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IDENTIFYING TECHNICAL MANAGEMENT AREAS THAT AFFECT PERFORMANCE TO INCREASE PROJECT EFFICIENCY

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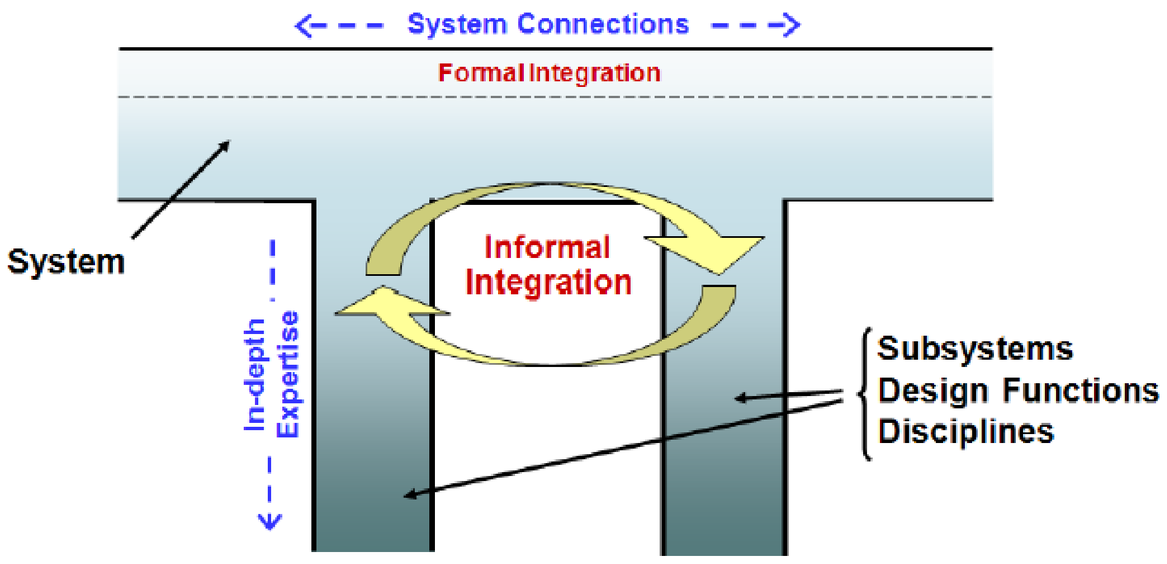
Overview

As space agencies develop plans for scientific and technological advances, they must manage resource constraints by increasing project efficiency. Key technical management issues that affect performance include critical thinking failures, managing organizational complexity, ownership and accountability, normalization of deviances, and decentralized authority. The most prominent issue lies in integrating systems continuously throughout the lifecycle. Such internal analysis of management practices can greatly reduce developmental cost while encouraging innovation.

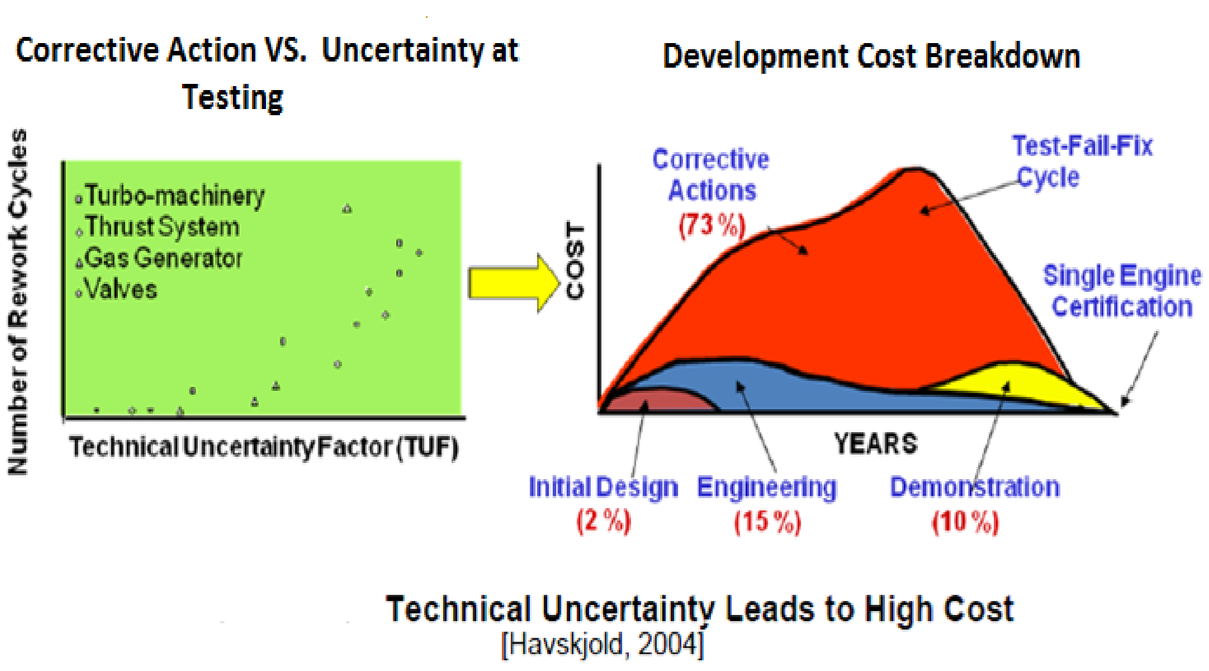
Key Findings

Project requirements must not restrict creativity and must be flexible. Such an open environment will also encourage thorough analysis of deviations in order to anticipate downstream issues that may arise. This process is facilitated by integration, both formal and informal integration, shown below in the T-Model, which emphasizes the cohesiveness of subsystems throughout the entire lifecycle.

The complexities of the projects translate to unwanted subsystem interactions where 72% of the development cost goes into “fixing” the interaction issues. Many NASA projects illustrate such findings.



T- Model for Technical Integration



Technical Uncertainty Leads to High Cost
[Havskjold, 2004]

Explanation

Aerospace projects face unique technical challenges but they also provide an opportunity for the development of new technology management knowledge and the transfer of that knowledge throughout the industry. Much can be learned about technology management from the NASA experience. This knowledge has applicability not only within NASA and the aerospace industry, but for large scale engineering projects in general; including those of AAS.

Impact

Project efficiency has the potential to greatly improve space project capabilities, and it is applicable to a project regardless of its technological environment. Such utilization of management theory can lead to more feasible space projects in a shorter time frame. Success in management efficiency will also facilitate human ingenuity and technological advances where wastes is greatly minimized.

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