Evolution of Projects and Project Management – Reframing Competency for the modern world.

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Current

After reviewing a lot of industry papers and the available project success statistics from over the last 20 years.

I can only say one thing, about Project Management in the 21st century...

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Current

After reviewing a lot of industry papers and the available project success statistics from over the last 20 years.

I can only say one thing, about Project Management in the 21st century...

We Suck

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State of Project Management (PMI vs AIPM)

The CHAOS Report from the Standish Group tracks IT project success rates. The results reported for the past few years were:

Result	1994	1996	1998	2000	2002	2004	2006	2009	2011
Successful	16%	27%	26%	28%	34%	29%	35%	32%	37%
Challenged	53%	33%	46%	49%	51%	53%	46%	44%	42%
Failed	31%	40%	28%	23%	15%	18%	19%	24%	21%

Project Management Book of Knowledge released

where:

Successful means that the projects finished on time, within budget, and delivered the required features and functions

Challenged meant that the projects were late, over budget, and/or delivered less than the required features and functions

Failed means that the projects were cancelled prior to completion, or delivered products which were never used.

	2018	2022	
Stakeholder Satisfaction	50%	48%	-2%
Business Goals	62%	72%	10%
On Budget	57%	62%	5%
On Time	56%	55%	-1%

*PMI Pulse of the Profession 2018 and 2022

	2018	2022	
Stakeholder Satisfaction	45%	48%	3%
Business Goals	47%	50%	3%
On Budget	36%	36%	0%
On Time	30%	32%	2%

*AIPM/KPMG State of Project Management 2018 and 2022

Professional Association Accreditation in AIPM

	2018	2022	
RegPM	50%	45%	-5%
Prince 2	32%	26%	-6%
PMP	24%	12%	-12%
Agile	17%	16%	-1%

*AIPM/KPMG State of Project Management 2018 and 2022

PMI and AIPM Data is based on projects across all industries, not just IT projects

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State of Project Management 2020 - 2022

The 2020 Standish Group Chais Report states that only 34% of projects are successful

The 2022 Standish Group Report states tat only

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Professionalism

- So many professional organisations devoted to project management competency, accreditation and improving the industry.
- We have the following professional bodies:
  - Australian Institute of Project Management (AIPM)
  - Project Management Institute (PMI)
  - Association of Project Managers (APM)
  - International Project Management Association (IPMA)
- Two have been around for over 40 years
- All have developed and implemented accreditation systems for project management competency (PMP, RegPM, Chartered Project Manager)

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History Of Project Management Associations

Project Management Institute – 1969 – 54 years

Association of Project Management – 1972 – 51 years

Australian Institute of Project Management = 1976 47 years

Prince2, Office of Government Commerce (OGC) = 1996 – 27 years

International Centre for Complex Project Management (ICCPM) = 2007 – 16 years

Projects are still failing – Nothing has improved

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??????????

WHY?

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A Theory

Projects evolve quickly

Management evolves slowly

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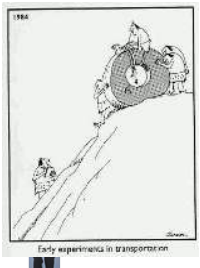
Simple

Simple Projects?

- Projects we (humans) have been doing since we fell from the trees.
- Low risk, existing knowledge, and existing technology
- First recorded project – The Ark
- Roads,
- Bridges, Houses, etc
- Things that we (humans) have been doing for thousands of years



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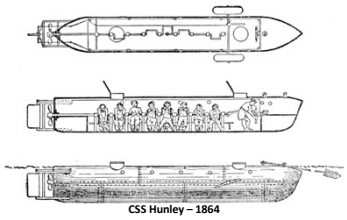
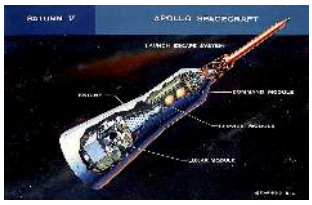
Complicated

Complicated Projects

- A project that uses existing technology and practices in a new and/or unique way.
- The Apollo Moon Landings are an example of a Complicated project.
  - Used existing technology in new ways:
    - Diving suits – Space suits
    - Submarine – Space capsule – Pressure vessel in a hostile environment
    - Rockets – Congreve Rocket 1804, Goddard's Rocket 1926, German V2 Rockets 1940's



CSS Hunley – 1864



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Complicated

What defines a Complicated Project

- There are many different types of complicated projects:
  - Construction
  - Software
  - Aerospace/Defence
  - Social
  - Health
- Any industry related project
- A complicated project will use existing technology in a new way, or attempt to incorporate new technology in an existing project.

