



# Integrating Data Streams Across the Enterprise for ALM

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Public

# P.O.S.T.



## PURPOSE

A look at defining the strategy and initiatives for “business” application lifecycle management for the entire engineering workflow – 1000+ applications and 1000s of data locations.



## OUTCOME / ASK

To **share** an approach to engineer an information ecosystem.  
To **ask** for validation of the approach and potential risks from your experience.



## STRUCTURE

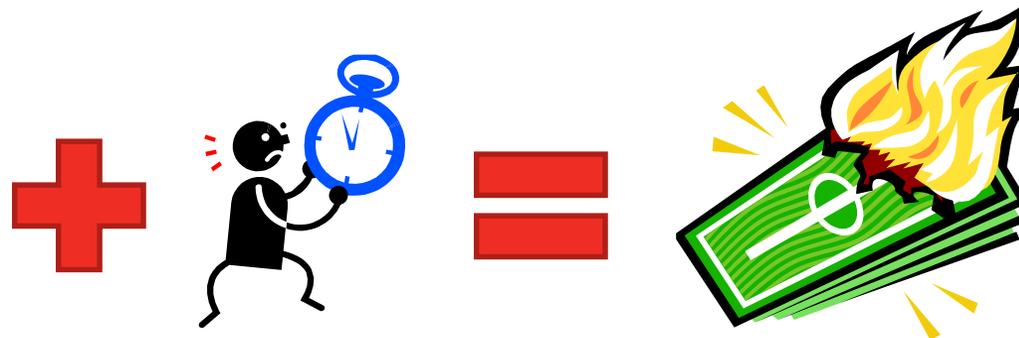
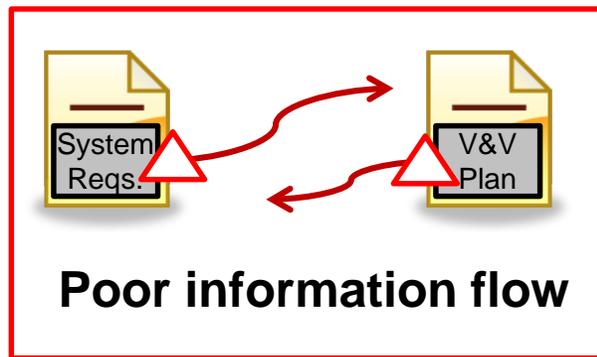
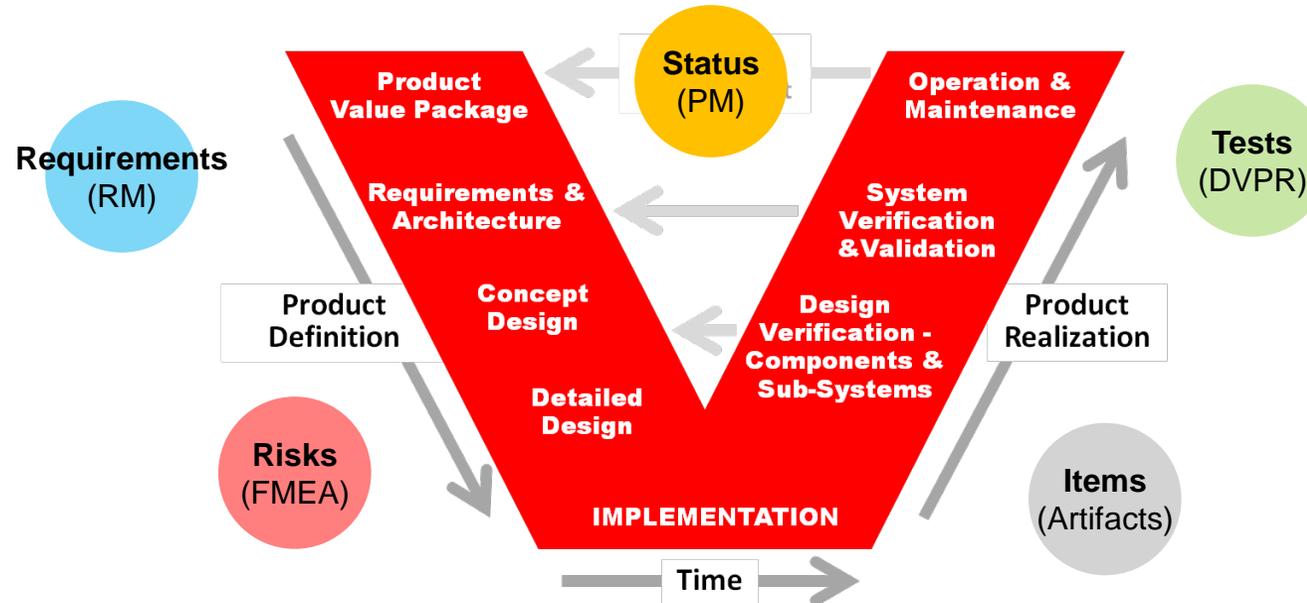
Presentation followed by questions and comments.



