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Understanding and Addressing Complexity in Problem Solving

Tuesday, 14 September 2021 15:00 (30 minutes)

Complexity manifests itself in many ways when attempting to solve different problems, and different tools are needed to deal with the different dimensions underlying that complexity. Not all complexity is created equal. We find that most treatments of complexity in problem-solving within both the statistical and quality literature focus narrowly on technical complexity, which includes the complexity of subject matter knowledge as well as complexity in the data access and analysis of that data. The literature lacks an understanding of how political complexity or organizational complexity interferes with good technical solutions when trying to deploy a solution. Therefore, people trained in statistical problem solving are ill-prepared for the situations they are likely to face on real projects. We propose a framework that illustrates examples of complexity from our own experiences, and the literature. This framework highlights the need for more holistic problem-solving approaches and a broader view of complexity. We also propose approaches to successfully navigate complexity.

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Statistical engineering, Six Sigma, decision making

Special/invited session

JQT, Technometrics and Quality Engineering session

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