

# Closing the Loop with Product Performance Intelligence

Bill Boswell  
Siemens PLM Software

GLOBAL PRODUCT DATA  
INTEROPERABILITY  
**S U M M I T**  
2016



ELYSIUM

Parker Aerospace

NORTHROP GRUMMAN

BOEING

ETAS

...

...

...



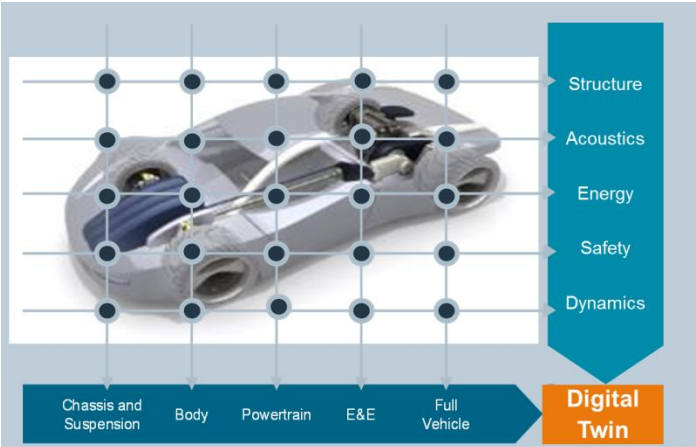
# Realizing The Digital Enterprise

## The Siemens Digitalization strategy

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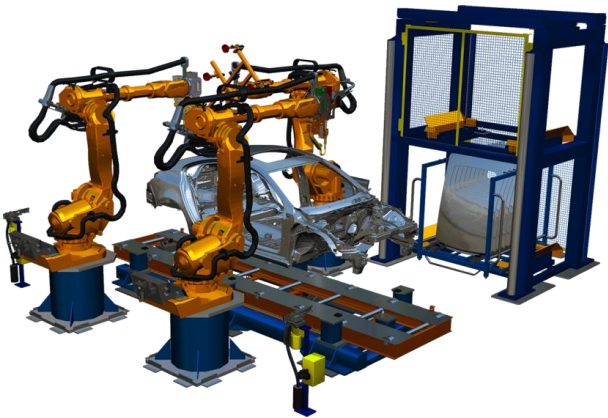
### Ideation

