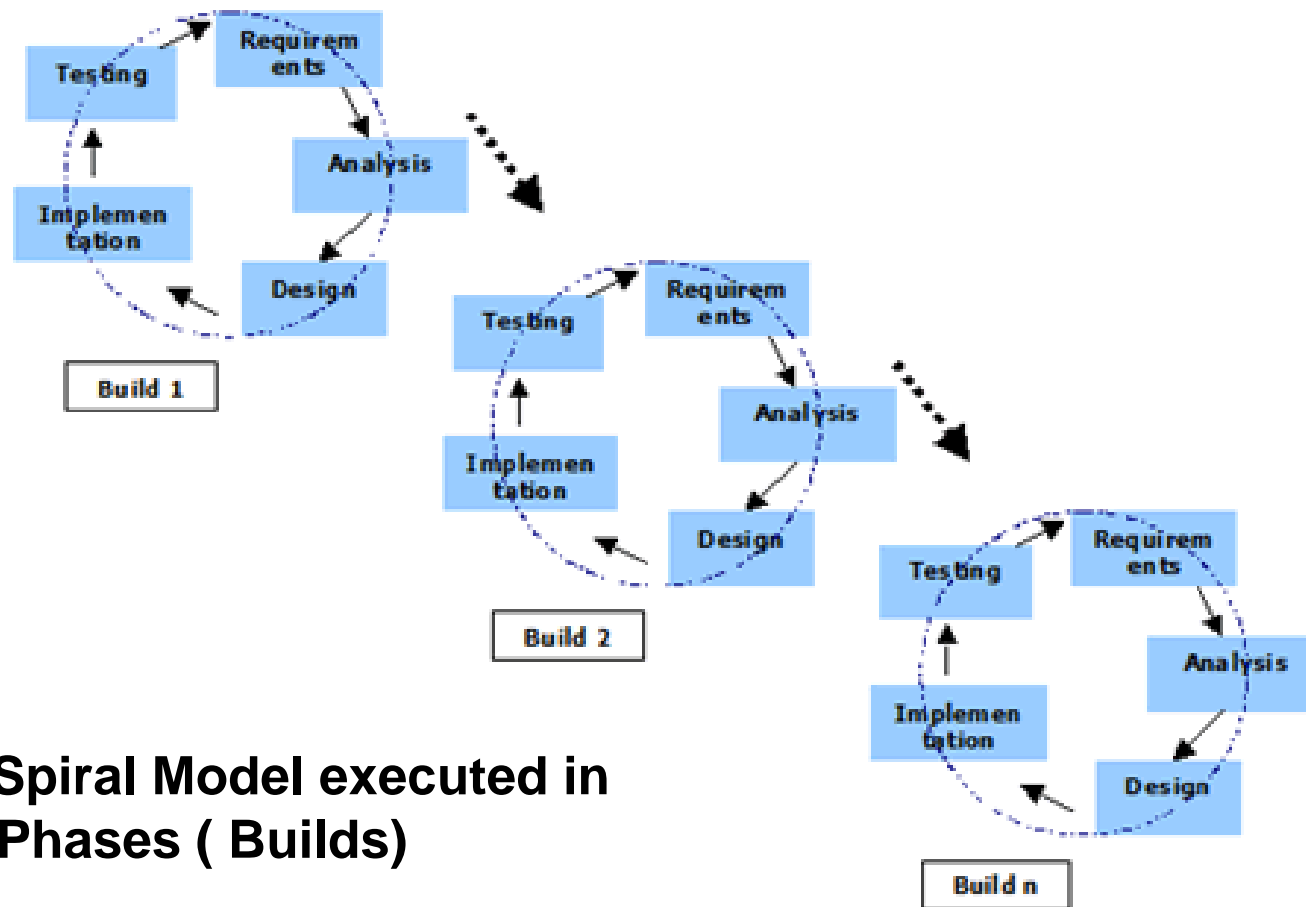


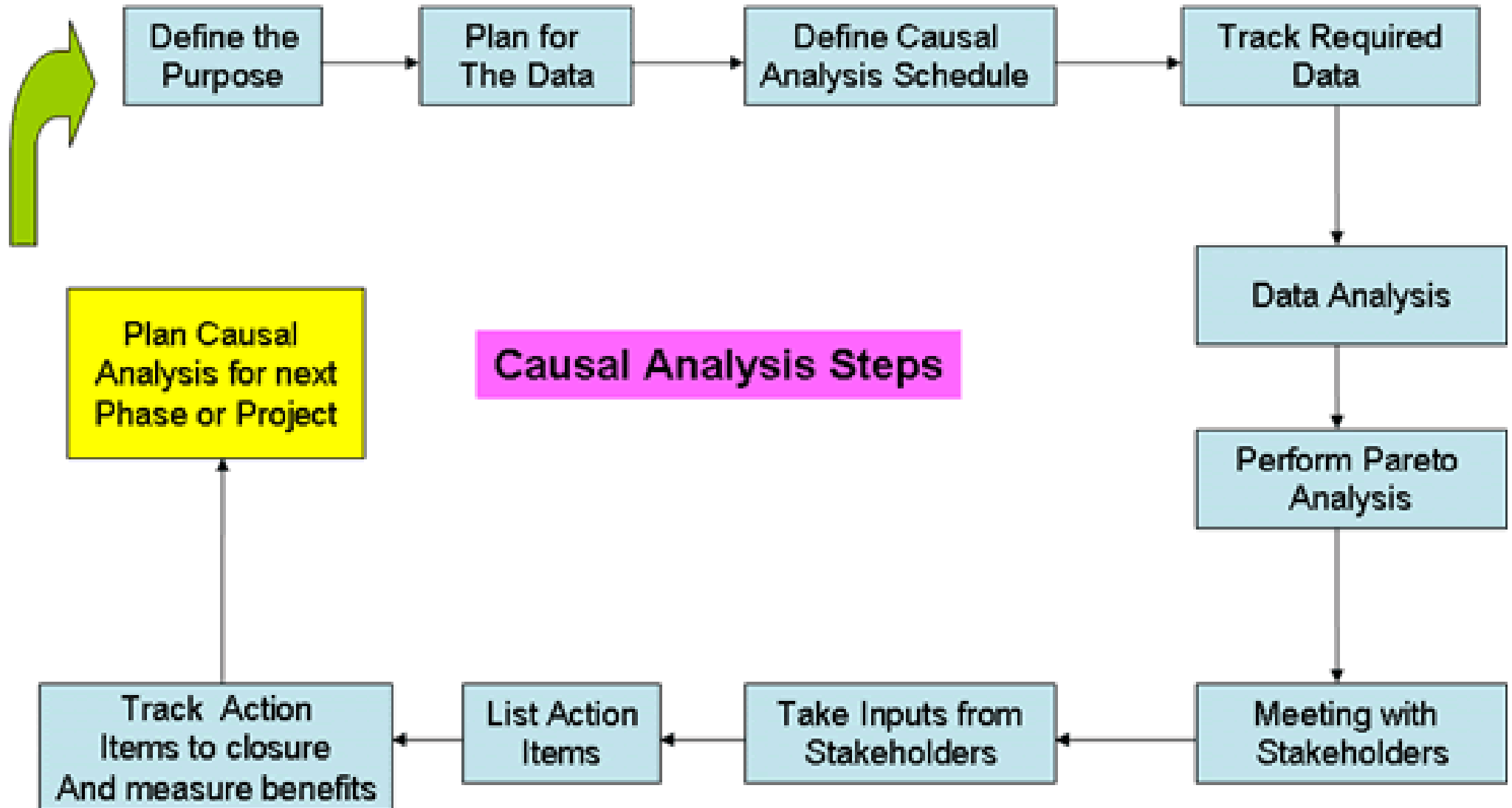
Figure: Spiral Model executed in multiple Phases (Builds)

Scope of Causal Analysis



- To provide quality improvements in:
 - The next Phase of the current project
 - New projects
- The Causal Analysis schedule should be well defined during the Planning Phase of the project.

