**CASE STUDY**

**Strategic Requirements Engineering for**

**Complex Sustainable Systems**

PART 1

Requirement engineering challenges of complex sustainable systems development are argued in the research. Presenting an examination to characterize major qualities of the RE strategy is vital in helping the improvement of intricate supportable frameworks. This paper presents our exploratory investigation of the development of prerequisites and socio-technological frameworks that empowers a better understanding of the requirements relationships as in the case of complex sustainable energy systems. It presents the analysis of Basalla’s study. There has been an extrapolation of Basalla’s analysis through its reflection on the respective system requirement. There is a flow of things being presented to the ones reading it. Firstly, the paper analyzes the necessary preconditions for the evolution of socio-technological systems. It then presents the analysis for the evolution mechanisms of socio-technological systems in comparison with natural systems. Thirdly, a discussion on the strategic RE shifts necessary for complex sustainable system development has been presented. The paper represents an example to validate and strengthen the viewpoint on the same. To conclude, the paper presents a described conclusion and the future scope of work.

PART 2

The paper explains how the development of a system requires a holistic and macroscopic systems engineering approach. There is a discussion on the critical importance of effectively managing interdependencies among all subsystems, minimizing development costs, and envisioning future needs and problems. An integral component of the systems engineering method is necessary for requirement engineering. Three preconditions under Basalla’s study are necessity, continuity, and diversity. The idea for the existence of variation and its incorporation within a system population is the essence of evolution. RE methods are usually based on the ideology that customers know what they want which may not be always true. There have been instances that counter the claim as well. The importance of this research becomes more significant because it showcases the need to identify the stakeholders’ requirements to create an impact.

PART 3

The paper has some potential problems with the way the research is presented. The paper is too detailed as far as the already researched aspects are concerned. For instance, Basalla’s study has been explained in too much detail to leave room for the original research to be explained properly. It seems like an explanation for Basalla’s study more than anything else. The paper discusses and explains the various aspects related to Basalla’s study thus, lacking originality to a great extent. The example presented is too straightforward. Some consideration of worst-case scenarios would have hugely benefited the overall critics for the underexplained study. The paper claims to be lacking a solid foundation of the RE aspect itself. It would have been better if the basis were laid in the research.

PART 4

There is a crucial need for a strong fundamental foundation for the requirements engineering aspects under discussion in the research. The need for leveraging the complex framework present for strategic RE methods is quite high. Reducing carbon dioxide emissions needs more attention. Presuming all favor for R1 is not only highly ambitious but also a little subjective. In the future, evolutionary mechanisms and patterns that fit in the specific system with the required number must be worked upon. Addressing these problems and arriving at a concrete solution to them are the future objectives.