## Digital Product Twin



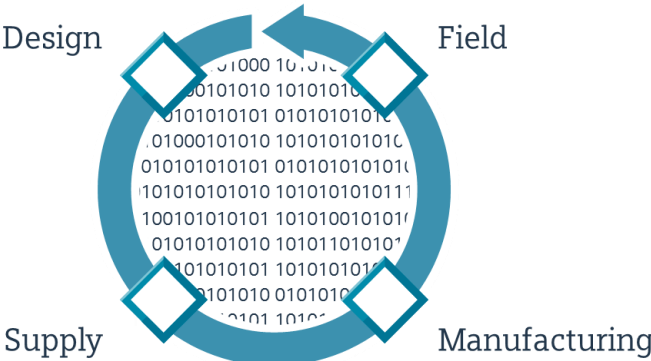
### Realization

## Digital Production Twin



### Utilization

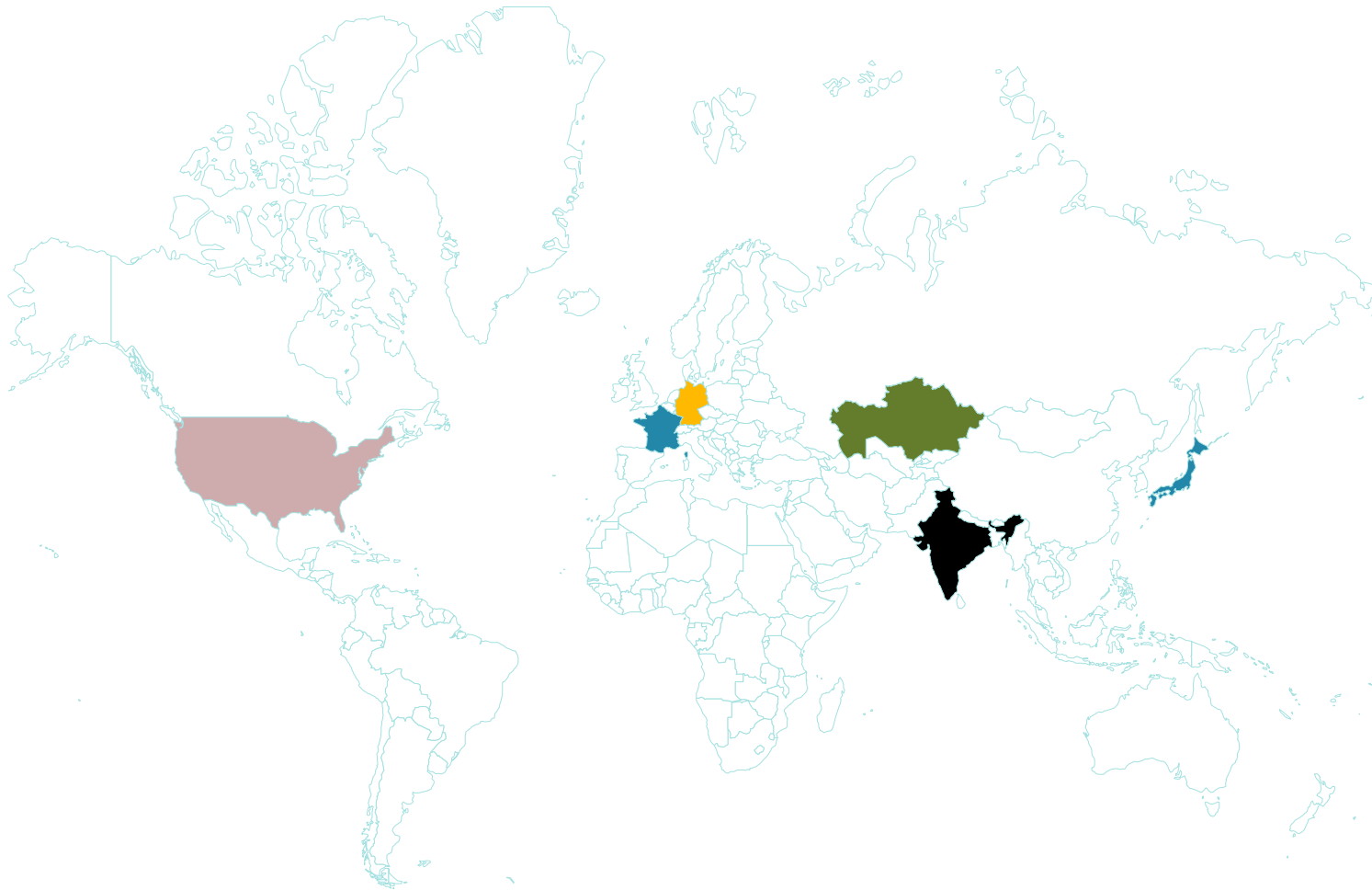
## Digital Performance Twin



Sales  
Materials  
Suppliers  
Design  
Distribution

Customer service  
Suppliers  
Manufacturing  
Marketing





Sales  
Materials  
Suppliers  
Design  
Distribution  
Customer service  
Suppliers  
Manufacturing  
Marketing

**What you  
think your  
products do.**



**MIND THE GAP**

**What your  
customers  
experience.**

# Bloomberg - Samsung Note 7 Recall

## Analysts estimate impact of recall at about \$1 billion

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# These kinds of problems are common across industries...