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Megaprojects

What is a Megaproject

- Any large-scale, complex (usually infrastructure) project that costs $1 billion or more, takes many years to develop and build, involves multiple public and private stakeholders, are transformational, and impact millions of people.
- Examples of built Megaprojects are Panama Canal, Three Gorges Dam, 1915 Cannakale Bridge, etc

- These projects are vast in time, deliverables and logistics.
- More dreams than projects, but possible with existing technologies and knowledge.

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Complex

Complex Projects

Any project that is defined as an intricate arrangement of the varied interrelated elements in which the elements can change and evolve constantly with an effect on the project objectives

- Ambiguity – lack of awareness of events and causality
- Uncertainty – inability to pre-evaluate actions
- Unpredictability – the inability to know what will happen
- Dynamics – the rapid rate of change
- Social Structure – numbers and types of interactions
- Interrelationships – many interdependencies and interconnections exist
- Usually run over a period which exceeds the technology style time of the technologies involved
- Details – number of variables and interfaces, and/or
- Can be defined by effect, but not solution.

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Complex

- **Remington, Kaye and Zolan * and ICCPM have determined that project complexity can be divided into five distinct groups.**
  These are:
  - **Structural Complexity - The structure of the project, multiple project partners, stakeholder, or suppliers, large number of interconnected activities; interdependence**
  - **Technical Complexity - Development of new technologies, products, or services**
  - **Directional Complexity - Misalignment of project goals, or expectations, hidden agendas, loss of original intent when handing over to a new team.**
  - **Temporal Complexity - Shifting environment or strategic direction over time, often experienced during mergers or change of government.**
  - **Socio-Cultural Complexity - Human interactions and needs, diversity, unconscious bias, organisational culture, societal expectations (ICCPM definition).**

* Remington, Kaye and Zolin, Roxanne and Turner, Rodney (2009) *A model of project complexity : distinguishing dimensions of complexity from severity*. In: Proceedings of the 9th International Research Network of Project Management Conference, 11–13 October 2009, Berlin.

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Emergence

- **And then there is Emergence**
  - **Emergence is a concept used to describe the sudden appearance of factors that increase the complexity of a project.**
  - **Factors are the five distinct groups that define complexity.**
  - **Can affect any project size (stop basing project size of dollar value).**
  - **Can happen at any time**
  - **What you have learned managing simple and complicated project will be useless**

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Complex Megaprojects

Complex Megaprojects

- Any project where the solution(s) are not known and the results are not a foregone conclusion.
- Any project that involve a number of factors, unproven technology, multiple stakeholders, multiple customers, new or novel risks.
- Any project with an open-ended budget, or a budget over $1b
- Examples of Complex Megaprojects
  - Sneferu's Pyramids – Three different Pyramids at the same time, each different
  - The Manhattan Project – they had to invent so many new technologies
  - Large Hadron Collider – they had to invent a new branch of science and maths
  - Fusion Reactors – science is known, but the technology needs to be invented

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Competency

We have seen that all the Project Management Associations work off the same playbook.

All use PMBoK as the basis for all their competency and training systems.

Is PMBoK fit for purpose?

