

The Role of People and Data in Complex Spatial-Related Long-Term Decisions: A Case Study of Capital Project Management Groups

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Abstract : Significant long-term investment projects can involve complex decisions. These are often described as capital projects, and the factors that contribute to their complexity include budgets, motivating reasons for investment, stakeholder involvement, interdependent projects, and the delivery phases required. The complexity of these projects often requires management groups to be established involving stakeholder representatives; these teams are inherently multidisciplinary. This study uses two university campus capital projects as case studies for this type of management group. Due to the interaction of projects with wider campus infrastructure and users, decisions are made at varying spatial granularity throughout the project lifespan. This spatial-related context brings complexity to the group decisions. Sensemaking is the process used to achieve group situational awareness of a complex situation, enabling the team to arrive at a consensus and make a decision. The purpose of this study is to understand the role of people and data in the complex spatial related long-term decision and sensemaking processes. The paper aims to identify and present issues experienced in practical settings of these types of decision. A series of exploratory semi-structured interviews with members of the two projects elicit an understanding of their operation. From two stages of thematic analysis, inductive and deductive, emergent themes are identified around the group structure, the data usage, and the decision making within these groups. When data were made available to the group, there were commonly issues with the perception of veracity and validity of the data presented; this impacted the ability of group to reach consensus and, therefore, for decisions to be made. Similarly, there were different responses to forecasted or modelled data, shaped by the experience and occupation of the individuals within the multidisciplinary management group. This paper provides an understanding of further support required for team sensemaking and decision making in complex capital projects. The paper also discusses the barriers found to effective decision making in this setting and suggests opportunities to develop decision support systems in this team strategic decision-making process. Recommendations are made for further research into the sensemaking and decision-making process of this complex spatial-related setting.

Keywords : decision making, decisions under uncertainty, real decisions, sensemaking, spatial, team decision making

Conference Title : ICDTDSS 2021 : International Conference on Decision Theory and Decision Support Systems

Conference Location : Paris, France

Conference Dates : November 18-19, 2021