## TIME

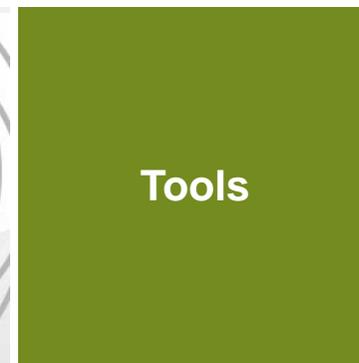
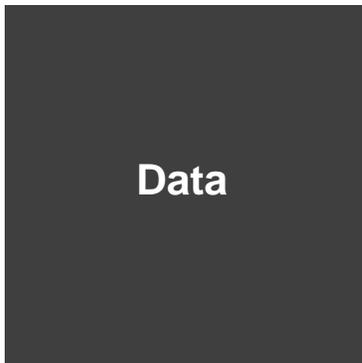
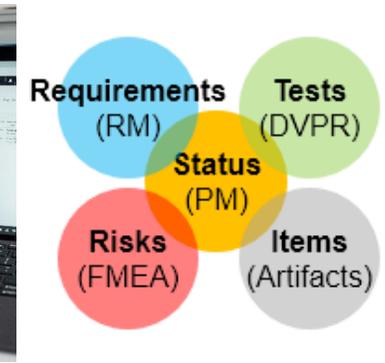
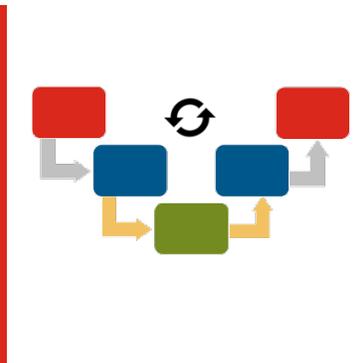
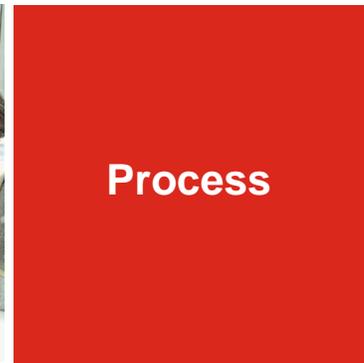
30 minutes

# Why Information Connectivity?



# How to create Value

- **People** have a **job** within an **organization** where they perform **roles** in which they are trained on **topics** to use a **tool** that has capabilities to Create, Read, Update, and Delete **information (data)** by following a **process** that delivers **value** to the **enterprise**, according to a **plan**.
- However, the accountability and source of truth of these **key items** to create **value** can be unclear to stakeholders.



# People – Job – Org. – Roles – Training




**Systems Engineer - Director**

**Function:** Engineering      **Comp Class:** CC04

**Job Summary:** Directs the overall application of a single-discipline engineering function including one or more of the following areas: development and maintenance system level requirements; development of system level verification and validation plans; architecture and generation of concept designs and functional allocation of system requirements; and/or development of system interface agreements, installation / application guidelines and quality assurance procedures.

**Key Responsibilities:** Leads and directs a technical group or technical program. Establishes employee performance standards; works collaboratively to set goals and to address areas of deficiency. Formulates strategies and aligns functional areas to achieve organizational goals. Influences business-area leadership decisions. Fosters the development of processes, tools and people. Makes critical and authoritative decisions; resolves highly complex issues. Develops and manages budget, financial controls and risk; ensures operations are executed efficiently and within established budget. Works with employees to establish their individual development and career plans; mentors and coaches. Assesses performance and provides feedback to direct reports.

**Skills:** Product Integration, Verification & Validation - Understands the basics of integration, verification, and validation concepts including component testing, integration testing, system testing, performance testing, test planning and documentation, and test environment. Has led the creation or mapping of tests to requirements and needs for several projects. Has led the creation of system test plans balanced with budget and appropriate risk mitigations.

