Complex Project Management Governance

Acknowledgments to both the International Centre for Complex Project Management (ICCPM) and Mr Ian Mack CDM,

"If I have seen further, it is by standing in the shoulders of giants" – Sir Isaac Newton

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Operations

Projects have evolved, project management hasn't. Neither have companies.

Projects have evolved into so many different types.

These are:

- **Simple Projects**
- **Complicated Projects**
- **Complex Projects**
- **Megaprojects**

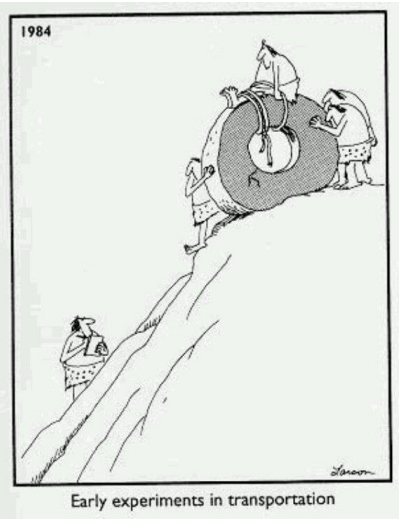
Simple Projects

What is a simple project?

Simple Projects

What is a simple project?

- Projects we (humans) have been doing since Thag fell from the trees.
- First recorded project – The Ark
- Second recorded project – The Tower of Babel
- Roads, Bridges, Houses, etc
- Things that we (humans) have been doing for thousands of years



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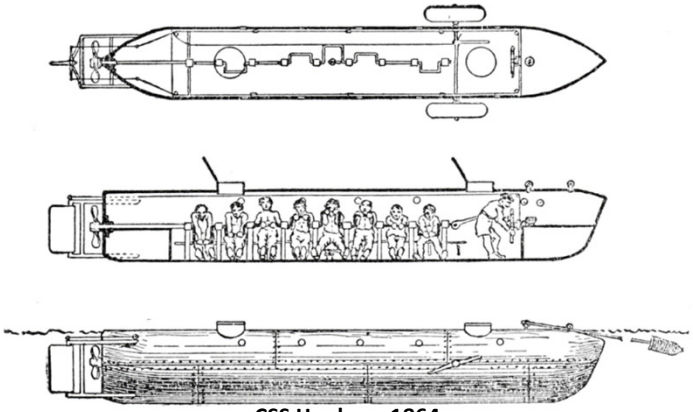
Complicated Projects

What is a Complicated Project

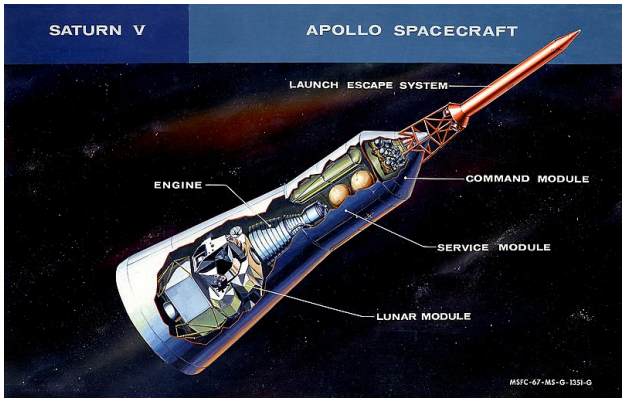
Complicated Projects

What is a Complicated Project

- 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 – Saturn V rocket



CSS Hunley – 1864



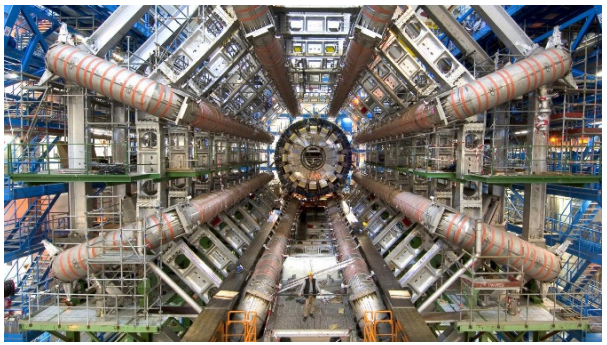
Complex Projects

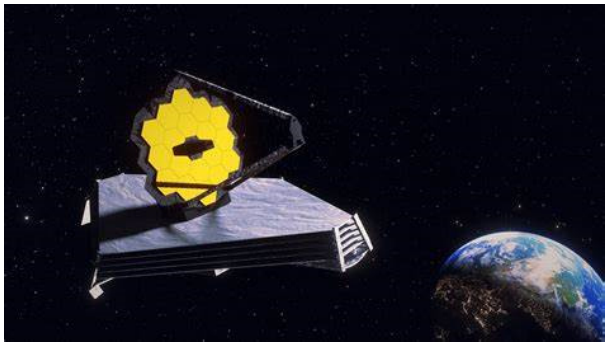
What is a Complex Project

Complex Projects

What is a Complex Project

- Any project where the solution(s) are not known and the results are not a foregone conclusion.
- Any project that involves a number of factors, unproven technology, multiple stakeholders, multiple customers, new or novel risks.
- 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
- James Webb Space Telescope – Solar Shield, Infra Red Detectors





Complex Projects

- **But wait there is more to project complexity than just new things**
- **The International Centre for Complex Project Management (ICCPM)* has determined that project complexity in 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.**

* 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.