Steps for Causal analysis



Define the Purpose

- What is the objective of Causal Analysis?
- Well defined when start any project.
- e.g.
 - May have an objective to reduce System Testing defects for the next phase of a project
 - or
 - Would like to do Causal Analysis to carry forward learnings for similar projects the organization may be executing in the future

Plan for the data



- The Project Manager should define the system to collect this data.
- How are you collecting “System Test Defects”?
 - Is it using Excel or Issue Management tool?
- Can your system categorize defects as:
 - Enhancements
 - Bugs
 - Continuous Improvements
- Are you tracking critical details like Severity, Found in Phase, Source Phase?
- Have you defined proper defect categories like
 - Requirements Not clear
 - Environmental (Stacks) Issues
 - Functionality Missed out
 - Functionality incorrect
 - Process Non Conformance
 - Unhandled Exceptions
- Is your Issue tracking system tracking required data?
(Maybe we can make defect category mandatory as we are planning to do Causal Analysis for defects)
- Providing the necessary training to team members to ensure correct data is entered in the system.

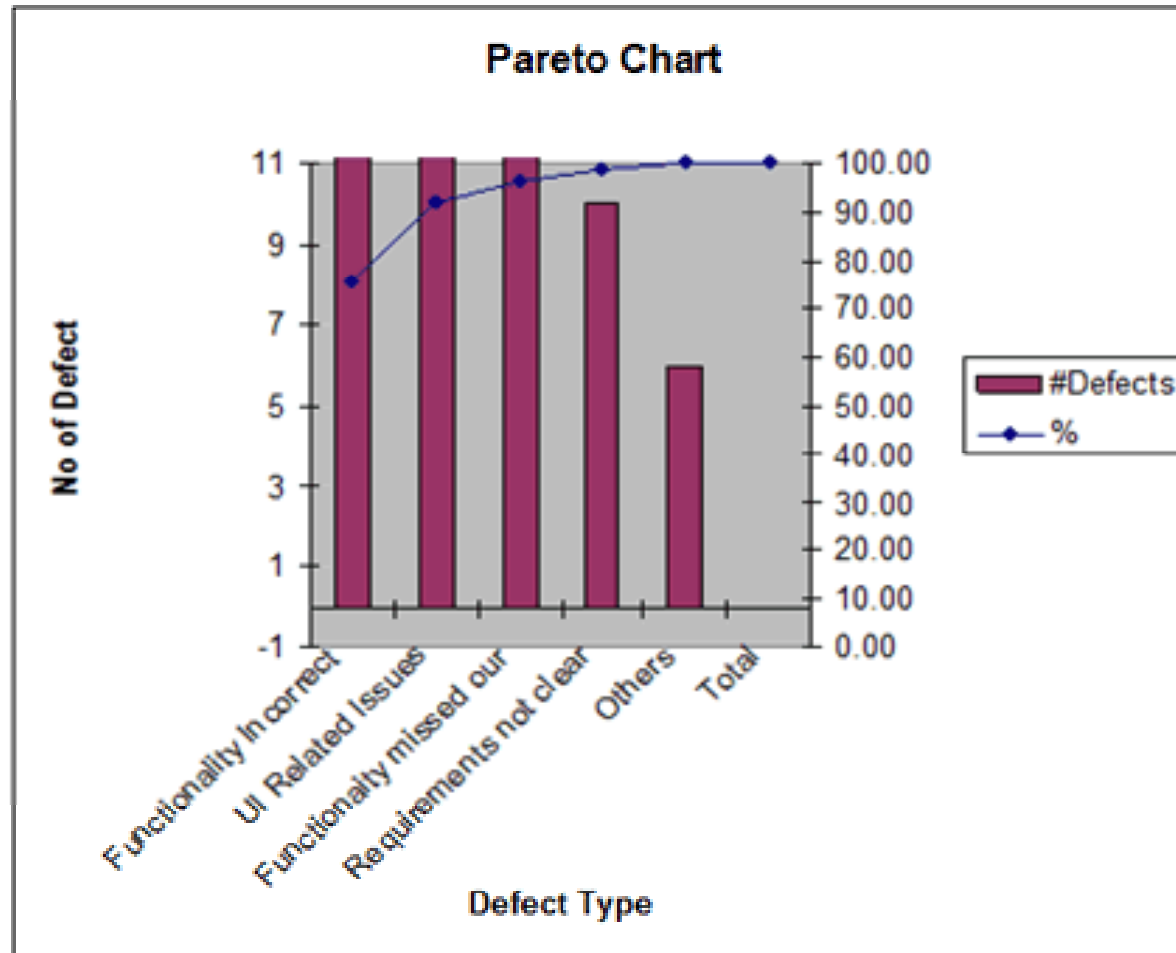
Data Analysis

- As per Causal Analysis plan extract the required data from the system and put in the Causal Analysis format.
- e.g.: for the above use case format can be:

Issue Id	Defect Summary/Description	Defect Type	Severity	Found In Phase	Source Phase	Cause Description
72403	Unable to find existing BOM Templates via General Search.	Bug	Major	System Test	Code and Unit Test	Sort Ascending Sort Descending
72636	Labels Copied are not refreshed in the List	Bug	Minor	System Test	Code and Unit Test	(All) (Top 10...) (Custom...)
72637	Labels/Packaging/Trims - Delete Selected Not Working	Bug	Major	System Test	Code and Unit Test	Functionality Incorrect Functionality Mixed out
72679	jsp page doesn't get displayed	Bug	Major	System Test	Code and Unit Test	Installer Problem Process Non Confirmation Requirements not clear UI Related Issues Unhandled Exception
72688	Page is not displayed	Bug	Major	System Test	Code and Unit Test	Functionality Mixed out