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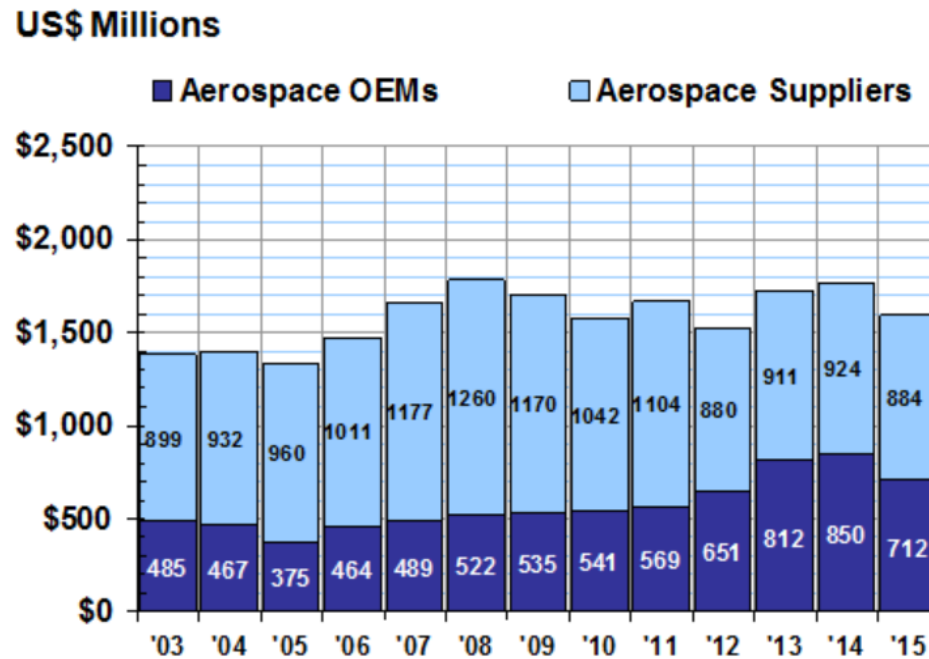


<http://www.bloomberg.com/news/photo-essays/2013-01-17/the-most-expensive-product-recalls>

# What if this could be reduced with Product Performance Intelligence?

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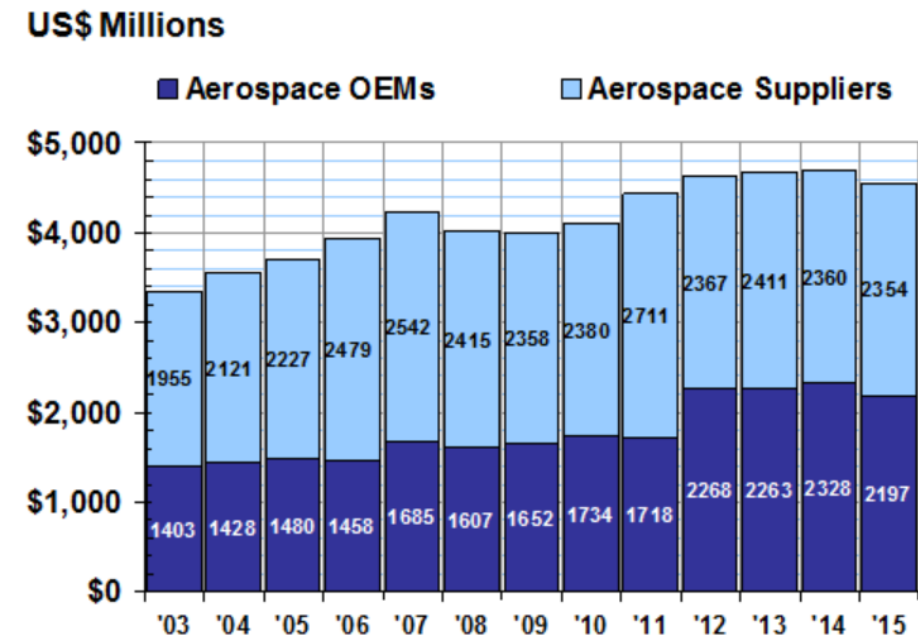
Figure 1  
Aerospace Warranties  
Claims Paid Worldwide by U.S.-based Manufacturers  
(in US\$ millions, 2003-2015)



Source: WarrantyWeek

<http://www.warrantyweek.com/archive/ww20160414.html>

Figure 5  
Aerospace Warranties  
Reserves Held Worldwide by U.S.-based Manufacturers  
(in US\$ millions, 2003-2015)



