# Management of Complexity in Early Planning Stage of projects

Walt Lipke Awards Session – PGCS – Canberra

21 Aug 2019

HOOSHMAND – INTELLIGENCE ADVISORY Pty Ltd. / UTS / elabora8 © 2019 – All Rights Reserved against copyright, trademark and other laws

## Introduction

- *Research Background*
- *Complexity in Portfolios and Single Projects*
- *Means of managing complexity*
- *An example of application : EAC categorisation model*
- *Discussion*

HOOSHMAND – INTELLIGENCE ADVISORY Pty Ltd. / UTS / elabora8 © 2019 – All Rights Reserved against copyright, trademark and other laws

## Research background

- To understand gaps in decision making between theory and practice when decision makers are exposed to unexpected events
- Drawing on our observations in workplaces which created an initial query about how senior managers could lose their pipeline works when they face complexity
- A strong discipline of PPM and PM across an organisation, coupled with a lack of common understating about implementation - particularly in uncertain conditions - indicated this area needs research attention

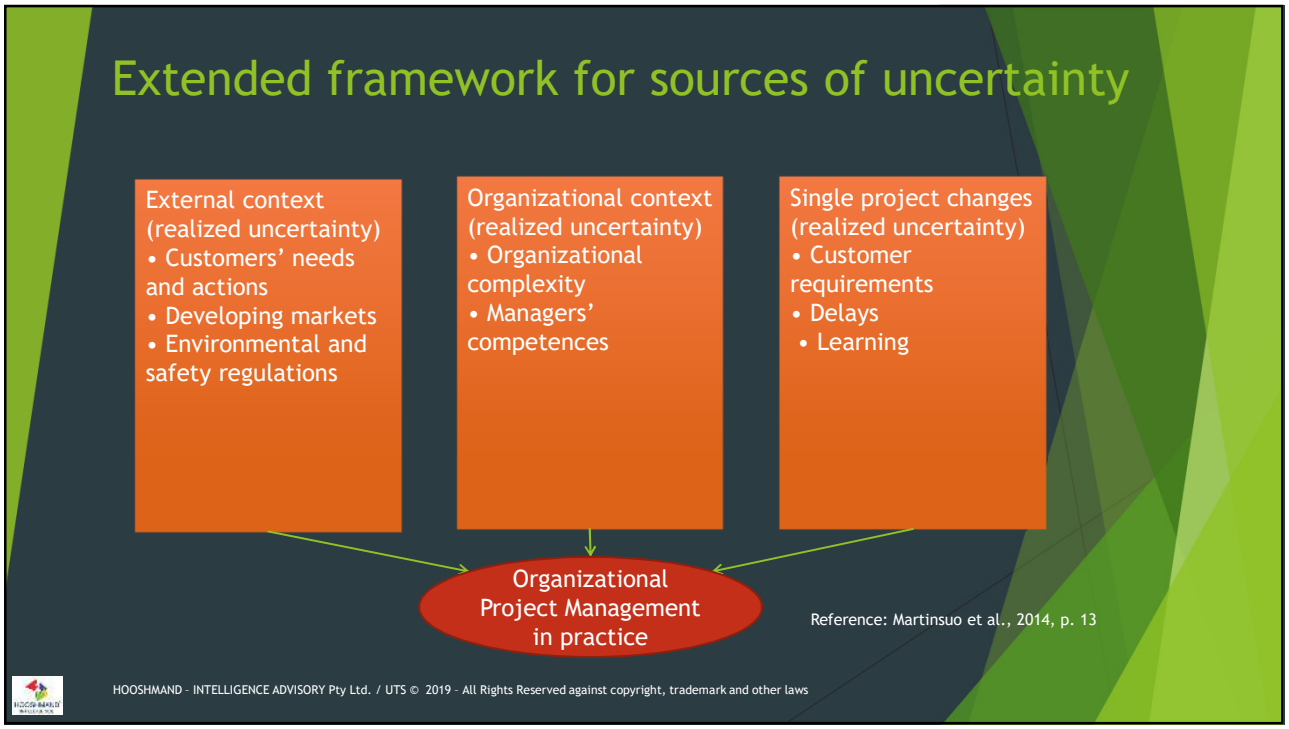
HOOSHMAND - INTELLIGENCE ADVISORY Pty Ltd. / UTS © 2019 - All Rights Reserved against copyright, trademark and other laws