Perform Pareto Analysis

- This is done to find out major causes of problems



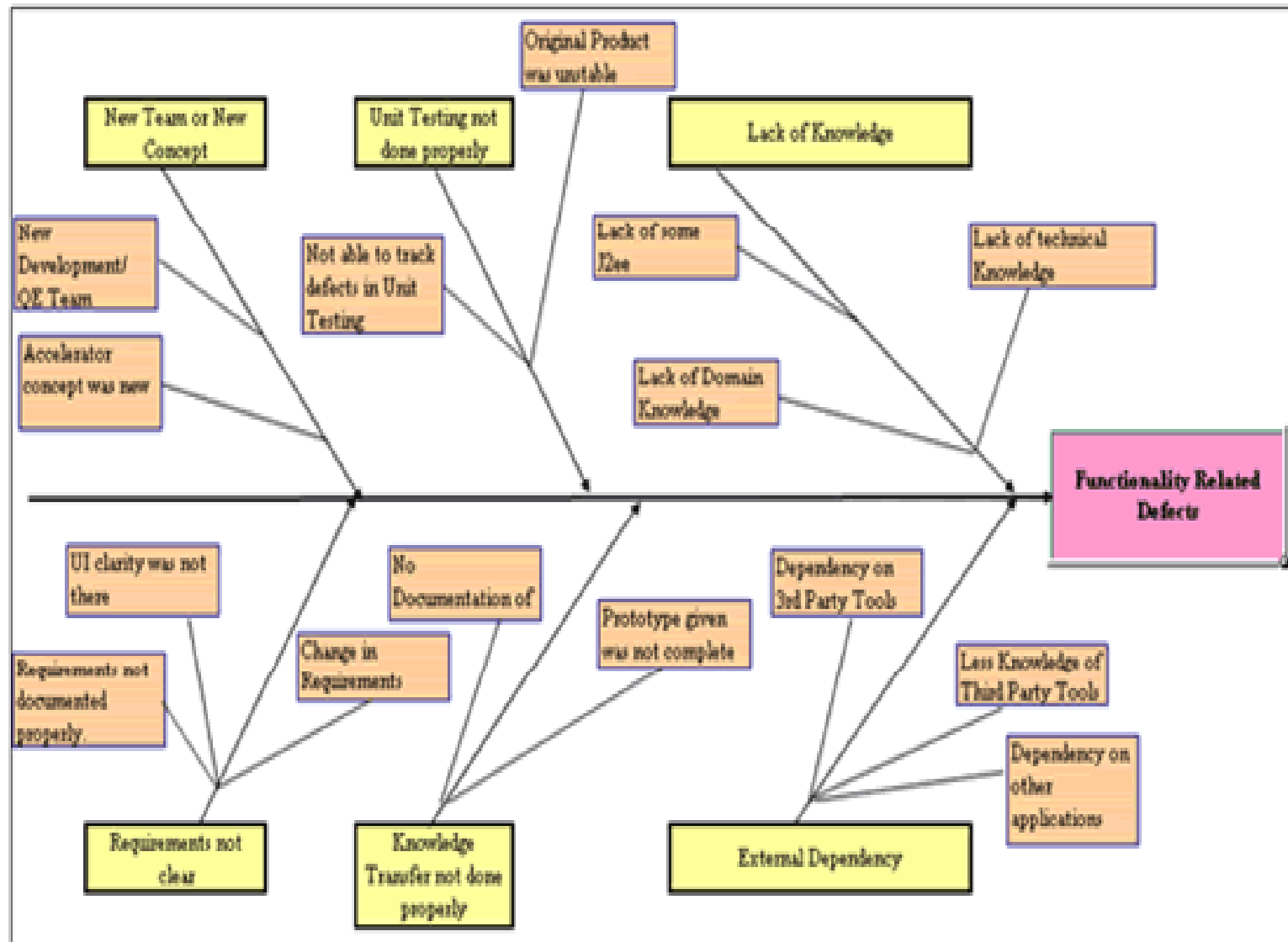


Identify major Cause

- This is a critical step
- Identify problems on which we would like to do Causal Analysis.

Take inputs from Stakeholders

- Obtain inputs from different Stakeholders and draw a Fishbone diagram



List / Track Key Action Items

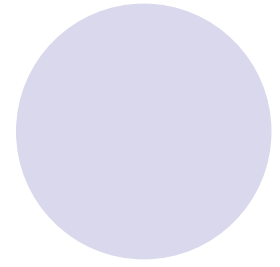
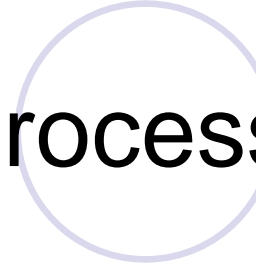
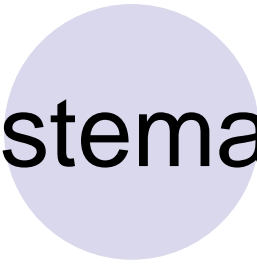
- Based on the discussions and the Fishbone diagram prepare
 - Action plans with Action Items,
 - Responsibility,
 - Target Dates,
 - Tangible/ Intangible benefits
- **Track Action Items to Closure and measure benefits**
 - Based on the action plan measure tangible and non tangible benefits.
 - e.g.: for the above problem statement we can track benefits for the next phase of the project

Plan Causal Analysis for
next phase

Questions



Systematic decision-making process



Why systematic decision-making process?

- If you establish strong foundations for decision making...
 - generate good alternatives
 - evaluate these alternatives rigorously
 - check your decision-making process
 - improve the quality of your decisions
 - leads to better decisions
- Without a well-defined process,
 - you risk making decisions are based on **insufficient information and analysis**.
 - Many variables affect the final impact of your decision

Decision Making Techniques

- Pareto Analysis
 - Choosing what to change
- Paired Comparison Analysis
 - Working out the relative importance of different options
- Grid Analysis
 - Making a choice taking into account many factors
- PMI
 - Weighing the pros and cons of a decision
- Force Field Analysis
 - Analyzing the pressures for and against change
- Six Thinking Hats
 - Looking at a decision from different perspectives
- Starbursting
 - Understanding options better by brainstorming questions
- Stepladder Technique
 - Making better group decisions
- Cost/Benefit Analysis
 - Seeing whether a decision makes financial sense
- Cash Flow Forecasting with Spreadsheets
 - Analyzing whether an idea is financially viable
- Decision Trees
 - Choosing by valuing different options

(Workshops)



**How to Make
Good Decisions?**

Questions





6 steps to making an effective decision:

- Create a constructive environment.
- Generate good alternatives.
- Explore these alternatives.
- Choose the best alternative.
- Check your decision.
- Communicate your decision, and take action.

Step 1: Create a constructive environment

Do the following:

- **Establish the objective** - Define what you want to achieve.
- **Agree on the process** - Know how the final decision will be made, including whether it will be an individual or a team-based decision. The [Vroom-Yetton-Jago Model](#) is a great tool for determining the most appropriate way of making the decision.
- **Involve the right people** - [Stakeholder Analysis](#) is important in making an effective decision with consulted stakeholders appropriately. Where a group process is appropriate, the decision-making group should have a good representation of stakeholders.
- **Allow opinions to be heard** - Encourage participants to contribute to the discussions, debates, and analysis without any fear of rejection from the group. This is one of the best ways to [avoid groupthink](#). The [Stepladder Technique](#) is a useful method for gradually introducing more and more people to the group discussion, and making sure everyone is heard. Also, recognize that the objective is to make the best decision under the circumstances: it's not a game in which people are competing to have their own preferred alternatives adopted.
- **Make sure you're asking the right question** - Ask yourself whether this is really the true issue. The [5 Whys](#) technique is a classic tool that helps you identify the real underlying problem that you face.
- **Use creativity tools from the start** - The basis of creativity is thinking from a different perspective. Do this when you first set out the problem, and then continue it while generating alternatives. Our article [Generating New Ideas](#) will help you create new connections in your mind, break old thought patterns, and consider new perspectives.

