Systems Thinking with the Aras PLM Platform

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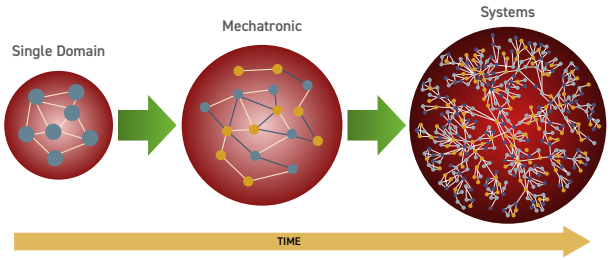
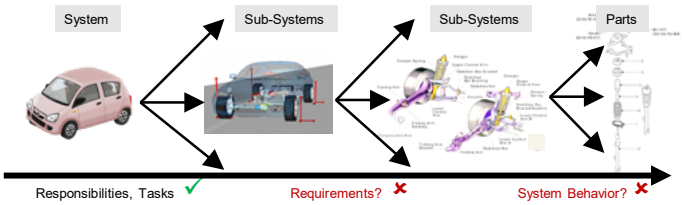


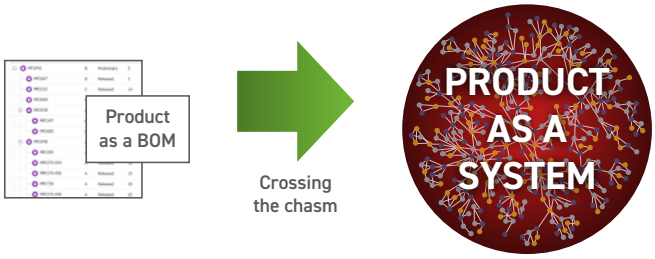
There's an Explosion of Complexity:

Products becoming increasingly intelligent and connected

Situation:

- Historically, products were developed focusing on the product itself, with few interaction with other products, and implemented on a single domain at a time—mechanical, electrical, software—but not together
- Work was done in silos, from organizational as well as a subject perspective, to solve individual problems, but tended to miss a wholistic view
- An over-reliance on Reductionism, to reduce the complexity of the problem, but may result in the loss wholistic of a view





Result:

- Increased cost
- Missed market opportunities
- Resources that unable to scale
- In extreme case, it may even lead to catastrophic failures and loss of life

Systems Thinking:

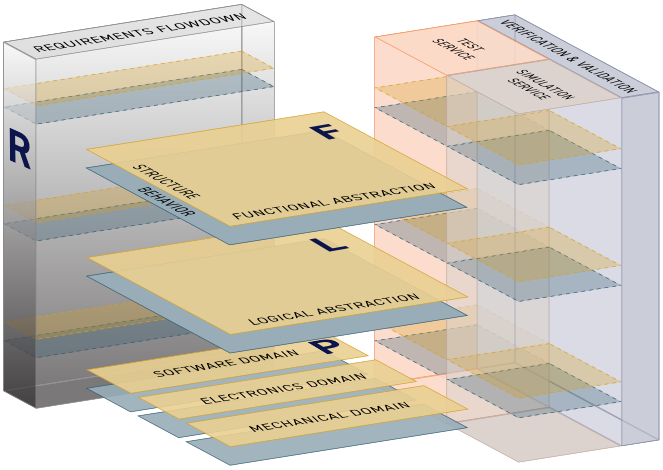
Systems Thinking, together with Digital Transformation, is central to managing the ever-increasing complexities of today's and tomorrow's intelligent and connected products. It is a wholistic approach to analyzing and understanding how the system's constituent behaviors and elements interrelate, how they change over time, and how they fit in the context of a larger system. It is not a tool, but a way one thinks about understanding and solving complex problems and is complementary to Reductionism. Systems Thinking is applicable to all design abstractions and all lifecycle stages of a product—from early design space exploration, all the way through its manufacture, and use in the field.