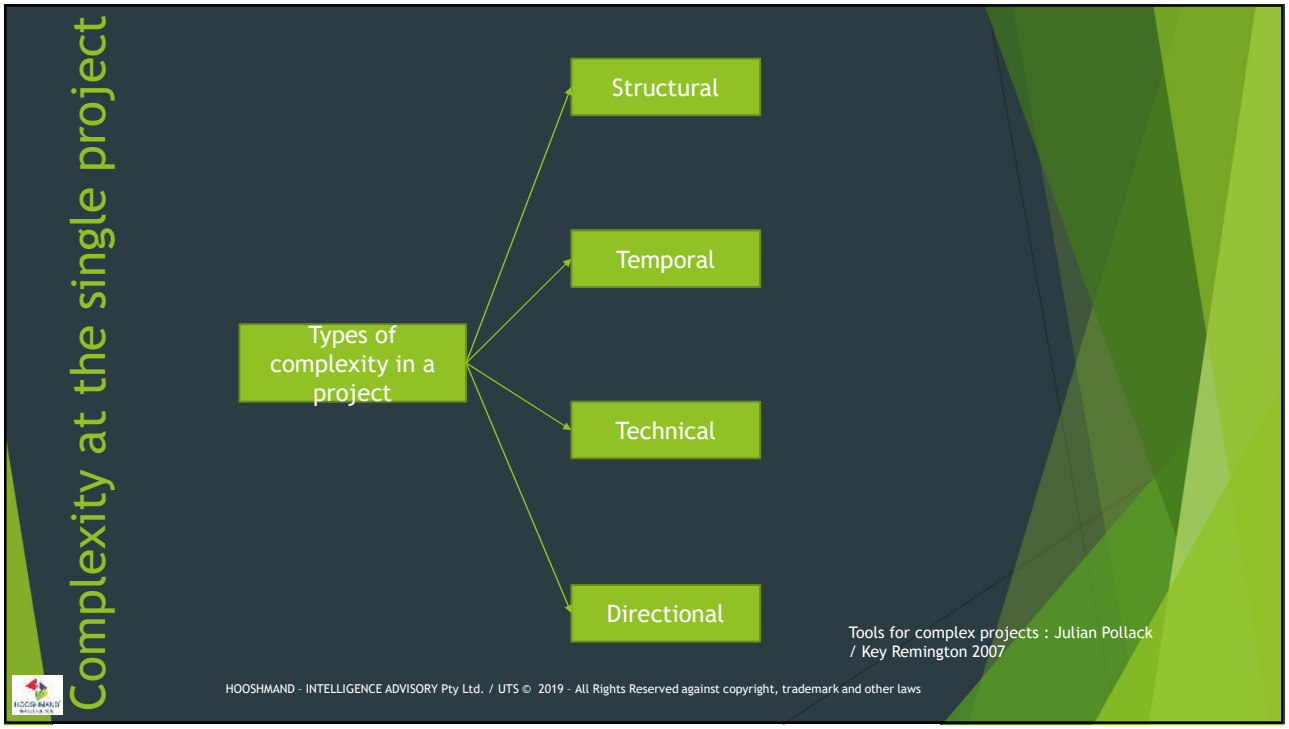
## Complexity in projects and portfolios

