

Digitalization Changes Everything, Everywhere

Jim Rusk, Senior Vice President and CTO
Siemens PLM Software



**DIGITALIZATION
CHANGES EVERYTHING.
EVERYWHERE.**

Automotive transformation

77% of auto OEM's on their way to being pure mobility providers

Source: KPMG Global Automotive Executive Survey 2016

Audi introduces digital showroom 'powerwalls'

Audi City

Big data analytics

50% of the world's data, in the history of mankind, was created in less than the last year

Source: World Economic Forum 2016

Outcome economy

Sensors and connected peripherals outpace Smartphones and PCs for active wireless connections for the first time in history

Source: ABI Research, July 13, 2016

Connected World

8 billion devices connected to the Internet today; by 2030 it is forecast that there will be 1 trillion

Source: World Economic Forum 2016

Digitalization Changes Everything, Everywhere

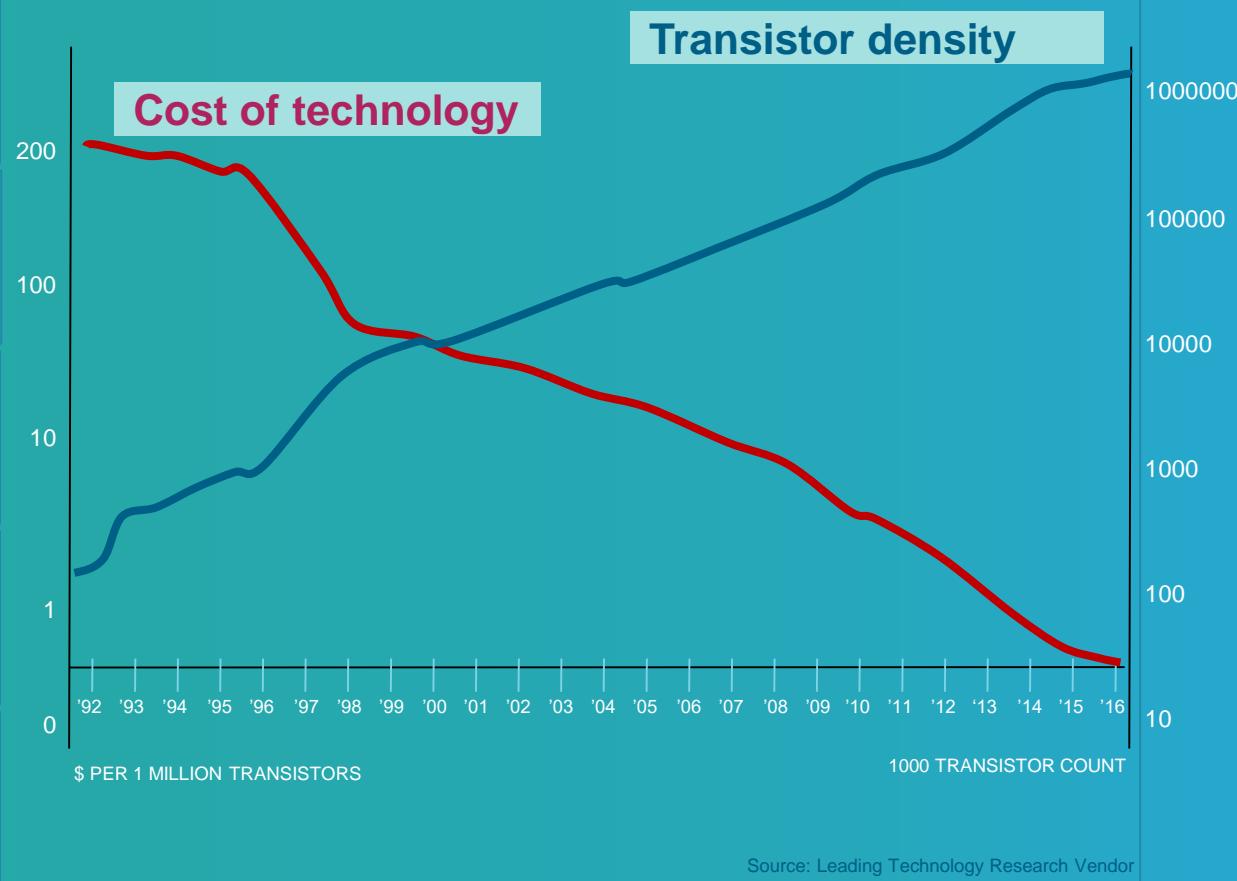
The pace of technological advances is fueling digital transformation

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The cost of key technologies is falling

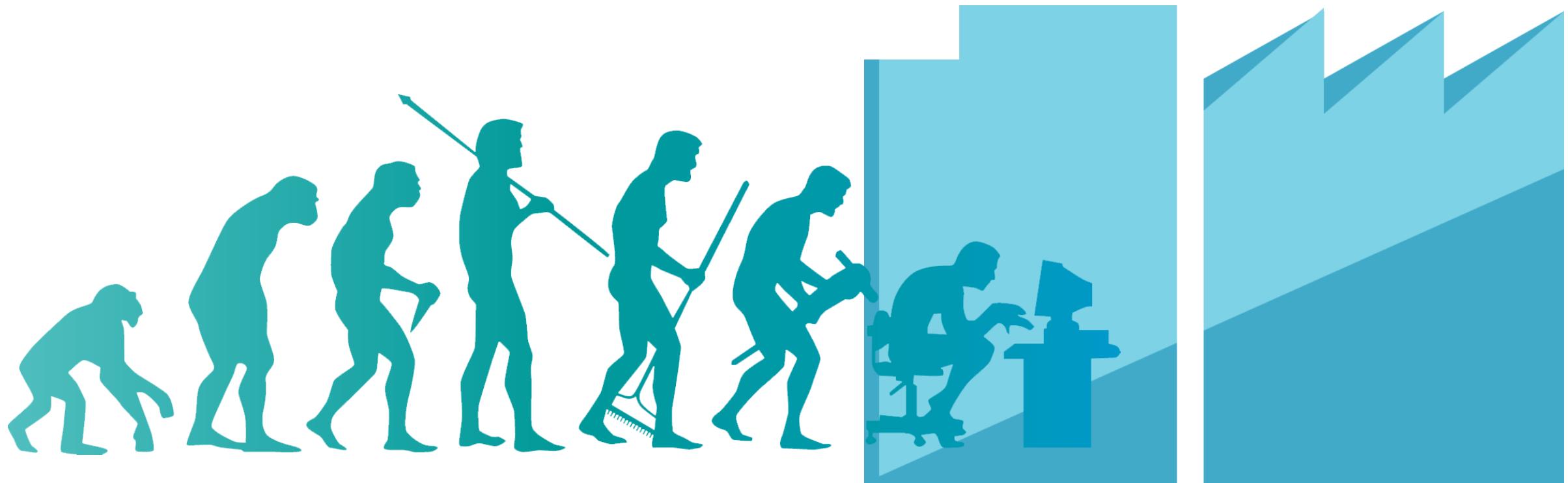
		COST PER UNIT
 DRONES	2007	\$100,000
	2013	\$700
 3D PRINTING	2007	\$40,000
	2014	\$100
 INDUSTRIAL ROBOTS	2007	\$550,000
	2014	\$20,000
 SENSORS	2007	\$30,000
	2014	\$80
 SMART PHONES	2007	\$449
	2015	\$10

Implications of Moore's Law



Source: Accenture Technology Vision 2015

40% of today's Fortune 500 could vanish within a decade



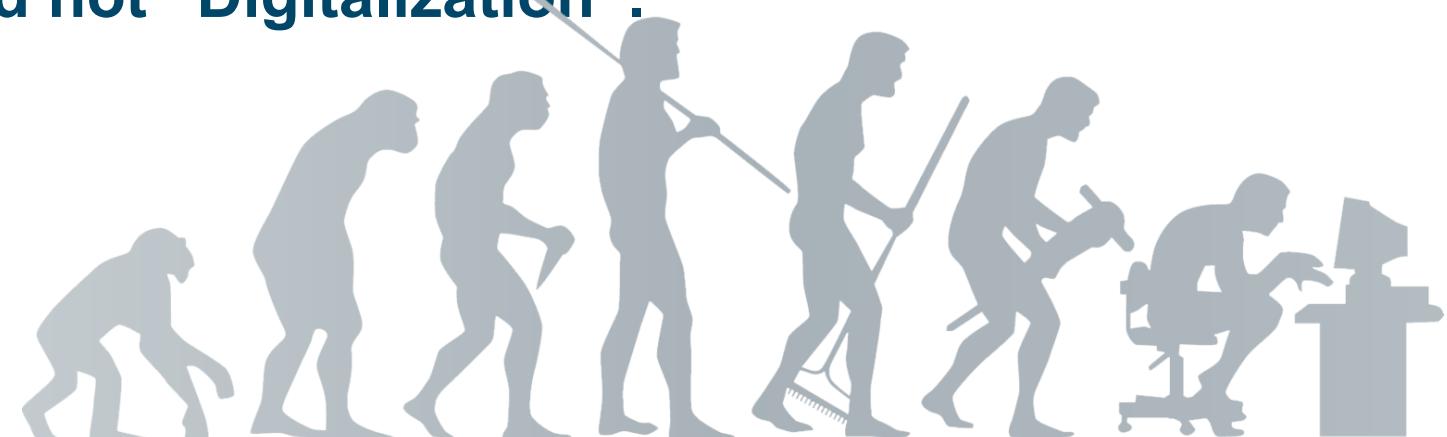
“More than 50% of companies that attempt to move to a digital model fail.”