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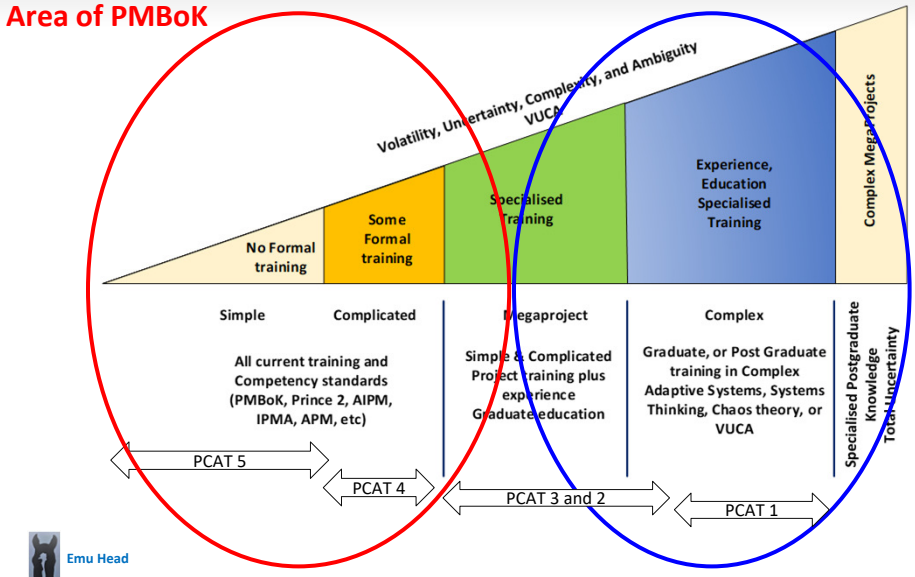
Competency

Area of PMBoK



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Maybe

Organisation Project Categories

Current system used by a number of large organisations:

- **Size 0 projects – up to $5m**
- **Size 1 projects – between $5m and $50m**
- **Size 2 projects – between $50m and $200m**
- **Critical Projects – Over $200m**

They use project value and risk to the company to determine the category.

Simplistic measurements based around what executives, with no real project management experience, deem to be important to the organisation.

It is not about dollar value, in fact dollar value means very little.

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Maybe

Organisation Project Categories

The PCAT (Project Category) system used by within Australian Government:

- **PCAT 5 projects – minor works**
- **PCAT 4 projects – traditional projects**
- **PCAT 3 projects – traditional project within a highly political environmentP**
  PCAT 2 projects – complex project
- **PCAT 1 projects – highly complex project**

They use project complexity to determine the category but is it accurate.

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Projects

Project category determination has nothing to do with dollar value

- **a project can be a minor value ($1m) project and be incredibly complex.**
- **a project can have a large value ($900m) and be simple.**

Project category determination should be based on the following:

- **Risk of achieving the project (not risk to the organisation)**
- **Complexity**

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Competency

Projects are becoming more complex, yet most people and organisations have training and accreditation to the Simple/Complicated level.

All competency standards are based around the PMBoK.

The PMBoK is based around Simple and Complicated Projects.

It does not deal with Complexity, or Megaprojects.

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Competency CPPP (taken from the AIPM CPPP Competency Standard)

AIPM	IPMA		
CPPP	Level D	Team Member	Basic Scope Management Basic Time Management Basic Cost Management Understanding of Quality Management Understanding of Human Resources Management Understanding of Communications Management (Stakeholders) Basic Risk Management
		Section/Team Leader	Scope Management Time Management Cost Management Quality Management Human Resources Management Communications Management (Stakeholders) Risk Management

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Competency CPPM (taken from the AIPM CPPM)

AIPM	IPMA		
CPPM	Level C	Project Manager	Advanced Scope Management Project Integration Advanced Time Management Advanced Cost Management Earned Value Management Advanced Quality Management Advanced Human Resources Management Advanced Communications Management Stakeholder Management Advanced Risk Management Risk Management Analysis and Workshops Procurement Management
	Level B	Senior Project Manager	Plan, Manage and Review Project Scope Plan, Manage and Review Project Integration Plan, Manage and Review Time and Schedules Plan, Manage and Review Cost and Finance Plan, Manage and Review Quality Management Plan, Manage and Review Human Resources Management Plan, Manage and Review Communications Plan, Manage and Review Stakeholder Management Plan, Manage and Review Risk Management Plan, Manage and Review Procurement Management

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Competency CPPD (taken from the AIPM CPPD Competency Standard)

AIPM	IPMA		
CPPD		Programs Manager	Plan, Manage, Direct and Review Project Scope Plan, Manage, Direct and Review Project Integration
CPPD	Level A	Project Director	Plan, Manage, Direct and Review Time and Schedules Plan, Manage, Direct and Review Cost and Finance Plan, Manage, Direct and Review Quality Management Plan, Manage, Direct and Review Human Resources Management Plan, Manage, Direct and Review Communications Plan, Manage, Direct and Review Stakeholder Management Plan, Manage, Direct and Review Risk Management Plan, Manage, Direct and Review Procurement Management

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What is Missing from Comptetency

Where is the competency on Volatility, Uncertainty, Complexity and Ambiguity (VUCA)?

