

# Agile Program Management and Cost & Schedule Assurance Principles

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# Outline

1. What is program management?
2. Traditional Versus Agile Program
3. Traditional Versus Agile Program Management
4. Cost and Schedule Assurance in Agile Program Management

# Section One

## What is program management?



- Program management is the planning and execution of various interrelated projects with connecting goals, requirements, and outcomes.
- The goal of program management is to ensure effective resource allocation and all projects work together to achieve a shared organisational goal.
- Program management is typically done by a Program Management Office (PgMO)

Program management involves the planning and implementing of key areas, such as →

Suggested readings:

- Project Management Institute - PMBOK® Guide
- PRINCE2®
- Harvard Business Review Project Management Handbook
- Australian Institute of Project Management
- Project Control Expo



## Section Two

# Traditional Program Versus Agile Program



# Differences between Traditional and Agile Program

Parameters	Traditional Program	Agile Program
Scope	Defined	Not well-defined
Schedule	Defined	Adjustable
Cost	Contested cost, allocated budget	Contested and uncontested cost; scalable budget
Resource	Planned workforce; stable supply chain	Hybrid workforce; unstable/unidentified supply chain
Projects' scale	Small to medium scale	Small, medium and large scale
Cummunication	Formal communication	Include face-to-face communication and collaboration
Risks	Known risk register with mitigation plan	Both known and unknown risks
Technology	Developed technologies	Experimental technologies



# Traditional Program Example

## Major Surface Combatant Continuous Build Program - Naval Ship Building Plan 2017

### ► Scope:

- Project 1 – Upgrade and sustainment of three Hobart Class Destroyers (2020-2040)
- Project 2 – Upgrade and sustainment of eight Anzac Class Frigates (2016-2030)
- Project 3 – Build nine Future Frigates (2018-2040)

### ► Schedule: 2016-2040

### ► Budget:

- Project 2: \$2 billion
- Project 3: \$35 billion

### ► Enablers: Infrastructure, workforce, local industry, national approach

<https://www.defence.gov.au/business-industry/naval-shipbuilding/plan>





# Agile Program Example

## Tham Luang cave rescue June-July 2018

- ▶ Scope: changed from internal Thai to international rescue effort
- ▶ Duration: 18 days
- ▶ Program variables: Many are under little control of the program manager
  - The resilience of the members of the football team (aged 11-16)
  - Level of floodwaters due to the monsoon season and weather condition
  - The availability of professional cave divers.....
- ▶ Cost: May have cost around \$500 million US dollars + loss of life

[https://en.wikipedia.org/wiki/Tham\\_Luang\\_cave\\_rescue](https://en.wikipedia.org/wiki/Tham_Luang_cave_rescue)



## Section Three

# Traditional Versus Agile Program Management



# Differences between Traditional and Agile Program Management

Variables	Traditional Program Management	Agile Program Management
Governance	Emphasises planning and predictability	Emphasises flexibility and adaptability
Resources	Prioritises strict planning and meeting projects' requirements	Prioritises collaboration and projects' integration
Project Scope	No change	Accepts volatility in projects' scope
Communication	Formal communication	Face-to-face communication and collaboration
Schedule Planning	Uses long projects phases for planning and delivery. Change is usually not allowed.	Uses short sprints for planning and delivery. Allows for changes and adjustments.
Stakeholder Engagement	Regular, high level of Involvement	Irregular, low level of Involvement
Organisation Structure	Functionally divided teams	Cross-functional teams

Primadhika Marnada, Teguh Raharjo, Bob Hardian, Adi Prasetyo. 2021. Agile project management Challenge in handling scope and change: A system literature review.



## Success in Traditional Program Management

Success in traditional program management is *the ability to execute as planned* when projects are delivered on budget and on schedule.

► In the Major Surface Combatant Continuous Build Program success is the ability to plan and execute the design, construction and sustainment of future fleets of major surface combatants

(Naval Shipbuilding Plan 2017, p.20)

‘on budget and on schedule’ might not guarantee a desired outcome

# Project on Budget and on Schedule...However



Cost benefit analysis is to ensure success at program level



# Success in Agile Program Management

Success in agile program management is the ***ability to deliver things that matter*** when projects deliver the intended value(s).

► In the Tham Luang cave rescue success is the ability to rapidly mobilise special skills and resources that were not readily accessible for the operation to save lives.