Step 2: Generate Good Alternatives

- When you generate alternatives, you force yourself to dig deeper, and look at the problem from different angles. If you use the mindset, 'there must be other solutions out there,' you're more likely to make the best decision possible. If you don't have reasonable alternatives, then there's really not much of a decision to make!

Some key tools to develop good alternatives:

- **Generating Ideas**

- [Brainstorming](#) is probably the most popular method of generating ideas.
- Another approach, [Reverse Brainstorming](#), works similarly. However, it starts by asking people to brainstorm how to achieve the opposite outcome from the one wanted, and then reversing these actions.
- The [Charette Procedure](#) is a systematic process for gathering and developing ideas from very many stakeholders.
- Use the [Crawford Slip Writing Technique](#) (member only) to generate ideas from a large number of people. This is an extremely effective way to make sure that everyone's ideas are heard and given equal weight, irrespective of the person's position or power within the organization.

- **Considering Different Perspectives**

- The [Reframing Matrix](#) uses 4 Ps (product, planning, potential, and people) as the basis for gathering different perspectives. You can also ask outsiders to join the discussion, or ask existing participants to adopt different functional perspectives (for example, have a marketing person speak from the viewpoint of a financial manager).
- If you have very few options, or an unsatisfactory alternative, use a [Concept Fan](#) to take a step back from the problem, and approach it from a wider perspective. This often helps when the people involved in the decision are too close to the problem.
- [Appreciative Inquiry](#) forces you to look at the problem based on what's 'going right,' rather than what's 'going wrong.'

- **Organizing Ideas**

This is especially helpful when you have a large number of ideas. Sometimes separate ideas can be combined into one comprehensive alternative.

- Use [Affinity Diagrams](#) to organize ideas into common themes and groupings.

Step 3: Explore the Alternatives

- When you're satisfied that you have a good selection of realistic alternatives, then you'll need to evaluate the feasibility, risks, and implications of each choice. Some popular and effective analytical tools:
- **Risk**

In decision making, there's usually some degree of uncertainty, which inevitably leads to risk. By evaluating the risk involved with various options, you can determine whether the risk is manageable.

 - [Risk Analysis](#) helps you look at risks objectively. It uses a structured approach for assessing threats, and for evaluating the probability of events occurring - and what they might cost to manage.
- **Implications**

Another way to look at your options is by considering the potential consequences of each.

 - [Six Thinking Hats](#) helps you evaluate the consequences of a decision by looking at the alternatives from six different perspectives.
 - [Impact Analysis](#) (member only) is a useful technique for brainstorming the 'unexpected' consequences that may arise from a decision.
- **Validation**

Determine if resources are adequate, if the solution matches your objectives, and if the decision is likely to work in the long term.

 - [Starbursting](#) helps you think about the questions you should ask to evaluate an alternative properly.
 - To assess pros and cons of each option, use [Force Field Analysis](#), or use the [Plus-Minus-Interesting](#) approach.
- [Cost-Benefit Analysis](#) looks at the financial feasibility of an alternative.

Step 4: Choose the Best Alternative

After you have evaluated the alternatives, the next step is to choose between them. These tools will help:

- Grid Analysis, also known as a decision matrix
 - a key tool for this type of evaluation.
 - bring disparate factors into your decision-making process in a reliable and rigorous way.
- Paired Comparison Analysis
 - to determine the relative importance of various factors.
 - compare unlike factors, and decide which ones should carry the most weight in your decision.
- Decision Trees
 - useful in choosing between options.
 - lay out the different options open to you, and bring the likelihood of project success or failure into the decision making process.

Step 5: Check Your Decision

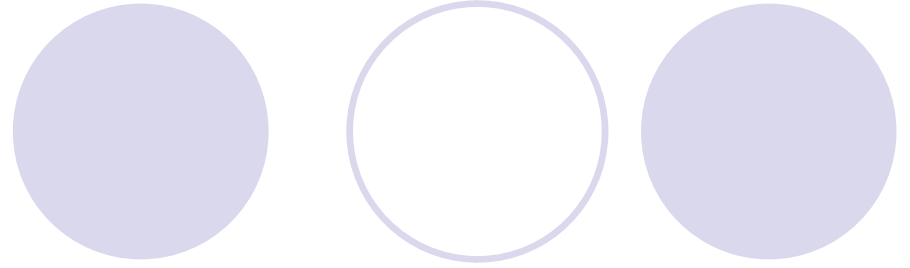
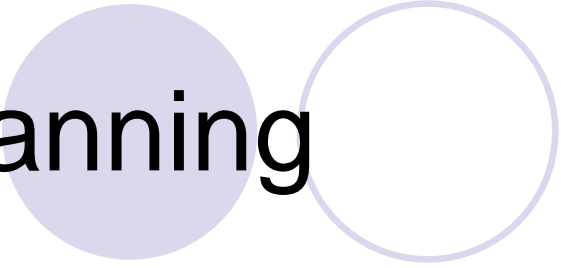
- it's easy to forget to 'sense check' your decisions.
- This is where you look at the decision you're about to make dispassionately, to make sure that your process has been thorough, and to ensure that common errors haven't crept into the decision-making process. After all, we can all now see the catastrophic consequences that
 - over-confidence,
 - groupthink,
 - other decision-making errors
- have wrought on the world economy.

- The first part of this is an intuitive step,
 - which involves quietly and methodically testing the assumptions and the decisions you've made against your own experience, and thoroughly reviewing and exploring any doubts you might have.
- A second part involves using a technique like [Blindspot Analysis](#)
 - to review whether common decision-making problems like over-confidence, escalating commitment, or [groupthink](#) (member only) may have undermined the decision-making process.
- A third part involves using a technique like the [Ladder of Inference](#)
 - to check through the logical structure of the decision with a view to ensuring that a well-founded and consistent decision emerges at the end of the decision-making process.

Step 6: Communicate Your Decision, and Move to Action!

- Once you've made your decision,
 - it's important to explain it to those affected by it, and involved in implementing it.
 - Talk about why you chose the alternative you did.
 - The more information you provide about risks and projected benefits, the more likely people are to support the decision.

Planning



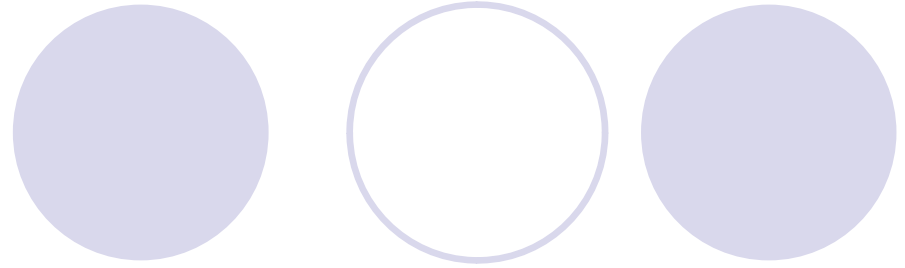
Planning



- In Planning processes they have the following areas
 - Quality Planning
 - Organizational Planning
 - Staff Acquisition
 - Communications Planning
 - Risk Identification
 - Qualitative Risk Analysis
 - Quantitative Risk Analysis
 - Risk Response Planning
 - Procurement Planning
 - Solicitation Planning

Quality Planning

- What is Quality?



