





# Shift-Left The Value of Virtual Prototyping in Engineering Digital Transformation of Product Development Lifecycle

CIMData PLM Road Map & PDT North America 2024 | Washington D.C. | 8-9 May

PLM Road Map™ & PDT North America 2024  
 Value Drivers for Digitalization of the Product Lifecycle  
 Insights for the PLM Professional—Why the investment, what are the returns,  
 and how are they achieved?  
 May 8 & 9

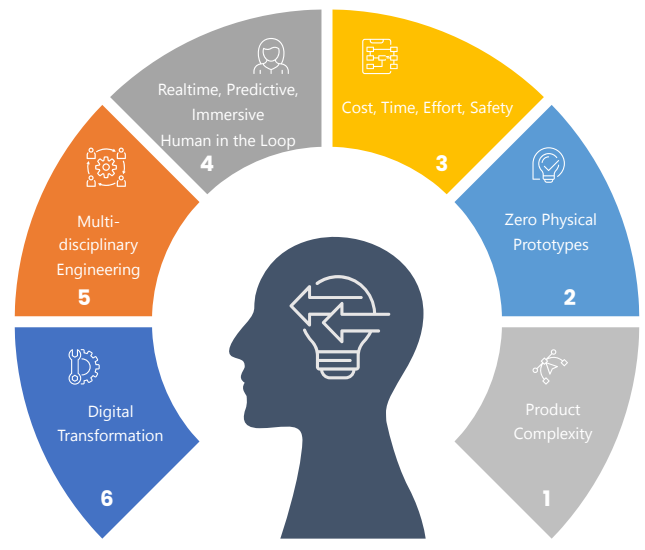



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Innovation Without Compromise


## Industry Challenge – Engineering Complex Products

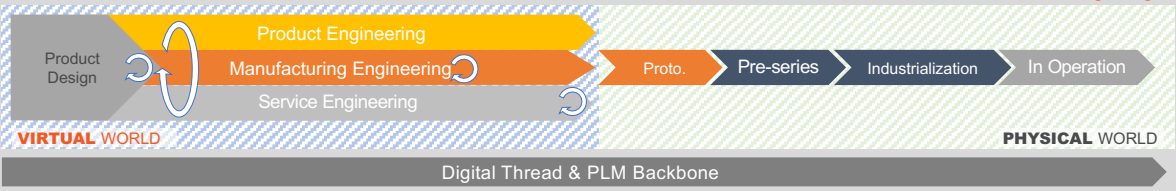


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## Better Collaboration Across Engineering Functions

**Concurrent engineering** for decreased lead time and cost  get it right




**VIRTUAL WORLD** **PHYSICAL WORLD**

Digital Thread & PLM Backbone



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## Our Purpose

### Innovation Without Compromise.

Through sustainable product innovation, efficient manufacturing processes and simulation-proven physical testing, we help our clients create products that are clean throughout their lifetime with a smaller environmental footprint to create a clean, safe, and productive industry by leveraging intelligent digital simulation technology.

- **CLEAN:** Sustainable product innovation, efficient manufacturing processes, and simulation-proven physical testing, to help create products that are clean throughout their lifetime with a smaller environmental footprint
- **SAFE:** Relentless drive to put **human safety first**; trusted to create a safer world with work critical to some of the biggest brands on the planet, ensuring drivers, passengers, pedestrians, and workers' daily lives are ever safer
- **PRODUCTIVE:** Technology and expertise focused on helping companies **work smarter and reduce costs, improving quality, productivity**, accelerating time to market, and improving lifetime product and industrial performance



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## Helping Our Customers Achieve Their Business Objectives

**CUSTOMERS OBJECTIVES**



ACCELERATE TIME TO MARKET



LOWER OPERATIONAL COSTS




REDUCE RISK & IMPROVE QUALITY – LESS RECALLS



REDUCE ENVIRONMENTAL FOOTPRINT

**ESI VALUE PROPOSITION**

1. Solving the most complex simulation problems at scale
2. Deep knowledge of customers objectives: integration with their digital thread and democratization
3. Best in class global talent





## Long-term perspectives anchored on three pillars


Like never before Industry is adopting digital practices, moving large part of processes and decisions to virtual. ESI envisions a world with inspiring improvements in clean, safe and productive industry.

