Arup Driving Change through Strategic Programme Management

Limpopo Department of Public Works
Learning Network Session
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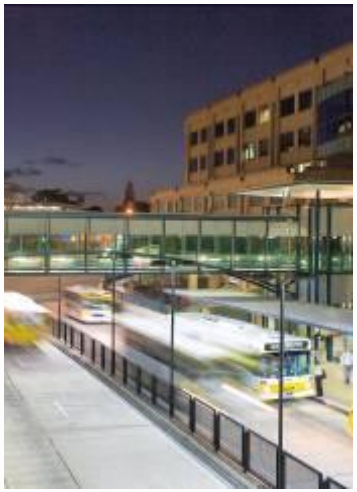
Shupikai Chihuri







ARUP

AGENDA

- Arup Overview
- Project Management Overview
- What is a Project?
- What is Project success?
- Why Do Projects Fail?
- Management techniques

OVERVIEW

- Founded in 1946 in London by Sir Ove Arup
- **Total design** culture
- Independence

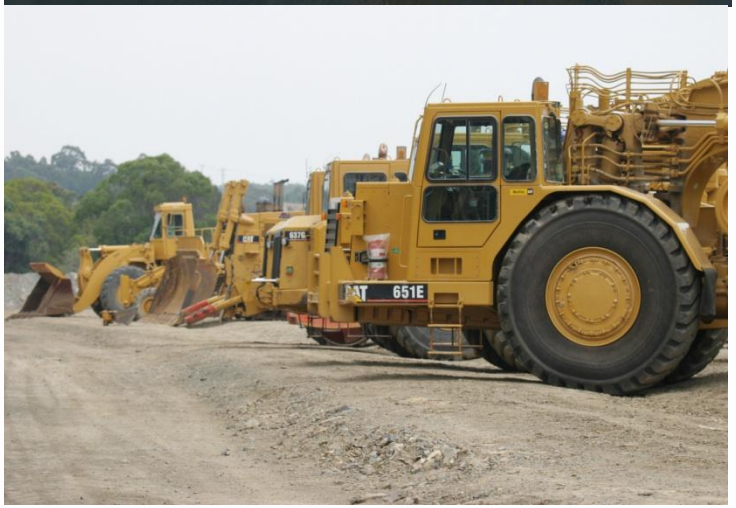
- All elements of the built environment
- Key market segments
  - Social infrastructure
  - Property
  - Transport
  - Energy, Resources & Industry

OVERVIEW

Arup today

- multi-disciplinary design
- implementation
- specialist skills & technology

In South Africa, Arup (Pty) Ltd employs over 400 people and has a track record of over 50 years



Globally, we employ more than 11,500 people

92 Offices and > 38 Countries

An annual turnover exceeding R11 billion

OVERVIEW

ARUP

Arup – An Extensive Range of Services

Technical Consultancy

- Feasibility Studies
- Pre-acquisition Audits
- Site Search & Selection
- Master-planning
- Relocation Management
- Environmental Audits
- Regulations & Planning
- Procurement Strategy
- Logistics Studies

Multi-Disciplined Design Services

- Urban Design
- Facilities Design
  - Architecture
  - Civil/Structural
  - Mechanical Systems
  - Electrical Systems
- Process Design
- Process Utilities Design
- Value Engineering
- Controls & Instrumentation
- Security

Specialist Skills and Technology

- Fire Safety Engineering
- Acoustics & Vibration
- Seismic & Geotechnical
- IT & Communications
- Environmental Engineering
- Façade Engineering
- Safety & Risk
- Data Centres & Mission Critical
- Pipe Stress Analysis

Project Implementation

- Project Management
- Cost Management
- Schedule Control
- Design Management
- Move Management
- Procurement Management
- Construction Management
- Site Management
- Commissioning
- Quality Assurance

Operational Consultancy

- Strategic planning Feasibility
- Operational Optimisation
- Technology Audits
- Manufacturing
- Supply Chain Management
- Process Layout and Design
- Systems Integration
- Supply Chain Logistics
- Economic Analysis
- Equipment Specification
- Waste Strategy
- Materials Handling