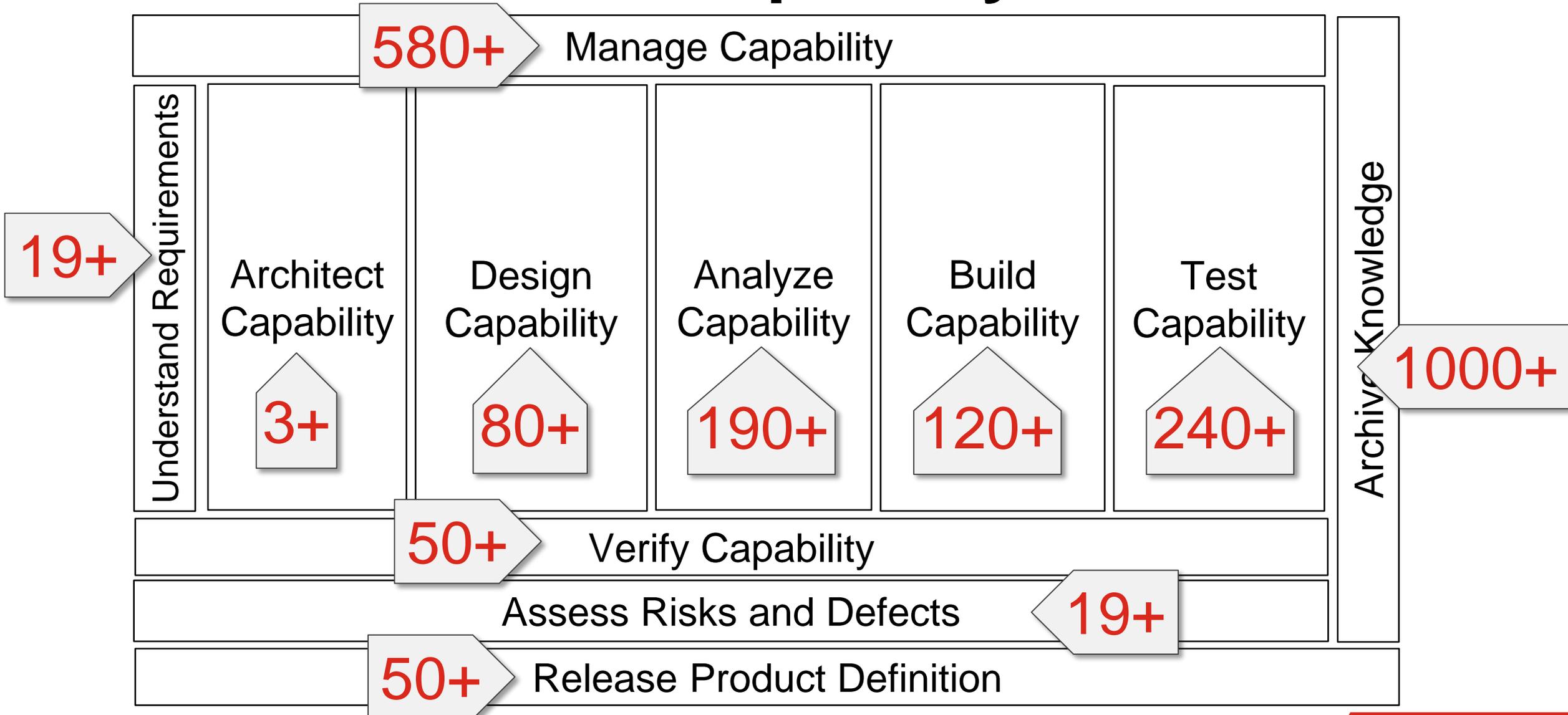
Product Risk Management - Understands the basics of risk management concepts including risk identification, risk management planning, and risk monitoring. Has led the production of product-specific risk items likely to compromise a project's success, and led the development of strategies to mitigate or control the risks. Has mentored others in risk management.

Requirements Engineering - Understands the basic terminology used in requirements engineering. Has leadership experience in the development and maintenance of

