Module 3 MGMT 6062

Identify Risks & Opportunities

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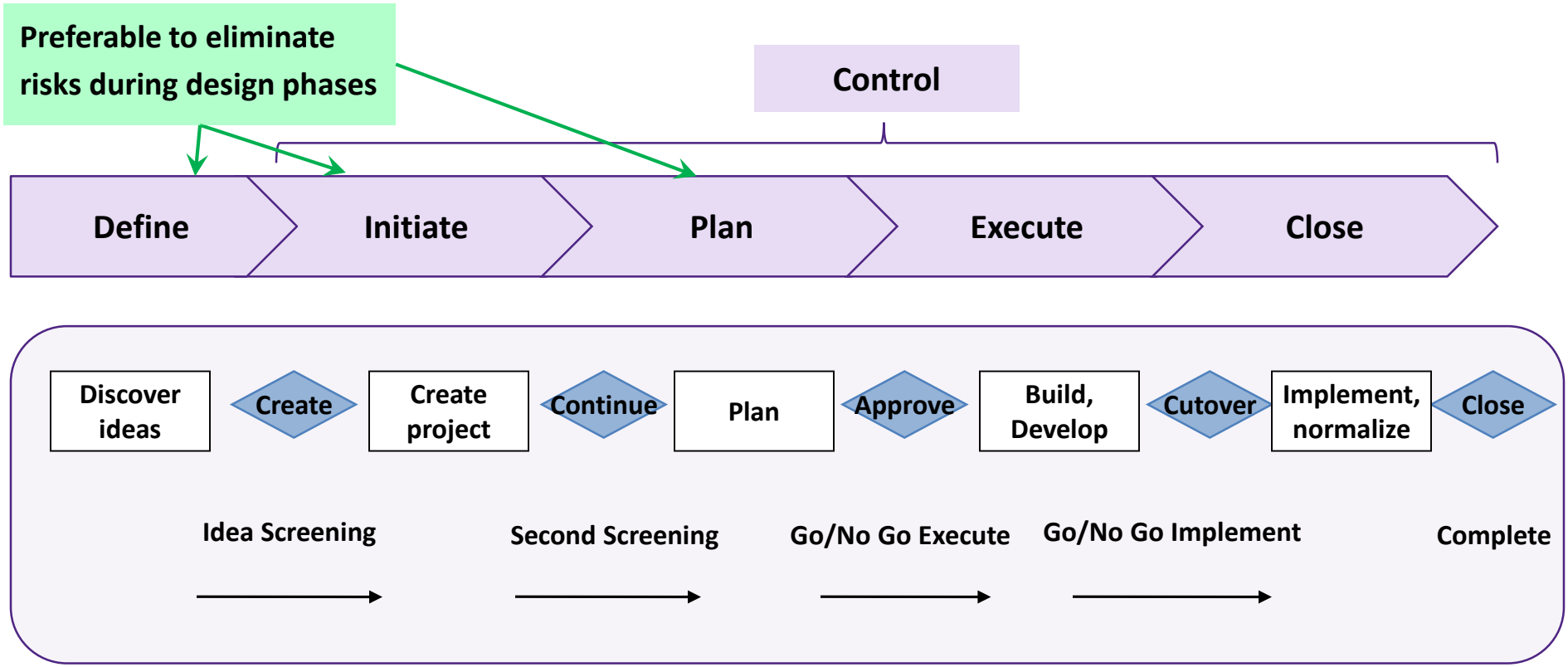
Identify risks & opportunities throughout the Project Lifecycle