- "Quality is fitness for use" - J.M. Juran
- "Quality is meeting or exceeding customer expectations at a cost that represents a value to them." - H. James Harrington
- "Quality should be defined as surpassing customer needs and expectations throughout the life of the product."
- Howard Gitlow and Shelley Gitlow

Judging Quality



- From a business perspective, project quality is judged as:
 - Was the project completed on time?
 - Was the project completed within budget?
 - Did the system meet my needs when it was delivered?
 - Is it stable?
- From a technical perspective, project quality is judged as:
 - Does the system comply with corporate standards for such things as user interface, documentation, naming standards etc.?
 - Is the technology stable?
 - Is the system well engineered so that it is robust and maintainable?

Conclusion: fit for purpose!

Quality Definitions

Term	Definition
Quality Materials	The artifacts used within an organisation to assist a Project Manager improve quality in the project e.g. Templates, Standards, Checklists. These materials are used in "Quality Events"
Quality Events	How the "Quality Materials" are applied to a project. They are the activities undertaken using "Quality Materials" to validate the quality of the project.
Quality Plan	A plan as to how and when "Quality Events" and "Quality Materials" are applied to a project.
Quality Control	The implementation of the "Quality Events" in the "Quality Plan"
Quality Assurance	<p>QA is an umbrella term. It refers to the processes used within an organization, to verify that deliverables are of acceptable quality and that they meet the completeness and correctness criteria established. QA does not refer to specific deliverables.</p> <ul style="list-style-type: none"> • The preparation of a "Quality Plan" for a project is part of QA • The development of standards is part of QA • The holding of a "Quality Event" is part of QA
Quality Metrics	<p>Statistics captured during the various activities undertaken as part of "Quality Assurance". Metrics are captured to:</p> <ul style="list-style-type: none"> • Identify areas where quality improvements can be made • Measure the effectiveness of quality improvement activities
Continuous Quality Improvement	Use of captured metrics, and lessons learnt to continually improve quality. They are the main reason for capturing statistics around quality. They are the main reason for capturing statistics around quality.
Well Engineered versus Correct	<p>The purpose of quality assurance is to ensure outputs of an organisation are both well engineered and correct.</p> <ul style="list-style-type: none"> • Well engineered means the construction is sound and reliable. It does not necessarily mean it is correct. • Correct means the end results are an accurate reflection of the requirements. It does not necessarily mean it is well engineered. <p>Many systems are well engineered but fail to meet the business need. On the other hand, there are also systems that meet the business need, but are unstable, unscaleable and expensive to run. Similarly a document can be well constructed but the content is deficient. Alternatively, the information can be there, but it is difficult to interpret.</p>

Quality Materials

Quality Materials	Description
Standards	"Standards" are instruction documents that detail how a particular aspect of the project must be undertaken. There can be no deviation from "Standards" unless a formal variation process is undertaken, and approval granted.
Guidelines	Unlike "Standards", "Guidelines" are not compulsory. They are intended to guide a project rather than dictate how it must be undertaken. Variations do not require formal approval.
Checklists	"Checklists" are lists that can be used as a prompt when undertaking a particular activity. They tend to be accumulated wisdom from many projects.
Templates	"Templates" are blank documents to be used in particular stages of a project. They will usually contain some examples and instructions.
Procedures	"Procedures" outline the steps that should be undertaken in a particular area of a project such as managing risks, or managing time.
Process	A description of how something works. It is different to a "Procedure" in that a "Procedure" is a list of steps - the what and when. A "Process" contains explanations of why and how.
User Guides	"User Guides" provide the theory, principles and detailed instructions as to how to apply the procedures to the project. They contain such information as definitions, reasons for undertaking the steps in the procedure, and roles and responsibilities. They also have example templates.
Example Documents	These are examples from prior projects that are good indicators of the type of information, and level of detail that is required in the completed document.
Methodology	A methodology is a collection of processes, procedures, templates and tools to guide a team through the project in a manner suitable for the organisation.

Quality Events

Quality Events	Description
Expert Review	<p>Review of a deliverable by a person who is considered an expert in the area. For example, a review of a data model by a senior DBA. The person may not currently hold a position (e.g. currently be a DBA) but has expert knowledge in the area.</p> <p>This type of review is good when the focus is on accuracy of content (Correct) rather than of structure (Well engineered).</p>
Peer Review	<p>Review of deliverables by one's peers.</p> <p>Peer reviews are better suited where the emphasis is on structure rather than content. A peer review will focus on ensuring the deliverable is well engineered.</p> <p>Neither an "Expert Review" nor a "Peer Review" is exclusively focused on content or structure. They each however, have a different emphasis.</p>
Multi person Review	<p>A review carried out independently by several people is likely to pick up more points however it does bring the difficulty of trying to reconcile different viewpoints. It is best undertaken when the purpose is to gain agreement between different stakeholders.</p> <p>Time should be allowed to reach agreement of conflicting opinions. This may entail a meeting or workshop to resolve differences.</p>
Walk-through	<p>A walk-through is a useful technique to validate both the content and structure of a deliverable. Material should be circulated in advance.</p> <p>If particular participants have not done their homework, they should be excluded from the walk-through. Too much time can be wasted bringing one person up to speed in a walk-through.</p>
Formal Inspection	<p>A formal inspection is a review of a deliverable by an inspector who would typically be external to the Project Team. The inspector captures statistics on suspected defects. It is a useful technique for use with documentation.</p>
Standard Audit	<p>A "Standard Audit" is carried out by a person who is only focused on ensuring the deliverable meets a particular standard(s).</p>
Process Review	<p>In this case a defined "Business Process" is reviewed to ensure all necessary actions are being undertaken, information recorded, and procedures followed. A "Process Review" is useful to validate the existing processes in an organisation.</p> <p>For example, modification to an existing IT system may be based on the assumption an existing business process is being followed. If the business process is either not being followed or is different, the modification to the IT system may have unexpected results.</p> <p>For a project quality check, a "Process Review" may be carried out to ensure proper change control procedures are in place. Typically someone like a Project Office or Internal Audit would complete a "Process Review".</p>

Planning Quality



- A quality plan needs to cover a number of elements:
- What needs to go through a quality check?
- What is the most appropriate way to check the quality?
- When should it be carried out?
- Who should be involved?
- What "Quality Materials" should be used?

