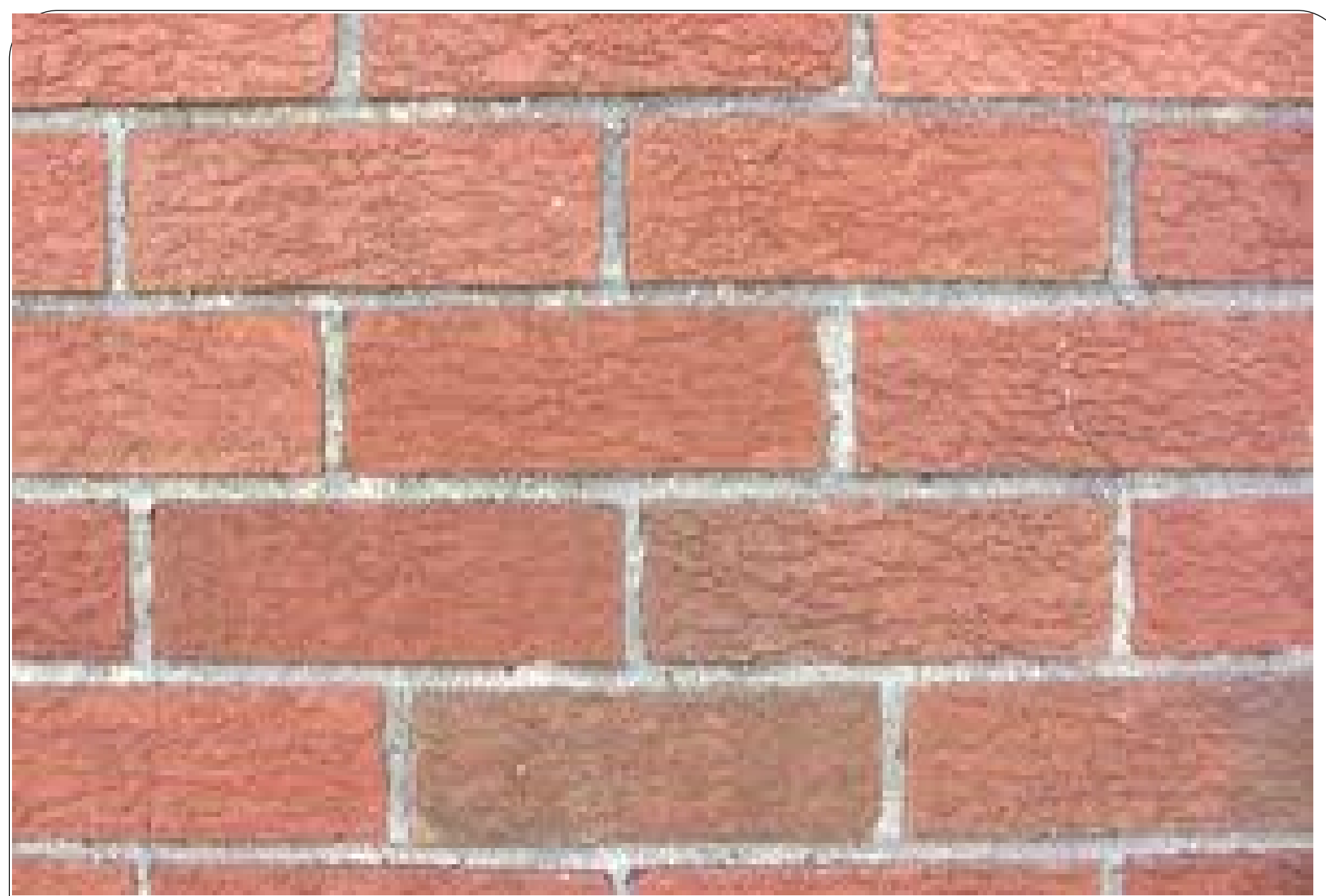


Project Risk Management

A DEVELOPMENT INSTITUTION'S
PERSPECTIVE





Risk-Defined

- **A situation involving exposure to danger;**
- **“The combination of the probability of an event and its consequences”**
- **“Effect of uncertainty on objectives”**

(ISO 31000(2009) /ISO Guide 73:2002)

Uncertainties include events (which may or not happen);

Uncertainties caused by ambiguity or a lack of information; and

Also includes both negative and positive impacts on objectives.

(developed by an international committee representing over 30 countries and is based on the input of several thousand subject matter experts.)

PROJECT and PROJECT MANAGEMENT

- **Project:** An individual or collaborative enterprise planned and designed to achieve an aim.
- **A project** is a temporary endeavor with a defined beginning and end (usually time-constrained, and often constrained by funding or deliverables), undertaken to meet unique goals and objectives, typically to bring about beneficial change or added value

Project Management

is the discipline of

- Planning;
- Organizing;
- Securing; and
- Managing resources to achieve specific goals.

PROJECT RISK

MANAGEMENT (PRM)

From above definitions PRM:

- Art and science of planning, organizing, securing and managing resources (**Management**) to harness/control/manage the effects of uncertainties on objectives (**Risk**) of a temporary endeavor (**project**).
- One of the nine knowledge areas defined in PMBOK (Project Management Body of Knowledge)

Risk Management

- Is a Comprehensive System that includes:
 - Creating an appropriate risk management environment
 - Maintaining an efficient Risk Measurement
 - Mitigating and Monitoring Process
 - Establishing an Adequate Internal Control ArrangementCore of the Strategic Management of the Company
- It is the process whereby organizations methodically address the risks attaching to their activities with the goal of achieving sustained benefit within each activity and across the portfolio of all activities.

OR

Risk Management is the;

- Identification;
- Assessment; and
- prioritization of risks
- Monitoring

followed by coordinated and economical application of resources to **minimize**, monitor, and control the probability and/or impact of unfortunate events or to **maximize** the realization of opportunities.

Why Risk Management:

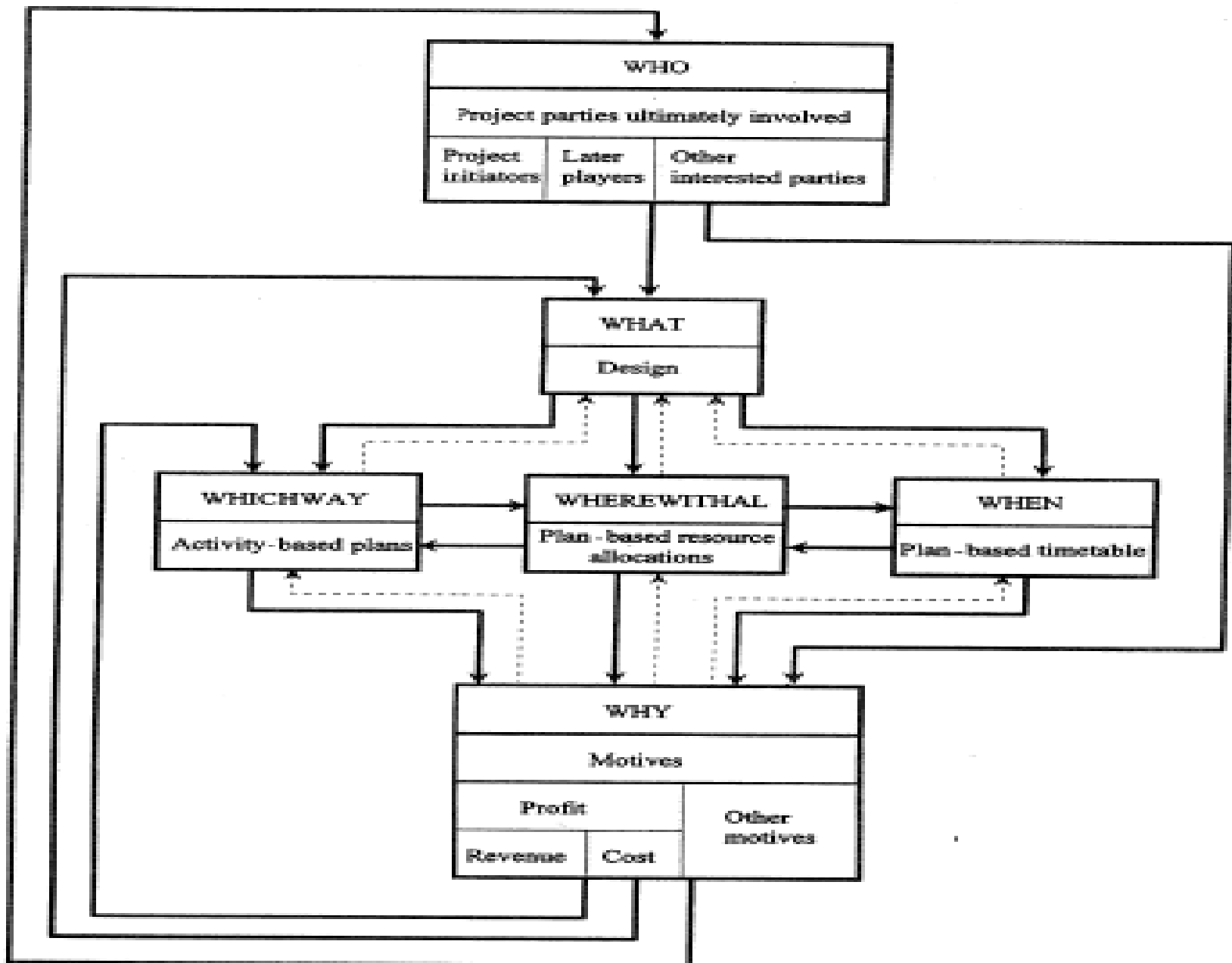
- Its objective is to add maximum sustainable value to all the activities of the organization.
- It marshals the understanding of the potential upside and downside of all those factors which can affect the organization.
- It increases the probability of success, and reduces both the probability of failure and the uncertainty of achieving the organization's overall objectives.

Healthy Stress?? Vs the bad stress (Zaib)

ROOTS OF UNCERTAINTY

- Stakeholders
- Objectives
- Variety of Resources, (human, capital, material..)
- Project Organizations
- Scope of work
- Cost
- Time
- Delivery of Quantified and Qualitative objectives
- Technologies
- Environment
- Regulators

- Roots of Uncertainty are associated with
- who Who are the parties ultimately involved
(Executing Agencies, partners, etc..)
- Why What do they want (motives, objectives..)
- What What is it the parties interested in (design)
- Whichway How is to be done (activities)
- Wherewithal What resources are required (resources)
- When when does it have to be done (Schedule, timetable)



Role of Risk Management

- Risk Identification
- Risk Appraisal
- Risk Management
- Focus of downside of risk
- Exploit Opportunities arising from risks

Types of Risks

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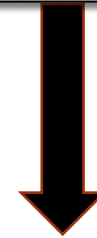
**" I DON'T THINK OF MY SKIN
AS SAGGY...I THINK OF IT
AS RELAXED-FIT! "**

Types of Risk

unsystematic,
specific to firm or
assets, diversifiable



Systematic, non-
diversifiable



Systematic risk can not be diversified however parts of the risk can be reduced through risk mitigation and transferring techniques.

SOURCES of RISKS

INTERNAL

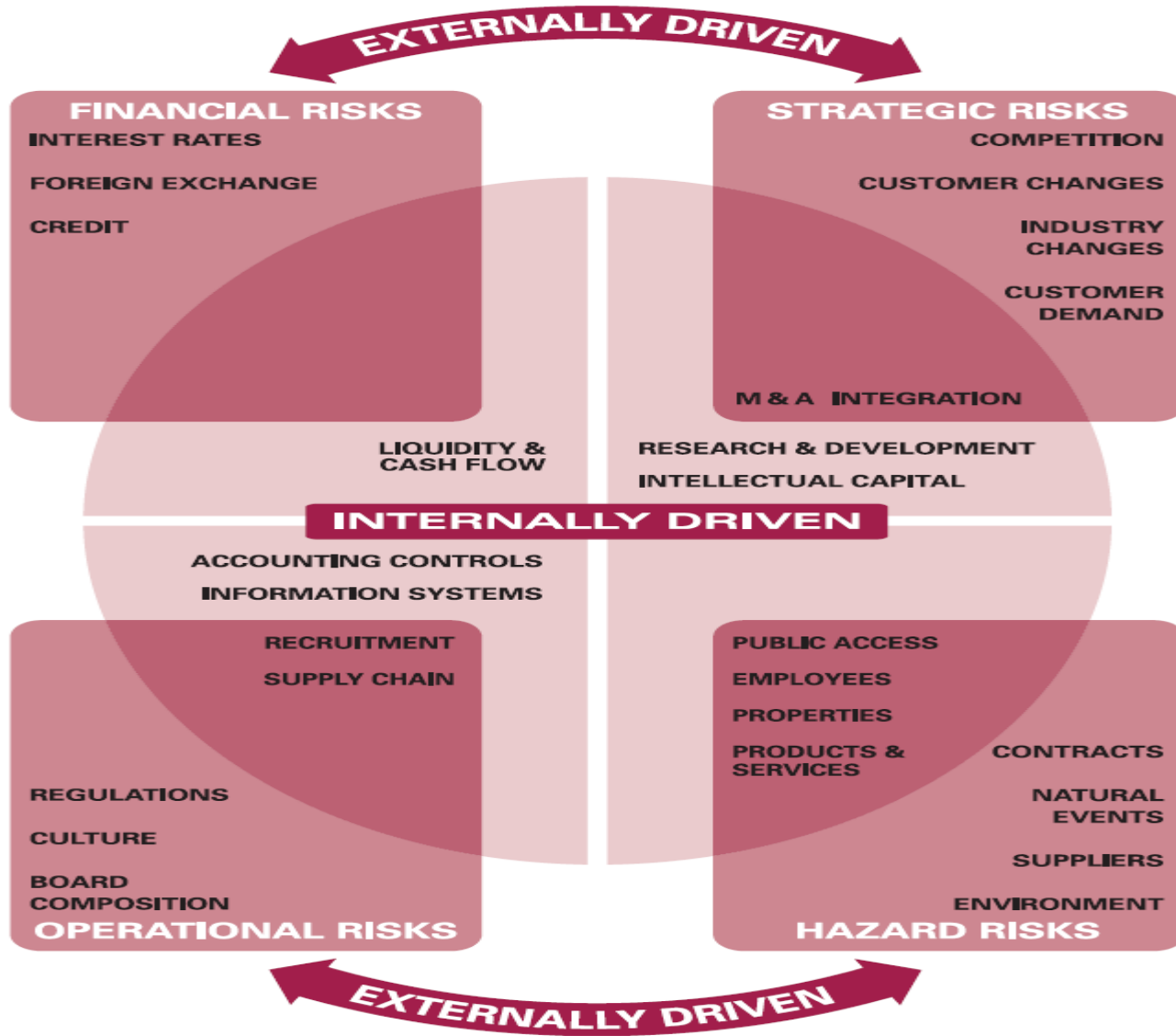
Resources

Processes

Inadequate internal controls,
Human errors
(incompetence,
inexperienced, corruption)
IT failure
Inadequate human resources
Operational Risks
Legal Risks??