Legend

Activity: **Discover ideas**

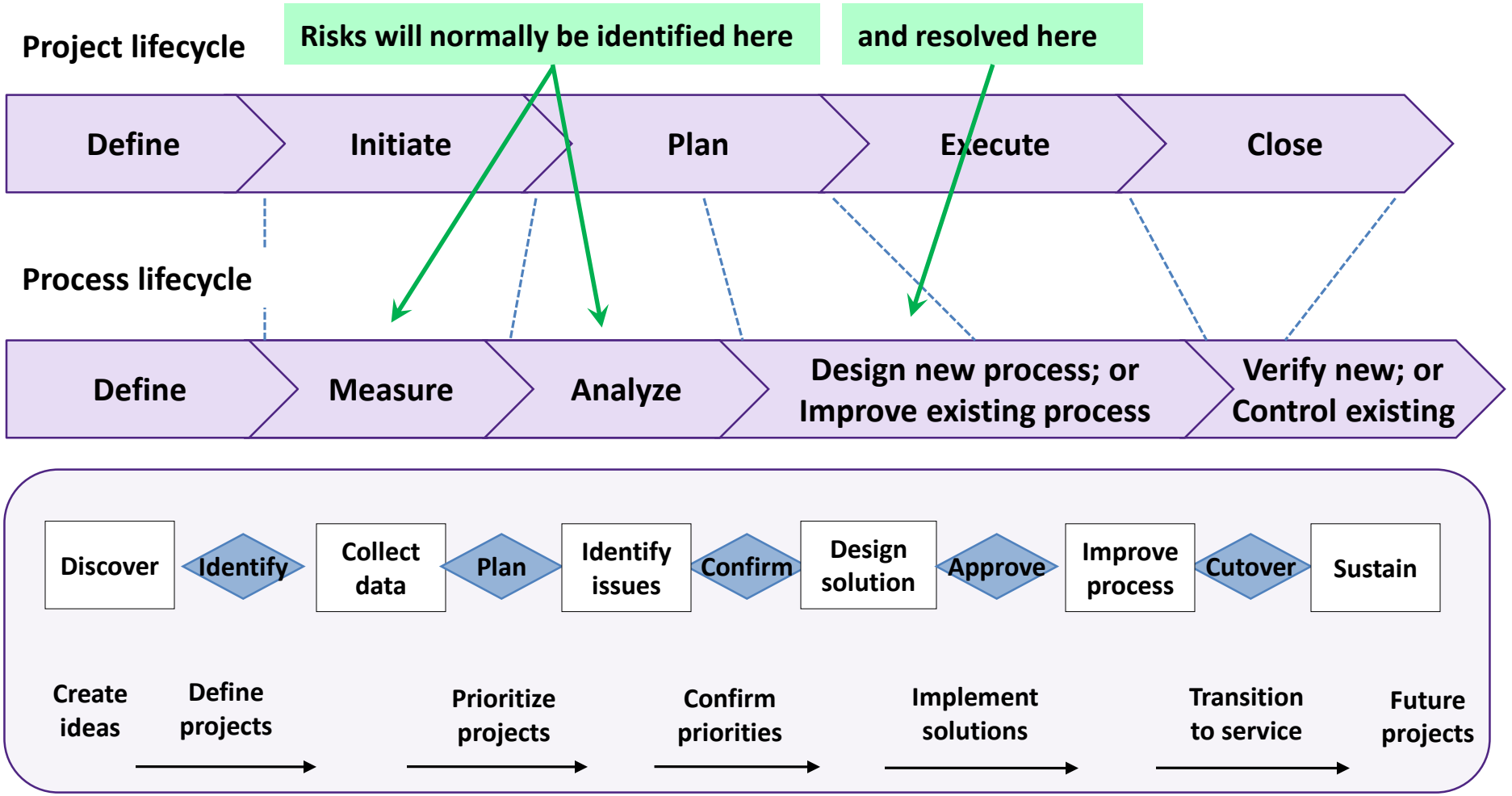
Decision 'gate': **Create**

For consideration:

- How do the project's activities, align with day-to-day operational activities?
- How do the project and related operational activities, align with OTHER projects and operational activities ? (program management)
- How can one make project decisions as part of a broader 'program'?
- Which parts can (or must) be iterated? Which parts must be sequential?
- How can change and feedback be accommodated?

2

Risks may be also be identified throughout an Operating Process



- Defined phases with specific activities: must have approval to proceed before starting each phase
- Only difference to Project Management: the process does not end, it is perpetual and repeats

3 Adapted from

- Kubiak and Benbow, The Certified Six Sigma Black Belt Handbook, 2nd edition, American Society for Quality Press 2009
- Six Sigma Black Belt body of knowledge, https://asq.org/cert/six-sigma-black-belt , scroll down about 2/3 of the page. Accessed June 23, 2021

Risk Classifications

Classification helps sort & group the risks to better manage them

Project Risk

- Risks are each stated in a complete sentence which states the cause of the risk, the risk, and the effect it causes on the project

Project Risk Category

- Risks are categorized by area of project affected, source of risk or other useful category, for example:
  - Risks which may result from Project Activities; i.e. the Project Activities themselves may trigger negative outcomes
  - Risks which may result from EXTERNAL factors; i.e. factors unrelated to the project can also cause negative outcomes
  - Political, economic, social, technological, legal, environmental

Risk Breakdown Structure

- RBS matches the risks with Work Breakdown Structure activities
  - May also need new WBS elements eg ‘manage risk’

Project Risk Owner

- The person who the project manager assigns to watch for triggers, and manage the risk response if the undesirable event occurs
  - The person accountable to manage the risk response could be someone outside of the project

Some methods to identify risks

Strategic analysis

- As per tools shown in Module 2
  - Plus: list of cognitive biases shown in Module 1

Failure mode & effects analysis

- Determine causes of failure
- Assess the negative outcomes of failure
- Prioritize solutions for resolution(discussed Module 4)

Cause & effect analysis

- Effect: the negative outcome, or 'symptom' of a problem
- Identify potential 'causes' of the problem: '6M' and '5 whys'
  - '6M': methods, machines (equipment), manpower (people), materials, measurement, 'mother nature' (environment)
  - '5 whys': ask 'why'; when an answer is given, ask again, 'why'. A similar method: '5 hows'.