Megaprojects

What is a Megaproject

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

- Other examples, are the Olympic Games, and Commonwealth Games

Complex Projects

- **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.**
  - **Can happen at any time**
  - **What you have learned will be useless**
  - **Don’t let the complexity distract**

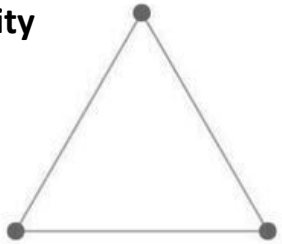
Pithy Quote

"The illusion that we understand the past fosters overconfidence in our ability to predict the future."

— **Daniel Kahneman, Thinking, Fast and Slow**

What can Complexity look like

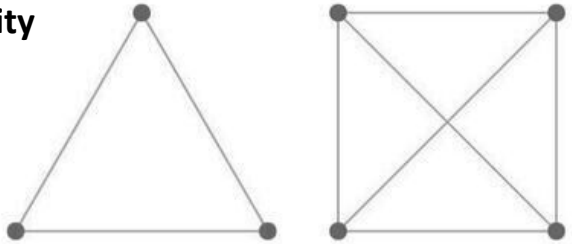
An example of Socio-Cultural Complexity



3 people, 3 lines

What can Complexity look like

An example of Socio-Cultural Complexity



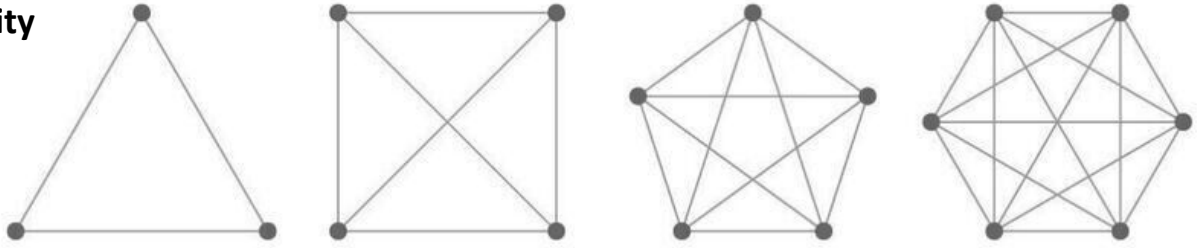
3 people, 3 lines

4 people, 6 lines

Complexity

What can Complexity look like

An example of Socio-Cultural Complexity



3 people, 3 lines | 4 people, 6 lines | 5 people, 10 lines | 6 people, 15 lines

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Complexity

What can Complexity look like

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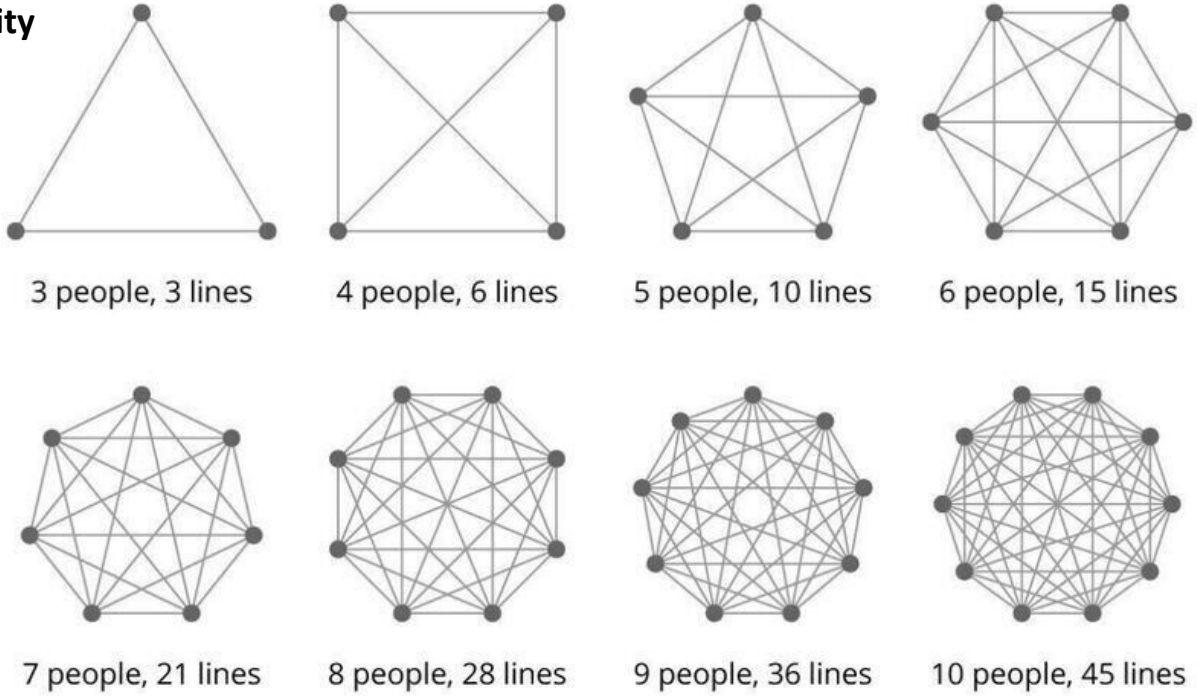

