

An Approach to Innovative Design within Complex Projects with the application of TRIZ-3PE

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Abstract. For innovative design to succeed within a complex project environment, it is essential to resolve contradictions and facilitate dynamic engagement across domains. This need is being further challenged by the growing strategy that large organisations are taking to outsource and/or develop partnership contracts to deliver particular aspects of system(s) within a system. TRIZ, being well-known as a problem-solving philosophy for applying logic and data, can improve both the control and management of the design process. However, its application is unstructured and there is scope to further expand its application. This paper proposes the embodiment of a 3PE model to form the basis of a framework for the design process. This structure provides an algorithmic process that crucially identifies areas where design challenges are clustering and focus must be applied to innovate, improve resilience, increase efficiency and control risk throughout the project lifecycle.

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