System design

- Consider how the project is physically constructed
  - What design principles & standards are followed?
  - How technically feasible is it ?

https://asq.org/quality-resources

Risks are formally documented in a Risk Register, for example:

FOL Content > Getting Started and Resources > Risk Management Tools > Risk Management Matrix

Project	Risk			Risk assessment			Risk Response		Assessment of Risk Response		
Date	Hazard	Event	Negative outcome	Probability of event happening	Ability to detect event happening	Severity of negative outcome	Mitigate, avoid, transfer, accept	Contin-gency	Feasibility	Cost	Benefit
Project Activity #1											
Project Activity #2											
….											
External environment factor #1											
External environment factor #2											
….											

Other Examples of "registers"

1. Risk Breakdown Structure
   - Created with a project's Work Breakdown Structure
   - Risks are matched to major project activities
2. Failure Mode and Effects Analysis tool
   - Mode: Identify possible ways in which something might fail
   - Effects: consequence of failure

Opportunity Classifications

Project Opportunity

- Opportunity stated in a complete sentence which states the cause, the opportunity, and the potential benefit from realizing it

Opportunity Category

- Risks are categorized by area of project affected, source, or other useful category, for example:
  - Opportunities which may result from Project Activities; i.e. the Project Activities may trigger positive benefits
  - Opportunities which may result from EXTERNAL factors; i.e. factors unrelated to the project can also drive benefits
  - Political, economic, social, technological, legal, environmental

Linkage with Risks

- An event might trigger risks **and** opportunities
  - Show the related Risks on the Risk Regsister

Opportunity Owner

- The person who the project manager assigns to watch for triggers, and manage the opportunity if a desirable event occurs
  - The person accountable to manage the opportunity could be someone outside of the project

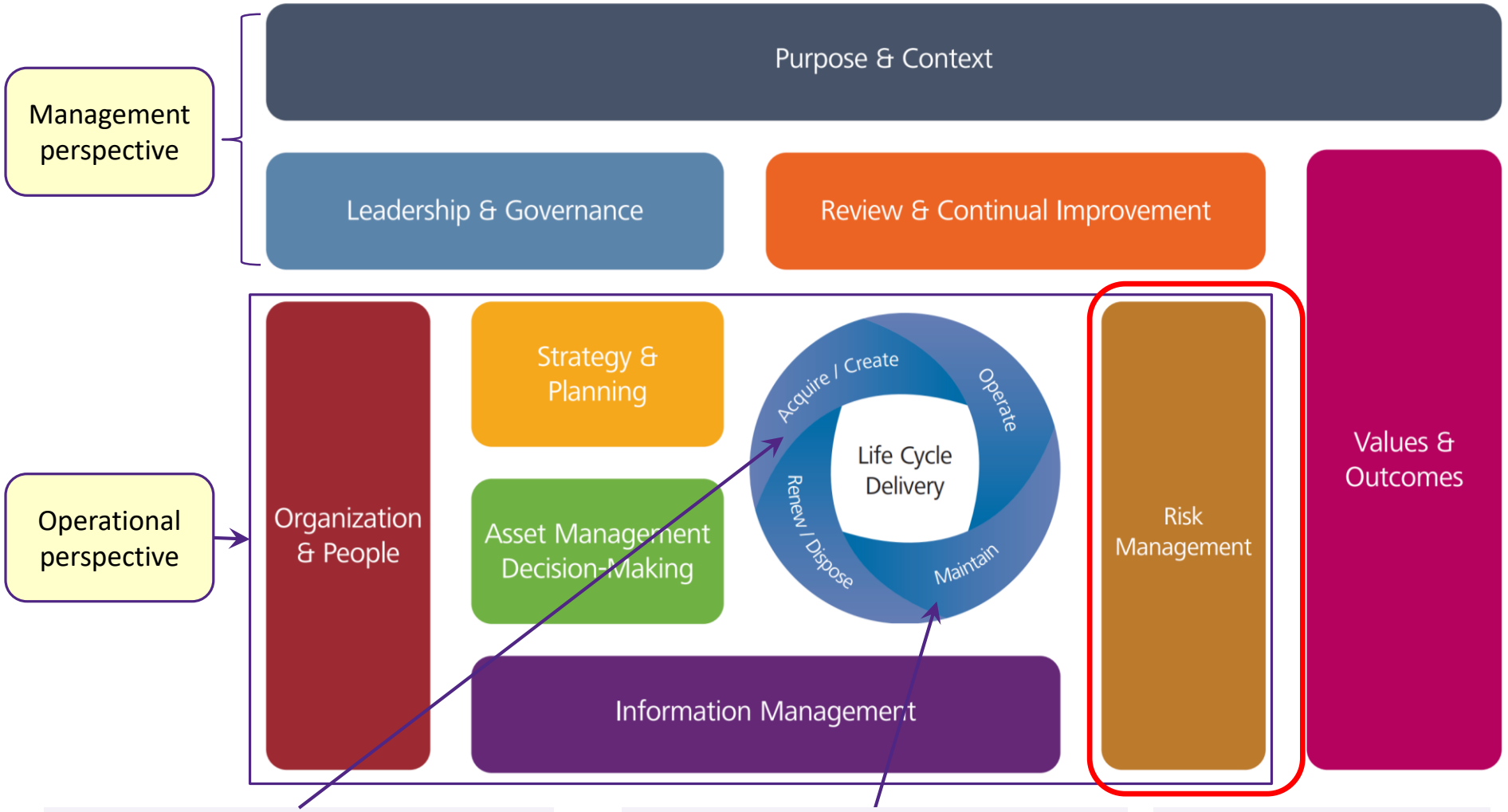
Opportunities are similarly documented in a Register