Complexity

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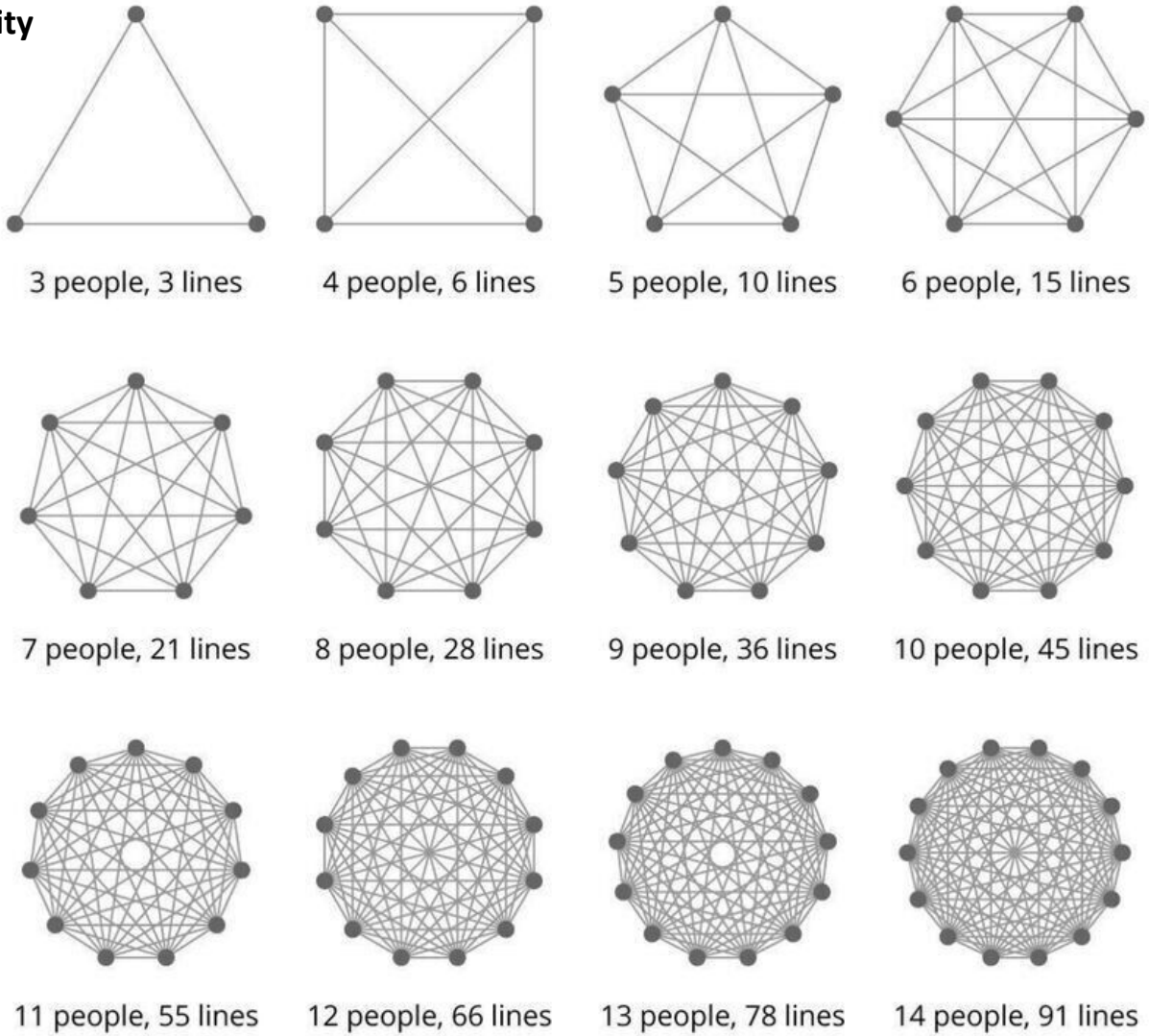