[https://en.wikipedia.org/wiki/Tham\\_Luang\\_cave\\_rescue](https://en.wikipedia.org/wiki/Tham_Luang_cave_rescue)

Suggested readings: *planreview. 2022. Agile Program Management: Making Work Connected and Visible*



# Advantages of Agile Program Management

- offers an agenda for program success when traditional program management processes no longer work.
- focuses on evolving changes and collaborative effort to bring out results rather than a predefined process.
- encourages data driven decision-making and prevent spending time on variables that are bound to change
- Adaptive planning is key

# Adaptive planning - The Tham Luang cave rescue

23-Jun-18	Adventurers go missing
24-Jun-18	Backpacks and sandals found
25-Jun-18	Thai Navy SEALs arrive
→ 26-Jun-18	Divers retreat
27-Jun-18	US and UK divers retreat
28-Jun-18	Pumps brought in
29-Jun-18	Thailand's PM visits
30-Jun-18	Rain eases, AFP Specialist Response arrives
1-Jul-18	Cave camp set up
2-Jul-18	Found!
→ 3-Jul-18	Plan hatched
4-Jul-18	Diving lessons
5-Jul-18	Water - and oxygen levels - drop
→ 6-Jul-18	SEAL dies
7-Jul-18	Ready to go
8-Jul-18	The rescue begins: four out
9-Jul-18	Four more out
10-Jul-18	Mission accomplished

<https://www.theage.com.au/interactive/2018/thailand-cave-rescue-timeline/>





# Challenges of Agile Program Management

- Handle individual project's scope and schedule change, leading to changes in cost or via versus
- Reprioritise resources
- Communicate about changes to stakeholders and governance committee(s)
- Mitigate any disconnection between projects' outcomes
- Manage complex dependencies, risks, and other conflicts across many teams

# Section Four

## Cost and Schedule Assurance in Agile Program Management



# Program Cost Assurance Principles

- ▶ **Comprehensive:** Includes all life cycle costs, based on technical baseline, reflects the current schedule, WBS used is product-oriented
- ▶ **Well-documented:** Shows costing method, source data, the reliability of the data, evidence that the cost estimate was reviewed
- ▶ **Accurate:** Estimate each WBS element using the best methodology from the data collected, regularly updated, based on a historical record; adjust for inflation and FOREX
- ▶ **Credible:** Includes a sensitivity analysis, risk and uncertainty analysis

## Suggested readings:

- ICEAA Cost Estimation and Assurance, Cost Estimating Body of Knowledge (CEBoK® v2.0) (<https://www.iceaaonline.com/>)
- US DoD, 'Cost Estimating and Assessment Guide - Best Practices for Developing and Managing Program Costs' (<https://www.gao.gov/assets/gao-20-195g.pdf>)



# Cost Assurance & Agile Program Management

Cost estimation in an agile program might not meet all principles of cost assurance at certain decision-making points

- ▶ Comprehensive: Not all life cycle costs could be included
- ▶ Well-documented: source data, the reliability of the data might not be ascertained
- ▶ Accurate: historical data might not be available, not all WBS are known and estimated
- ▶ Credible: Not fully analysed

# Cost Assurance & Agile Program Management

Focus of cost assurance in agile program management

- ▶ Resource allocation:
  - appropriate funding across projects and proportionated to scope and human resources.
- ▶ Resource reprioritisation:
  - follows consistent and transparent principles and is well-documented.
- ▶ Cost risks:
  - Understand cost risks of different projects and their mitigation plan
  - Agree a level of risk that the program is willing to take



# Program Schedule Management Principles

- ▶ Clear understanding of program objectives and projects' outcomes
- ▶ Development of integrated master schedule of all projects
- ▶ Taking into account all necessary projects' resources and the duration for which each resource will be needed
- ▶ Detailing how the schedule will be monitored, controlled and changed within the agreed scope.

## Suggested reading:

- Eric Lofgren, Putting Schedule Quality Checks to the Test, ICEAA 2016 (<https://www.iceaaonline.com/wp-content/uploads/2016/06/MS06-paper-Schedule-Quality-Checks.pdf>)

# Schedule Assurance & Agile Program Management

- ▶ Schedule management in agile program might have some challenges due to:
  - ▶ Program objectives might be fluid
  - ▶ Individual project's milestones or schedule might change in short notice
  - ▶ Reprioritisation of resource might alter the duration of use for each resource and individual project's critical path

Focus of schedule assurance in agile program management:

- Continuous update in accordance to changes
- Projects' timeline could be used for high level activities planning



# Cost and Schedule Assurance in Agile Program Management

- ▶ The core philosophy of agile program management is adaptive planning which involves informed reprioritisation and responsible risk-taking.
- ▶ Traditional cost and schedule assurance principles are no longer applicable for agile program management and changes are needed for effective performance.
  - Cost assurance could focus on resource allocation, resource reprioritisation and risk mitigation.
  - Schedule could be assured by continuous update of changes.





**THANK YOU**