EXTERNAL

Political risk
Country Risk
Market Risk
Currency Risk
Interest Rate Risk
Counter-part Risk
Credit or default Risk
Environmental Risk



● Business Risk vs Financial Risk

- Business risk arises from the nature of firms business; Strategic risk, compliance risks, financial and operational risk
- Financial risks arises from possible losses in financial markets due to movements in financial variables, usually associated with leverage with the risk that obligations and liabilities can not be met with present assets

Risk Classification for Risk Management understanding

- Three Types of Risks
 - Risk that can be eliminated
 - Those that can be transferred
 - Risks that can be managed by the institution

X

Financial Intermediaries would avoid certain risks by business practices and will not take up activities that impose risk upon them



Practice of Financial Institution is to take up activities in which risks can be efficiently managed and shift risks that can be transferred

- It must be integrated into the culture of
- the organisation with an effective policy
- and a programme led by the most senior
- management. It must translate the
- strategy into tactical and operational
- objectives, assigning responsibility
- throughout the organisation with each
- manager and employee responsible for the
- management of risk as part of their job
- description. It supports accountability,
- performance measurement and reward,
- thus promoting operational efficiency at
- all levels.

RISK MANAGEMENT PROCESS

Risk Management Process

- According to the standard ISO 31000 "Risk management -- Principles and guidelines on implementation," the process of risk management consists of several steps as follows:
- **Establishing the context involves:**
 1. Identification of risk in a selected domain of interest
 2. Planning the remainder of the process.
 3. Mapping out the following:
 - the social scope of risk management
 - the identity and objectives of stakeholders
 - the basis upon which risks will be evaluated, constraints.
 4. Defining a framework for the activity and an agenda for identification.
 5. Developing an analysis of risks involved in the process.
 6. Mitigation or Solution of risks using available technological, human and organizational resources.

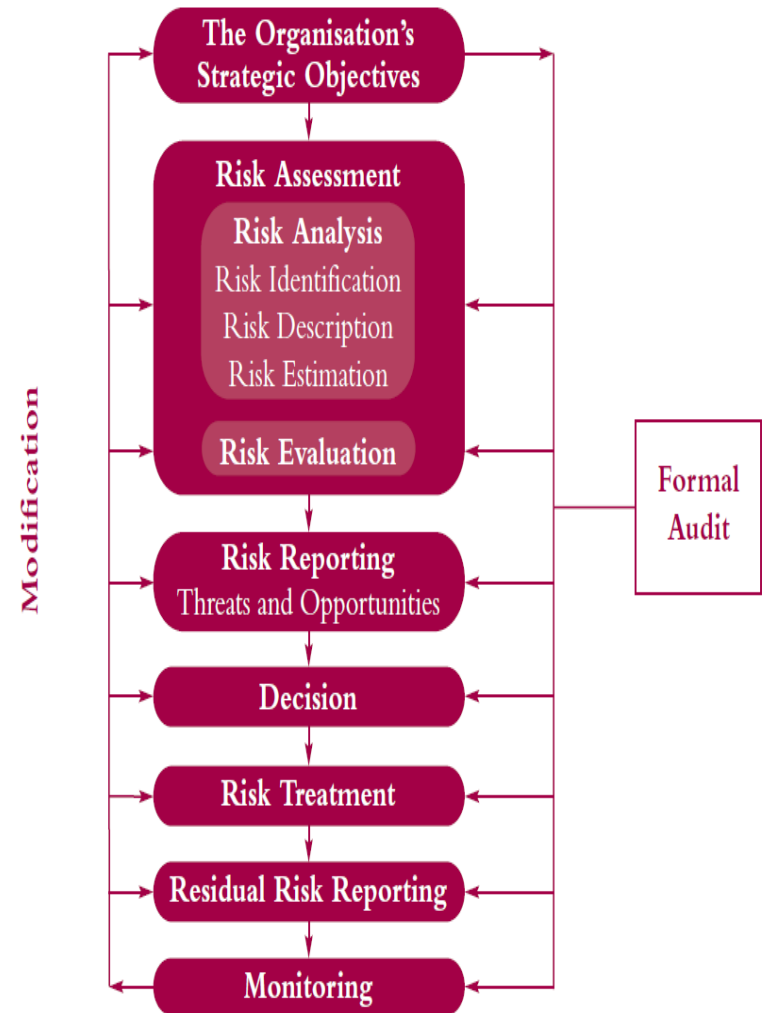
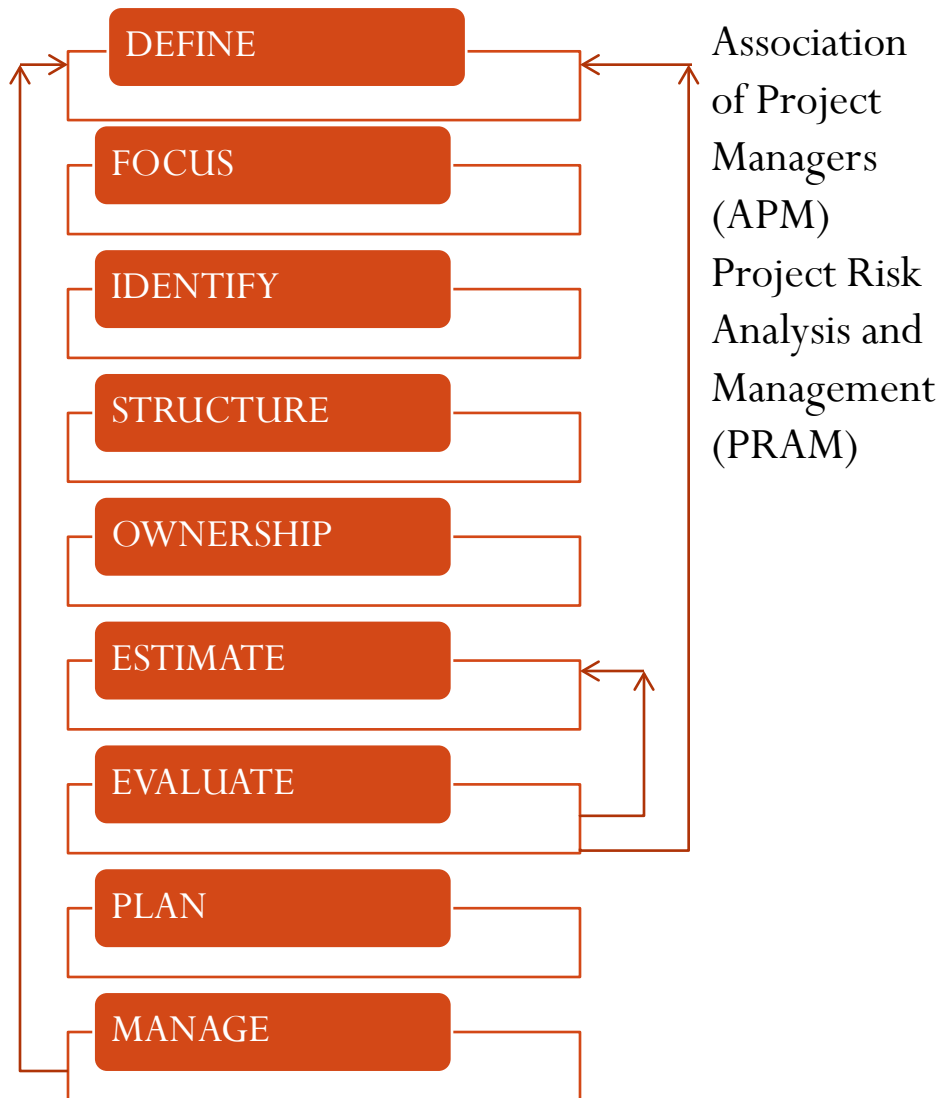
Risk Management Principals