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Across All Sectors

Property

- New masterplans
- Urban regeneration
- New build
- Retrofitting



Utilities

- Gas
- Water
- Wastewater
- Electricity
- Telecoms



Energy

- Conventional
- Renewable
- Waste to energy



Transport

- Airports
- Highways
- Rail
- Ports



Social Infrastructure

- Health
- Education
- Leisure
- Accommodation
- Regeneration



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Programme Management

Planning and Strategic Management of Capital Investment Projects

- Strategic and techno-economic assessment /analysis of viability of projects
- Effective communication and liaising with other key Ministries
- Resilient planning and budgeting process for capital intensive programme and projects

Assessment of Existing Programmes

- Due diligence/quality assessment of existing projects
  - Initiation
  - Planning, resourcing and procurement
  - Execution
  - Monitoring and control
  - Close-out
- Management of troubled projects
- Introduction of a Major Projects system and Framework
- Integrated reporting system to Stakeholder Ministries

Programme Management

- Provision of quality systems: procurement and bidding for Capital Projects.
- Benchmarking of projects against international norms.
- Robust Project management Information and Control System.
- Better control of projects (through better measurement of progress/success)

Project Management Overview

Purpose of presentation:

- To provide a high level overview of project management

Why??

- To Increase the likelihood that projects will :
  - be done on time and within budget
  - meet people's expectations
  - be done well
- Proper project management saves the province money and time
- Improve service delivery

What is a Project?

Any planned, temporary endeavour undertaken to create a unique product, service or outcome

- Temporary – beginning and an end
- Unique – each project differs from other similar endeavours & has a single definable purpose

Common Characteristics of a Mega Project

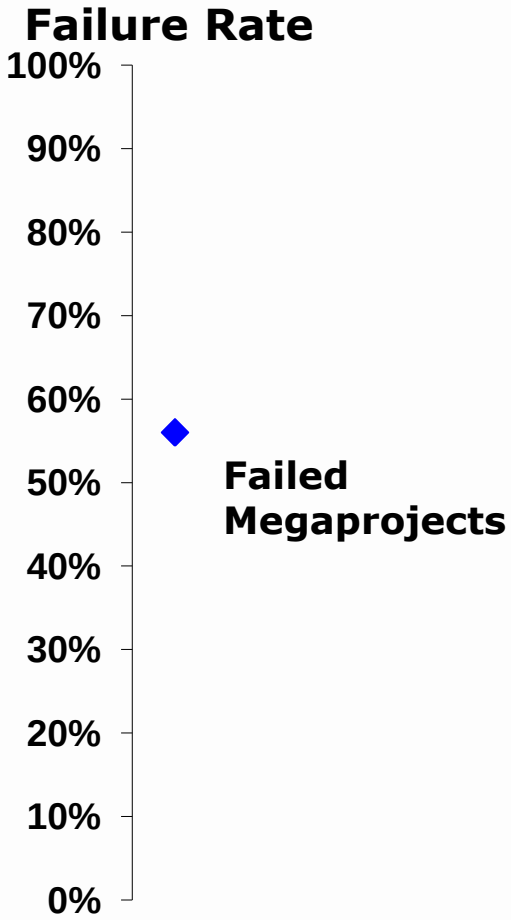
- ✓ Have long schedules that result in more team member turnover than typical projects and higher intrinsic risk
- ✓ Often have a host government or government company as a partner
- ✓ Comprise several functional areas with separate project managers, schedules, and budgets
- ✓ Include several major contractors, each with distinct contracting objectives
- ✓ Have complicated communication matrices among functional areas, contractors, business, local government, etc.