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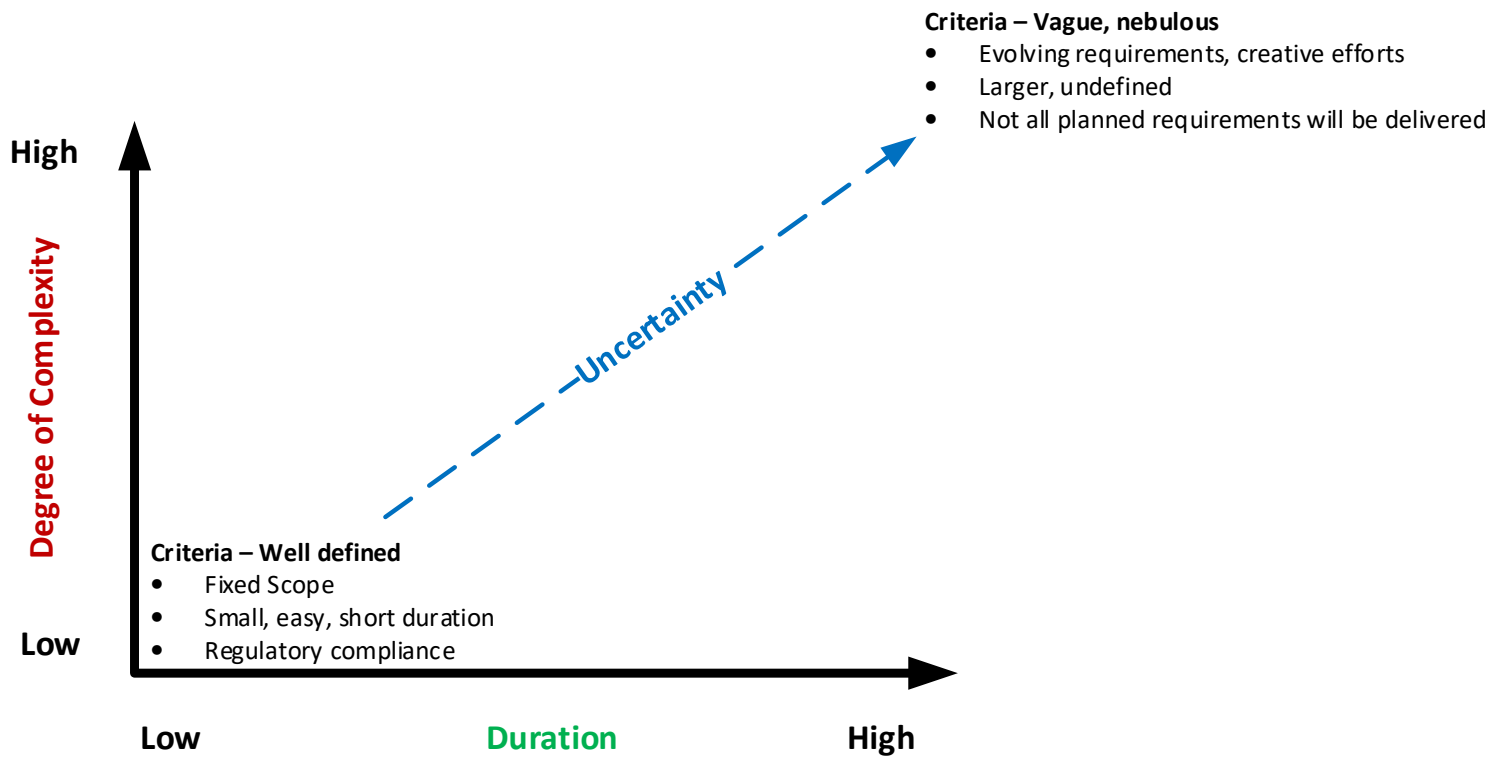
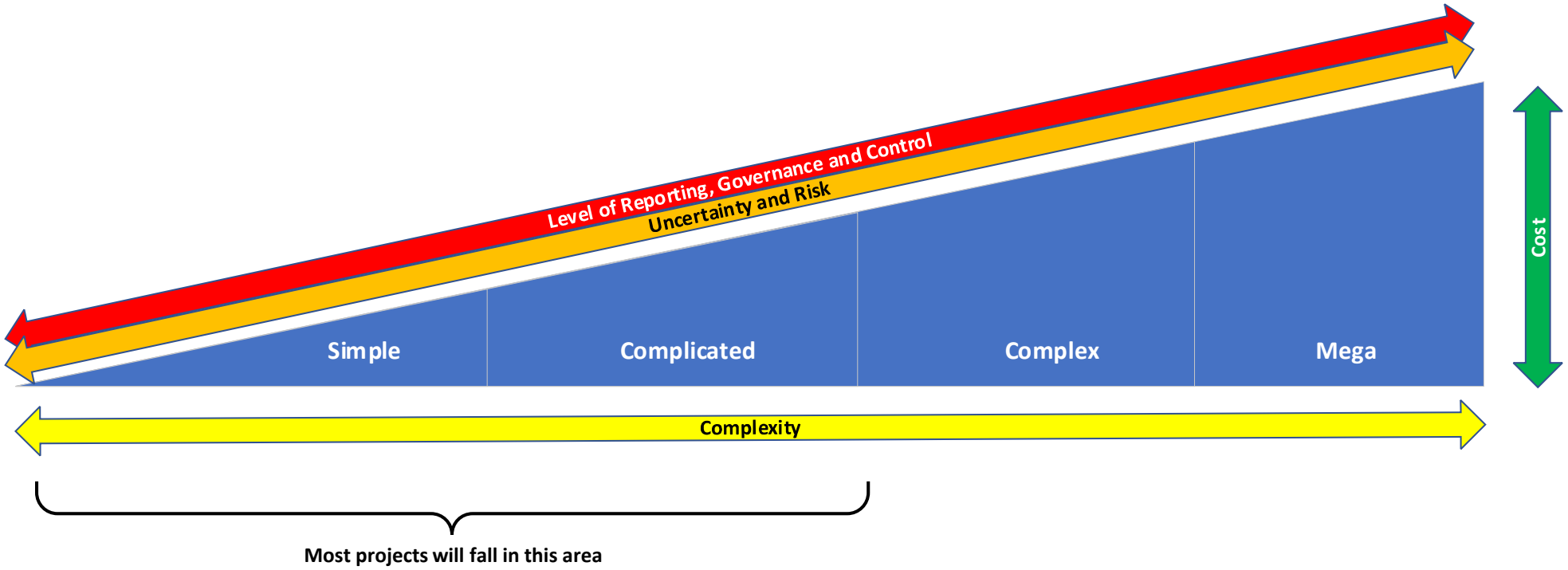
The one unyielding truth is that while complexity increases, so to does uncertainty.



