Smart Interface Manager for 3DExperience Platform

Digital Engineering to Manufacturing – The New Age PLM Process

For most product manufacturers, there exists a well-defined gated process for product development. With digital engineering this process and its governance will be completely digitized. For achieving the Digital Engineering vision a new age Product Lifecycle Management (PLM) strategy needs to be adopted which connects the people, data, application and processes efficiently. Digital tools are already playing a significant role in the complete lifecycle of any product, right from the product conception to retirement. However, the varying maturity of digital technologies adopted in each phase and lack of seamless interoperability between systems leads to significant inefficiencies in the process or rather significant opportunities to make a material improvement in the process. The interoperability of IT systems and engineering tools throughout the product's lifecycle is essential for a successful PLM approach. However, there are technological and architecture challenges that prevent the ideal integration. Especially, the lack of interoperability between complementing systems like PLM, MES and ERP. With multiple systems performing tasks and exchanging data, each has a unique system interface adding to the complexity. Typical solutions which allow one to one integration between engineering systems may result in a difficult to manage landscape of integrated systems, which cannot provide the benefits of digitization.

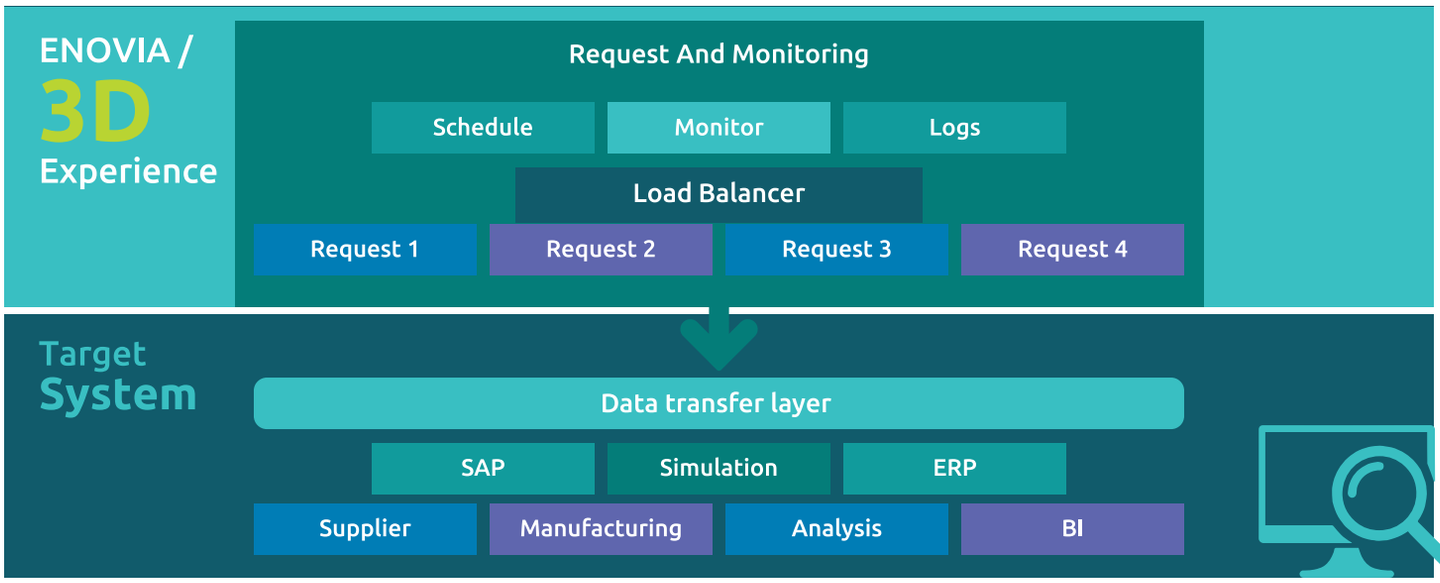
Enterprise Integration for the 3DExperience Platform

As part of its toolset for a larger Enterprise Integration strategy, Capgemini has developed a solution Smart Interface Manager particularly for the 3DExperience Platform. The Smart Integration Manager is a single framework that enables configuration of multiple business interfaces with minimal efforts and provides a unique and configurable solution to the otherwise complex process. A highly scalable solution, it facilitates real time and accurate exchanges between the Product Design and Product Manufacturing applications leading to faster realization of the digital engineering vision and concepts like factory of the future.

Challenges with typical integration architectures	Benefits Achieved with Capgemini's Smart Interface Manager
• Multiple servers to monitor • Complex checks for interface status • Inefficient load balancing mechanism • Limited access for the functional teams to manage key activities • Logs scattered all over the place • Restricted access to the support team and failure analysis • No re-usable component • Lot of re-development due to inadequate algorithms • Lack of scalability with increasing data and exchange requirements	• Single User Interface to monitor all application interfaces • Easy access to the execution logs – recent as well as past • Easy access to the support team to analyze failure • Scheduling control for functional user • Option for functional user to customize extraction data model • Efficient Load Balancing • Generic extraction and specific transformation algorithms • Re-usable components such as log management, reduce development effort by 15% - 25%

It is the cohesion of various best-of-breed applications in the engineering and manufacturing IT landscape that ensure operational efficiencies within processes. As we move towards embracing digital transformations Capgemini's solutions make sure that these multiple business specific applications and legacy systems operate interoperably with each other. In global engineering and manufacturing data exchange performance slows down over the time. The Smart Interface Manager stabilizes performance in a complex environment of integrated applications with PLM and removes roadblocks with connected with heavily customized applications.

PLM Data Exchange with Capgemini's Smart Interface Manager



A highly configurable Request and Monitor layer, high performance Data Processing and Queuing layer for complex data extraction requirements make the Smart Interface Manager very easy to implement and maintain with increasing scale.

Request And Monitor Configuration

Configure	Select Target	Select Frequency	Monitor
• Customizable Datamodel • Select pre-defined extraction algorithm • Clone exiting request • Full/Partial Extraction option	• Pre-defined Targets configured • Pre-determined mode of transfer • Pre-determined transformation algorithm. • Functional Perspective to the functional user	• Immediate • Daily • Once a Week • Once a Month	• View the current execution status • View the completion logs • Email notification to the requester and support team on occasion of failure.

Target Configuration

Target System Server	Mode Of Transfer	Transformation Algorithm	Data Model Mapping
• URL/Shared Location • Username • Password • Call Details	• FTP • SOAP • REST • Database/SQL Loader	• XSLT • JSON Template • SQL Loader Configuration	• Data to Table Column • Data to JSON Layout • XSD • JSON Template

Capgemini Advantages:

- Expertise in PLM practices and processes of multiple industries
- PLM product and technology expertise in global locations
- Over 1500 professionals in the PLM ecosystem
- Reusable solutions for PLM success
- Development of industry solutions in collaboration with Dassault Systemes

About Capgemini's Product and Engineering Services (P&ES)

Capgemini's Product and Engineering Services (P&ES) brings together deep domain and technology expertise for both the digital and the physical world of products. Consulting, technology and assets led solutions enable global companies to unlock the true potential of their product portfolios.
A recognized leader, with over 10,000 engineers across the globe and 30+ years of experience, P&ES offers a highly differentiated, comprehensive portfolio of services and solutions to meet the needs of digital engineering in a connected world.

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