Defining Megaproject Success and Failure

- **A project is deemed to be a failure if one or more of the following occurred:**

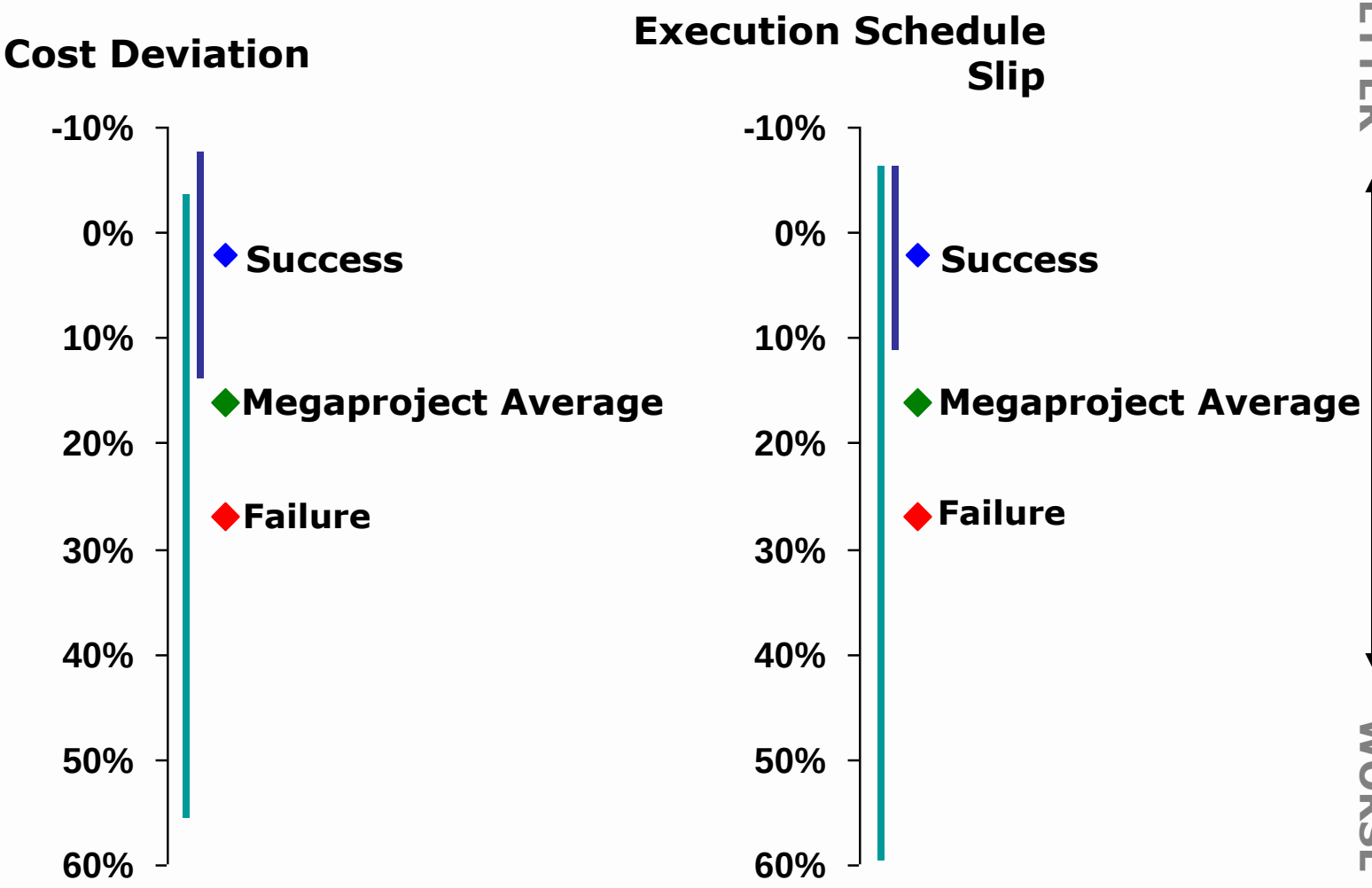
Costs grew	**25% +**
Schedule Slipped	**25% +**
Overspent *(Absolute Measure)*	**25% +**
Severe and Continuing Operational Problems *(≥1 yr)*	**Yes**

- **Of the projects that failed (56 %):**
  - **42 % failed on one criterion**
  - **32 % failed on two criteria**
  - **21 % failed on three criteria**
  - **5 % failed on all criteria**



What does MegaProject Success Look Like?

