

An Approach to Capture, Evaluate and Handle Complexity of Engineering Change Occurrences in New Product Development

Authors : Mohammad Rostami Mehr, Seyed Arya Mir Rashed, Arndt Lueder, Magdalena Missler-Behr

Abstract : This paper represents the conception that complex problems do not necessarily need a similar complex solution in order to cope with the complexity. Furthermore, a simple solution based on established methods can provide a sufficient way to deal with the complexity. To verify this conception, the presented paper focuses on the field of change management as a part of the new product development process in the automotive sector. In this field, dealing with increasing complexity is essential, while only non-flexible rigid processes that are not designed to handle complexity are available. The basic methodology of this paper can be divided into four main sections: 1) analyzing the complexity of the change management, 2) literature review in order to identify potential solutions and methods, 3) capturing and implementing expertise of experts from the change management field of an automobile manufacturing company and 4) systematical comparison of the identified methods from literature and connecting these with defined requirements of the complexity of the change management in order to develop a solution. As a practical outcome, this paper provides a method to capture the complexity of engineering changes (EC) and includes it within the EC evaluation process, following case-related process guidance to cope with the complexity. Furthermore, this approach supports the conception that dealing with complexity is possible while utilizing rather simple and established methods by combining them into a powerful tool.

Keywords : complexity management, new product development, engineering change management, flexibility

Conference Title : ICEMSO 2021 : International Conference on Engineering, Manufacturing and Supply Operations

Conference Location : Berlin, Germany

Conference Dates : July 22-23, 2021