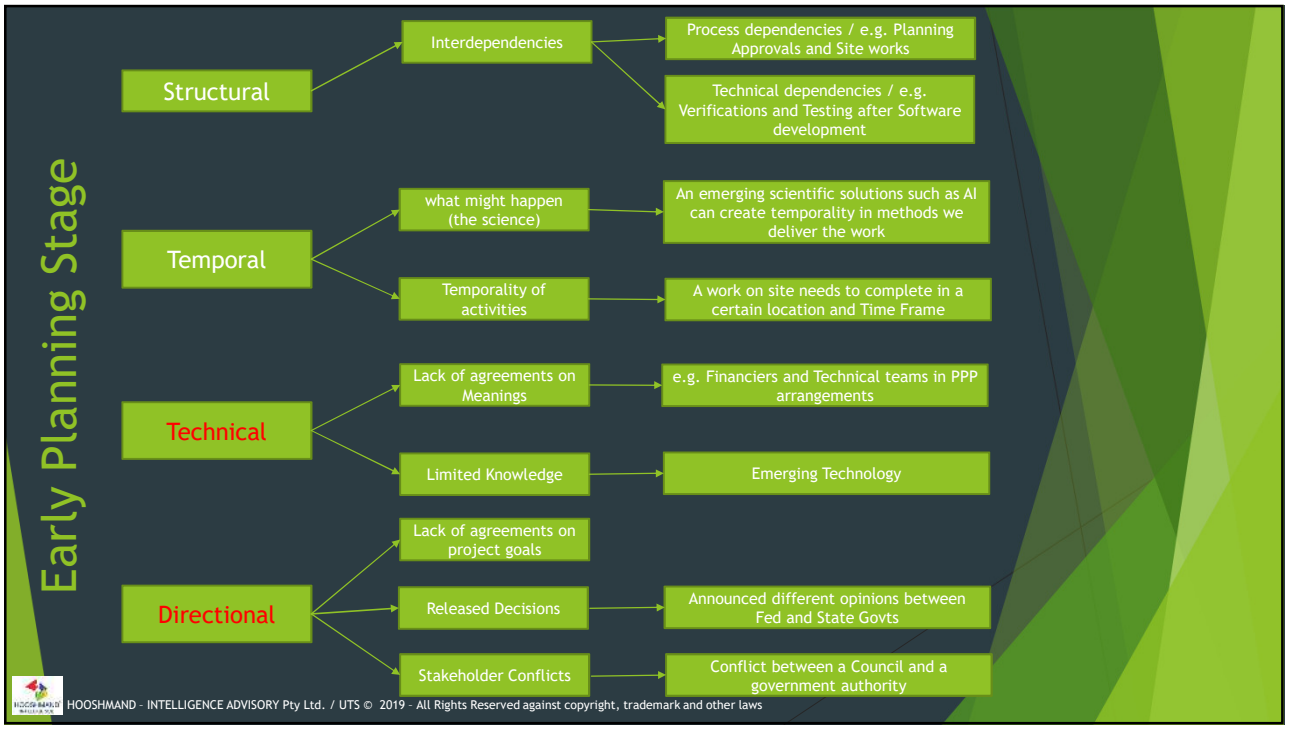
- There is no doubt that the work of project management is complicated:* and often complex.
- An organization's work is always complicated—what will make it complex is the combination of *technical complexity*, the *specific selection* and management of projects, and the *relationships with the stakeholder* community in the *environment of unpredictability.*
- *Complexity born by unpredictability affect performance of implementing projects*

*Reference: Levin, G. and Wyzalek, J., 2015*

HOOSHMAND - INTELLIGENCE ADVISORY Pty Ltd. / UTS © 2019 - All Rights Reserved against copyright, trademark and other laws


Extended framework for sources of uncertainty
External context (realized uncertainty)
• Customers' needs and actions
• Developing markets
• Environmental and safety regulations
Organizational context (realized uncertainty)
• Organizational complexity
• Managers' competences
Single project changes (realized uncertainty)
• Customer requirements
• Delays
• Learning
Organizational Project Management in practice
Reference: Martinsuo et al., 2014, p. 13
HOOSHMAND - INTELLIGENCE ADVISORY Pty Ltd. / UTS © 2019 - All Rights Reserved against copyright, trademark and other laws


Complexity at the single project
Types of complexity in a project
Structural
Temporal
Technical
Directional
Tools for complex projects : Julian Pollack / Key Remington 2007
HOOSHMAND - INTELLIGENCE ADVISORY Pty Ltd. / UTS © 2019 - All Rights Reserved against copyright, trademark and other laws