Cost and Schedule Predictability



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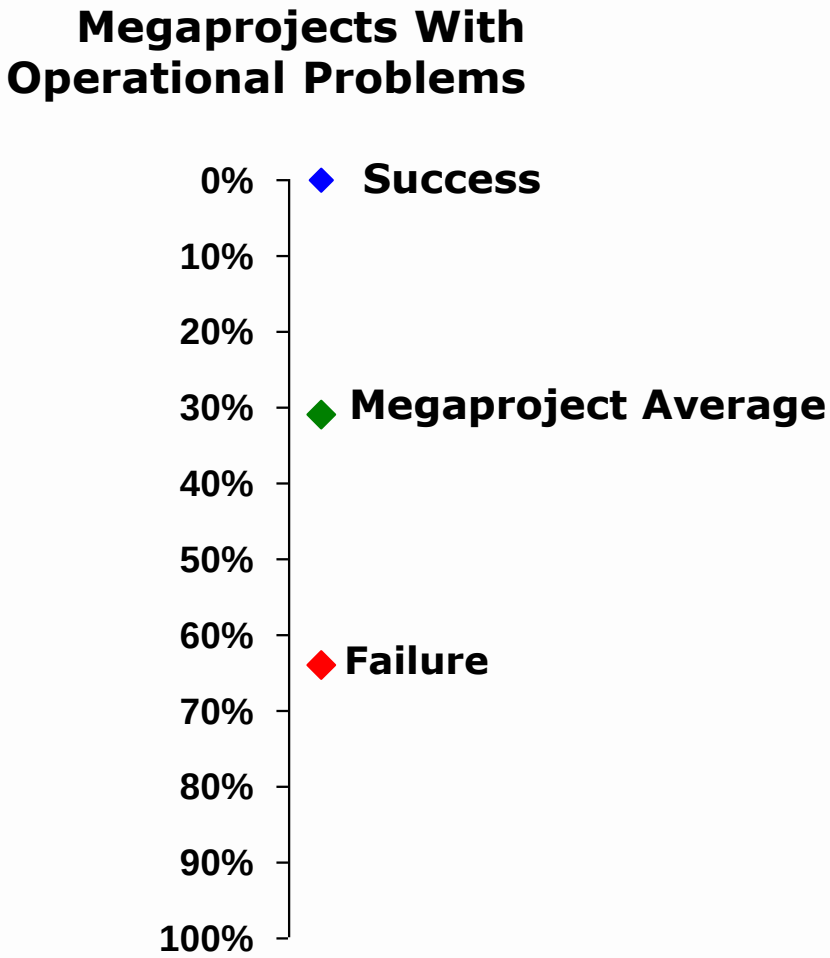


Project Management Process

Initiation

- Project Charter
- Stakeholder Identification and Management

Planning

- Project Execution Plan
- Scope, Time, Cost, Quality Management Plan
- Procurement, Risk, Resource, Communication, Integration

Execution

- Project Team, structure and Organisation
- Level of integration between processes, systems and tools
- Assessment of Schedule Performance Index (SPI), Cost Performance Index (CPI) and Earned Value (EV)