Governance

- **Due to the increase in cost, uncertainty and complexity it is necessary to increase the level of reporting.**



Discussion of Uncertainty and Risk are outside of today's topic.

Governance

Governance in Simple/Complicated Projects

- In a simple or complicated - project governance and control can be standardised.
- PMOs are very good at standard reporting procedures, from capturing and reporting KPIs.
- Delivering standardised processes and procedures that can be used by all projects.
- Establishing standardised KPIs.

Governance

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Governance in Complex Projects

- Standard processes won't work.
- Conventional processes won't work. Process elements will, but overall you will struggle
- Conventional governance, control or reporting structure will quickly drown in information,.
- Forget the term "Everything Goes According to Plan" (EGAP)

The Golden Rules

- Tailor Governance
- Tailor Management
- Embrace Uncertainty
- Efficient Decision Making
- Concentrate on the Critical Path
- Use Situational Leadership
- User Servant Leadership
- Continuity
- Collaborate
- Individual Responsibility
- Performance Management

Tailor Governance

- Each complex project and/or phase will be unique and the governance must be tailored for each project.
- Audience – know the stakeholders and who else will be reviewing the reports.
  - Remember different stakeholders will want different information.
- Governance, Control and Reporting requirements will increase and it is necessary to ensure that it is understandable by the audience.
- Filter the information and promote the most useful information.
- Tailor the project organisation to each part of the project.
- Failure to adapt the reports to the complexity will cause greater issues.
- Everything will need to be tailored :
  - Management Style
  - Delegations of Authority
  - Reporting lines
  - Reports

Tailor Management

- Very few people have the mindset and experience to manage complex projects.
- The person in charge today, may not be the best person for the job, but they have the history
- Focus on selection of the most efficient processes and procedures.
- Ensure you have a Professional Project Manager
- An accidental Project Manager will not be good enough
- Scheduling resources

Embrace uncertainty

- If you cannot accept uncertainty, get out of the way.
- Everything in a complex project is uncertain and will be until the last delivery.
- What you know may not be enough.
- Expect surprises

Ensure efficient decision making

- Corporate decision making processes (Delegations of Authority), must be robust and short. The shorter the Delegation tree the better.
- Agreement must be reached at the start, there can be no double guessing decisions.
- The Project Managers decision is final, never question a decision made quickly, or with little, or incomplete details. Leave this for the post mortem.

Governance

Concentrate on the Critical Path

- Everything on the Critical Path is necessary, anything not on the critical path is expendable.
- While the Ends justifies the Means, understand that at times the means may be wrong path.

