Gaming, Simulation and Decision Making in Project Portfolio Management

by

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List of Figures and Tables

Glossary of Terms

Terms	Description
Project Portfolio Management	*Portfolio management* ensures that an organization can leverage its *project* selection and execution success. Project portfolio management refers to the centralized management of one or more *project* portfolios to achieve strategic objectives.
Action Learning	**Action Learning** is a process that involves a small group working on real problems, taking **action**, and **learning** as individuals, as a team, and as an organization. It helps organizations develop creative, flexible and successful strategies to pressing problems (wial.org/action-learning).
Simulation	Simulation is 'the abstraction of reality for a purpose' (Leigh 2013, p. 200).
Simulation Protocol	A document that explains the steps of a role-play simulation in order to standardise the process of facilitation.
Team Cognition	team cognition emerges from the interplay of the individual cognition of each team member and team process behaviors. (www.researchgate.net)
Cynefin	The Cynefin framework helps leaders determine the prevail- ing operative context so that they can make appropriate choices.
SenseMaker	Software to monitor a change of paradigms in a complex environment.
Widget	The widget is an embedded function in the software that helps a user to choose suitable combinations for using SenseMaker.
Signifier	Signifiers are signs or symbols that help research subjects to identify the pattern, the paradigm and the change in their perceptions during an experiment.
Dyad	A dyad is a two-dimension signifier that assesses the subjects' perception.
Triad	A triad is a three-dimension signifier and assesses the status of six questions at the same time.
MCQ	Multiple-Choice Queries are the usual method to assess subjects' opinions. SenseMaker uses MCQ to assist researchers with the categorisation of patterns in signifiers.
NVivo	A software which is used for qualitative analysis of research data.
Hooshmand-1	Hooshmand means intelligent in Persian. It is a role play simulation which I designed for data collection in this thesis.
Real-time events	Real-time events are intentional changes in the simulation Hooshmand-1 to observe the reaction of participants and their influence on participants' perceptions.
Turning points	Turning points are the key momentums of decision making experiment from a participants' perspective.

Abstract

The motivation for this research was due to my observation of project management practitioners in leading organisations and, in particular, noticing their poor judgement on key project portfolio decisions when faced with unexpected events. An initial review of the literature revealed that the impact of real time events on Project Portfolio Management has not been addressed adequately. The research problem was then formed as "What is the impact of real-time events on managers during decision-making processes for Project Portfolio Management (PPM)?" Two key themes were selected for investigation after an extensive analysis of relevant literature. These themes are: 1- PPM and its associated decision-making processes; and, 2 - the process of sensemaking while dealing with complex problems.

These two themes also aligned with my interest in investigating decision-making processes for project portfolio managers and the effect unexpected events had on them. Evolution of the research resulted in adaptation of a phenomenological focus on researching participants' perceptions during decision making on how decisions were made in the context being investigated. The final design of a tailored multiple-methods approach created for this investigation, resulted in a series of decision-making scenarios for use in a relatively controlled environment for data generation while, at the same time, testing the effect of unexpected events. Five simulation designs were then piloted using a series of action learning cycles, with the help of a simulation expert, to design the final research instrument.

The research instrument that emerged as a simulation, now called Hooshmand-1, developed because rapidly changing conditions made it impossible to conduct the research in the workplace where the initial observations had occurred. The research questions were further developed to address findings in the literature review, and a detailed questionnaire was developed to gather research participants' self-reflective observations on factors influencing their decision making, under both complicated and complex conditions. As the simulation

evolved into its final form, an opportunity emerged to use 'SenseMaker' © software to structure and analyse the data collected from participants in Hooshmand-1. This enabled a richer and more varied data collection method and enhanced the result of data analysis.

The observations which prompted this research included puzzlement about the role of emotions in decision making, especially during times of uncertainty. Creating a realistic environment within which to generate decision-making situations, made possible an exploration of research questions designed to elicit participants' thoughts and responses to abrupt changes and unanticipated events. It also enabled collection of a range of data to shed light on emotions influencing individuals' capacity for judgment when facing sudden change during decision-making events. The research provides evidence about similarities and differences among participants' perceptions regarding the impact of unexpected events on their group decision-making processes, and their individual judgment about decisions made during research conditions, which replicated a PPM context.

This research contributes to knowledge about decision making in PPM contexts. It applies new research methodologies to extend our understanding of the possible impact of unexpected and unanticipated events on individual responses. Helping project portfolio managers to improve their awareness of innovative tools and approaches to coping with uncertainty is an important outcome of the research. Additional contributions relate to emerging insight into practical applications of the theoretical concepts called 'Groupthink' and 'Abilene Paradox' as well as the use of simulation for learning more about management in complicated and complex conditions.

Thus, this research contributes to: theories of PPM and decision making in practice by guiding organizations and practitioners to improve their PPM practices; and, to methodology, by combining legitimate simulation with data collection and analysis software, SenseMaker, which was developed to investigate complex situations.

Publications and feedback

Refereed Conference Papers

1. SHALBAFAN, S., LEIGH, E., POLLACK, J. & SANKARAN, S. 2015. Using simulation to create a time-bound, space-constrained context for studying decision-making in project portfolio management using the Cynefin framework. Apros - Egos 2015. Sydney.

2. SHALBAFAN, S., LEIGH, E., POLLACK, J. & SANKARAN, S. 2016. Using simulation to study decisionmaking in project portfolio management. Second Danish Project Management Research Conference. Denmark.

3. SHALBAFAN, S., LEIGH, E., POLLACK, J. & SANKARAN, S. Application of Cyenfin framework to facilitate decision-making in complex conditions in project portfolio management IRNOP 2017 Boston. Boston University.

4. SHALBAFAN, S. & LEIGH, E. 2017. Design thinking: Project Portfolio Management and Simulation – a creative mix for research, ISAGA 2017. Netherlands: ISAGA.

Guest lecturer / Facilitator

1- Decision making and project finance – Postgraduate Course- UTS – DAB – 2016
2- Decision making and project finance – Postgraduate Course- UTS – DAB – 2017

Designers of Simulation for Educating postgraduate students

1- Hooshmand-2; Decision Making in PPM, MBA, UMEA, Sweden, 2016/ 2017
2- Hooshmand-3; Decision Making in project finance, Project Finance, DAB, UTS, Sydney, 2016 / 2017

Event Organiser / Manager

1- Sense Maker Community of practice workshop, 2014, NSW, UTS

“Wise people rain into thirsty minds that cause changes in the future”, The Great Orod, Iranian Philosopher (Orod, 2017)