Four **operating segments**



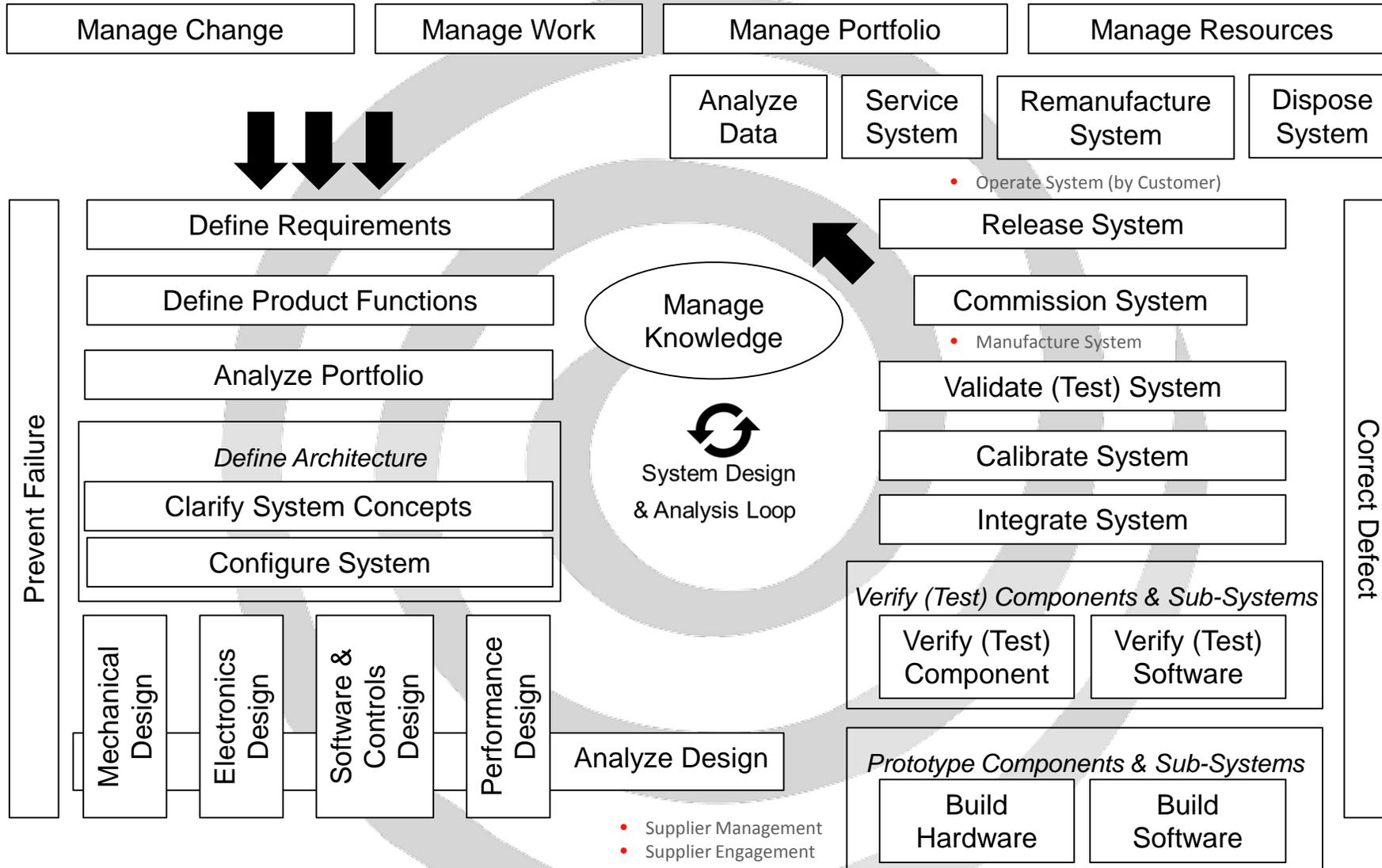
# Tools – in an ‘IT’ Capability Model



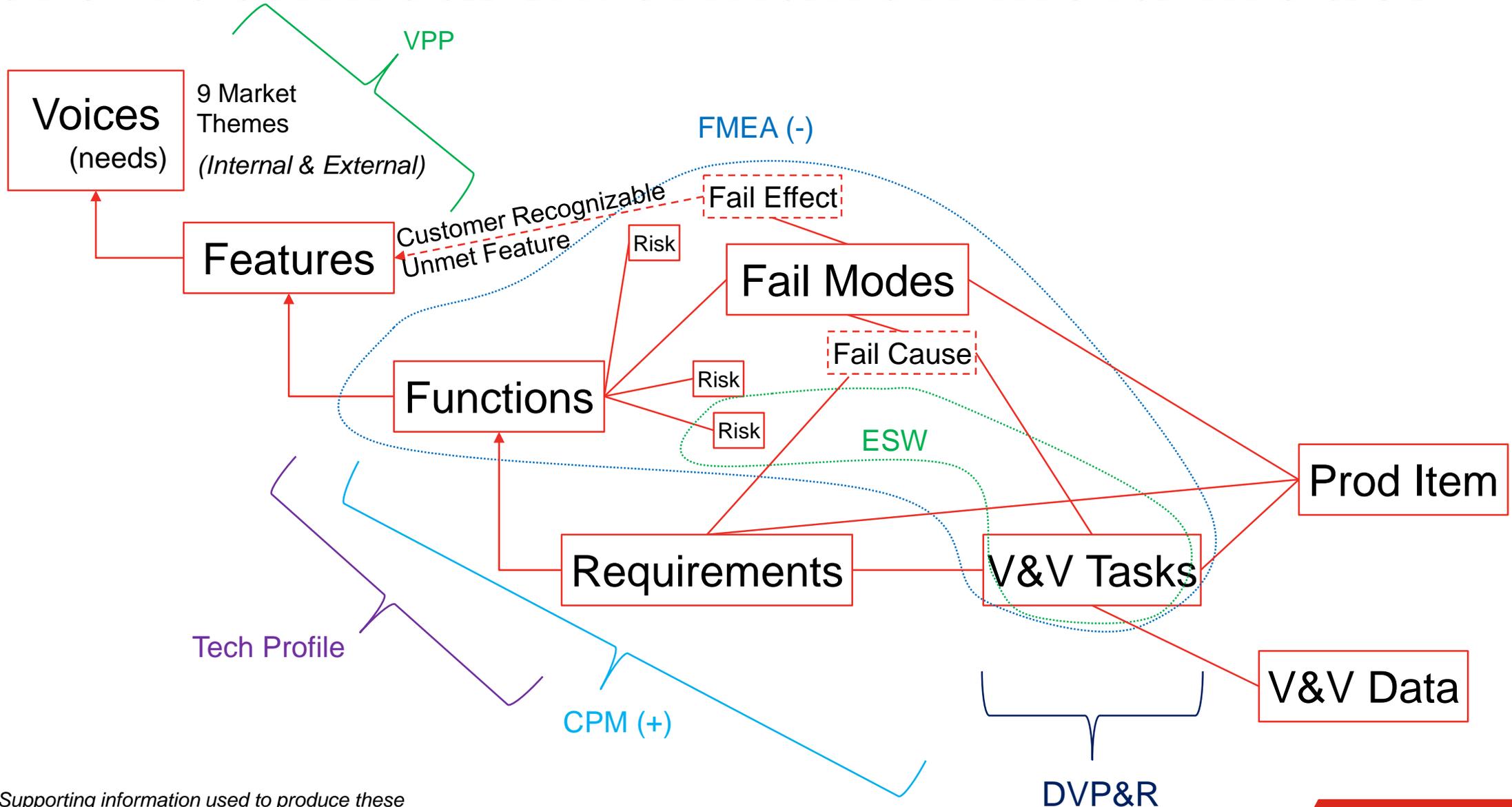




# Process – Engineering Workflow



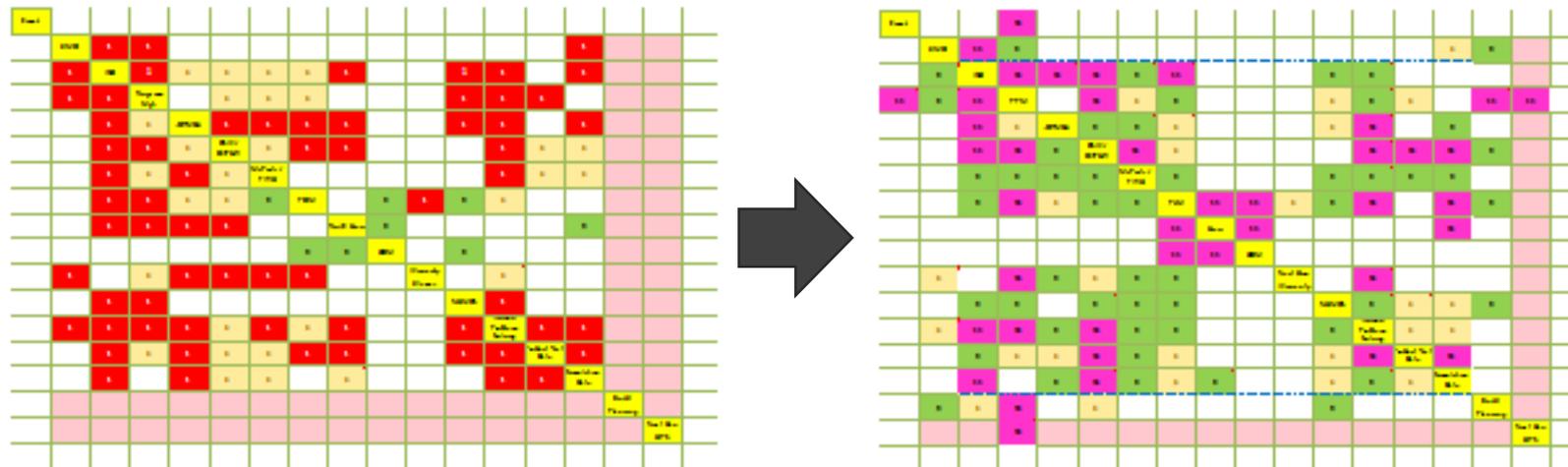
# Core Technical Information Meta-Model



\*Supporting information used to produce these items is not shown. E.g. procedures, practices

# Interactions and Interfaces

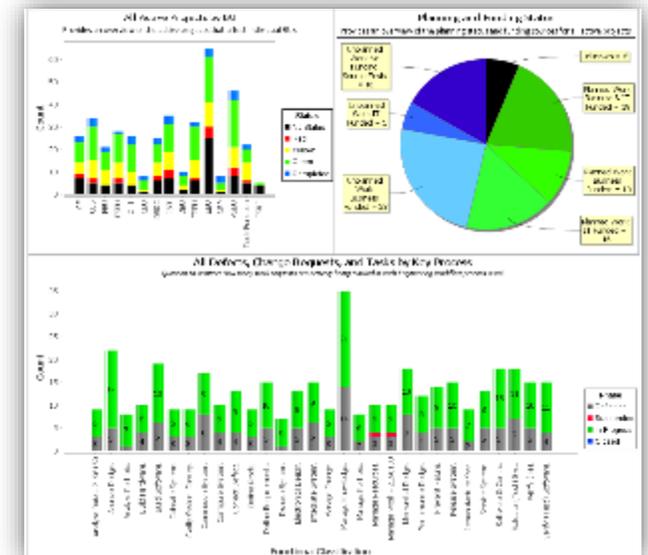
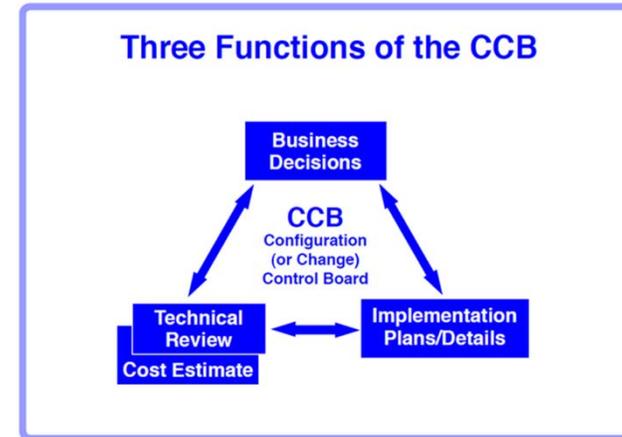
- $N^2$  Matrices are used to expose tool interfaces and clarify critical, high volume, high reliability data flows
- Value depends upon our capability to understand, design, optimize, and manage relationships among system elements
  - Data flows from one database/tool to another
  - Process step interdependencies
  - A piece of information is authored in one place, but referenced in many other places