Be prepared to cut

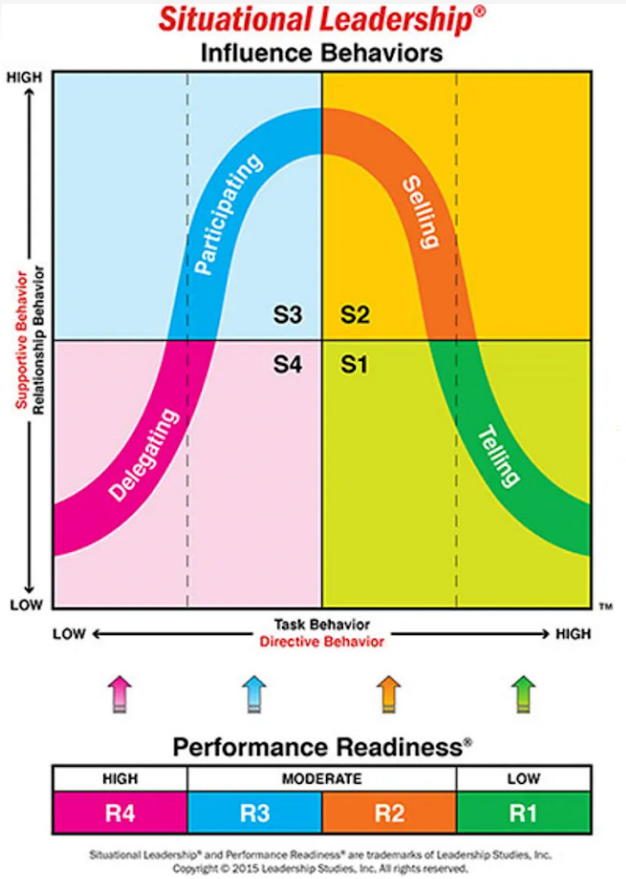
- There is no longer such thing as a "Sunk Cost".
- Better to lose money now, than fare more pursuing the wrong path.
- If it not critical path, be prepared to cut it, no matter the cost.

"The sunk-cost fallacy keeps people for too long in poor jobs, unhappy marriages, and unpromising research projects."

— Daniel Kahneman, Thinking, Fast and Slow

Situational Leadership model

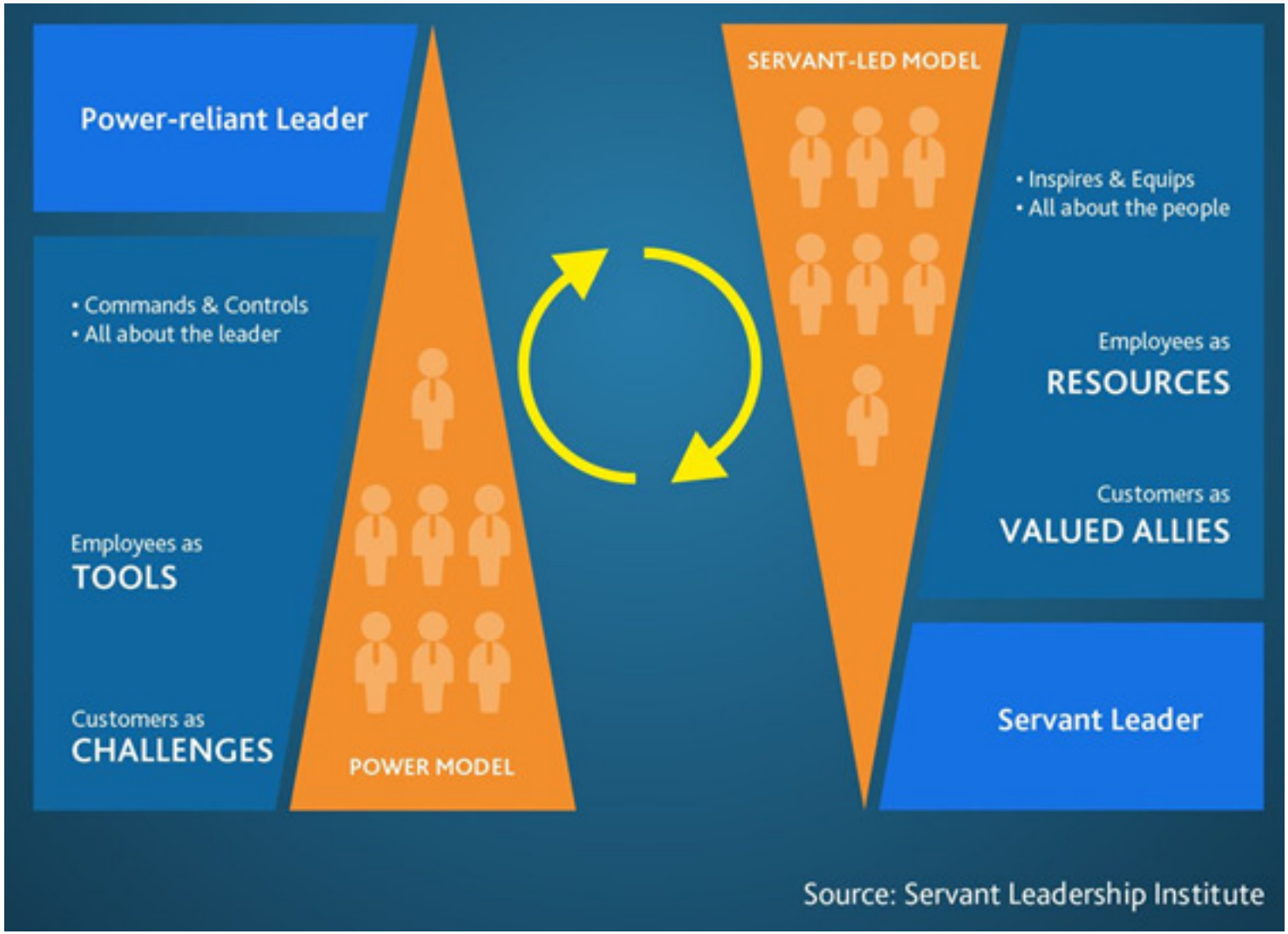
- Influencing Behaviours
  - Performance Readiness – R Model
    - R1 – Unable and Unwilling
    - R2 – Unable but Willing
    - R3 – Able and Unwilling
    - R4 - Able and Willing
  - Situational Readiness
    - S1 – Directing
    - S2 – Coaching
    - S3 – Supporting
    - S4 - Delegating