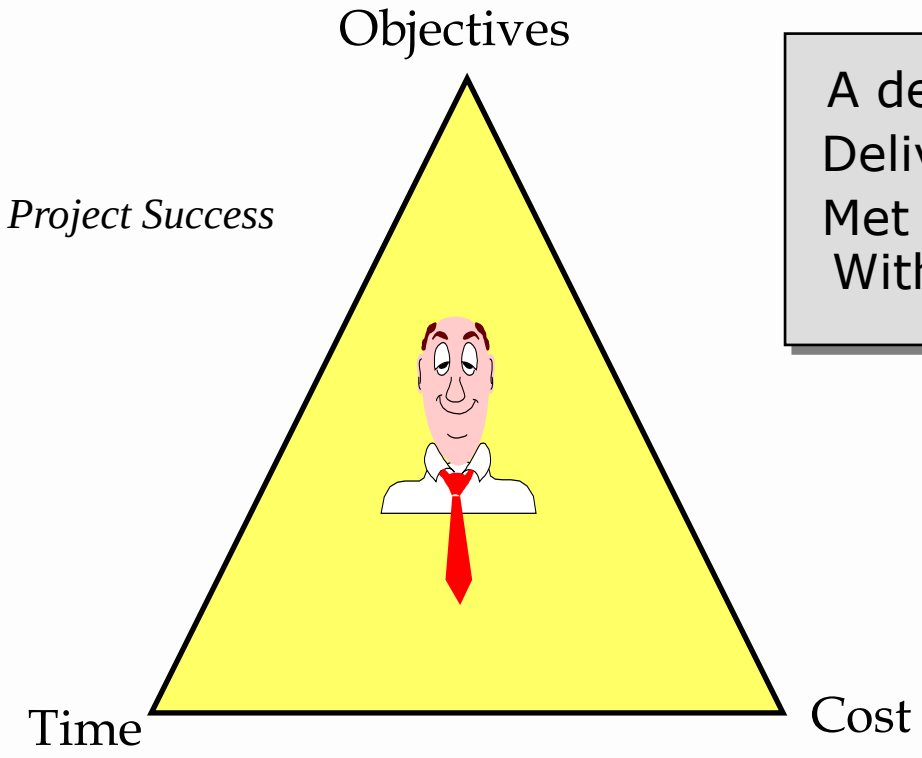
Monitoring and Control

- Tools and techniques used
- Change Control ⇨ Cost ⇨ Scope ⇨ Time ⇨ Contracts
- Reporting and Analysis Format

Close-out

- Commissioning and Handover
- Procurements Close-out
- Financial and Commercial Reconciliation
- Customer Review

What is Project Success?



Project success occurs when we have:

A delighted client *(expectations met)*
Delivered the agreed objectives
Met an agreed budget - $, resources etc.