To get there, everything should be simulated, exploring alternatives sooner and involving a diverse cast of stakeholders in all decisions.


To go beyond virtual testing, ESI Group software solutions anchored on three pillars.



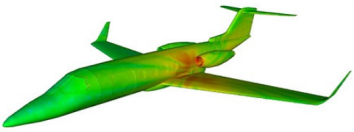
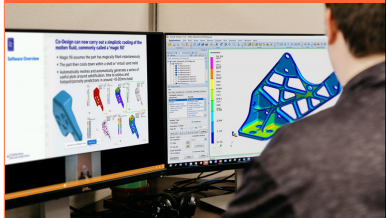

**Predictive**



**Real-time**



**Immersive**

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Innovation Without Compromise.

### A Long-Standing Player.

**2021 to 2023**

- Major three-year strategic evolution
- Acquisition by Keysight Technologies



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**2001 to 2020**

- Successive acquisition of niche software products
- Strengthening our global presence



Public

**1991 to 2000**

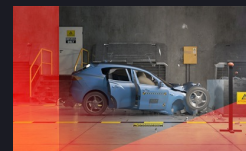
- Supplementing engineering services with simulation software
- Launched Initial Public Offering (IPO)



Public

**1973 to 1985**

- 12 years after foundation, successfully conducted first ever crash simulation together with Volkswagen



7



### Focusing In Three Main Industries

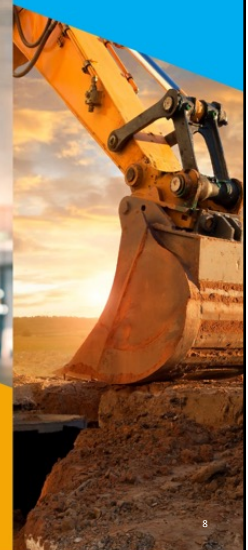
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Aerospace & Defense