Effective leadership isn't one size fits all. People within any organisation differ from one another. While some might need more support and direction, others will be the opposite.

Servant Leadership model

- Servant Leadership model – the need for the project leader to both lead and serve the project team.
- Servant leadership is a philosophy where a leader is a servant first. Servant leaders aspire to serve the team and the organisation first ahead of personal objectives. It is a selfless leadership style where a leader possesses a natural feeling to serve for the greater good.
- A Servant Leader -
  - Isn't concerned about acquiring or holding onto power.
  - Isn't focused on maintaining a certain reputation above all else.
  - Isn't obsessed with staying ahead of everyone else on the ladder.
  - Doesn't fear employees gaining skills and knowledge beyond their own.
  - Doesn't use domination or fear to control people.
  - Doesn't think in terms of controlling people at all, really.
  - Is committed to the growth and improvement of those being led.
- A Servant Leader is a rare beast, but it is the only way to manage complexity


Power-reliant Leader
• Commands & Controls
• All about the leader
Employees as
TOOLS
Customers as
CHALLENGES
POWER MODEL
SERVANT-LED MODEL
• Inspires & Equips
• All about the people
Employees as
RESOURCES
Customers as
VALUED ALLIES
Servant Leader
Source: Servant Leadership Institute

Governance

Continuity

- It is imperative to keep the history of the project.
- Long term incentives to keep the project leadership in the same role.
- Understanding both the history of a project and the decisions made is essential.

Collaborate, Collaborate, Collaborate

- No one person, or organisation can deliver a complex project alone, it is a collaborative effort, to ensure that everyone sings from the same hymn sheet.
- Sub-contractors, suppliers and contractors must all “buy in” to the project, not just the vision, but the tempo and timing (Takt).

Governance

Individual responsibility

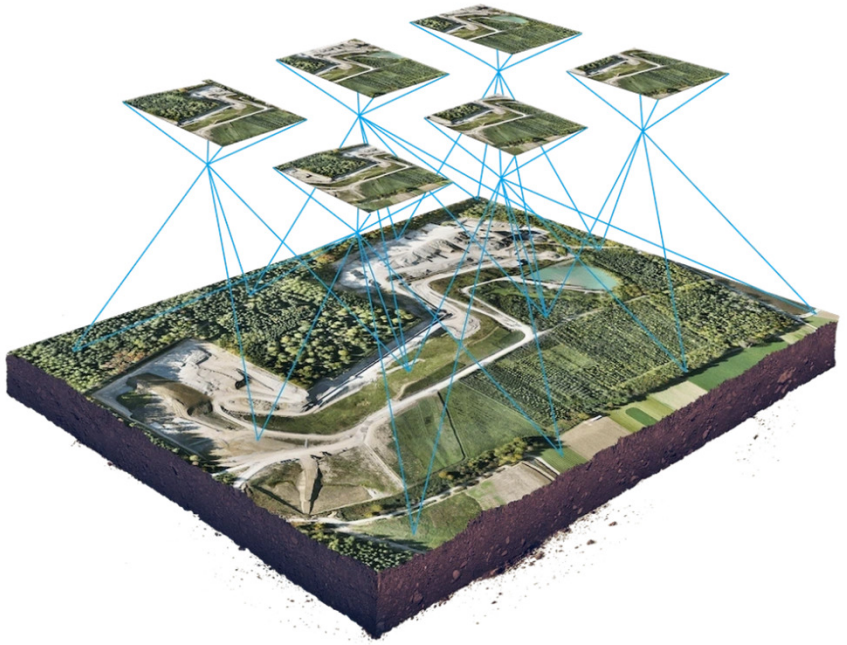
- Complex projects are a myriad of unique challenges to governance, many can only be tackled with a deep understanding of the project issues and options.
- The need for efficient/effective decision-making drives this requirement
- Senior governance members need to lead on critical project aspects (e.g. sector-relevant domain knowledge, information flow, performance measurement, collaboration, risk treatment, crisis response, public affairs, cost analysis).
- Links back to Effective Decision Making.