ISO identifies the following principles of risk management:

Risk management should:

- create value - resources expended to mitigate risk should generally exceed the consequence of inaction, or (as in value engineering), the gain should exceed the pain
- be an integral part of organizational processes
- be part of decision making
- explicitly address uncertainty and assumptions
- be systematic and structured
- be based on the best available information
- be tailorable
- take into account human factors
- be transparent and inclusive
- be dynamic, iterative and responsive to change
- be capable of continual improvement and enhancement
- be continually or periodically re-assessed

RISK MANAGEMENT PROCESS (RMP)



Phases	Purposes	Deliverables (may be targets not achieved initially)
Define	Consolidate relevant existing information about the project. Fill in any gaps uncovered in the consolidation process.	A clear, unambiguous, shared understanding of all relevant key aspects of the project and the associated RMP, documented, verified and reported.
Focus	Scope and provide a strategic plan for RMP. Plan RMP at an operational level.	A clear, unambiguous, shared understanding of all relevant key aspects of RMP, documented, verified and reported.
Identify	Identify where risk might arise. Identify what we might do about this risk, in proactive and reactive responses terms. Identify what might go wrong with our responses.	All key risks and responses identified, both threats and opportunities, classified, characterised, documented, verified and reported.
Structure	Testing simplifying assumptions. Providing more complex structure when appropriate.	A clear understanding of the implications of any important simplifying assumptions about relationships between risks, responses and base plan activities.
Ownership	Client/contractor allocation of ownership and management of risks and responses. Allocations of client risks to named individuals. Approval of contractor allocations.	Clear ownership and management allocations, effectively and efficiently defined, legally enforceable in practice where appropriate.
Estimate	Identify areas of clear significant uncertainty. Identify areas of possible significant uncertainty.	A basis for understanding which risks and responses are important. Estimates of likelihood and impact in scenario or numeric terms, the latter including identification of assumptions or conditions, sometimes with a focus on 'show-stoppers'.

APM (used here)	UK MoD (1991)	SCERT (Chapman, 1979)
Define Focus	Initiation	Scope
Identify Structure	Identification Analysis	Structure
Ownership Estimate		Parameter
Evaluate Plan	Planning	Manipulation and interpretation
Manage	Management	

(SCERT) Synergistic Contingency Evaluation and Review Techniques by BP International

RPM

Define phase: Define the Project for Risk Management Purpose

1. Consolidate info about project, eg.,

- Project Objectives clearly stated, Project scope, Project Strategy
- Activity Plan (at higher level: Simple), Associated Timing, Resource usage implication specified, Underlying issues like design described, Stake holders interest defined

2. Uncover any gap in consolidation phase (gaps shall not exist but in reality needs to be checked)

Define
Focus
Identify
Structure
Ownership
Estimate
Evaluate
Plan
Manage

RPM

Focus The Risk Management Process:

Define RMP scope and strategy

Eg., testing viability of a project, a qualitative approach may be appropriate; RMP used for budgets, costs, bid prices, a quantitative approach may be required.

Scope covers issues like who is analyst, why is the formal RMP required, what is the scope of the relevant risk

Plan the Process- what time frame? What resources, what models (techniques) to be applied, what software etc..

Culminate – in a tactical plan for risk management process

Document, verify, assess and report

- Define
- Focus
- Identify
- Structure
- Ownership
- Estimate
- Evaluate
- Plan
- Manage

RPM

Identify the Risk and Responses:

Sources of Risk and response

Search for Sources of Risks by pondering, brainstorming, checklist, surveys etc..

Classsify: Provide suitable structure for defining risks and responses, aggregating/ disaggregating variables

Document, verify, assess and report

Key Deliverables: Threats and Opportunities

- Define
- Focus
- Identify
- Structure
- Ownership
- Estimate
- Evaluate
- Plan
- Manage

Description of Risk

1. Name of Risk	
2. Scope of Risk	Qualitative description of the events, their size, type, number and dependencies
3. Nature of Risk	Eg. strategic, operational, financial, knowledge or compliance
4. Stakeholders	Stakeholders and their expectations
5. Quantification of Risk	Significance and Probability
6. Risk Tolerance/ Appetite	Loss potential and financial impact of risk Value at risk Probability and size of potential losses/gains Objective(s) for control of the risk and desired level of performance
7. Risk Treatment & Control Mechanisms	Primary means by which the risk is currently managed Levels of confidence in existing control Identification of protocols for monitoring and review
8. Potential Action for Improvement	Recommendations to reduce risk
9. Strategy and Policy Developments	Identification of function responsible for developing strategy and policy

RPM

ANALYSIS

Structure

Ownership

Estimate

Evaluate

- Define
- Focus
- Identify
- **Structure**
- Ownership
- Estimate
- Evaluate
- Plan
- Manage

RPM

Develop the Analysis Structure:

Test Simplifying Assumptions and Provide more complex structure when necessary.

1. **Refine Classification-** Review and develop existing classification: new classification structure may be defined distinguishing specific and General responses.
2. **Explore Interactions-** Review and explore interdependencies or links between project activities, risks, responses and understand the reasons of interdependencies;
3. **Developing ordering-** possible revision to the precedence relationships fro project activities assumed in Define Phase. Needed for setting priorities for project and process planning and presentation. Also devloping ordering of responses.

Document, verify, assess and report; picture, graphs, mathematical models, etc.

Key Deliverables: Clear understanding of implications of any important, base plan activities.

- Define
- Focus
- Identify
- Structure
- Ownership
- Estimate
- Evaluate
- Plan
- Manage

RPM

Clarify Ownership Issues:

1. To distinguish the ownership and responses that the client is prepared to own and manage from those of other organizations (contractors, JV, guarantors...)
2. To allocate responsibility for managing risks and responses owned by the client to named individuals;
3. To approve ownership/ management allocations controlled by contractors, third parties.

Document, verify, assess and report

Key Deliverables: Scope of policy and plan for contracts.

- Define
- Focus
- Identify
- Structure
- Ownership
- Estimate
- Evaluate
- Plan
- Manage

RPM

Estimate in Terms of Scenario and Numbers :

- 1) Identify areas of the project “reference plan” which **may** involve significant uncertainty and need more attention in terms of data and analysis
- 2) To identify areas of the project reference plan which **clearly** involve significant uncertainty and **clearly** require careful decisions , judgments by the tem,

Document, verify, assess and report

Key Deliverables: Select an appropriate risk; scope and uncertainty (probability, numbers, etc.); refine earlier estimates.

- Define
- Focus
- Identify
- Structure
- Ownership
- Estimate
- Evaluate
- Plan
- Manage

Consequence-both threats and opportunities

High	Financial impact on the organisation is likely to exceed £x Significant impact on the organisation's strategy or operational activities Significant stakeholder concern
Medium	Financial impact on the organisation likely to be between £x and £y Moderate impact on the organisation's strategy or operational activities Moderate stakeholder concern
Low	Financial impact on the organisation likely to be less than £y Low impact on the organisation's strategy or operational activities Low stakeholder concern

RPM

Evaluate the Numbers and Scenarios:

May be coupled with Estimate Phase

Deliverable highly depends on preceding phases, looping back to the earlier phases, before proceeding further is the key decision at this stage.