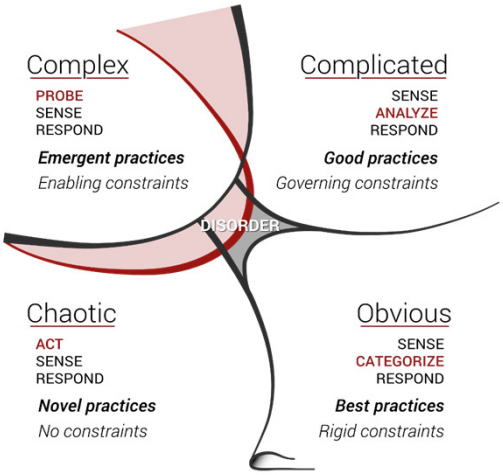



# Observation of an ICT Project

Application of EAC Model

## Easy, Analysis, Can of Worms

Can of Worms



Analysis

Easy

elabora8 © 2019 - All Rights Reserved against copyright, trademark and other laws

## Easy

- Name the person
- Answer in less than 20 minutes

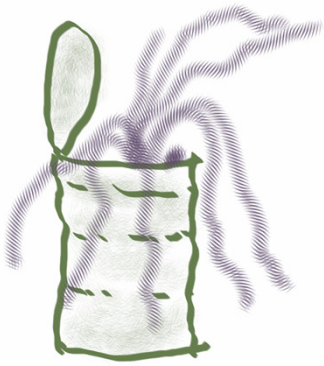
elabora8 © 2019 - All Rights Reserved against copyright, trademark and other laws

## Analysis

- Name the experts
- 2-3 Hour workshop
- Defined analytical task

elabora8 © 2019 - All Rights Reserved against copyright, trademark and other laws

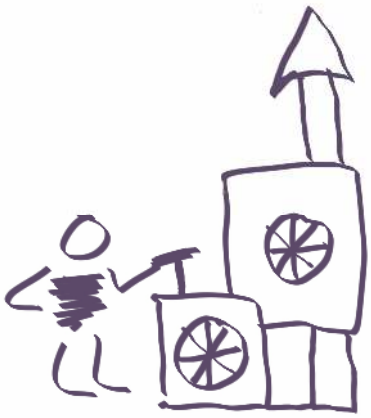
## Can of Worms



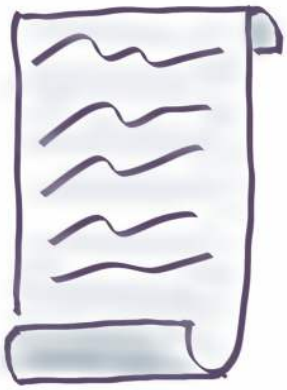
- Does not fit into Easy or Analysis

elabora8 © 2019 - All Rights Reserved against copyright, trademark and other laws