Example Quality Plan

A typical quality plan for an applications project may look something like this:

Deliverable	Quality Event	Quality Materials	Purpose
Preliminary Business Case	Expert Review	Template for Business Case Approved Business Case for Project ABC	Ensure the information is accurate and well constructed prior to submission to Steering Committee
Final Business Case	Formal Inspection by Sponsor	Template for Business Case	Ensure the Business Case is in a fit state to be submitted to the Finance Review Committee
Project Definition	Walk-through of early draft	Template for Project Definition	Review early draft for completeness
	Peer Review of final draft		Review final draft for completeness and construction
Database Design	Expert Review of physical model	Standard for Database Design	Compliance with standard General accuracy
Etc			

Organizational Planning



- Working smarter begins with...
- Organizational development and design.
- Not only organizational chart
- Make the purpose, principles and values of the organization more effective through communication, growth and improvement regarding:
 - staff,
 - marketing and sales,
 - production, delivery and work flows,
 - customer service,
 - finance, cash flow, etc., and
 - communication

Staff Acquisition



- Inputs
 - 1 Staffing management plan
 - 2 Staffing pool description
 - 3 Recruitment practices
- Tools & Techniques
 - 1 Negotiations
 - 2 Pre-assignment
 - 3 Procurement
- Outputs
 - 1 Project staff assignment
 - 2 Project team directory

Project Management Communications Plan Outline

- Effective communication
 - make success in any kind of project.
 - make sure you're heading in the right direction
- This Communications Management Plan is designed to:
 - Ensure timely and appropriate generation, collection, distribution, storage, retrieval, and ultimate disposition of project information
 - Provide the critical links among people and information that are necessary for successful communications
 - Guide the project manager, the project team, stakeholders, customer, sponsor, and everyone involved in the project understand how communications affect the project as a whole.

Communications Planning

- A proper communications plan should include/address:
 - Executive Management
 - (summary schedule, progress)
 - Turnaround Management
 - (scope, schedule, progress, manpower)
 - Planning / Scheduling
 - (scope, schedule, progress)
 - Inspection
 - (schedule, progress)
 - Operations
 - (scope, schedule, progress)
 - Safety
 - (scope, schedule [permit requirements])
 - Warehouse
 - (scope, schedule)

The image shows a collage of project management documents. On the left is a 'TABLE OF CONTENTS' for a project management document. In the center is a 'Managing Stakeholders' section with a table of members and their involvement levels. On the right is a 'Communications Planning' section with a table of stakeholder roles and other project participants.

Members	Inform	Involve	Invoke Action	Gain Buy-In
Project Team	✓	✓	✓	
User Group				
Stakeholder Group				
External / Public Audience				

Stakeholder	Message/Information Needed	Deliverable
Project Sponsor		
Project Manager		
Communications Manager		
Project Team Member		
Quality Team Member		
Procurement Team Member		
Legal		
Other Stakeholder		

What can **Communications management plan** be?

- It can include:
 - guidelines for project status meetings
 - project team meetings
 - e-meetings
 - e-mail
- It can be
 - formal or informal
 - highly detailed or broadly framed
 - based on the needs of the project

Risk Identification



- The main goals to risk monitoring and control:
- - To confirm risk responses are implemented as planned
 - To determine if risk responses are effective or if new responses are needed
 - To determine the validity of the project assumptions
 - To determine if risk exposure has changed, evolved, or declined due to trends in the project progression
 - To confirm policies and procedures happen as planned
 - To monitor the project for new risks
 - To monitor risk triggers

I/O & Tools of Risk Identification

- **Inputs of Risk Identification Process:**

- **Enterprise Environmental Factors** - Published information, including commercial databases, academic studies, benchmarking, or other industry studies, may also be useful in identifying risks.
- **Organizational Process Assets** - Information on prior projects may be available from previous project files, including actual data and lessons learned.
- **Project Scope Statement** - Uncertainty in project assumptions should be evaluated as potential causes of project risk.
- **Risk Management Plan**
- **Project Management Plan**

- **Tools and Techniques used in Risk Identification:**

- Documentation Reviews
- **Information Gathering Techniques** like Brainstorming, Delphi technique, Interviewing, Root cause identification, Strengths, weaknesses, opportunities, and threats (SWOT) analysis
- **Checklist Analysis** - Risk identification checklists can be developed based on historical information
- Assumptions Analysis
- **Diagramming Techniques** like Cause-and-effect diagrams, System or process flow charts, Influence diagrams

- **Output of Risk Identification Process:**

- **Risk Register (Risk Tracker)** - it should contain the following information:
 - List of identified risks,
 - List of potential responses,
 - Root causes of risk
 - Updated risk categories.

Quantitative Risk Analysis



- The concept refers specifically to the project related process of performing a thorough and complete numeric analysis of the overall effect of the complete and total quantifiable amount of risks in the entirety of the predetermined list of project objectives that have been set forth by the project management team and or project management team leader.
- The qualitative risk analysis can be conducted at any point in a project life cycle, however at least once at the onset it should be conducted.

The inputs to the Qualitative Risk Analysis process are:

- **Organizational process assets** –
 - are any of your company's policies or procedures which assist in understanding the current project's risks.
 - Another component of organizational process assets is information regarding risks from previous projects. This information yields understanding of how a risk was either successfully or unsuccessfully managed in the past, provides insights into the departments or organization's risk tolerance, and may provide a standard operating policy of how risks are to be managed.
- **Project Scope Statement** –
 - The Project Scope Statement details the project objectives, deliverables, assumptions, constraints, schedule, budget, and configuration management requirements.
 - Typically a component of the project scope statement is whether the technology or process is a new endeavor for your organization. As we all know the bleeding razor edge is wrought with high levels of risk.
- **Risk Management Plan** –
 - details the roles and responsibilities,
 - risk management budgets,
 - risk management scheduled activities,
 - risk categories,
 - probability and impact definitions,
 - probability and impact matrix,
 - and stockholder's risk tolerances
- **Risk Register** –
 - The Risk Register is a listing of the risk the project team identified.



How to rate and prioritize the project risks?

- **Probability**

- the likelihood that a risk condition will actually occur.

- **Consequence**

- the impact that might occur from the risk.

- To rate and prioritize the project risks in a rapid and cost-effective manner.
These tools and techniques are:

- **Risk probability and impact assessment**

- **Probability and impact matrix**

- **Risk data quality assessment**

Risk probability and impact Assessment



- Risk probability and impact is the team rating of the project's risks and opportunities. It is best to use a team of project members, subject matter experts, individuals listed on the roles and responsibilities section of the risk management plan, and any other useful knowledgeable participants.
 - There are two tactical methods for deriving a risk rating.
 - First have a meeting with the team.
 - Secondly conduct risk interviews.
 - Generally, the first approach is to tackle the probability question of all identified risks, then review and determine the impact of all identified risks.
 - Finally the risk score is calculated by multiplying probability by impact.
 - The successful outcome of a risk probability and impact assessment is a Risk Register that has been updated with risk ratings for probability, impact, and score

Probability and impact matrix

- illustrates a risk rating assignment for identified risks
 - Each risk is rated on its
 - probability of occurrence
 - impact upon objective.
 - From a spotlight analysis
 - Reds: high risk zone,
 - Yellows: medium risk
 - Greens: low risks

Probability	Threats					Opportunities				
	0.90	0.70	0.50	0.30	0.10	0.90	0.70	0.50	0.30	0.10
0.90	0.045	0.090	0.180	0.360	0.720	0.720	0.360	0.180	0.090	0.045
0.70	0.035	0.070	0.140	0.280	0.560	0.560	0.280	0.140	0.070	0.035
0.50	0.025	0.050	0.100	0.200	0.400	0.400	0.200	0.100	0.050	0.025
0.30	0.015	0.030	0.060	0.120	0.240	0.240	0.120	0.060	0.030	0.015
0.10	0.005	0.010	0.020	0.040	0.080	0.080	0.040	0.020	0.010	0.005
	0.050	0.100	0.200	0.400	0.800	0.800	0.400	0.200	0.100	0.050

