

# DATA ANALYTICS INFORMS DATA QUALITY

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Complex projects are a prevalent component of today's business environment and as a consequence the decisions required from planning to execution require significant effort by project managers to ensure delivery. As complex projects have grown so has the volume of data surrounding decision-making regarding these projects. From procurement cycles to scheduling and risk the emergence of methodologies to inform curation of datasets requires sophisticated tools supporting the requisite volumes of data. The emergence of data analytics for decision-making in complex projects has become the newest fad, aimed at improving decision quality and by extension complex project performance.

We explore the role of data analytics to support decision-making in complex projects through the lens of data analytics with quality as a prerequisite for any proposed adoption, recognizing that effective data-analytics adoption must be informed by "good data." The article provides preliminary insights regarding the question: *How can data analytics support decision-making in complex projects?* Through exploration of quality requirements for data analytics adoption, we examine the pre-requisite for data analytics implementation in complex projects.

## Introduction

Complex projects are not new, from the construction of the pyramids to the current space race - all require a degree of complexity for planning, execution and control. Notwithstanding the differentiation between complicated and complex projects stratified by their respective degrees of ambiguity, complex projects represent a form of problem solving which are completely unspecifiable in advance [1]. As a consequence of their ambiguity complex projects are necessitated by an inability to be specified distinguished by two dimensions technological uncertainty and system scope [2].

There exists several definitions of complex projects [3]. That said, they are usually characterized by factors such as uniqueness, uncertainty & unknown dependencies, interconnectedness and interdependent teams, heavy time constraints and volatility. Like all projects, they are also bound by elements such as technology, cost and schedules as well as external variables such as the political environment and degrees of global connectivity. Success of complex projects depends on the dynamism of the project managers and their ability to use readily available information to make decisions critical to project delivery. Given the high degree of ambiguity, quality decision data is usually unavailable resulting in guesstimates.