## Aging Technology Stack



24 x 7 Mission Critical



Architectural White Paper

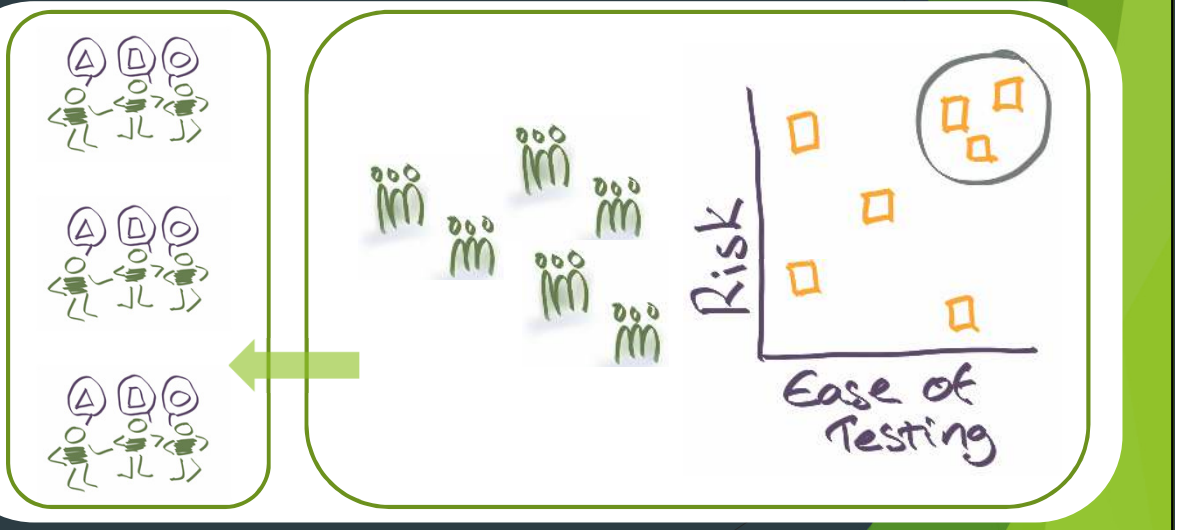
elabora8 © 2019 - All Rights Reserved against copyright, trademark and other laws

## 140 Technology Questions

| Item | EAC | Notes |
|---|---|---|
| One? | Easy | e.g. Windows or Linux? |
| Two? | Analysis | Experts could answer in less than 1 hour |
| Three? | Can of Worms | 'I think…' |
| Four? | Analysis | |
| Five? | Can of Worms | |

elabora8 © 2019 - All Rights Reserved against copyright, trademark and other laws

## Two-Day Workshop




elabora8 © 2019 - All Rights Reserved against copyright, trademark and other laws

## Typical Actions

Easy - Obvious

Analysis - Complicated

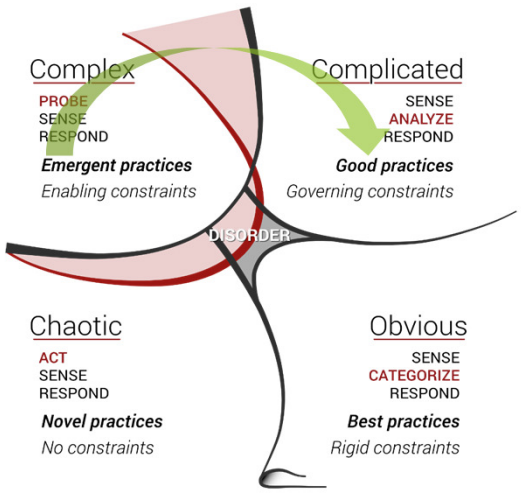
Can of Worms - Complex

elabora8 © 2019 - All Rights Reserved against copyright, trademark and other laws

## Risk - Workshops Derailed

elabora8 © 2019 - All Rights Reserved against copyright, trademark and other laws

## Movement on the Cynefin Framework

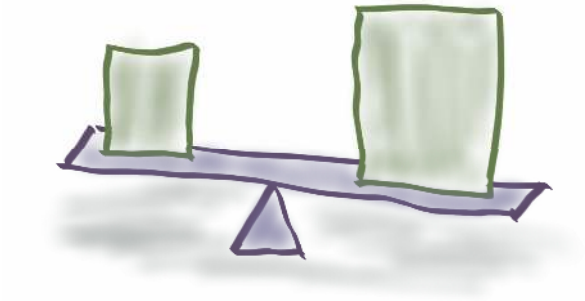


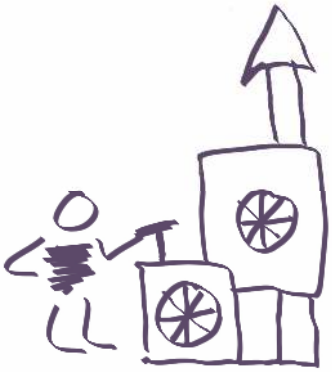

Cognitive Edge © 2019

elabora8 © 2019 - All Rights Reserved against copyright, trademark and other laws