Key Benefits:

- Increased value and effectiveness of Digital Transformation
- Minimize overdesign effect of Reductionism approach
- Able to identify and mitigate risks earlier
- Better process for managing new technology insertions
- Saves time, resources, and costs

Traceability with Digital Thread:

Digital Thread is key to Systems Thinking since it enables traceability of the design intent, design data, and design history across all lifecycle stages.

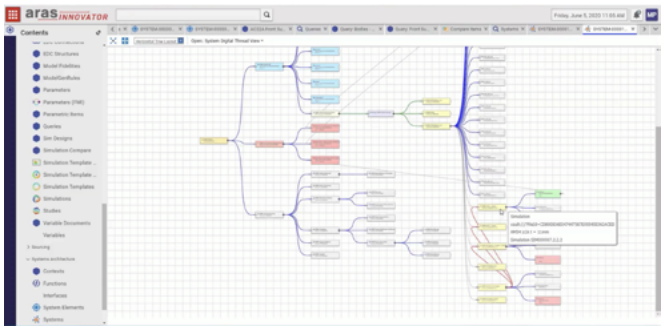


Systems Architecture:

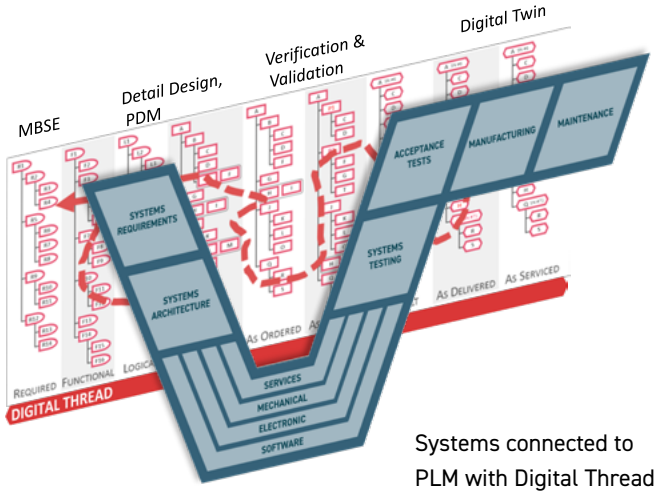
Systems Thinking applies to every lifecycle stage of a product, it also creates a foundation for the rest of the process during the initial conceptual phase of a design. This is the domain of systems engineers who use Systems Thinking and MBSE to understand the system-of-systems context to explore the optimum architecture of the system-of-interests. Systems architecture is expressed on a conceptual level, a high abstraction level, and is meant to be a connective tissue for all simulation studies, implementation domains, cross-team collaborations, interpretation of feedback data from the field, etc.

Benefits of the Aras Platform:

As companies shift their focus to Systems Thinking, they need a PLM platform that is resilient enough to keep evolving as the complexity of the systems evolve. The platform must be adaptable and extendable to represent ever-evolving company-specific needs. It simply can't be a legacy PLM/PDM system rooted in the management of mechanical structures. The Aras Platform is an enterprise low-code platform—open, flexible, scalable, upgradeable—that provides long-term benefits for the implementation of a Systems Thinking strategy for the lifecycle management of a system-of-interest and a system-of-systems.



Interactive view of Digital Thread through a graphical view



Systems connected to PLM with Digital Thread

Aras provides a resilient platform for digital industrial applications. Only Aras offers open, low code technology that enables the rapid delivery of flexible, upgradeable solutions for the engineering, manufacturing and maintenance of complex products. Aras' platform and product lifecycle management applications connect users in all disciplines and functions, to critical product data and processes, across the lifecycle and throughout the extended supply chain. Aras supports more than 350 global multinational customers and over 250,000 users. The Aras Innovator platform is freely downloadable. All applications are available at a single subscription rate, which includes all upgrades performed by Aras. Aras customers include Airbus, Audi, Denso, GE, GM, Honda, Kawasaki, Microsoft, and Nissan.