Source: John Chambers, McKinsey & Company Report
March 2016

Why Will These Companies Fail?

- Digital is not central to their corporate strategy.
- Companies invest in the latest “silo’d” digital technologies and fail to work horizontally.
- They perceive digital as a back office strategy aimed purely at operational efficiency.
- They think “Digitization” and not “Digitalization”.



Achieving Digitalization/Business Transformation



“To survive disruption and thrive in the digital era, incumbents need to become digital enterprises, rethinking every element of their business.”

Source: 2016 World Economic Forum

How Do You Embrace Transformational Change?

Monetize Innovation

GM/Lyft: Grow beyond organic



Capitalize on Disruption

Haier: Mass customization

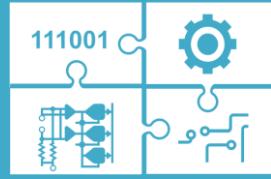


Technological Forces Transforming Industry

Changing
the way
products
come to life



GENERATIVE
DESIGN



INTELLIGENT
MODELS

Changing
the way
products
are realized



MACHINE
LEARNING



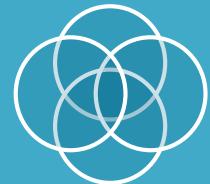
ADDITIVE
MANUFACTURING



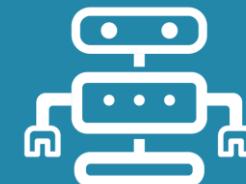
CLOUD
TECHNOLOGY



KNOWLEDGE
AUTOMATION



SYSTEMS OF
SYSTEMS



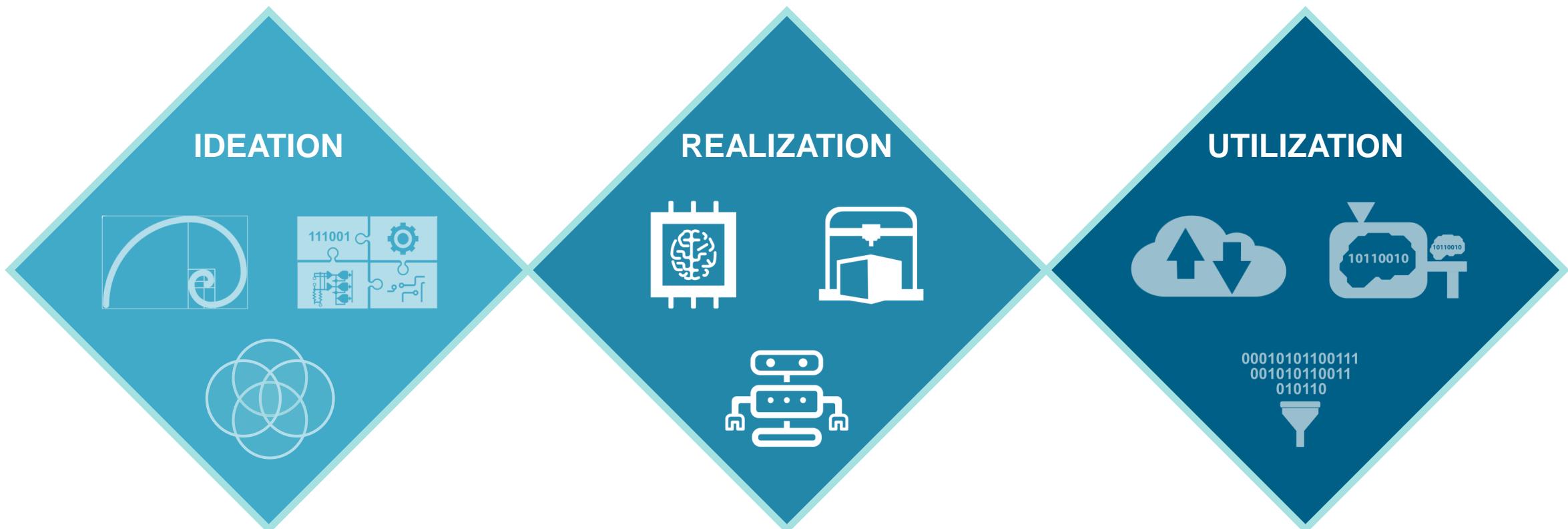
ADVANCED
ROBOTICS

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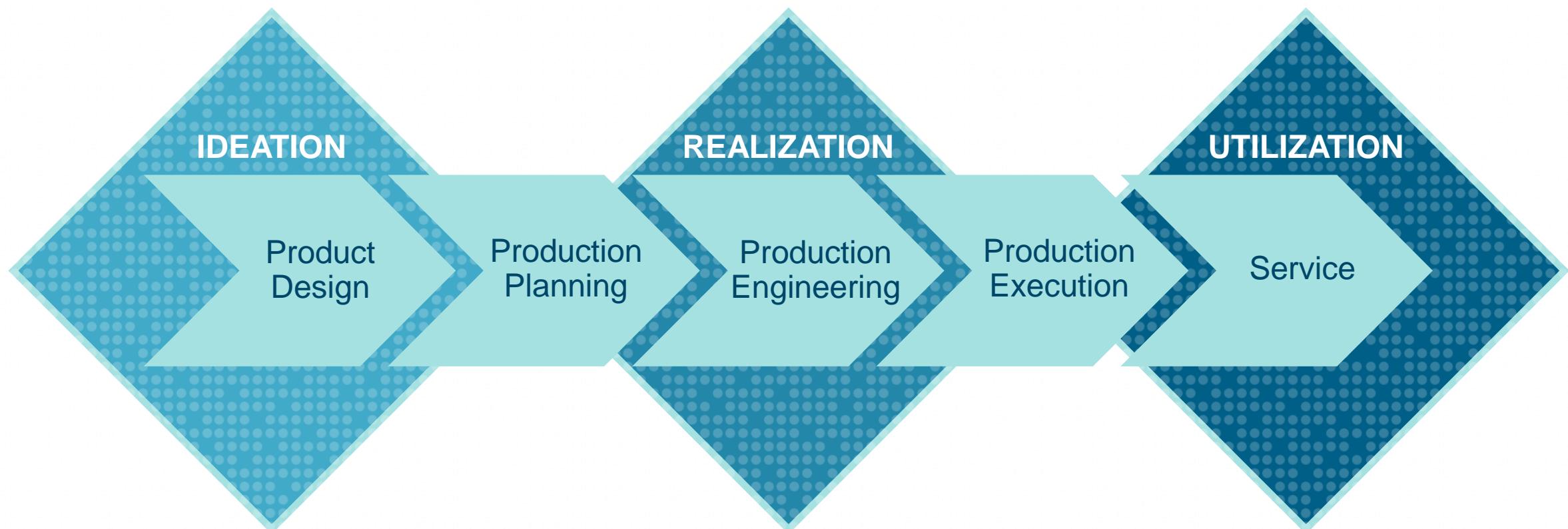


BIG DATA
ANALYTICS

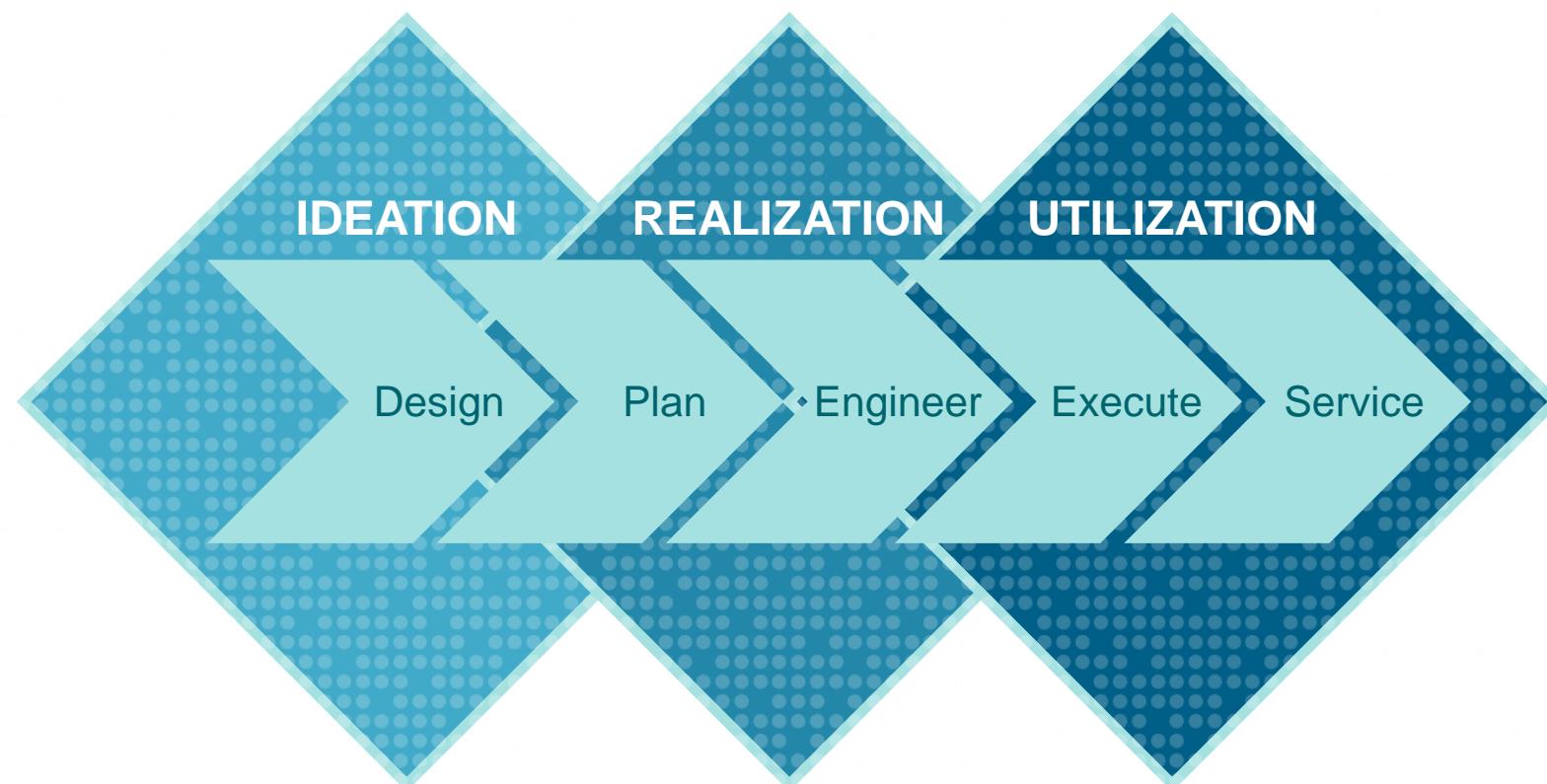
How do you leverage these forces in your innovation process?