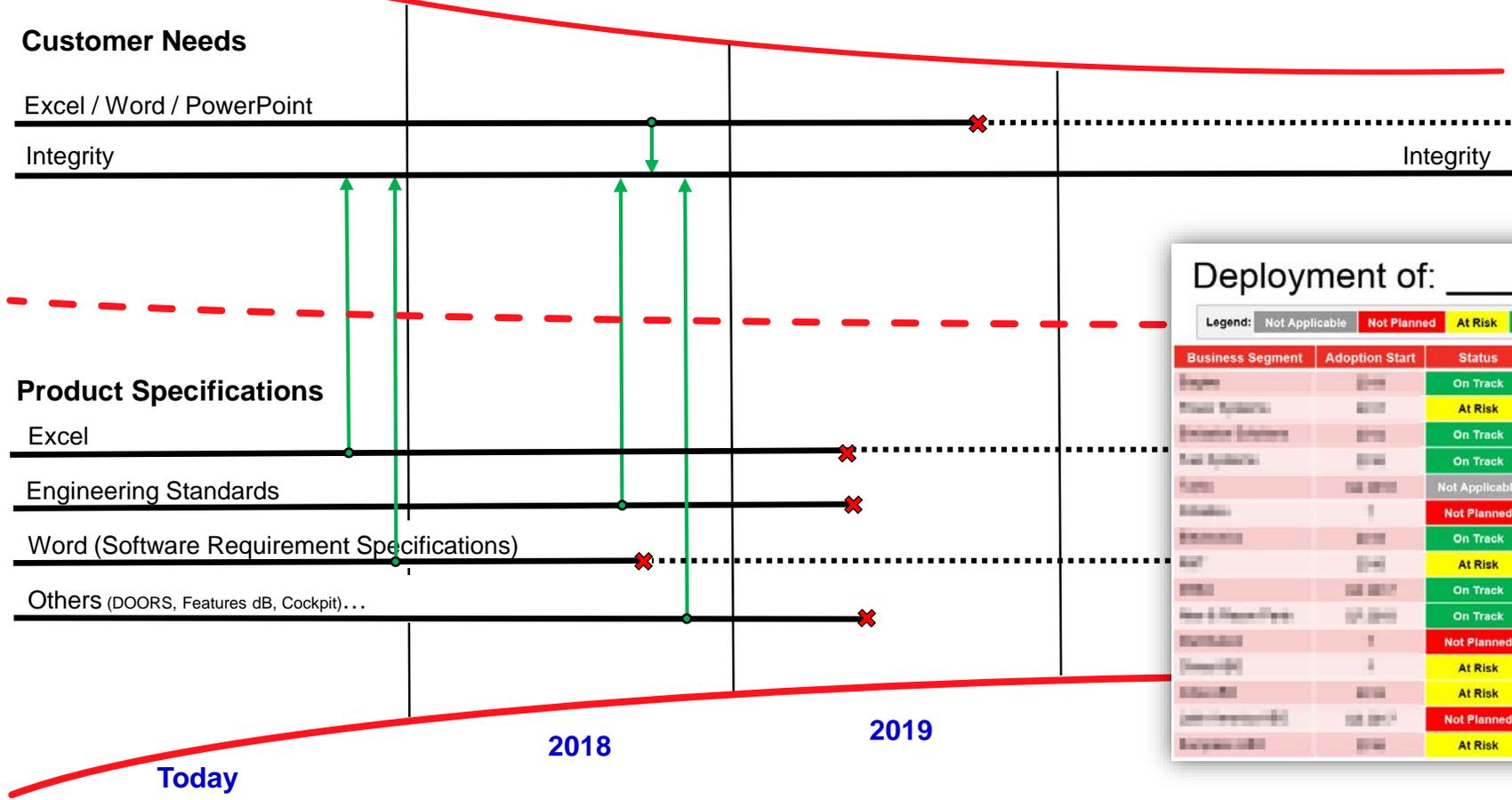
# Engineering the Information Eco-System

## Technical Information Roadmaps

- For each engineering workflow process area, a roadmap (strategy) is created, reviewed, and approved by the Technical Information Strategy Team to optimize our IT systems and workflows.
  - Each BU area has a Director or higher Business Area Stakeholder to approve the strategy, promote the roadmaps and their business needs, and serve as a proxy for their area.
  - CRB / CIB meets weekly to review new requests and monthly for Roadmap approvals
- Using a formal Change Management system to track known Technical Information 'IT' projects
  - Relating to Process area, Business Area, Functional discipline area, and responsible teams
  - Assessing Difficulty, Technical Feasibility, and Resources