Within an agreed time frame

Done it all professionally & without killing the team

Why do Projects Fail?

- Changing Scope
- Insufficient planning
- No risk or issue management
- Poor communication
- Lack of commitment & responsibility by stakeholders
- Incompetent service providers

Best Practices

To increase the likelihood of project success, one must manage:

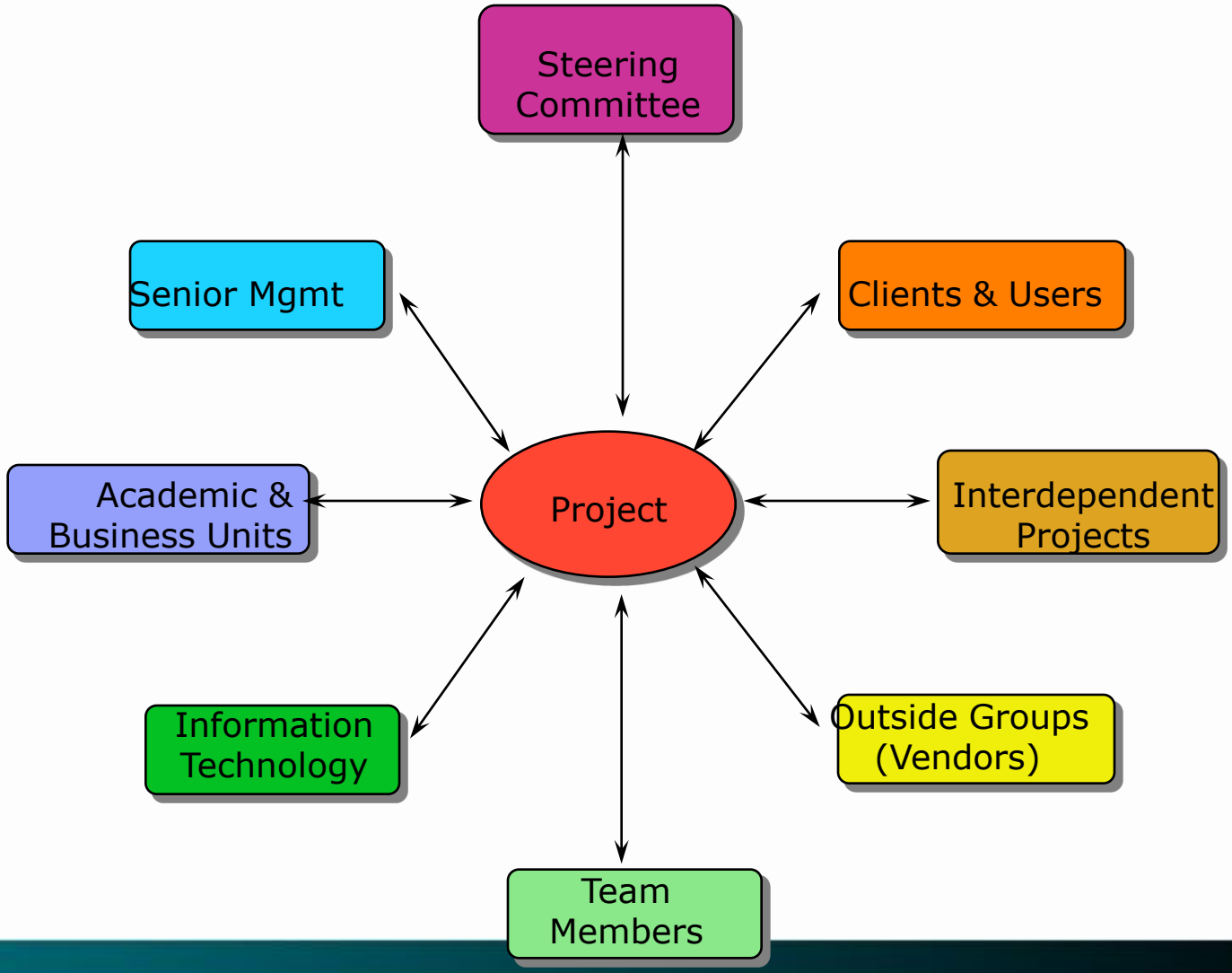
- Stakeholders
- Risks
- Issues
- Changes