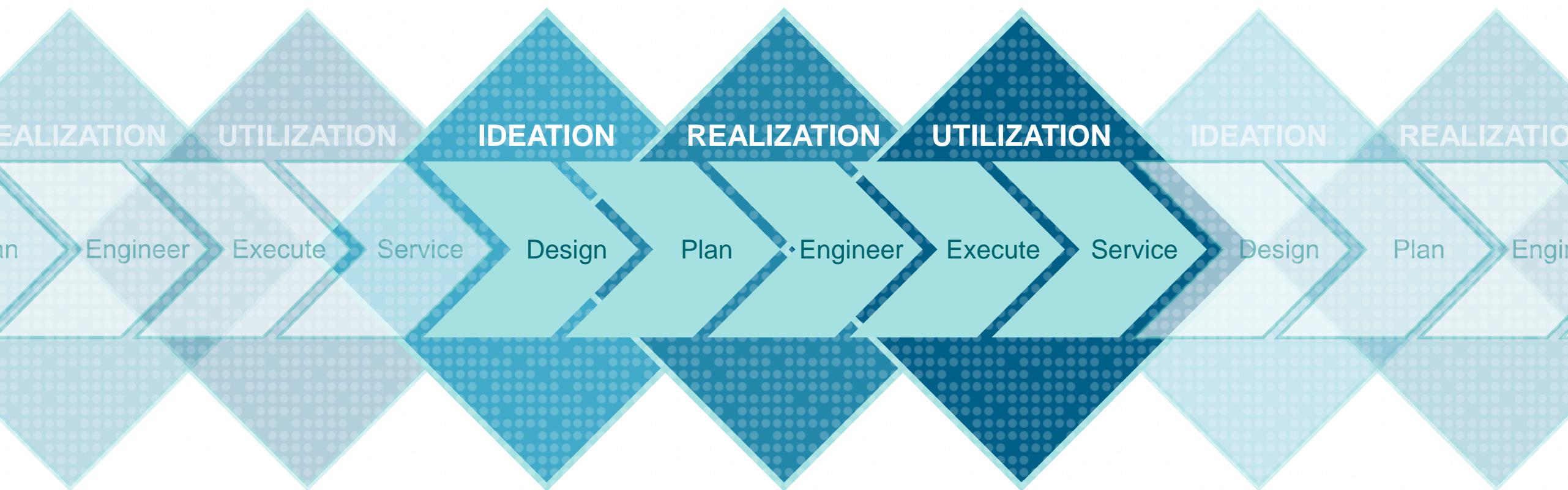
Only Siemens has solutions across the entire value chain



Digitalization collapses the innovation lifecycle...



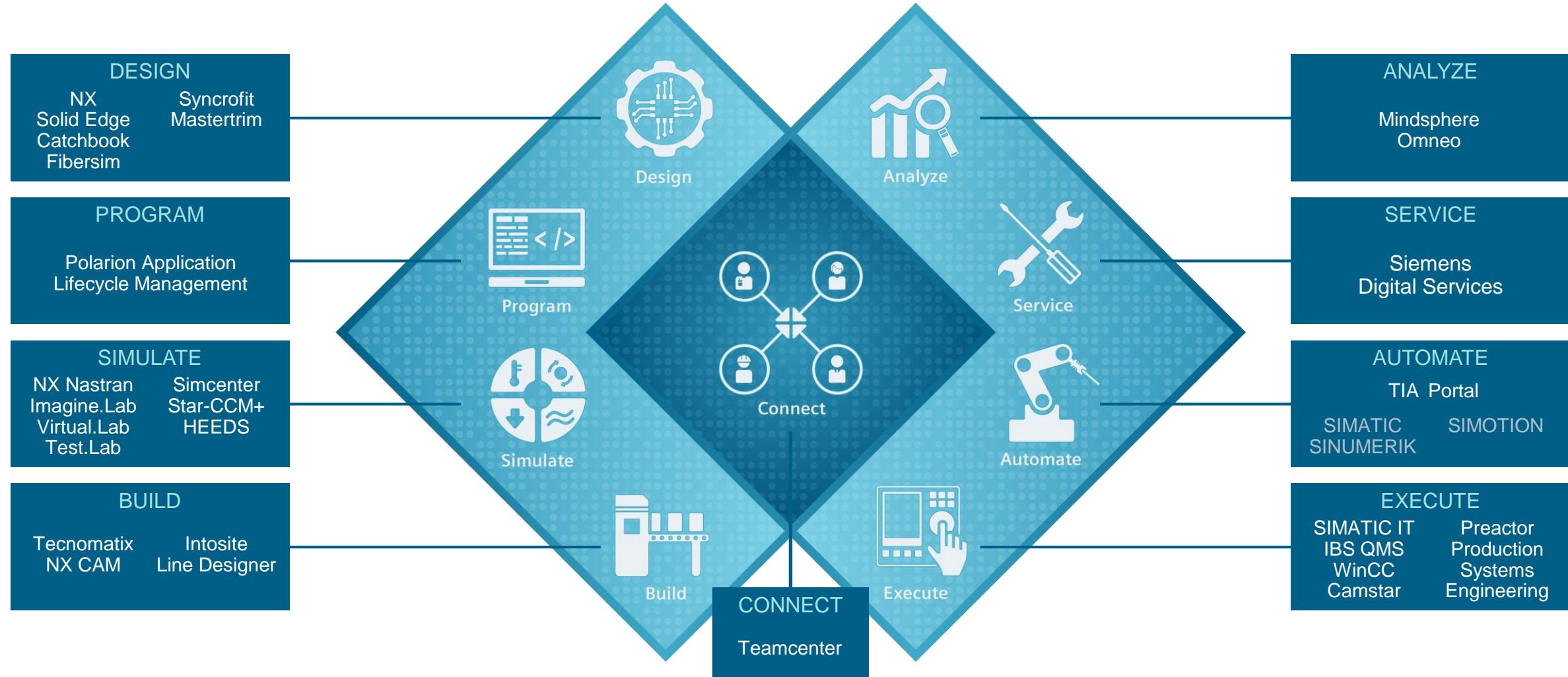
...and enables continuous business transformation