Document, verify, assess and report

Key Deliverables: Diagnosis of any and all difficulties, and comparative analysis of the implications of responses to these difficulties

- Define
- Focus
- Identify
- Structure
- Ownership
- Estimate
- Evaluate
- Plan
- Manage

RPM

Plan the Project and the Management of its Risk-

Plans are nothing, planning is everything. *Napoleon*

Bonaparte

Three main tasks:

Consolidating and explaining the reference plans and risk analysis. Writing final report. Involve a lot of craft-based on experience.

Selecting and evaluating action horizon, other purposes for plans, base plans and contingency plans. Craft skills, clear grasp of purposes and possibilities.

Support and convince-what can or can not be done.

Abstraction of analyses, to reach joint decisions.

An ultimate test of risk analyst's craft skills.

Uses all proceeding RMP processes to produce:

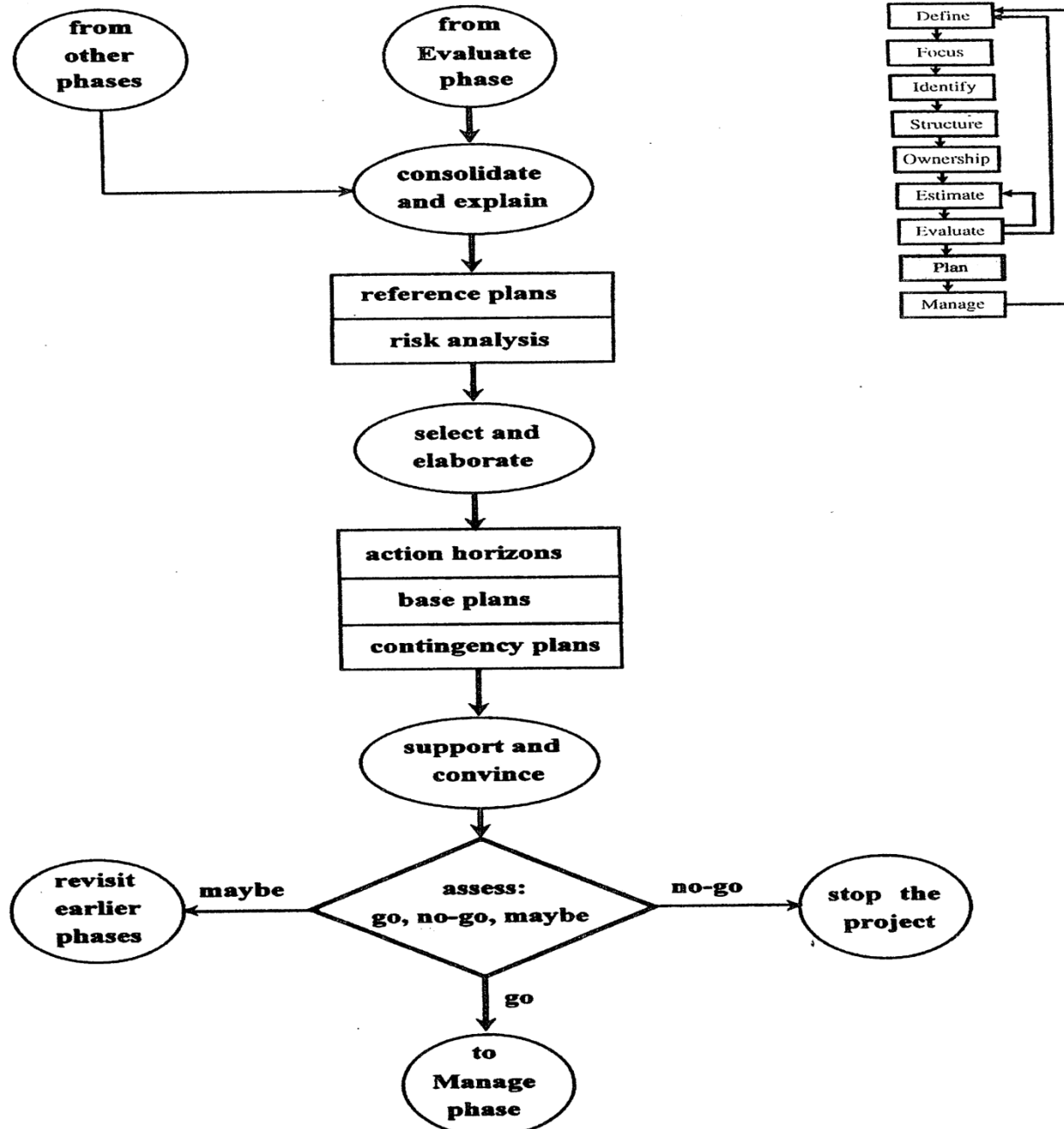
- Define
- Focus
- Identify
- Structure
- Ownership
- Estimate
- Evaluate
- Plan
- Manage

RPM

Key Deliverables:

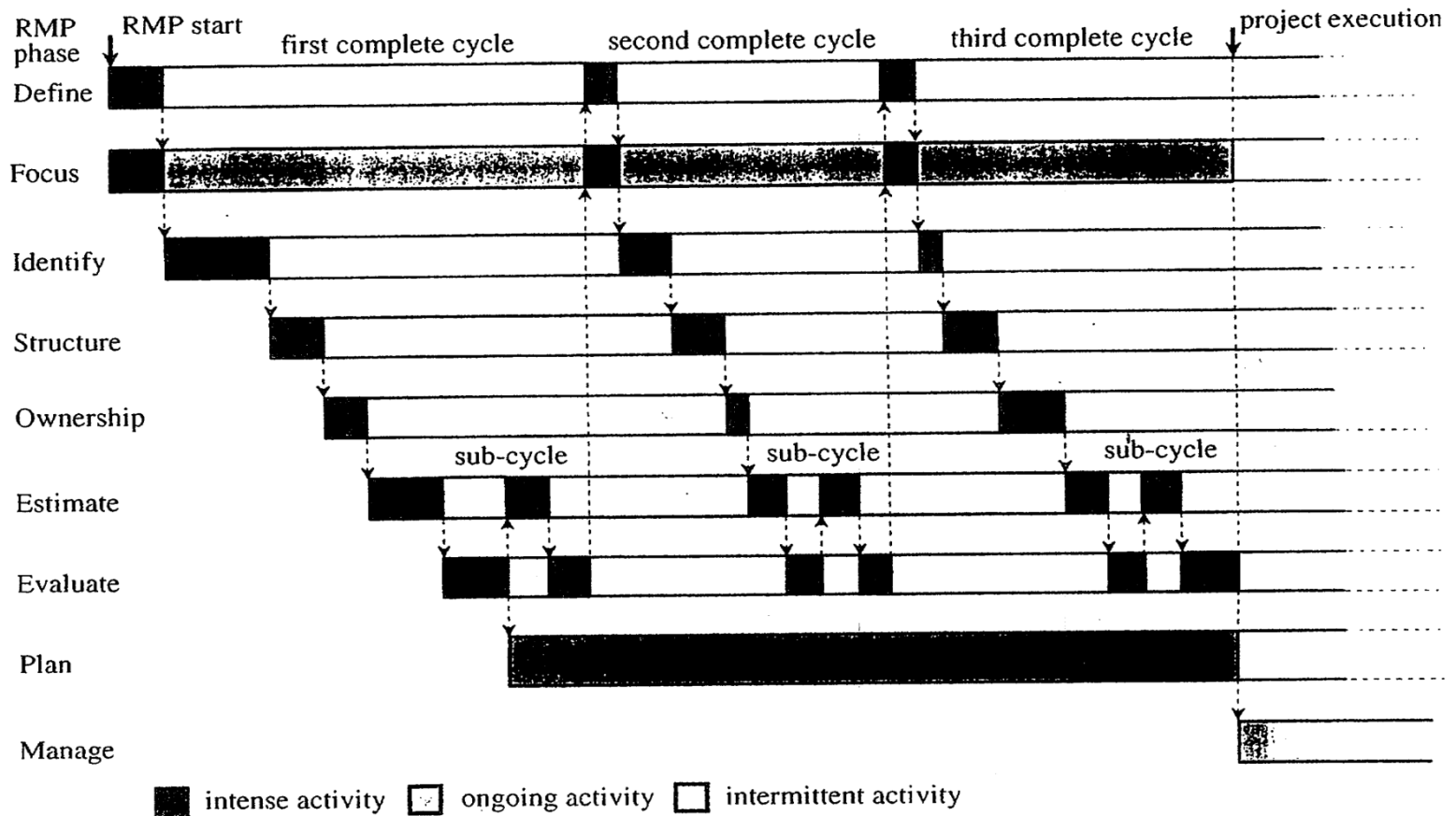
- 1) Project Base Plan ready for implementation
 - 2) Associated risks
 - 3) Associated tasks are in relation with the deliverables
- **Project Base Plan** activities, at the detailed level required for implementation, with timing, precedence, ownership and associated resource usage/ contractual terms clearly specified, including milestones initiating payments, other events or processes defining expenditures, and an associated plan expenditure profile;
 - **Risk assessment in terms** of threats and opportunities, positioned, assessed in terms of impact given no response if viable and potentially desirable, along with an assessment of alternative potential proactive and reactive responses;
 - **Recommended proactive and reactive** contingency plans in activity terms, with timing, precedence, ownership, and associated resources usage/ contractual terms where appropriate clearly specified, including trigger points, initiating reactive contingency response, and impact assessment

- Define
- Focus
- Identify
- Structure
- Ownership
- Estimate
- Evaluate
- Plan
- Manage



Generic RMP

Time scale: days, weeks or months, depending on the nature of the project



RPM

Manage the Project and its Risk;

I have never known a battle plan to survive a first contact with the enemy.



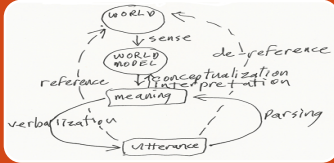
- Define
- Focus
- Identify
- Structure
- Ownership
- Estimate
- Evaluate
- Plan
- Manage

- Four main tasks:
 1. Manage planned actions; action phase, implement planned project activities, basis of project management, translating plans into actions seldom straightforward. Routine project planning meetings .
 2. Monitor; Formal and informal monitoring at different levels and change control process at various levels. End-of project reviews involve higher level monitoring
 3. Manage Crisis
 4. Roll action plans forward

- Define
- Focus
- Identify
- Structure
- Ownership
- Estimate
- Evaluate
- Plan
- Manage



PROJECT LIFE CYCLE (PLC)