Managing Stakeholders

A stakeholder is any person or group who, if their support or involvement is withdrawn may cause the project to fail

- Get them involved
- Keep them informed
- Get their endorsement

Who are stakeholders?



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Managing Stakeholders?

- Identify stakeholders
- Involve in planning
- Establish expectations / accountabilities
- Formal communication
- Gain sign-off
- Change and issues resolution
- Project reviews
- Define project completion

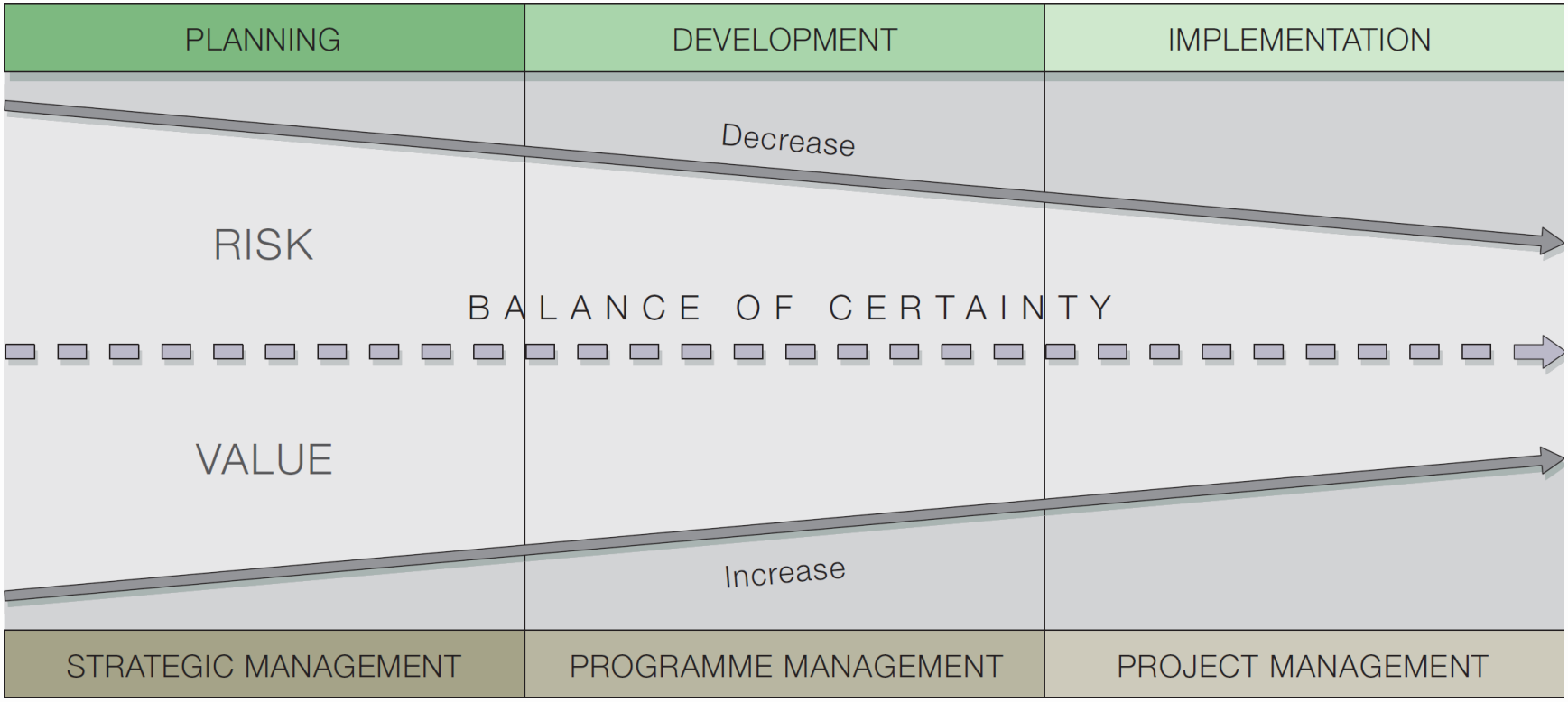
Managing Risk

What is “risk”?

Any factor capable of causing the project to go off track.

- Develop and monitor a Risk Plan

Managing Major Projects - AMP System



Managing Issues

Unresolved issues will drive a project towards failure and consume a significant part of a project manager's time.

Stakeholders play key role in issues management and resolution

- Establish Issues log, review, escalation process

Change Management

Uncontrolled changes to a project will probably account for up to 30% of a project's total effort.

If these changes are not managed, the project will be viewed to be over time and over budget.

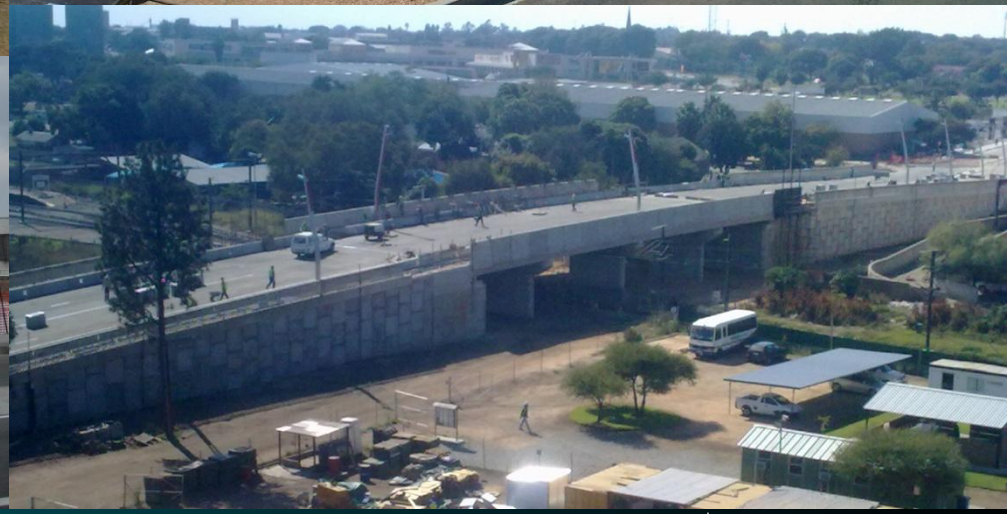
- Establish a Change management process

9 Knowledge Areas of Project Management

Recommended approach/tool – PMBok:-

*Project **Integration** Management*
*Project **Scope** Management*
*Project **Time** Management*
*Project **Quality** Management*
*Project **Procurement** Management*
*Project **Communications** Management*
*Project **Human Resources** Management*
*Project **Cost** Management*
*Project **Risk** Management*

Picture Gallery



Picture Gallery

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