Digital Twins at Every Step are Connected Through a Digital Thread



Digital Enterprise Software Suite Domains



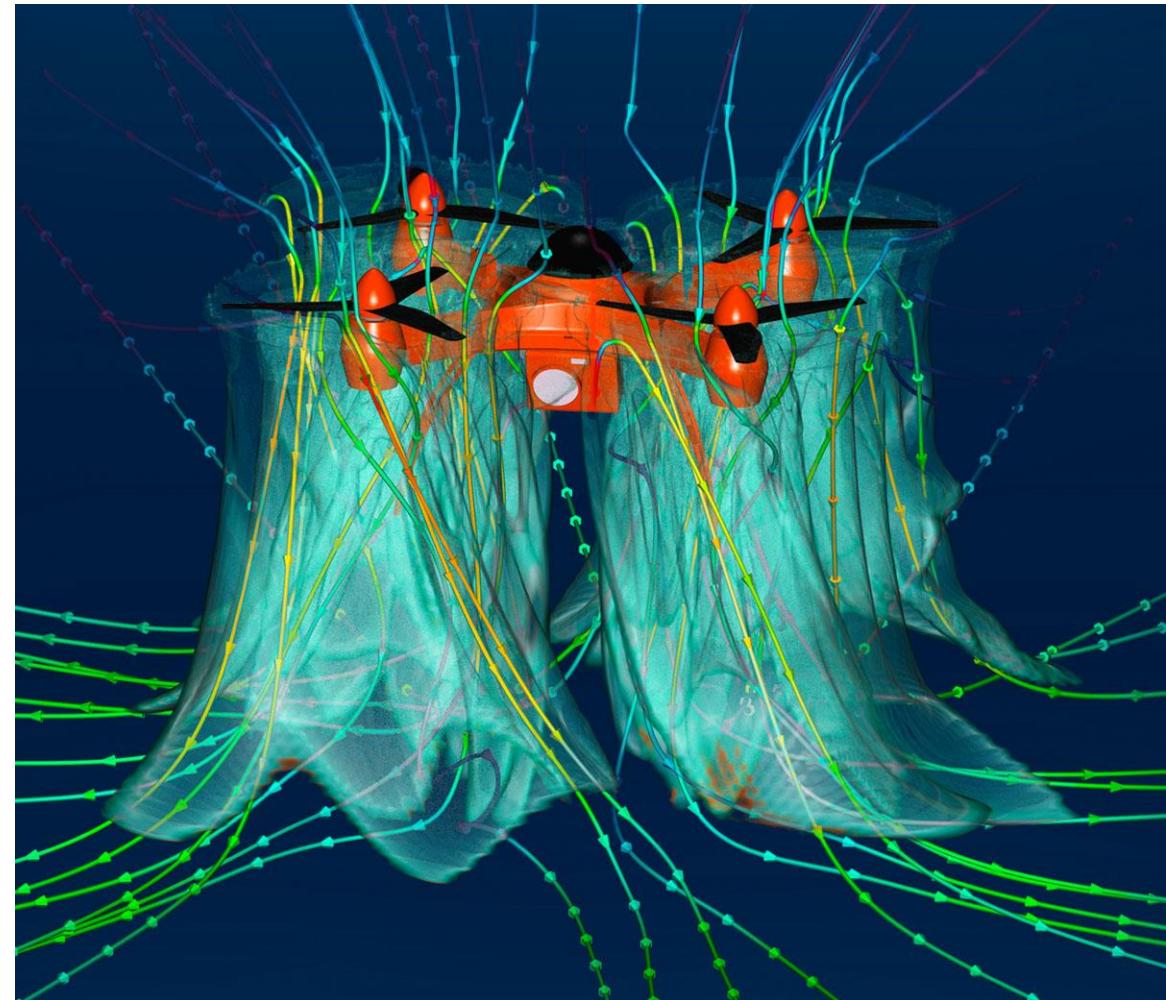
**Accurately represent what is real
and simulate what is possible**

HIGHLIGHTS

ALM-PLM

Simcenter

Convergent Modeling



BUSINESS PROBLEM

Standard PLM
systems aren't
optimized for
managing software
development.

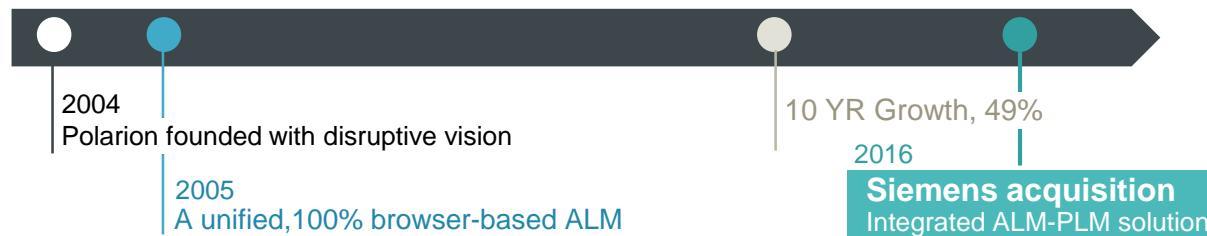
SOLUTION

Application Lifecycle Management



Integrated ALM-PLM with Polarion

POLARION'S TIMELINE



Focus on unlocking synergies

Full traceability, real-time collaboration, intuitive UI

200+

Extensions

250+

Fortune 1000 Deployments

2.5+M

Users

15K

Registered Community Members



Innomedic| Application Lifecycle Management

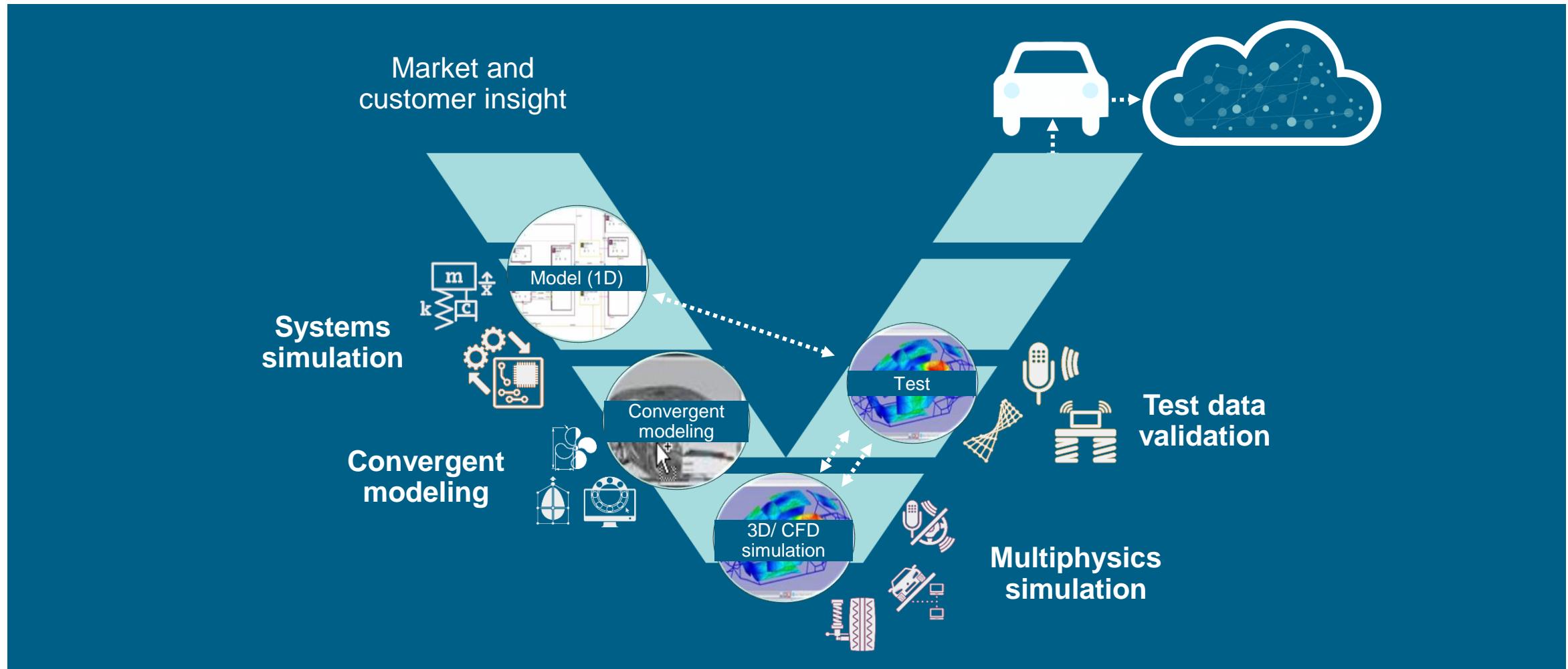


Innomedic reduces audit issues using Polarion ALM to manage software requirements, workflows and traceability.

Transforming the way ideas come to life

The performance digital twin

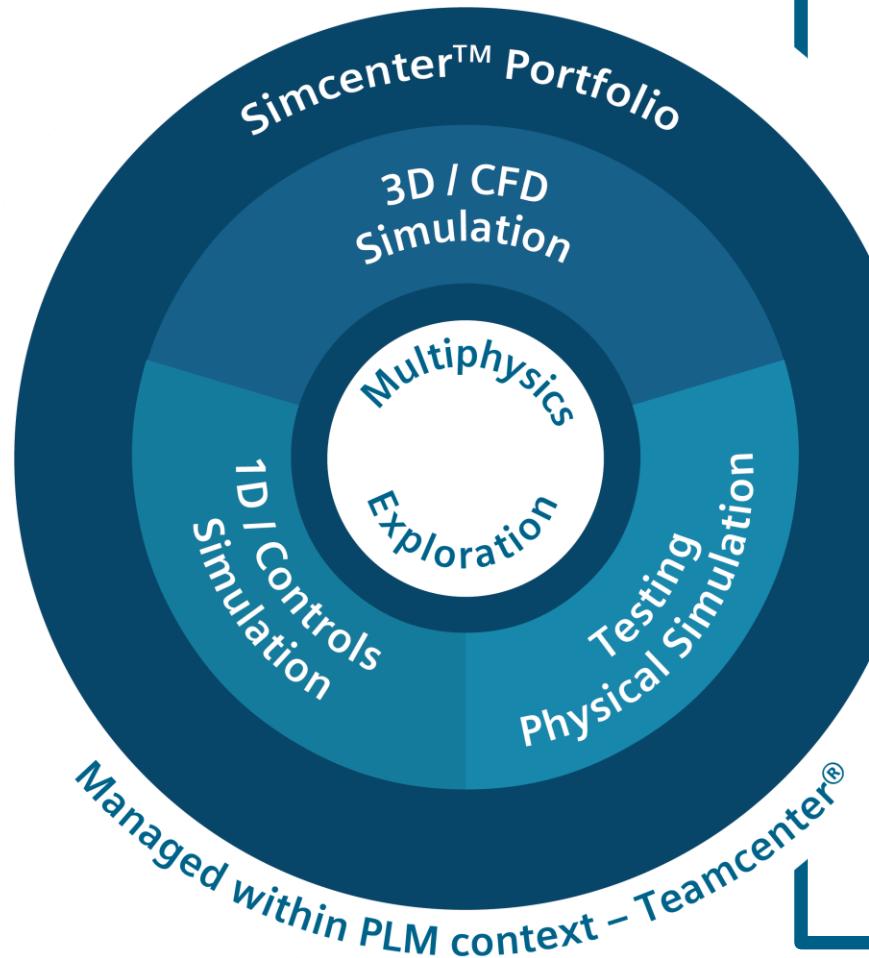
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Predictive Engineering Analytics