FOL Content > Getting Started and Resources > Risk Management Tools > Opportunity Management Matrix

Project	Opportunity			Opportunity assessment			Opportunity response		Assessment of Opportunity Response		
Date	Situation	Event	Positive outcome	Benefits from positive outcome	Probability / frequency of event	Visibility of event	Enhance, Exploit, Share, Accept?	Benefits Realization Plan	Feasibility	Cost	Benefit
Project Activity #1											
Project Activity #2											
….											
External factor #1											
External factor #2											
….											

- Opportunities and Risks are related: projects are created to realize opportunities and reduce risks; however,
  - Project activities may introduce more risks
  - Some events may lead to positive or negative outcomes
- We must still separate Opportunities and Risks on the Registers
  - For example, we do NOT combine them all on the Risk Register
  - Opportunity and Risk response plans have different goals and different actions

Consider the business environment in which projects take place



Projects

- Acquire or create physical assets: property, plant, equipment, software
- Dispose at end-of-life or end-of-use

Operations

- Operate and maintain assets
- May require new projects and processes

Risk Management

- Processes shown on next slide

Apply a company's core Risk & Review processes

31. Risk Assessment and Management	The policies and processes for identifying, quantifying and mitigating risk and exploiting opportunities.
32. Contingency Planning & Resilience Analysis	The processes and systems to ensure an organisation is able to continue to either operate its assets to deliver the required level of service in the event of an adverse impact or maintain the safety and integrity of the assets (whether or not they operate).
33. Sustainable Development	The interdisciplinary, collaborative processes used by an organisation to ensure an enduring, balanced approach to economic activity, environmental responsibility and social progress to ensure all activities are sustainable in perpetuity.
34. Management of Change	An organisation's processes for the identification, assessment, implementation and communication of changes to people, processes and assets.
35. Asset Performance & Health Monitoring	The processes and measures used by an organisation to assess the performance and health of its assets using performance indicators. The indicators can be leading or lagging and allow for the prediction of future asset performance and health as well as the assessment of current or historic performance.
36. Asset Management System Monitoring	The processes and measures used by an organisation to assess the performance and health of its AMS. The primary aim is to evaluate the extent to which the AMS is fit for purpose and that the organisation is delivering its asset management objectives.
37. Management Review, Audit & Assurance	An organisation's processes for reviewing and auditing the effectiveness of its asset management processes and AMS.
38. Asset Costing & Valuation	An organisation's processes for defining and capturing 'as built', maintenance and renewal unit costs and the methods used by an organisation for the valuation and depreciation of its assets. This includes ensuring that the quality of financial information is appropriate for the financial reporting framework of the organisation.
39. Stakeholder Engagement	The methods an organisation uses to engage with stakeholders.

- Identify, understand and manage risk
- Create effective feedback and review mechanisms
- Ensure objectives are achieved
- Support continual improvement of project and operational activities

https://theiam.org/knowledge-library/asset-management-an-anatomy P. 23 of Asset Management – an Anatomy, 2015

End Module 3