# Example Application Roadmap & Deployment Tracking



Deployment of: \_\_\_\_\_ Application

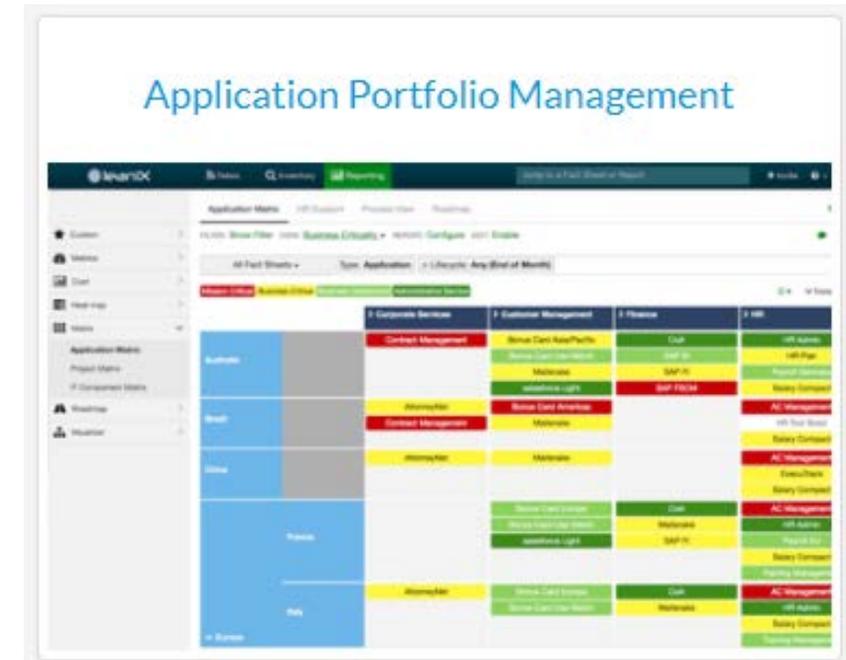
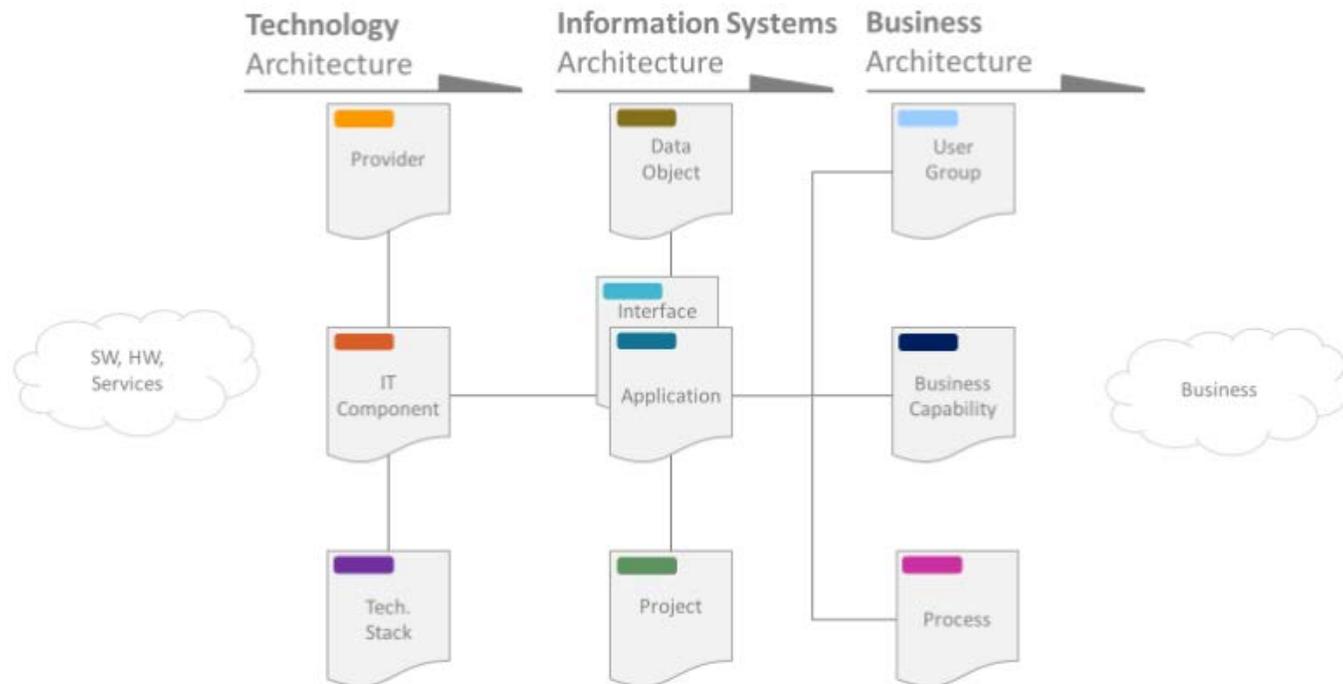
Legend: Not Applicable (grey), Not Planned (red), At Risk (yellow), On Track (green), Complete (blue)

Adoption: % of projects using tool feature

Business Segment	Adoption Start	Status	Comments	Adoption
Engine	2018	On Track	Review of requirements by 2018/03/01	█
Power Systems	2018	At Risk	Review of requirements by 2018/03/01	█
Engine (Others)	2018	On Track	Review of requirements by 2018/03/01	█
Test Systems	2018	On Track	Review of requirements by 2018/03/01	█
Tools	2018-2019	Not Applicable	Review of requirements by 2018/03/01	
Others	?	Not Planned	Review of requirements by 2018/03/01	
Hardware	2018	On Track	Review of requirements by 2018/03/01	█
IoT	2018	At Risk	Review of requirements by 2018/03/01	█
IT	2018-2019	On Track	Review of requirements by 2018/03/01	█
IT (Others)	?	Not Planned	Review of requirements by 2018/03/01	
Services	?	At Risk	Review of requirements by 2018/03/01	█
IT (Others)	2018	At Risk	Review of requirements by 2018/03/01	█
Services (Others)	2018-2019	Not Planned	Review of requirements by 2018/03/01	
Services (Others)	2018	At Risk	Review of requirements by 2018/03/01	█