Introducing Simcenter

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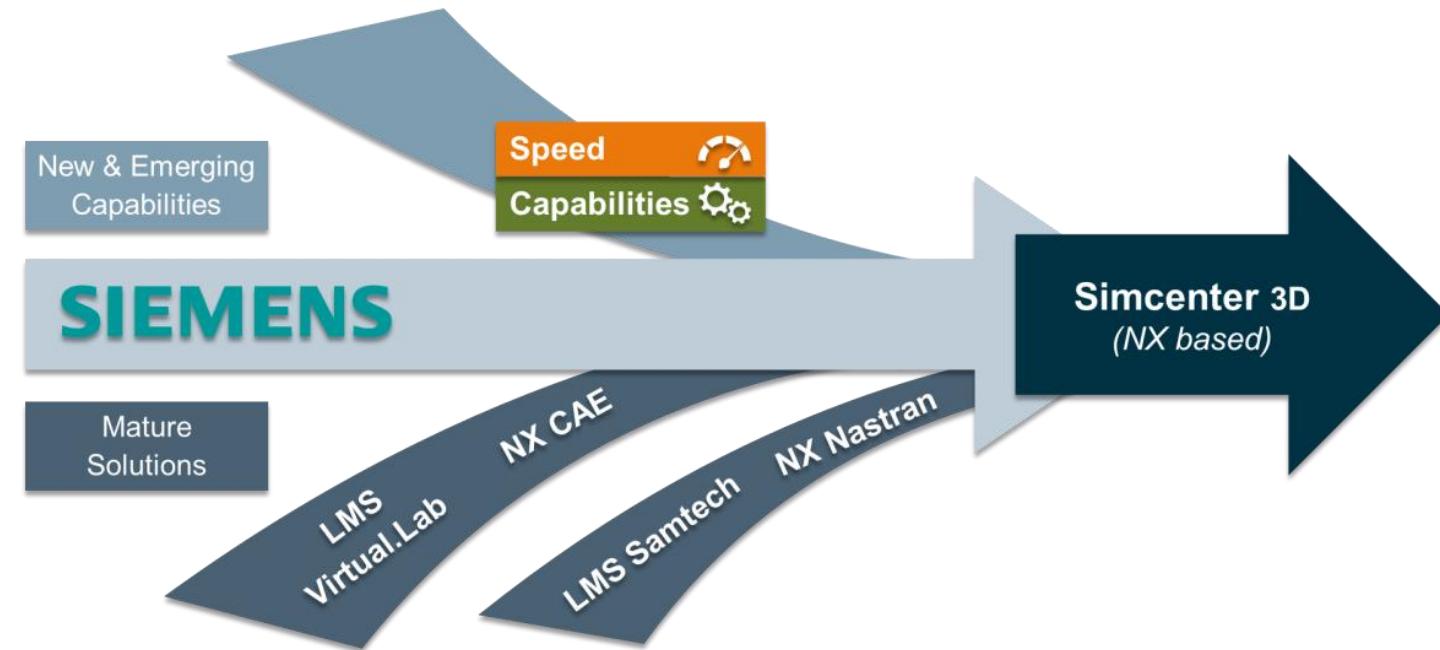
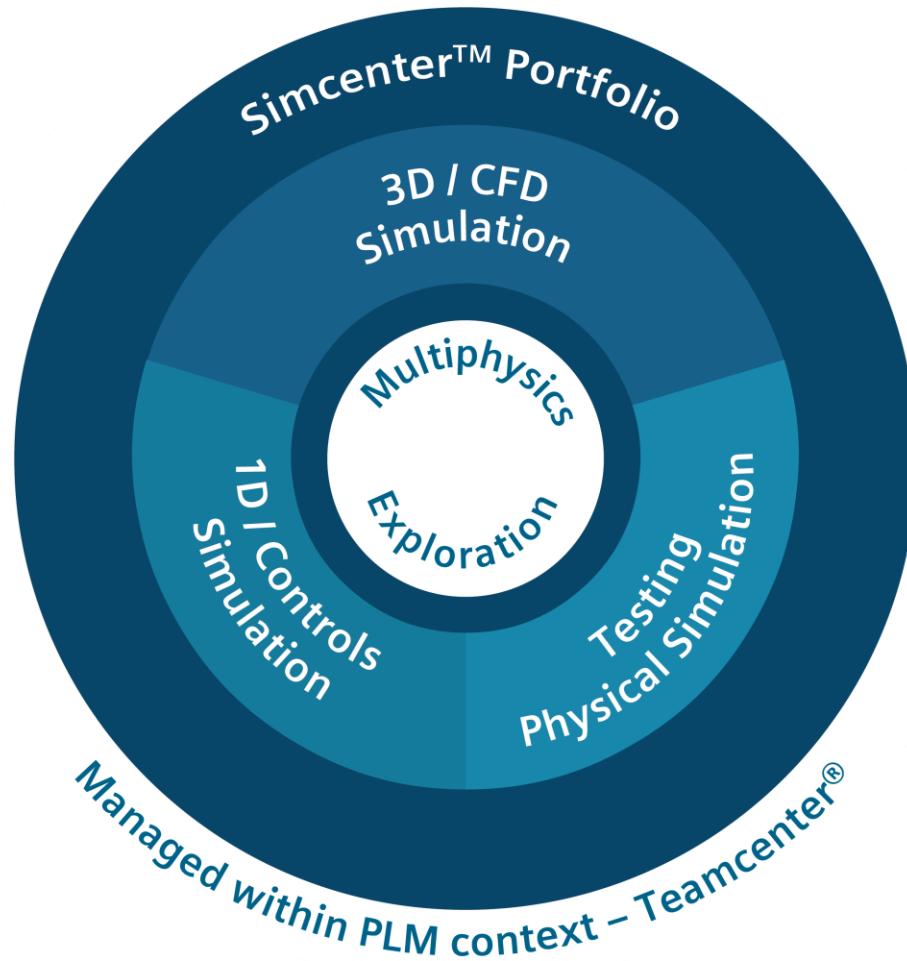


Simcenter™

Predictive Engineering Analytics

Aligning our portfolio

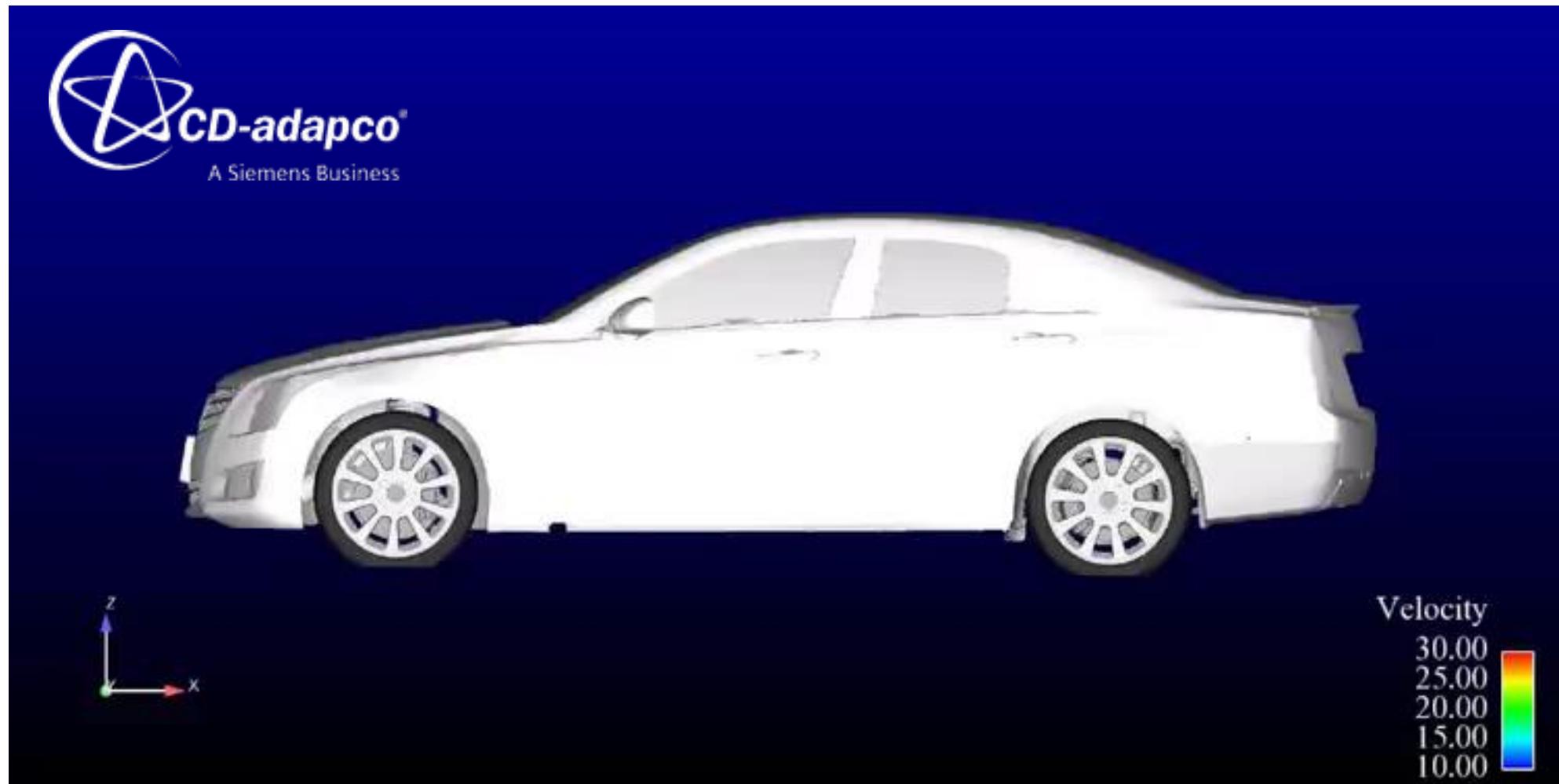
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Predictive Engineering Analytics