## Types of Uncertainty

Complex inter-related decisions





Meaning/Ambiguity – insufficient experience

elabora8 © 2019 - All Rights Reserved against copyright, trademark and other laws

## Discussion and Conclusions

## Means of managing complexity – Early Stage Planning

- Frameworks for decision making in dynamic condition e.g. Cynefin™ (Kurtz and Snowden 2003)
- Categorisation of decisions over time (Early Stage, Procurement , Delivery, Operations)
- Agile delivery – promoting responsiveness which is appropriate for each stage of project life cycle

HOOSHMAND – INTELLIGENCE ADVISORY Pty Ltd. / UTS / elabora8 © 2019 - All Rights Reserved against copyright, trademark and other laws

## Frameworks for Early Planning

- Cynefin framework provides theory to support classification and categorisation techniques such as EAC model in practice of project decision making
- We have identified Categorisation frameworks which links to the early planning phase of projects raised by French (1995) and Van Putten (2013)

HOOSHMAND – INTELLIGENCE ADVISORY Pty Ltd. / UTS / elabora8 © 2019 - All Rights Reserved against copyright, trademark and other laws

## Agility of decision making

- Agility and responsiveness has been at the centre of attention for researchers and practitioners in delivery of projects
- The EAC model has proved to help with time reduction and agile decision making in the ICT project

HOOSHMAND - INTELLIGENCE ADVISORY Pty Ltd. / UTS / elabora8 © 2019 - All Rights Reserved against copyright, trademark and other laws

## Easy Analysis Can of Worms Categorisation - Early Planning

- Created common words and rituals among project teams
- Promoted collaboration on areas of business case with high level of complexity
- Our initial results from a single project data collected in an ICT project shows we have observed findings which can be extended into next stage of research where we factor in outcomes of using EAC in projects

HOOSHMAND - INTELLIGENCE ADVISORY Pty Ltd. / UTS / elabora8 © 2019 - All Rights Reserved against copyright, trademark and other laws

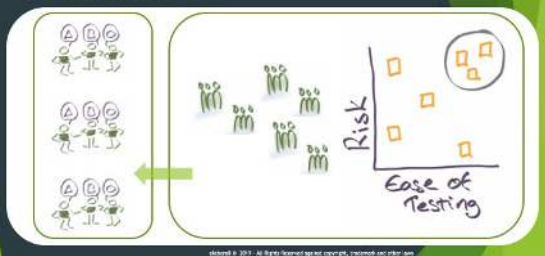
## Business Case Framework

Van Putten (2013)

Stakeholders opinions

Clarifying reasoning

Two-Day Workshop




Information Sources

| Item | EAC | Notes |
|---|---|---|
| One? | Easy | e.g. Windows or Linux? |
| Two? | Analysis | Experts could answer in less than 1 hour |
| Three? | Can of Worms | 'I think…' |
| Four? | Analysis | |
| Five? | Can of Worms | |

elabora8 © 2019 - All Rights Reserved against copyright, trademark and other laws

## Next Steps

- Apply EAC Model in other projects and measure the outcomes on pilot projects for next research paper
- EAC model can be further developed to provide support for agile innovation project management where management between chaos and complicated becomes crucial essence of success

HOOSHMAND - INTELLIGENCE ADVISORY Pty Ltd. / UTS / elabora8 © 2019 - All Rights Reserved against copyright, trademark and other laws

## Presenters' Profile and Contacts

Kim

- Kim Ballestrin is a passionate and highly skilled Principal Consultant at Elabor8 working on the Agile transformations of large enterprises. With over 20 years of diverse management (IT) experience, helping some of Australia's most prominent organisations on their Agile change journey.

Kim.ballestrin@elabor8.com.au

Saeed

Dr Saeed Shalbafan is an academic, researcher and industry advisor. He is national sector director for PMO services in ONTOIT Global. He has worked as one of key leaders in most complex mega infrastructure projects in Australia. He also pursue his passion in project portfolio management in HOOSHMAND-INTELLIGENCE and UTS.

Saeed.shalbafan@hintplex.com / saeed.shalbafan@uts.edu.au