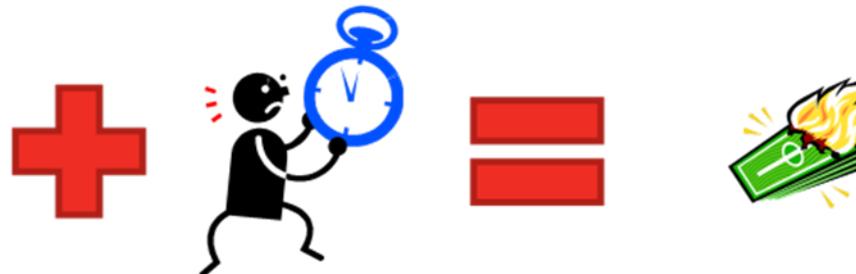
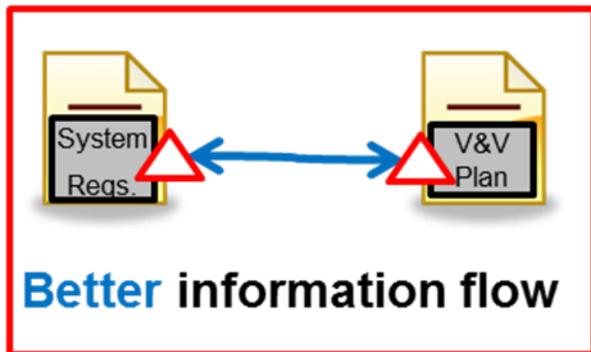
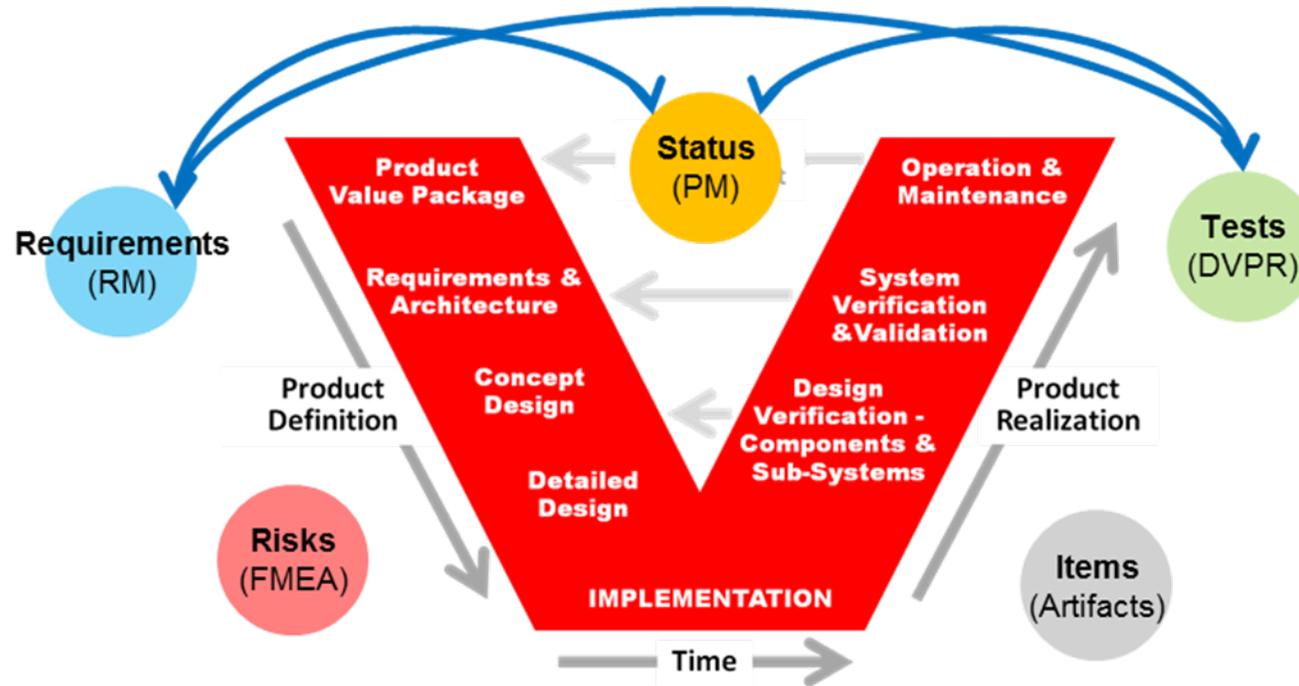
# Interactions and Interfaces

- A common method, framework, language, and Enterprise Architecture tool is being pursued so that business owners *with* IT can effectively improve this information eco-system
  - **From** PowerPoint and Excel **To** formal EA tool with supporting analysis tools (e.g. a DSM tool)



Ref. <https://www.leanix.net/en/>

# A Better Information Ecosystem



Q+A