Simulate all the physics

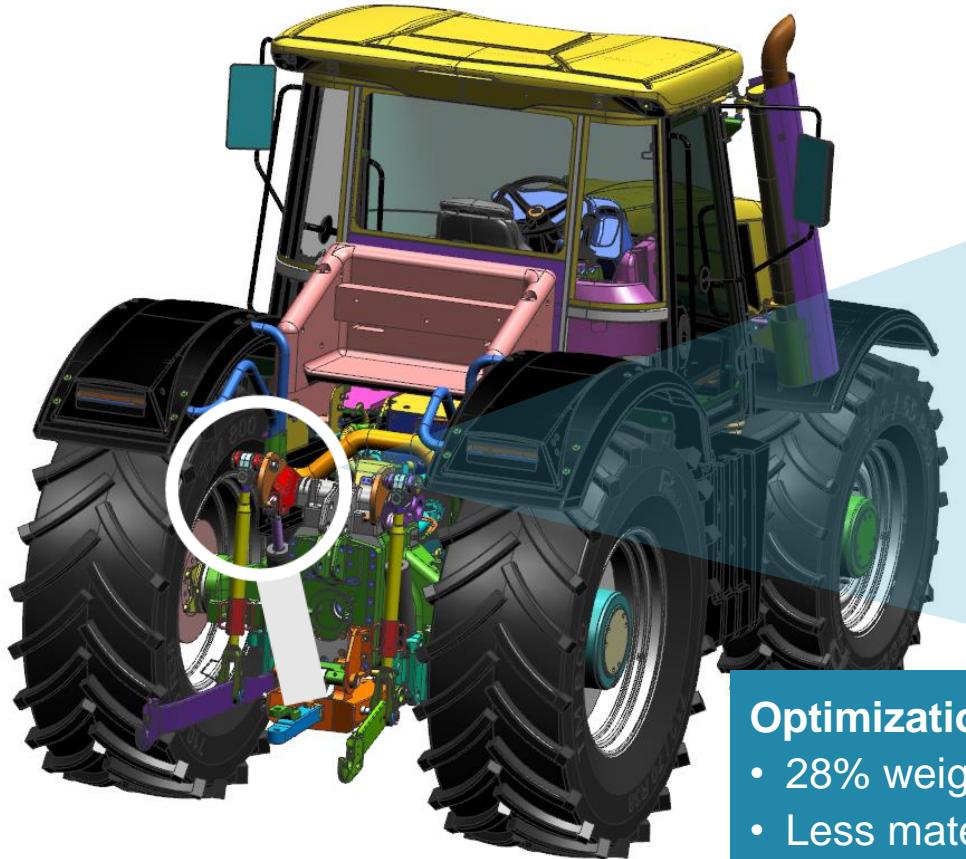
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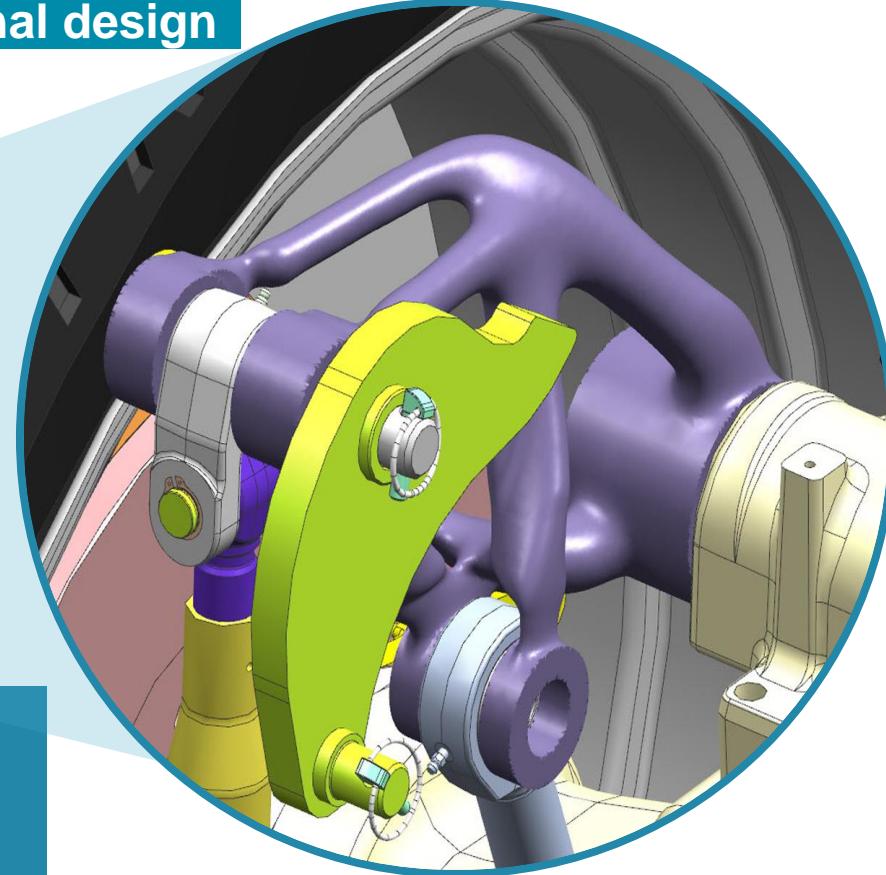
Transforming Product Development

Optimized design for a new generation of products

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Conventional design



Optimization benefits:

- 28% weight reduction
- Less material
- Equal strength
- Fewer manufacturing setups

Optimized design

REALIZATION:

Transforming the Way Products Come to Life

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Making the virtual real

HIGHLIGHTS

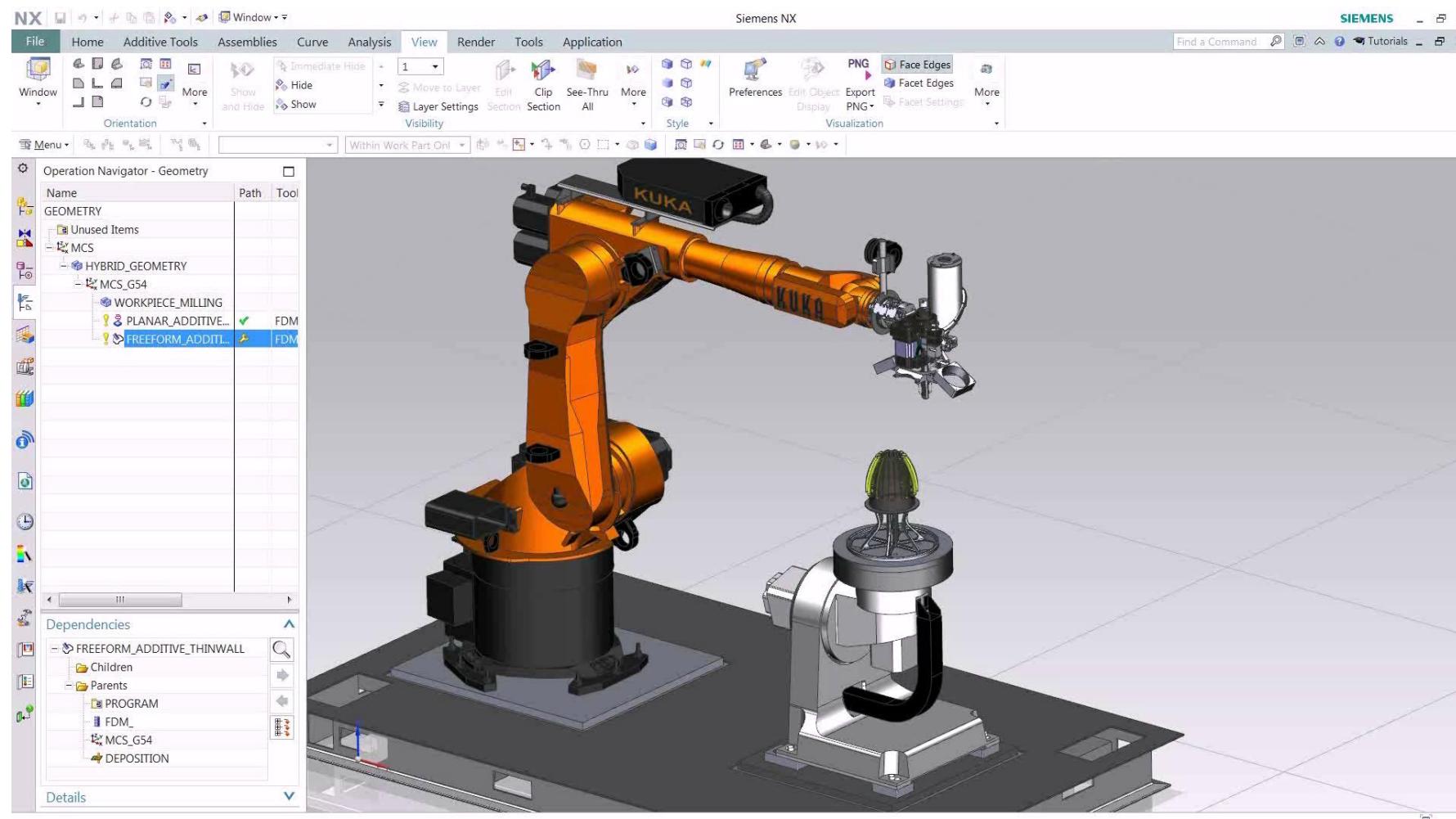
Additive Manufacturing and Advanced Robotics

Smart Manufacturing

Digital Machine Shop

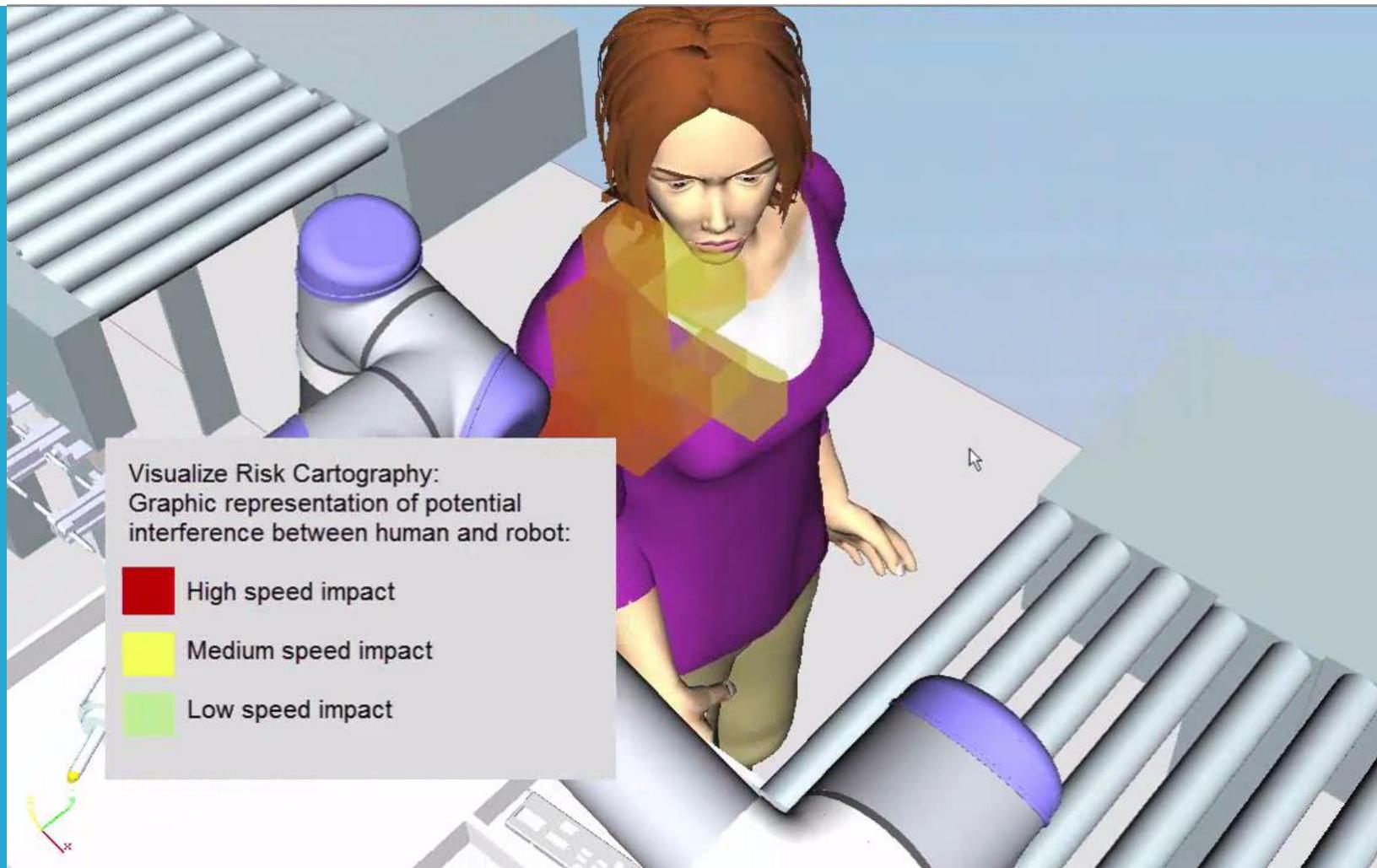


Merging of Advanced Robotics and Additive Manufacturing



Collaborative Robots (Co-bots)