Performance Measurement

- All KPIs must be tailored, a complex project will have many performance elements to capture and review and it will be necessary to filter the information.
- KPIs will change the longer a project runs and increases on the Complexity scale.
- It is not always possible to combine KPIs across the program, as it may distort the current picture. Often at the start of a Complex project, you can be underspent and ahead of schedule. Any gains and losses should be taken as unique.
- Each phase of the project must be judged on its own merits, as each phase will be different.

Governance

- Governance of a Complex project is about building a picture from the information.
- Each element adds to the overall image until the full picture emerges.



Photogrammetry

- Is a system developed that allows a full 3D picture to be developed from hundreds of small er images.
- Complex Project governance is similar to Photogrammetry building a picture from all the little images

Why does HDA care about project complexity

- Hanwha Defence manufacture the K9/K10 family of vehicles.
- While the Family of Vehicles themselves are not complex, for a military system, when the program is looked at from the outside it becomes obvious that it is not a normal program

Example

Land 8116 Mobile Fires			Complex Project		MegaProject
Total number of Vehicles	45 (approx)	×	Structural Complexity	×	Large Scale
Total number of International users	1 countries	×	Multiple Stakeholder and Project Partners	×	Multiple countries, public and private stakeholders
Languages translated	1 languages	×	Socio-cultural Complexity		
Total value of contracts	$800 million (approx)	×	High Value	×	Value over $1 billion
Technology Transfer	1	×	Technical Complexity	×	Multiple countries
Years in production	10	×	Temporal Complexity	×	years to develop and build
Years of continued support	30	×	Temporal Complexity	×	years to develop and build
Number of suppliers worldwide	over unknown	×	Structural Complexity	×	Public and Private Stakeholders
Number of Democratic Governments	1	×	Socio-cultural Complexity	×	

By itself the Land 8116 (Huntsman) project it does not meet any criteria for either a Complex project, or a Megaproject.

A simple project delivering capability into the Australian Defence Force (ADF), it can be complicated by requirements, but is not incorporating any new technology, or novel construction techniques.

Example

K9 Family of Vehicles			Complex Project		Megaproject
Total number of Vehicles	2200 (approx)	✓	Structural Complexity	✓	Large Scale
Total number of International users	9 countries	✓	Multiple Stakeholder and Project Partners	✓	Multiple countries, public and private stakeholders
Languages translated	9 languages	✓	Socio-cultural Complexity		
Total value of contracts	$6 billion (approx)	✓	High Value	✓	Value over $1 billion
Technology Transfer	6 countries	✓	Technical Complexity	✓	Multiple countries
Years in production	23	✓	Temporal Complexity	✓	years to develop and build
Years of continued support	30	✓	Temporal Complexity	✓	years to develop and build
Number of suppliers worldwide	over 500	✓	Structural Complexity	✓	Public and Private Stakeholders
Number of Democratic Governments	9	✓	Socio-cultural Complexity	✓	

When Land 8116 project is combined in the K9 Family of vehicles, it becomes obvious that the program is a Complex Program, bordering on a Megaproject.

The reality is that the program has occurred over the last 23 years, so the programs has had the benefit of two of the major control and governance requirements for a Complex/Megaproject.

- **Modularity and**
- **Replicability.**

Example

K9/AS10 Contract			Complex Project		MegaProject
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Years in production	23	✓	Temporal Complexity	✓	years to develop and build
Years of continued support	30	✓	Temporal Complexity	✓	years to develop and build
Number of suppliers worldwide	over 300	✓	Structural Complexity	✓	Public and Private Stakeholders
Number of Democratic Governments	9	✓	Socio-cultural Complexity	✓	

Example

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Years in production		✓	Temporal Complexity	✓	years to develop and build
Years of continued support	3	✓	Temporal Complexity	✓	years to develop and build
Number of suppliers worldwide	over 300	✓	Structural Complexity	✓	Public and Private Stakeholders
Number of Democratic Governments	9	✓	Socio-cultural Complexity	✓	

Maybe

Questions?