Risk data quality assessment

- A qualitative risk analysis needs to have unbiased and accurate data for credibility.
- A risk data quality assessment is a means to evaluate the reliability and accuracy of the information from which the risk rating is derived.
 - **Extent to which the risk is understood** - How well is the risk grokked?
The data should be clear, concise and easily explained. Evaluate your data source? Did the wolf caller just tell you another wolf was after the sheep.
 - **Data availability** - Is the data complete?
A common whole is to base risk ratings on incomplete data.
 - **Data Quality** - Is the data timely and relevant?
Honestly evaluating a CPOE install by data that is 20 years old isn't good practice. Most like the information isn't timely and relevant.
 - **Data integrity and reliability** - How objective is the data?
Qualitative Risk Analysis is imprecise; ratings reflect subjective opinions and judgment. However, with this fact in mind, try to obtain the most accurate and unbiased information you can. For example if in a rampant war of office politics, is it objective what stones one side is throwing at the other?
- **Risk urgency assessment** - Risk requiring near-term responses are have a higher level of urgency than risk way off in the future land.
- **Risk categorization** - Risks can be grouped in different ways for example they can be categorized by source, area impacted, or project phase.

Output of the Qualitative Risk Analysis process

- An updated Risk Register, it include:
 - **Relative ranking or priority of project risks**
 - The overall risk ranking is determined by summing the individual risk scores and then dividing by the number of risks.
 - **Risks grouped by categories**
 - Placing risks in categories reveal areas of risk concentration and highlights common causes of risk. For example, if every risk is surrounding a lack of project resources, then maybe actually planning the project work to the resources available is necessary.
 - **Lists of risks requiring response in the near term**
 - The most urgent risks commonly need responses in the short term. By sorting according to urgency, it is easy to identify the most severe risk event which need almost immediate action.
 - **List of risks for additional analysis and response**
 - Risks which need additional analysis and management are classified as high sometimes even moderate.
 - **Watch-list of low priority risks**
 - Risks which are not urgent and require action in the distant future are commonly detailed on a watch-list for monitoring.
 - **Trends in qualitative risk analysis results**
 - With each iteration of Qualitative Risk Analysis, a trend may result which necessitates a response or further analysis

Output of the Qualitative Risk Analysis process (Con't)

Probability – the likelihood that a risk condition will actually occur.

Probability (P)	Point Values
You'd be surprised if this happened.	0.1 to 0.2
Less likely to happen than not.	0.3 to 0.4
Just as likely to happen as not.	0.5 to 0.6
More likely to happen than not.	0.7 to 0.8
You would be surprised if this did not happen.	0.9 to 1.0

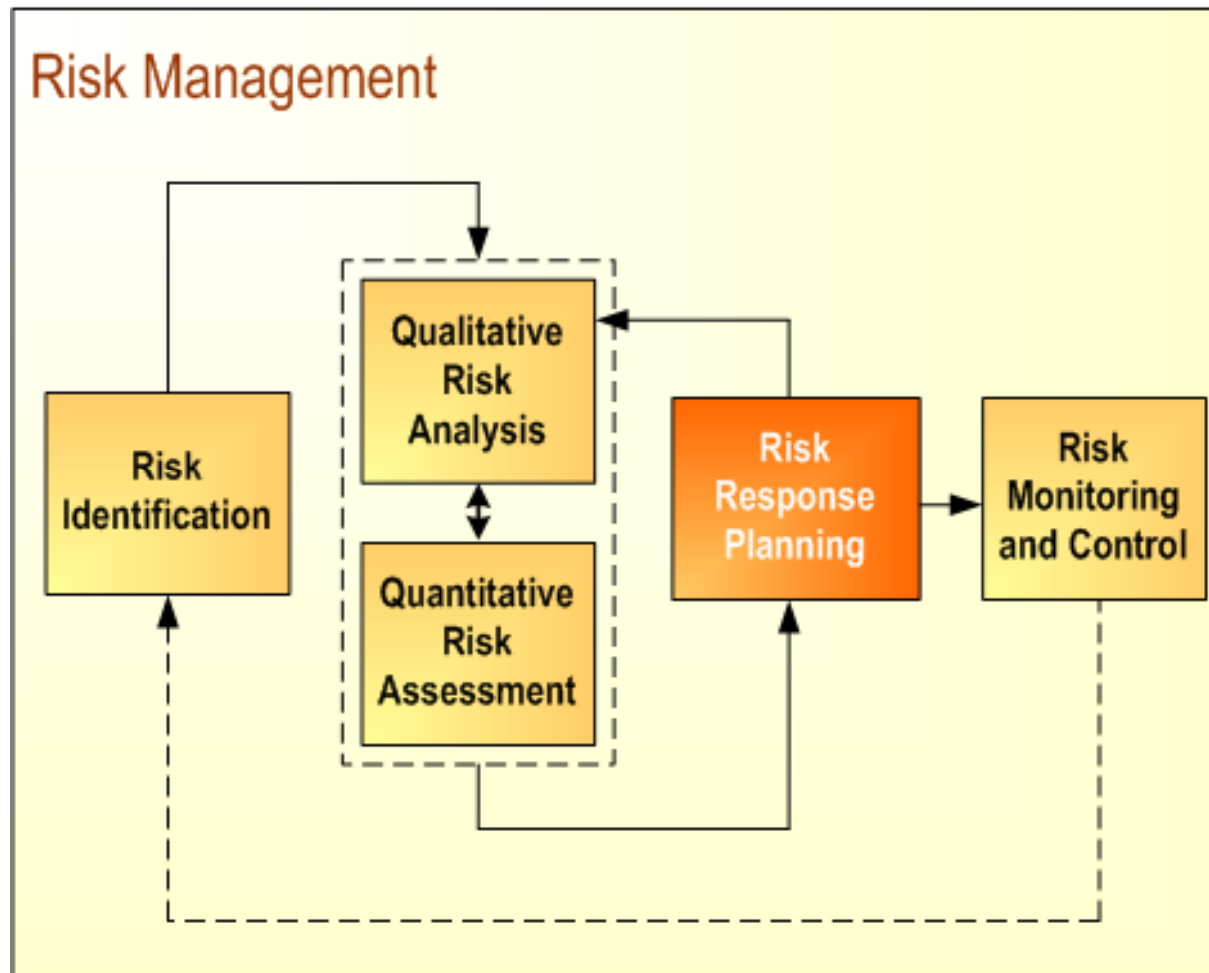
Consequence – the impact that might occur from the risk.

Consequence Point Value	Technical Consequence (Ct)	Schedule Consequence (Cs)	Cost Consequence (Cc)
Low (0.1 to 0.2)	Minimal impact to product performance	No impact to end date	Within budget
Minor (0.3 to 0.4)	Small reduction in product performance	End date will slip less than 10% of the project lifecycle	Less than a 10% cost overrun
Moderate (0.5 to 0.6)	Moderate reduction in product performance	End date will slip between 10% to 15% of the project lifecycle	10% - 20% overrun
Significant (0.7 to 0.8)	Significant reduction in product performance	End date will slip between 15% to 25% of the project lifecycle	20 – 50% overrun
High (0.9 to 1.0)	Product will not meet customer/user critical needs	End date renders the product useless to the customer	Overrun cannot be funded

Risk Response Planning

Having identified 'green' and 'red' risks you now need to look at what your response will be to each of the red risks.