Changing the way our factories work with robots and people safely cooperating



Improve performance with visibility
and insight for action

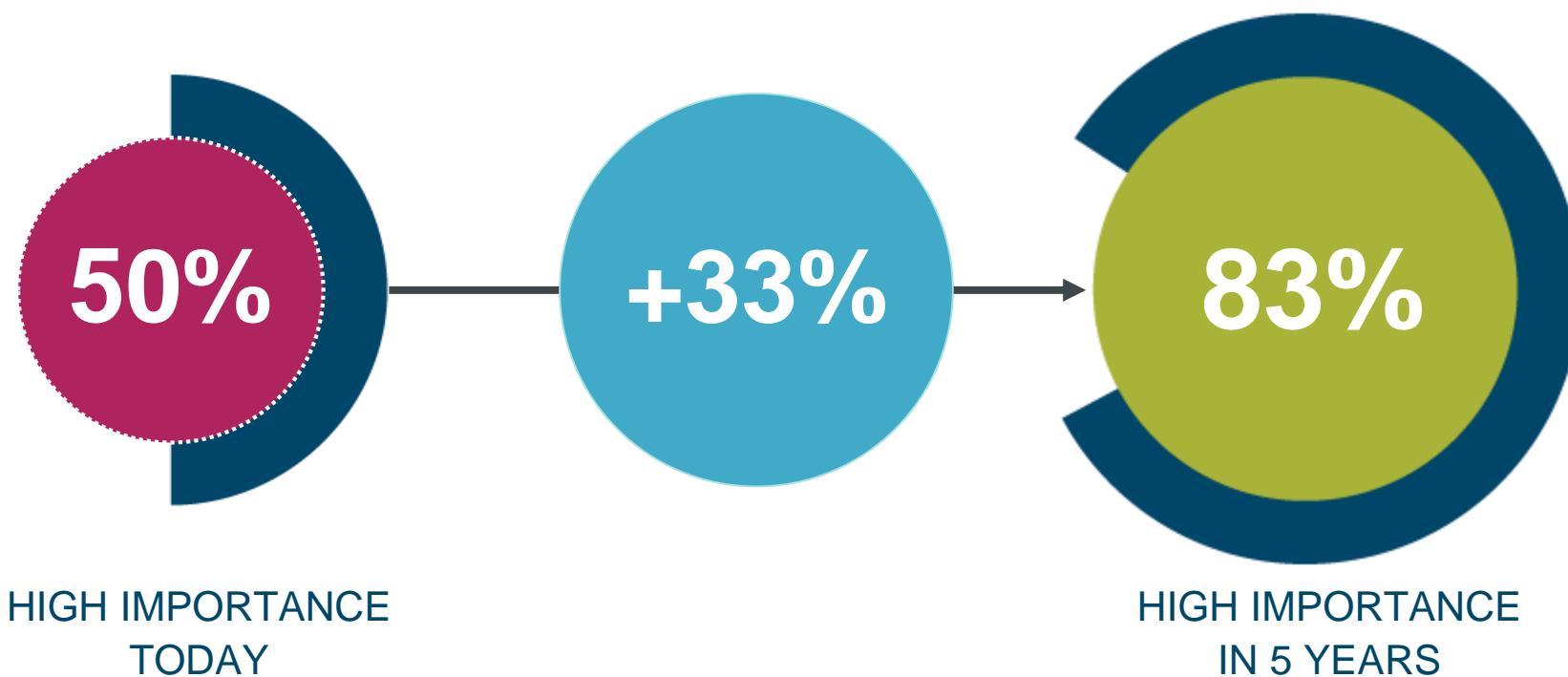
HIGHLIGHTS

Mindsphere cloud platform for
Industry

Omneo product
performance intelligence

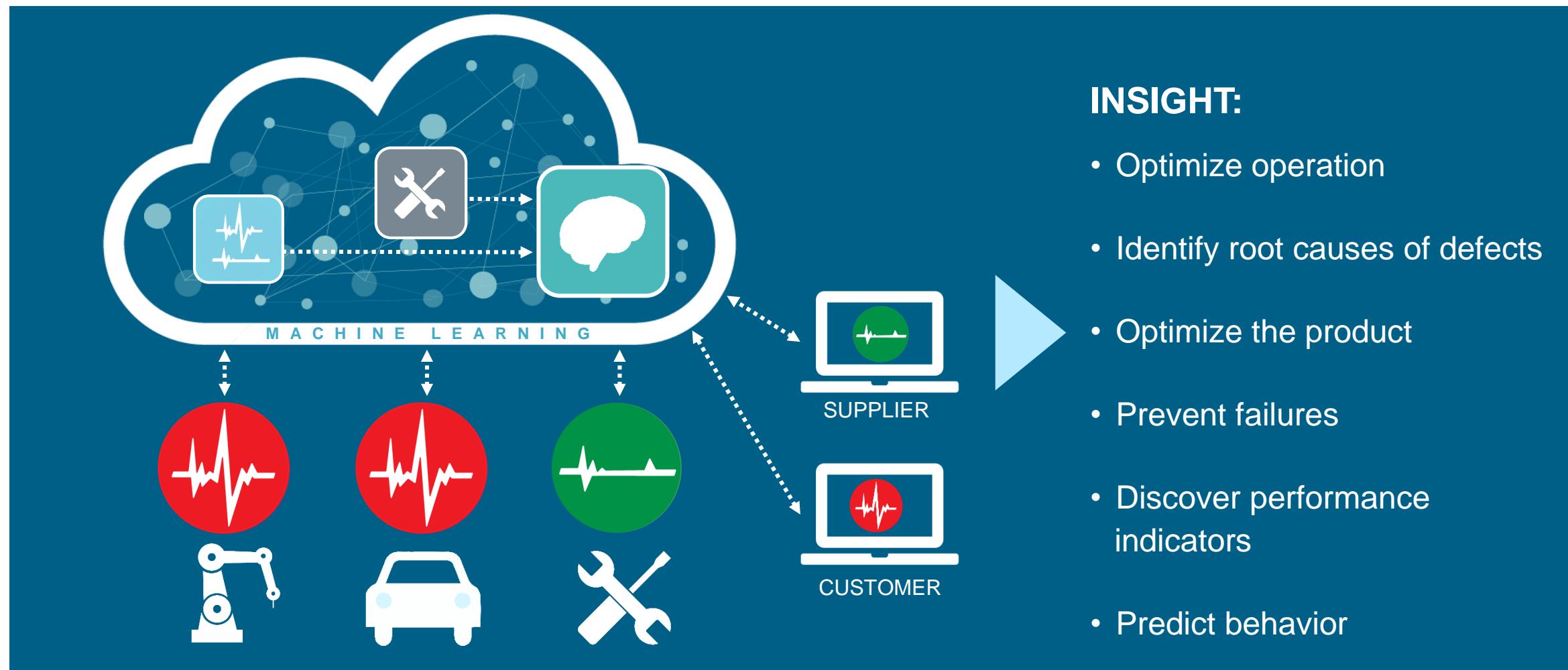


Data and analytics are becoming increasingly important to decision-making



PWC's 2016 Global Industry 4.0 survey of industrial companies

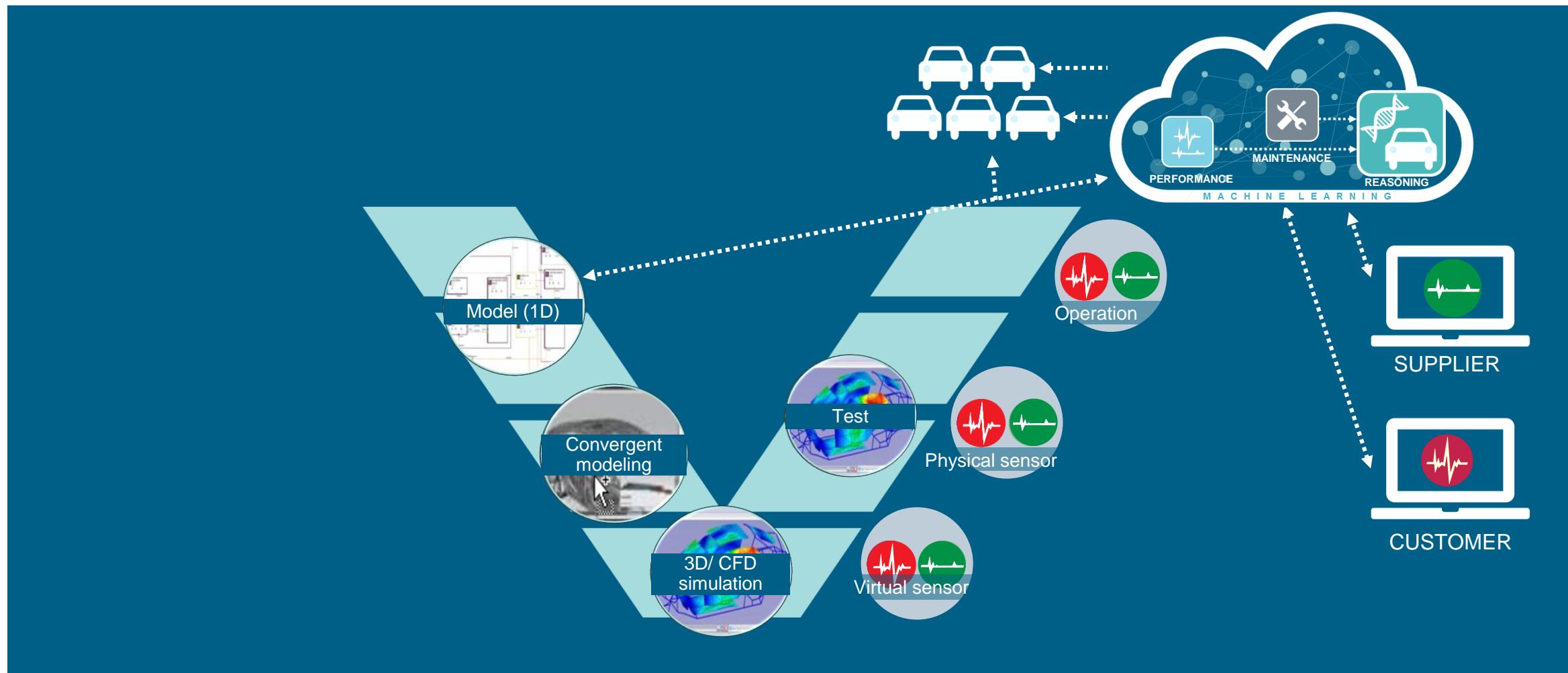
Understanding the language of products



Transforming the way ideas come to life

The digital twin is the foundation for reasoning

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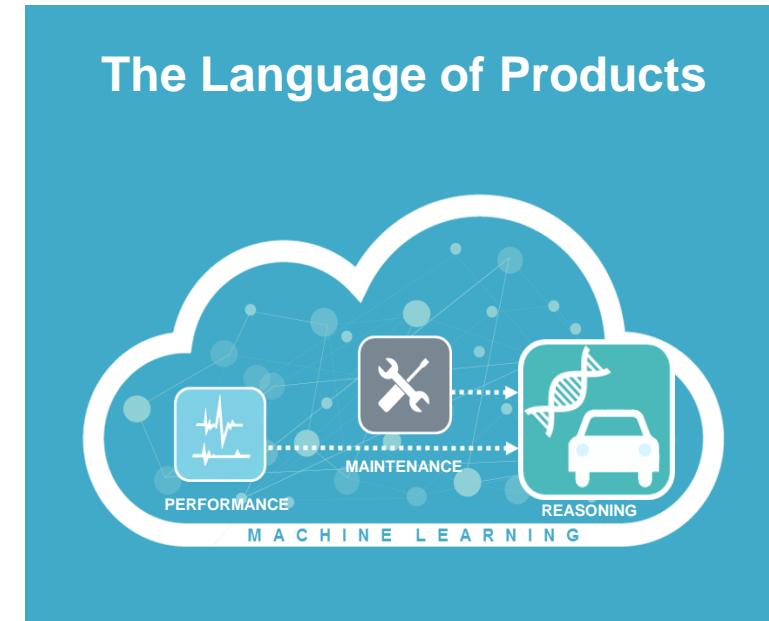




Michael Shepherd, Senior Strategist, Dell

“Performance Analytics empowers us to discover hidden patterns in data in order to ensure optimal product performance.”

Summary- The Vision Comes to Life



**Rethinking every phase
of the Digital Enterprise**

**Driving continuous
business transformation**

Gaining insight from data

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Realize innovation.