CONCEPTUALIZATION

- CONCEIVE



PLANNING

- Design
- Plan
- Allocate

EXECUTION

- Execute



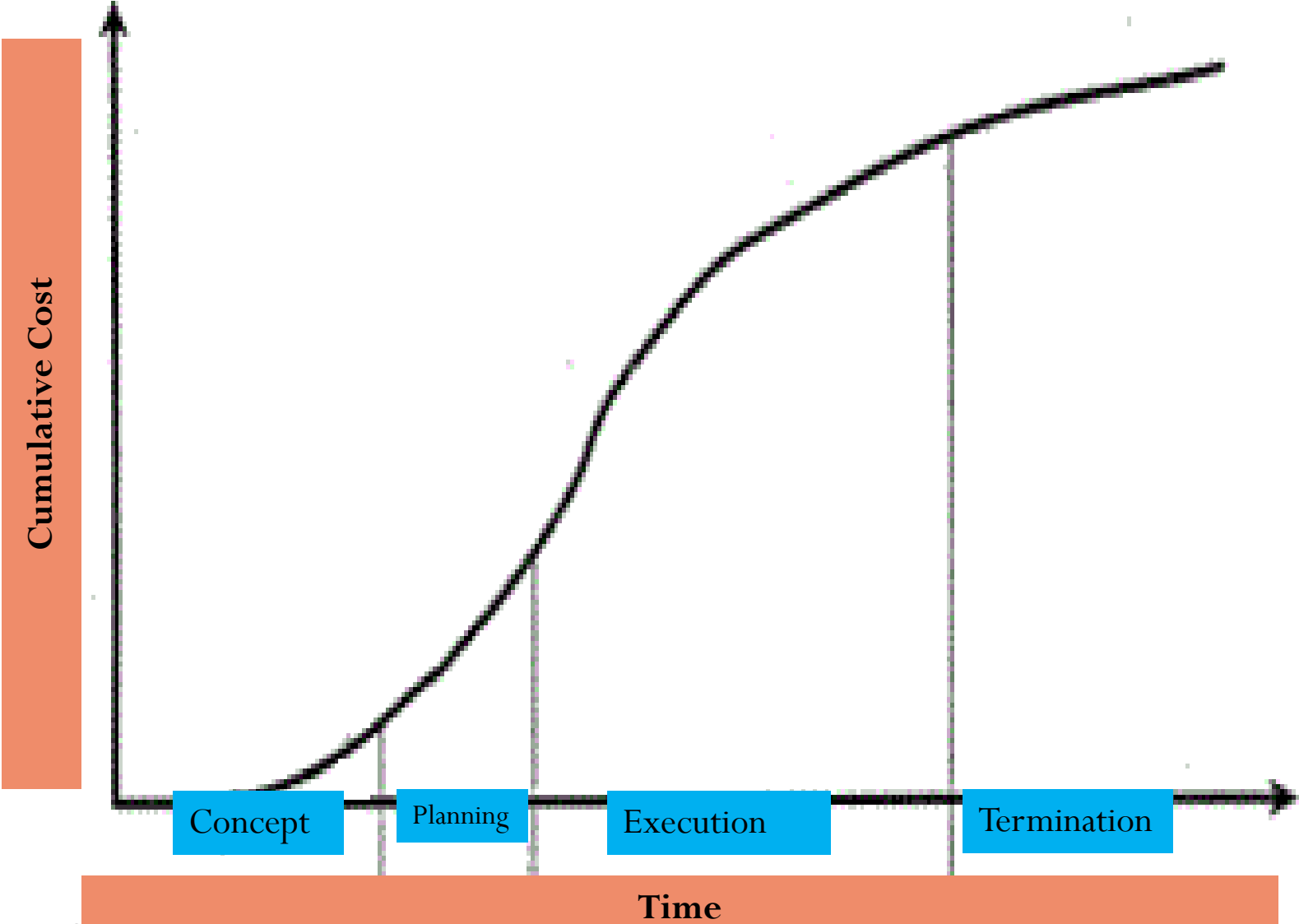
TERMINATION

- Deliver
- Review
- Support

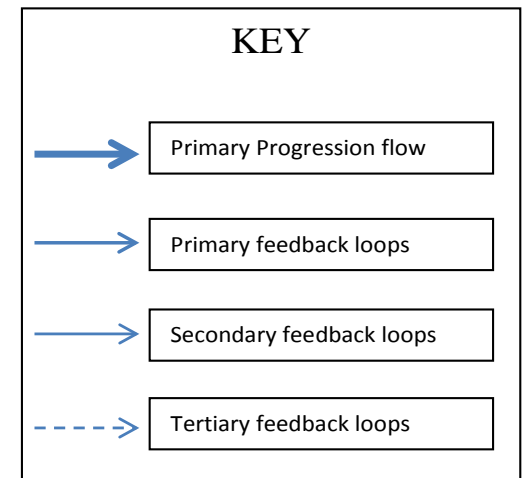
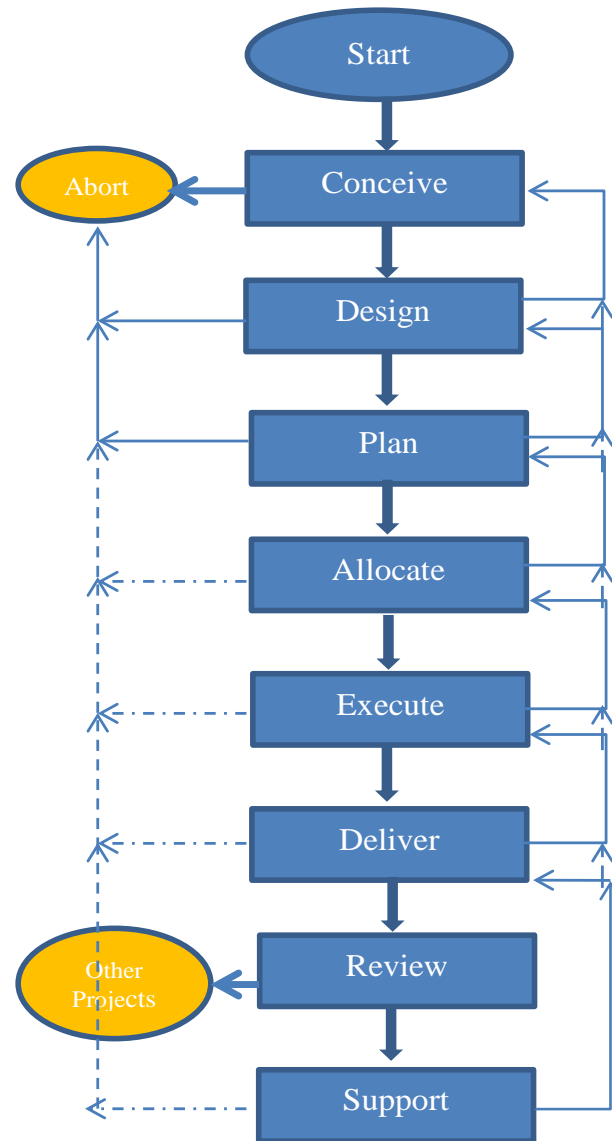


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Project Life Cycle



PLC



PLC

Phases	Stages	Steps
Conceptualization	Conceive	Trigger event Concept capture Clarification of purpose Concept elaboration Concept evaluation
Planning	Design	Basic Design Development of performance criteria Design development Design evaluation
	Plan	Base plan Development of targets and milestones Plan development Plan evaluation
	Allocate	Base design and plan detail Development of allocation criteria Allocation development Allocation evaluation

PLC

Phases	Stages	Steps
Execution	Execute	Coordinate and control Monitor progress Modification of targets and milestones Allocation modification Control evaluation
Termination	Deliver	
	Review	Basic review Review development Review evaluation
	Support	Basic maintenance and liability perception Development of support criteria Support perception development Support evaluation

Application of Risk Management in PLC

Stages	Steps
Conceive	<ul style="list-style-type: none"> Identifying stakeholders and their expectations Identifying appropriate performance objectives
Design	<ul style="list-style-type: none"> Testing the reliability of design Testing the feasibility of design Setting performance criteria Assessing the likely cost of a design Assessing the likely benefits from a design Assessing the effect of changes to a design
Plan	<ul style="list-style-type: none"> Identifying and allowing for regulatory constraints Assessing the feasibility of plan Assessing the likely duration of a plan Assessing the likely cost of the plan Determining appropriate milestones Estimating resources required Assessing the effect of changes to the plan Determining appropriate levels of contingencies funds and resources

Application of Risk Management in PLC

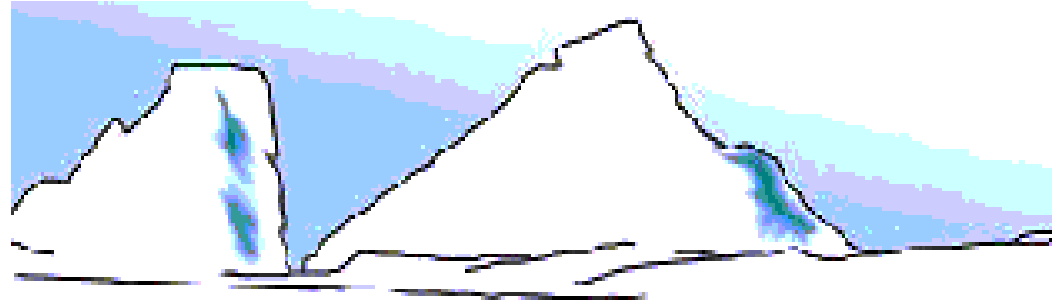
Stages	Steps
Allocate	<ul style="list-style-type: none">Evaluating alternative procurement strategiesDefining contractual terms and conditionsDetermining appropriate risk sharing arrangementsAssessing the implications of contract conditionsAssessing and comparing competitive tendersDetermining appropriate targets costs and bid prices for contractsEstimating likely profits following project termination
Execute	<ul style="list-style-type: none">Identifying remaining execution risksAssessing implications of changes to design or planRevising estimates of cost on completionRevising estimates of completion time of execution stage
Deliver	<ul style="list-style-type: none">Identifying risks to deliveryAssessing feasibility of delivery scheduleAssessing feasibility of meeting performance criteriaAssessing reliability of testing equipmentAssessing requirement for resources to modify project deliverableAssessing availability of commissioning facilities

PLC-

Review	Assessing effectiveness of risk management strategies Identifying of realized risk management strategies
Support	Identifying extent of future liabilities Assessing appropriate level of resources required Assessing profitability of the project

Phases of RMP

Stage of PLC	Define Project	focus	Identify	Structure	Ownership	Estimate	Evaluate	Plan	Manage
Conceive									
Design									
Plan									
Allocate									
Execute									
Deliver									
review									
Support									



26, G. Garçon, La Caille

Risk Matrix and Developing Methodologies

- **Risk matrix as a tool to project risk management;**
- **Risk matrix NOT designed to establish another list to do; and**
- **Its purpose is to help plan and schedule the project so that all contingencies are embedded into the project core.**

STEP-1

From WBS and interviews,
identify project risk/ tasks
with inherent risks

STEP-2

Describe the risk in detail-
what is apt to happen and
why

STEP-3

Determine impact on schedule,
cost quality, customer
satisfaction

STEP-4

Estimate the chance that the
risk will happen; what is the
probability

STEP-5

Rank risks in terms of
severity-overall how severe is
the risk

STEP-6

Identify root cause
for each risk

STEP-7

Prepare
contingenc plan
for high risks

STEP-8

Estimate schedule
impacts using MS
Project PERT
analysis

STEP-9

Incorporate all
contingencies into
schedule; establish
buffers

STEP-10

Identify triggers
for applying
contingencies
buffers

- **Step-1: identify tasks with risks.** The overall project risk is the sum of the individual risks associated with product development plus the risk associated with the market for the product.
- Work Breakdown Structure (WBS) at each level
- Each task/component is reviewed and ranked in terms of potential risks
- All risks ranked up for risk matrix.
- Some risks disappear when intensities are dimensioned, other are ranked high and addressed with contingency planning.