There are a number of fairly standard definitions of response types that can be summed up as follows:



Response	Description
Risk Avoidance	<p>Also known as Risk Removal and Risk Prevention. Altering the plan so that the circumstances which may give rise to the risk no longer exist.</p> <p>e.g.</p> <p>Risk: You plan to build a new sports centre on a green field site but there is a risk that the council will refuse planning permission and delay the project.</p> <p>Response: You decide to build on brown field site on a former industrial estate. This incurs additional cost in terms of demolishing old buildings and removing hazardous waste.</p>
Risk Mitigation	<p>Also known as Risk Reduction. Reducing the probability or impact of the risk.</p> <p>e.g.</p> <p>Risk: You won't be able to attract technical staff for the project.</p> <p>Response: Offer a salary supplement to project staff.</p>
Risk Transference	<p>Moving the impact (and ownership) of the risk to a third party.</p> <p>e.g.</p> <p>Risk: You are aware that colleges are the target of an organised gang stealing hardware.</p> <p>Response: You decide to outsource some of your servers to a hosting company.</p>
Risk Deferral	<p>Deferring aspects of the plan to a date when the risk is less likely to occur.</p> <p>e.g.</p> <p>Risk: You are undertaking a major review of student administration processes and a new head of the organisation wants to implement an immediate re-structure. There is a risk that staffing resources won't be aligned with the new process.</p> <p>Response: Postpone the organisational restructure until the process review is complete and staffing requirements are known.</p> <p>N.B. Apologies to those who know this scenario is unrealistic and the opposite always happens - we can but try...</p>
Risk Acceptance	<p>Dealing with the risk via contingency rather than altering the plan.</p>



Procurement Planning

- ***Process of identifying which project needs can be best met by procuring products or services outside the project organization.***
- ***Involves knowing***
 - ***whether to procure,***
 - ***how to procure,***
 - ***what to procure,***
 - ***how much to procure***
 - ***when to procure.***

Procurement Planning (Con't)

- **Input includes:**

- Scope statement
- Product description
- Procurement resources
- Market conditions
- Other planning Output
- Constraints
- Assumptions

- **Methods include:**

- make-or-buy analysis,
- expert judgment
- contract type selection (fixed, cost reimbursable, etc.).

- **Output includes:**

- Procurement management plan and statement of work (SOW) for each planned contract



Solicitation Planning

- Process of preparing documents needed to support solicitation

- ***Input includes:***

- procurement management plan,
- SOW's, and other planning Output.

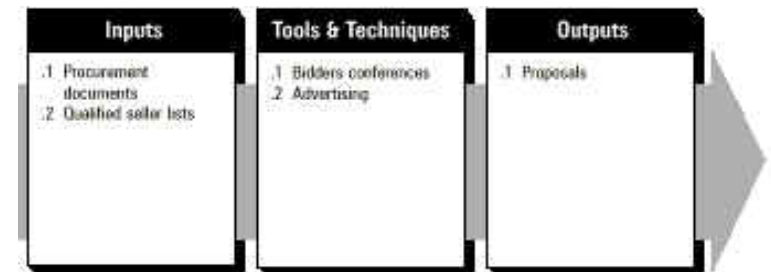
- ***Methods include:***

- standard forms and expert judgment.

- ***Output includes:***

- Procurement documents such as IFB's, RFQ's, and RFP's.
- Evaluation criteria:
 - the criteria that will be used to rate or score proposals.
 - The criteria may be subjective or objective.

- Statement of work updates.



SWOT Analysis (強弱機危分析法)

SWOT Analysis

- A strategic planning method
- To evaluate the
 - **S**trengths,
 - **W**eaknesses,
 - **O**pportunities, and
 - **T**hreats involved in a project or in a business venture.
- It is used to address critical issues for business.
- It involves specifying the objective of the business venture or project.
- Identifying the internal and external factors that are favorable and unfavorable to achieving that objective.

Strengths	Weaknesses
Opportunities	Threats



SWOT - internal factors

- **Strengths**

- Your specialist marketing expertise.
- A new, innovative product or service.
- Location of your business.
- Quality processes and procedures.
- Any other aspect of your business that adds value to your product or service.

- **Weaknesses**

- Lack of marketing expertise.
- Undifferentiated products or services (i.e. in relation to your competitors).
- Location of your business.
- Poor quality goods or services.
- Damaged reputation



SWOT - external factors

- **Opportunities**

- A developing market such as the Internet.
- Mergers, joint ventures or strategic alliances.
- Moving into new market segments that offer improved profits.
- A new international market.
- A market vacated by an ineffective competitor.

- **Threats**

- A new competitor in your home market.
- Price wars with competitors.
- A competitor has a new, innovative product or service.
- Competitors have superior access to channels of distribution.
- Taxation is introduced on your product or service.

SWOT Analysis e.g.: Wal-Mart.

● Strengths.

- Wal-Mart is a powerful retail brand. It has a reputation for value for money, convenience and a wide range of products all in one store.
- Wal-Mart has grown substantially over recent years, and has experienced global expansion (for example its purchase of the United Kingdom based retailer ASDA).
- The company has a core competence involving its use of information technology to support its international logistics system. For example, it can see how individual products are performing country-wide, store-by-store at a glance. IT also supports Wal-Mart's efficient procurement.
- A focused strategy is in place for human resource management and development. People are key to Wal-Mart's business and it invests time and money in training people, and retaining a developing them.

● Weaknesses.

- Wal-Mart is the World's largest grocery retailer and control of its empire, despite its IT advantages, could leave it weak in some areas due to the huge span of control.
- Since Wal-Mart sell products across many sectors (such as clothing, food, or stationary), it may not have the flexibility of some of its more focused competitors.
- The company is global, but has has a presence in relatively few countries Worldwide.

● Opportunities.

- To take over, merge with, or form strategic alliances with other global retailers, focusing on specific markets such as Europe or the Greater China Region.
- The stores are currently only trade in a relatively small number of countries. Therefore there are tremendous opportunities for future business in expanding consumer markets, such as China and India.
- New locations and store types offer Wal-Mart opportunities to exploit market development. They diversified from large super centres, to local and mall-based sites.
- Opportunities exist for Wal-Mart to continue with its current strategy of large, super centres.

● Threats.

- Being number one means that you are the target of competition, locally and globally.
- Being a global retailer means that you are exposed to political problems in the countries that you operate in.
- The cost of producing many consumer products tends to have fallen because of lower manufacturing costs. Manufacturing cost have fallen due to outsourcing to low-cost regions of the World. This has lead to price competition, resulting in price deflation in some ranges. Intense price competition is a threat.

Simple rules for successful SWOT analysis

- Be realistic about the strengths and weaknesses of your organization when conducting **SWOT** analysis.
- SWOT analysis should distinguish between where your organization is today, and where it could be in the future.
- SWOT should always be specific. Avoid grey areas.
- Always apply SWOT in relation to your competition i.e. better than or worse than your competition.
- Keep your SWOT short and simple. Avoid complexity and over analysis
- SWOT is subjective

(Case Study / Worksheet - SWOT)

Questions

