Management of Complexity in Early Planning Stage of projects

Walt Lipke Awards Session - PGCS - Canberra

21 Aug 2019

Introduction

- Research Background
- Complexity in Portfolios and Single Projects
- Means of managing complexity
- An example of application: EAC categorisation model
- Discussion
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 understanding about implementation - particularly in uncertain conditions - indicated this area needs research attention.

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**

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

Complexity at the single project

Types of complexity in a project

- Structural
- Temporal
- Technical
- Directional

Tools for complex projects: Julian Pollack / Key Remington 2007

Observation of an ICT Project

Application of EAC Model
Easy, Analysis, Can of Worms

- **Complex**
  - PROBE
  - SENSE
  - RESPOND
  - Emergent practices
  - Enabling constraints

- **Complicated**
  - SENSE
  - ANALYZE
  - RESPOND
  - Good practices
  - Governing constraints

- **Chaotic**
  - ACT
  - SENSE
  - RESPOND
  - Novel practices
  - No constraints

- **Obvious**
  - SENSE
  - CATEGORIZE
  - RESPOND
  - Best practices
  - Rigid constraints

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**Easy**

- **Analysis**
- **Can of Worms**

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**Easy**

- Name the person
- Answer in less than 20 minutes
Analysis

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

Can of Worms

• Does not fit into Easy or Analysis
Aging Technology Stack

24 x 7 Mission Critical

Architectural White Paper

140 Technology Questions

<table>
<thead>
<tr>
<th>Item</th>
<th>EAC</th>
<th>Notes</th>
</tr>
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<tbody>
<tr>
<td>One?</td>
<td>Easy</td>
<td>e.g. Windows or Linux?</td>
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<tr>
<td>Two?</td>
<td>Analysis</td>
<td>Experts could answer in less than 1 hour</td>
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<tr>
<td>Three?</td>
<td>Can of Worms</td>
<td>‘I think…’</td>
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<tr>
<td>Four?</td>
<td>Analysis</td>
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<tr>
<td>Five?</td>
<td>Can of Worms</td>
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Two-Day Workshop

Typical Actions

- Easy - Obvious
- Analysis - Complicated
- Can of Worms - Complex
Risk - Workshops Derailed

Movement on the Cynefin Framework
Types of Uncertainty

Complex inter-related decisions

Meaning/Ambiguity - insufficient experience

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

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)
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.

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.
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
Presenters’ Profile and Contacts

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