Risk Identification Techniques

examples

- *Brainstorming*
- *Questionnaires*
- *Business studies which look at each business process and describe both the internal processes and external factors which can influence those processes*
- *Industry benchmarking*
- *Scenario analysis*
- *Risk assessment workshops*
- *Incident investigation*
- *Auditing and inspection*
- *HAZOP (Hazard & Operability Studies)*

STEP-2: Describe risk: A statement covering what could go wrong with the task.

- What-if analysis

STEP-3: Determine Impact: is the change that could occur in key project indicators when risk occurs.

STEP-4: Estimate chance/ probability of risk event:

- Ranking risk in terms of 25, 50, 75 percent chance of occurrence
- Mathematical probabilities
- Stakeholders views/ perceptions of risk ranking , past history of similar projects

Probability of Occurrence-threat

Estimation	Description	Indicators
High (Probable)	Likely to occur each year or more than 25% chance of occurrence.	Potential of it occurring several times within the time period (for example - ten years). Has occurred recently.
Medium (Possible)	Likely to occur in a ten year time period or less than 25% chance of occurrence.	Could occur more than once within the time period (for example - ten years). Could be difficult to control due to some external influences. Is there a history of occurrence?
Low (Remote)	Not likely to occur in a ten year period or less than 2% chance of occurrence.	Has not occurred. Unlikely to occur.

Probability of Occurrence-Opportunity

Estimation	Description	Indicators
High (Probable)	Favourable outcome is likely to be achieved in one year or better than 75% chance of occurrence.	Clear opportunity which can be relied on with reasonable certainty, to be achieved in the short term based on current management processes.
Medium (Possible)	Reasonable prospects of favourable results in one year of 25% to 75% chance of occurrence.	Opportunities which may be achievable but which require careful management. Opportunities which may arise over and above the plan.
Low (Remote)	Some chance of favourable outcome in the medium term or less than 25% chance of occurrence.	Possible opportunity which has yet to be fully investigated by management. Opportunity for which the likelihood of success is low on the basis of management resources currently being applied.



STEP-5: Rank Risk by Severity:

Risk may be high in probability but with minimal severity, thus cost of contingency is low.

Low-probability risk may have high severity, eg., a key supplier go out of business

STEP-6: Identify root-cause:

Analytic exercise that can eventually help manage risk
Identifying root causes in schedules and task definitions.

STEP-7: Prepare contingency plan:

A schedulable task addresses the likelihood that a linked task will not work.

Designed to correct an event or action that delays the schedule or impacts the quality of work.

Risk Analysis Methods and Techniques - examples

Upside risk

- *Market survey*
- *Prospecting*
- *Test marketing*
- *Research and Development*
- *Business impact analysis*

Both

- *Dependency modelling*
- *SWOT analysis (Strengths, Weaknesses, Opportunities, Threats)*
- *Event tree analysis*
- *Business continuity planning*
- *BPEST (Business, Political, Economic, Social, Technological) analysis*
- *Real Option Modelling*
- *Decision taking under conditions of risk and uncertainty*
- *Statistical inference*
- *Measures of central tendency and dispersion*
- *PESTLE (Political Economic Social Technical Legal Environmental)*

Downside risk

- *Threat analysis*
- *Fault tree analysis*
- *FMEA (Failure Mode & Effect Analysis)*

STEP-8: Estimate schedule impacts using MS Project software:

- Apply theory of constraints
- When a predictable source or bottleneck is identified in the planning process, creating a risk, the scenario planning is done (worst case-pessimistic; optimistic; expected), PERT analysis establishing a buffer schedule for that contingency.

STEP-9: Incorporate risk in schedules and establish buffers:

- New pessimistic risk-based schedule is not base-lined into project but buffertime equal to difference between the expected and pessimistic durations is withheld for later use.

STEP-10: Identify triggers for applying buffers:

Identify events or indicators that will trigger a buffer action based on risk.

Symptoms and trigger action

Risk may trigger a buffer

How decisions will be made to help avoid last minute “crisis management.

SAMPLE MATRIX

Risk Item	Description of Risk	Impact (technical, schedule, cost, quality)	Severity (high, medium, low)	Contingency plan	Ranking
Testing	Critical function needed by new system may be overlooked if not tested properly	Technical	High	Formal testing plan Test plan Test cases Testing schedule Method to log test results	5
Termination, if applicable	Project termination needs to be done early as not lose money and time	Cost/ Quality	Low	Enough research should have been done to terminate the project before it got to far	1

Building a Risk Management Culture

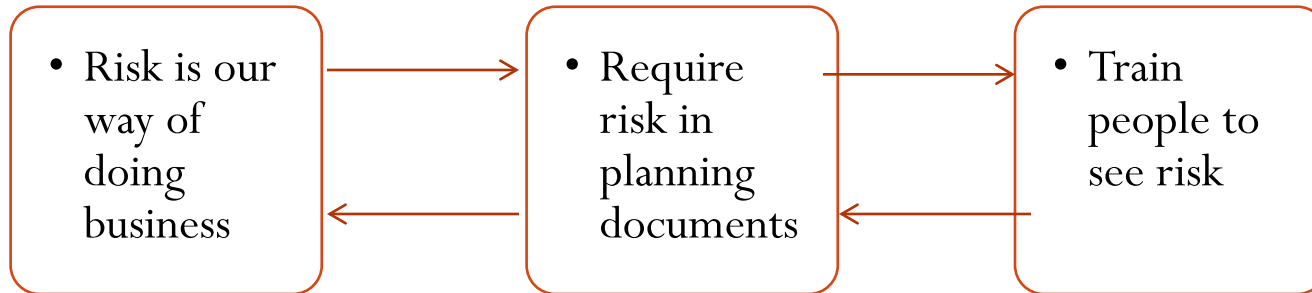
- Prepare the organization
- Risk: the Organizational Culture Issue
- A culture of risk management competencies
- Link corporate and project planning
- Training and Development in Risk
- Project Experience
- Learning Organization
- Strong Functional managers Address Quality
- Building the Culture
- Addressing Risk with scenarios
- Performance incentives
- The Risk of “Blinders”
- Personal, Project and Organization Risk

Culture-Internal risk to projects

- Building culture is a process of developing:
- People in Organization who thinks and plan projects effectively
- Support by company systems
- Encourage people to think and plan effectively
- Culture of what-if approach
- Inculcating a culture of theoretical (could happen) and practical risks (likely to happen)

Preparing the Organization

- Culture is the way of doing work
- Risk management is likely to fail if organization does not address risk the way work is done;
- Risk management/ risk matrix is part of planning process in organizations.



Establish vision of risk based decisions
Connect to businesses success

Shehzad Akram

Write manuals
Use risk to help select
Use risk to help manage
Identify acceptable methods

Develop online risk training program
Use electronic template for training and cases