

2020 THEME

Harnessing Emergence in Complex Projects: Risk, Uncertainty and Opportunity

This document serves to provide context for the 2020 International Roundtable Series Workshops.

INTRODUCTION

What is 'emergence'?

*Emergence*ⁱ

NOUN

- 1 The process of becoming visible after being concealed.
- 2 The process of coming into existence or prominence.

Origin

Mid 17th century (in the sense 'unforeseen occurrence'): from medieval Latin *emergentia*, from Latin *emergere* 'bring to light'.

BACKGROUND

The topic of 'risk' has been a recurring sub-theme in each of the previous Roundtable Reports, and one that appears to need further, and more detailed, enquiry.

The ability to understand and manage risk, as well as the ability to appreciate risk in parallel with opportunity, has a significant impact on organisational success. Complex projects not only have greater exposure and potential in this regard, they are defined by it.

At a meeting of the ICCPM Corporate and Academic Partners held on the 20th September 2019, the idea of 'risk' as the 2020 Roundtable topic was discussed. It was agreed that this would make a valuable contribution in the context of both government and private industry projects but it was decided that the focus should rather be placed on 'emergence' in complex projects as a broader more encompassing topic which better situates risk, uncertainty and opportunity.

The principle of emergence in complex projects.

Fundamental to the application of the principle of emergence in complex projects is an understanding of projects as complex adaptive systems composed of different parts (agents, units, sub-systems). More importantly, these projects do not operate in a vacuum but are delivered in a system of systems environment which may be described as the project ecosystem. This Meta ecosystem is a 'soft-system' that can include suppliers, distributors, manufacturers, customers, competitors, and government agencies etc., involved in the delivery of a specific product or service through cooperation, collaboration and competition. The dynamic Interaction of these component parts (agents or people in this instance – hence 'soft-system') results in emergence and the necessary experience of uncertainty and unpredictability.ⁱⁱ

Importantly, system properties cannot be determined only by the properties of its parts. On the contrary, the whole affects the structure and operation of its parts. Each entity in the eco-system is simultaneously affected and affecting.

However, the principle of emergence in systems indicates that phenomena described at the level of the basic units of the system are qualitatively different from phenomena arising from the interaction of these units among themselves within the subsystems or whole system.ⁱⁱⁱ Not only are these emergent phenomena unpredictable, they are irreducible to their component parts.

Current risk management practices

According to the Australian Risk Policy Institute (ARPI) current risk management practices have failed government and industry worldwide. Most importantly current risk management practices have failed to protect our vulnerabilities within local and international communities. Current risk management practices have evolved into a formalised framework that is now accepted as a standardised process approach to the management of risk. This process of risk management has largely come together with the concept of compliance management because of the regulatory nature of the current business environment. As a consequence, process has overridden leadership, decision-making, and accountability at the highest levels of firms and agencies. Simply put, it is better to have a risk process to fall back on than to face the reality of vulnerability identification, which would force leadership decision-making and action.

The relationship between opportunity, uncertainty and risk

A recent reframing of risk in the ISO 31000:2018 standard shifts the definition of risk from “chance or probability of loss” to “effect of uncertainty on objectives”. Dr David Hillson aka the Risk Doctor, prefers a simple definition of risk as follows- “risk is uncertainty that matters”, and complex systems are defined by uncertainty.

Uncertainty can take many different forms for example relational uncertainty, psychological uncertainty, and social uncertainty – any form of uncertainty that matters.

This implies that risk can also refer to positive consequences of uncertainty namely opportunity, as opposed to only negative consequences.

According to ARPI's Risk Policy Model we are uncertain when we don't know what is happening or might happen and/or what to do. Uncertainty in its broadest context applies to the future in general. Opportunity lives in uncertainty, just as risk does. Opportunity is an uncertainty that could result in gain or advantage.

Decision-making, project control and emergence in complex projects

It is precisely in the unknown and unpredictable that the certainty underpinning our approach to project control must give way to an approach that embraces emergence - at the system level. The dynamic nature of complex projects creates unique challenges for leaders, and increasingly volatile project contexts require leaders to integrate emergent phenomena into their adaptive response in order to sustain best practice and realise better outcomes.

What might this mean in relation to risk and opportunity in complex projects and how might we harness the dynamics of emergence, exploit the necessary uncertainty to create value and through better decision-making, achieve better outcomes? Essentially this roundtable series will focus on how leaders approach, recognise, appreciate and respond to emergence in order to leverage and harness its systemic properties of risk and opportunity.

ⁱLexico Dictionaries | English. (2019). Emergence | Definition of Emergence by Lexico. [online] Available at: <https://www.lexico.com/en/definition/emergence> [Accessed 1 Oct. 2019].

ⁱⁱFloris, M., Smith, C. & Cuganesan, S. (2019). Project Leadership: The game changer in large scale complex projects. International Roundtable Series; Canberra: ICCPM

ⁱⁱⁱManagementMania.com. (2019). Principle of Emergence. [online] Available at: <https://managementmania.com/en/principle-of-emergence> [Accessed 1 Oct. 2019].

POSSIBLE AREAS OF INVESTIGATION WITHIN THE THEME

Further formulation and refinement of workshop questions will be negotiated with participants however indicative areas of investigation are given below:

- What are the impacts of the emergent characteristics on complex projects and how can we respond to ensure value is created and benefits are realised?
- What does systemic risk management in the context of emergence look like and what might we have to do differently?
- What needs to be done differently to realise opportunity in emergence?
- How do we deal with uncertainty and emergence during a complex project bid process and after contract phase?
- What is the role of the governance function in emergent situations and what should governance boards /committees be doing differently?
- What is the role of diversity and or culture, if any, in harnessing the effects of emergence?
- How do we manage conventional project controls such as scope, time, and cost in the context of emergence?
- Can technology help to 'watch' for all identified risks and uncertainties in the context of emergence? If so, what data, information, validation and methodology is relevant and appropriate?

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Join us in this Thought Leadership initiative and be recognised for supporting the knowledge and practice of complex project management. To receive a copy of the Sponsorship Prospectus or host a Roundtable Workshop, please email ICCPM Director, Industry Liaison and Member Services Dr Naomi Mathers at n.mathers@iccpm.com.

PARTICIPATE IN THE ROUNDTABLE WORKSHOP DISCUSSIONS

This thought leadership series will give you an opportunity to interact with experienced practitioners and leading academics across multiple sectors and contribute to the development of practical insights to improve how organisations manage risk, uncertainty and opportunity in emergent projects. These insights will be captured in the outcomes report which will be released no later than mid-2021. Register your interest at the bottom of the webpage: iccpm.com/2020-rs

ICCPM Members receive free attendance to the Workshop Discussions and receive regular updates about the 2020 International Roundtable Series. For more information on ICCPM Membership, please visit iccpm.com/membership

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