Many project failures can be attributed to deficiencies in requirements management.

The Energy of Innovation

Requirements Management

Successful projects meet stakeholder expectations, needs, and system requirements. Requirements Management establishes and manages the set of stakeholder and system requirements that govern development of a product or system at all levels and throughout all stages or the system life cycle. Many project failures can be attributed to deficiencies in requirements management.

Stakeholder requirements define the scope of the system development project. System requirements are the foundation of the system definition and form the basis for the architectural design, integration, and verification. Therefore, it is imperative that program and project managers have an effective process for understanding and managing requirements.

Systems Analyses and Engineering (SA&E) helps projects ensure that applicable stakeholder and system requirements are clearly identified, consistently documented, and successfully managed in a single, accessible environment.

Common Problems
Project requirements are often scattered across a wide range of stakeholders and locations making management, control, and change difficult. Additionally, redundant and/or miscited requirements in multiple and diverse documents create problems for project personnel and end-users. Since requirements come from multiple sources, eliciting and capturing requirements constitutes a significant effort on the part of the systems engineer.

Each requirement carries a cost. Therefore, it is essential that a complete but minimum set of system requirements be established from defined stakeholder requirements early in the project life cycle. New or changing requirements later in the development cycle can have a significant and often devastating cost impact on the project, possibly resulting in cancellation. As such, new requirements are identified and constantly refined as the

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system concept develops and additional details become known. The requirements are analyzed, and deficiencies and cost drivers are identified and reviewed with the customer to establish a requirements baseline for the project.

Solution

SA&E identifies requirements through discussion with stakeholders and examination of applicable laws and regulations. It then uses off-the-shelf and, when needed, customized tools and processes to document and manage those requirements toward achieving mission objectives. SA&E maintains a requirements engineering database capability that is currently being used on a number of DOE and non-DOE projects.

The right tools used the right way:

- Ensure program, technical, operational, functional, and interface requirements are understood

- Ensure requirements are not overlooked

- Help projects identify and coordinate system interfaces

- Increase project management effectiveness and cross-functional collaboration using real-time data

- Provide defensible requirement traceability over the project lifecycle

- Provide objective evidence of regulatory compliance.

The right requirements engineering processes:

- Provide a standardized, requirements-driven approach to manage complexity

- Improve efficiency and consistency through the reuse of common requirements during different project phases or by different projects

- Create a mature requirements management process that allows decision makers to see the big picture and make good choices.

In a business context, these processes enable decision making based on a clear understanding of stakeholder and system requirements and on the associated costs and benefits of meeting those requirements.

For more information

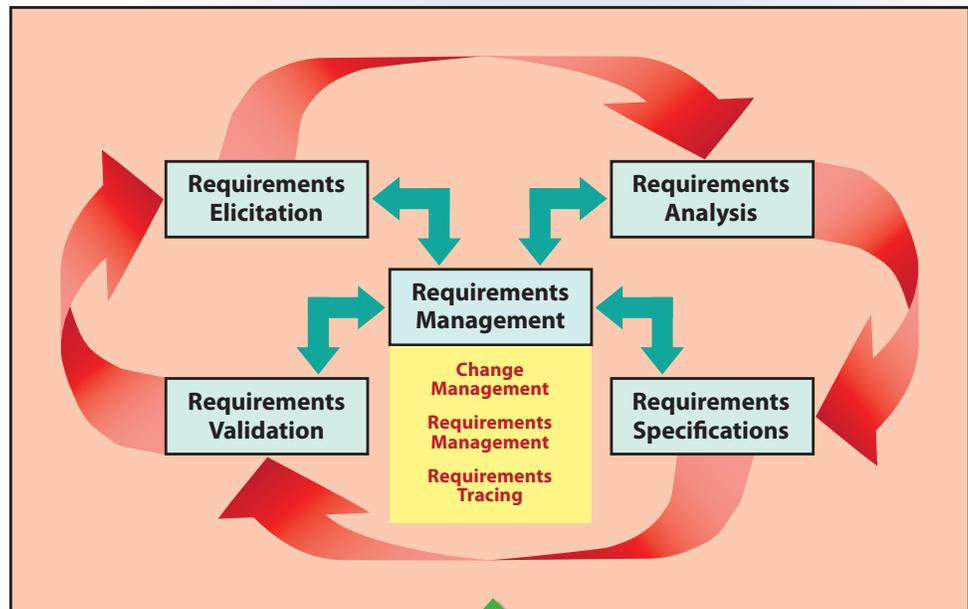**Ron Klingler**
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