Public

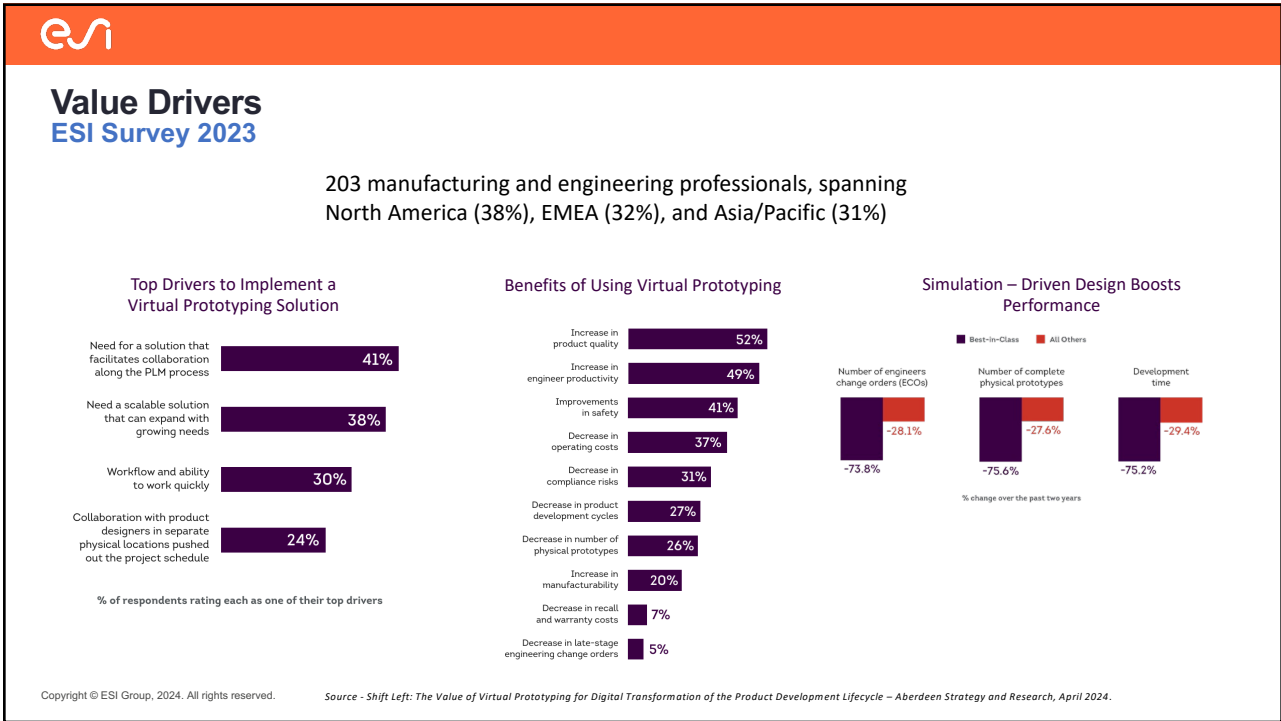
Heavy Industry



8

Automotive





**ESI's Virtual Testing Software Portfolio**

The power of our proven **simulation software** for validating...

PRODUCT PERFORMANCE	SMART MANUFACTURING PROCESSES	HUMAN WORKFLOWS
<ul style="list-style-type: none"> <li>VPS Crash, Safety, Strength and Dynamics Simulation Software</li> <li>VA ONE Acoustic Performance Simulation Software</li> <li>SimulationX System Simulation Software</li> </ul>	<ul style="list-style-type: none"> <li>PAM-STAMP Stamping Simulation Software</li> <li>SYSWELD Weld &amp; Assembly Simulation Software</li> <li>ProCAST Casting Simulation Software</li> <li>PAM-COMPOSITES Composites Simulation Software</li> </ul>	<ul style="list-style-type: none"> <li>IC.IDO Advanced Virtual Reality Software</li> </ul>

...enable customers to effectively perform **key engineering tasks**...

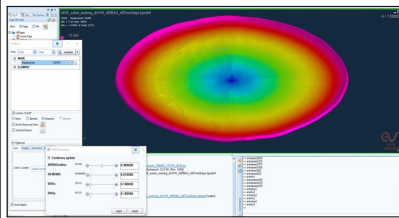
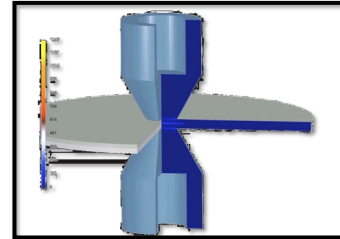
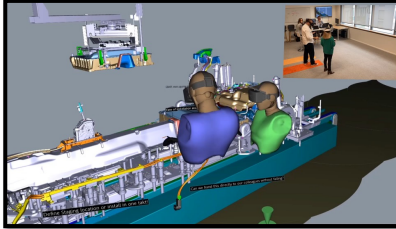
CRASH, SAFETY, STRENGTH, DYNAMICS	MANUFACTURING ENGINEERING	HUMAN-CENTRIC PROCESS & PRODUCT VALIDATION
<ul style="list-style-type: none"> <li>Full vehicle crash &amp; safety simulation</li> <li>Dynamics, strength, system performance simulation</li> </ul>	<ul style="list-style-type: none"> <li>(Body) casting process validation</li> <li>Stamping Process validation</li> <li>Local joining quality &amp; weld rupture validation</li> <li>Assembly distortion engineering</li> <li>Composites manufacturing validation</li> </ul>	<ul style="list-style-type: none"> <li>Immersive experience of product and process validation                             <ul style="list-style-type: none"> <li>Product integration</li> <li>Assembly line</li> <li>Maintenance process</li> </ul> </li> </ul>

...and facilitate end-to-end digital workflows when being combined into **virtual prototyping solutions** for key industries.

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## Examples



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