Where is the requirement for Emergence?

Where is the competency for Complexity :

- Structual
- Directional
- Technological
- Temporal
- SocioCultural

There does not need to be a separate competency for Complexity, but there does need to be a competency weaved throughout the current standards

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Way Forward

The current competency accreditation systems need to change.

- Project Management Book of Knowledge, must either be changed to include Megaprojects and Complexity, specifically Volatility, Uncertainty, Complexity and Ambiguity (VUCA).
- Greater understanding of risks, with projects that have VUCA
- Complex Adaptive Systems (CAS) need to be a part of the Competency Standards.

The International Centre of Complex Project Management (ICCPM) provides training in all these areas.

No one else does yet.

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Greatest Danger

Earlier this year the PMI called for people to comment on the new edition of PMBoK.

- I made a number of comments around issues that needed to change.

  This was their response.

  - **Reject. Conflicts with Other Accepted Material in Standard - Recommended change conflicts with other generally accepted material in the document.**

  It didn't follow the orthodoxy of the existing PMBoK.

  I think I know why project management is broken.

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Greatest Danger

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Training Standards

The current project management training standards, can be equated to learning to fly an airplane.

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Simple Project

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Complicated Project

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Megaproject

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Complex Project

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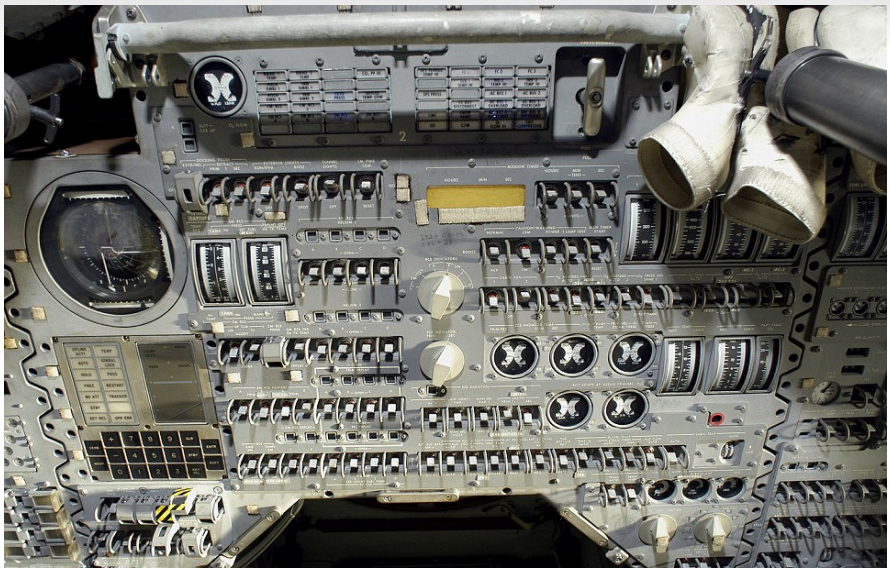
Complex MegaProject



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Way Forward

Ask the following questions of your projects:

- Has the project been done before successfully?
- Is all the information known about the project, are all stakeholders being honest? (Directional Complexity)
- Has the techniques and technology been used together on other projects successfully? (Structural Complexity)
- How many Stakeholders are involved? (Structural Complexity)
- Are there interdependencies of suppliers, stakeholders or subcontractors? (
- Is the financing model simple? (Financial Complexity)
- Is there any Volatility, Uncertainty, Complexity, or Ambiguity in the project. (VUCA)
- How long will the project run? (Temporal Complexity)
- Is there a system in place to ensure the project leadership team remain with the project till the end. (Directional Complexity)

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Questions

Questions?

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