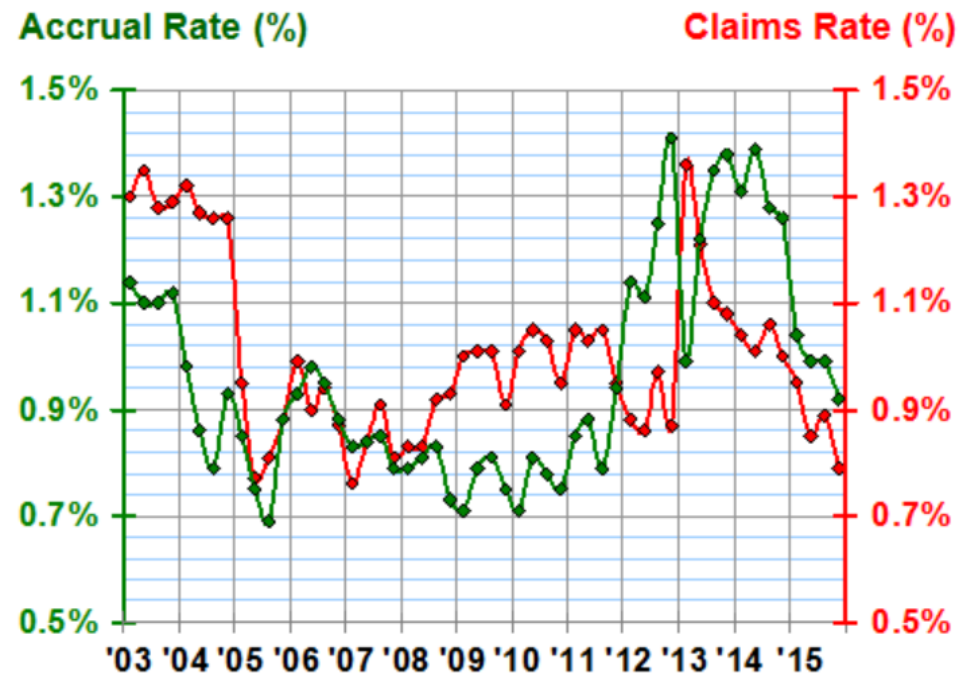
Source: WarrantyWeek



# What if this could be improved with Product Performance Intelligence?

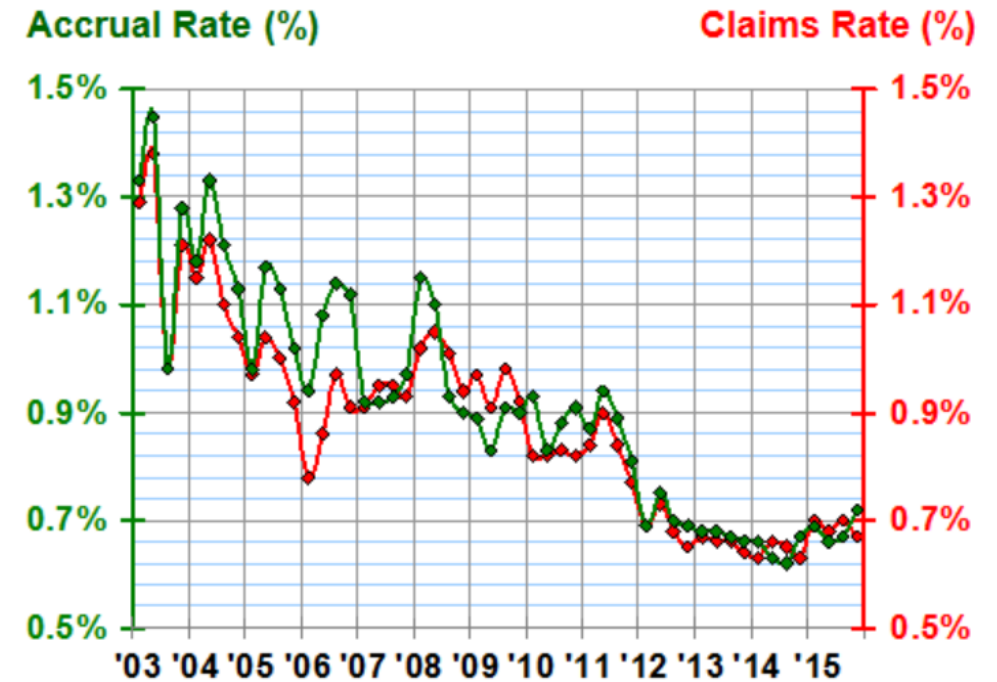
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Figure 3  
Aerospace OEMs  
Average Warranty Claims & Accrual Rates  
(as a % of product sales, 2003-2015)



Source: Warranty Week

Figure 4  
Aerospace Suppliers  
Average Warranty Claims & Accrual Rates  
(as a % of product sales, 2003-2015)



Source: Warranty Week

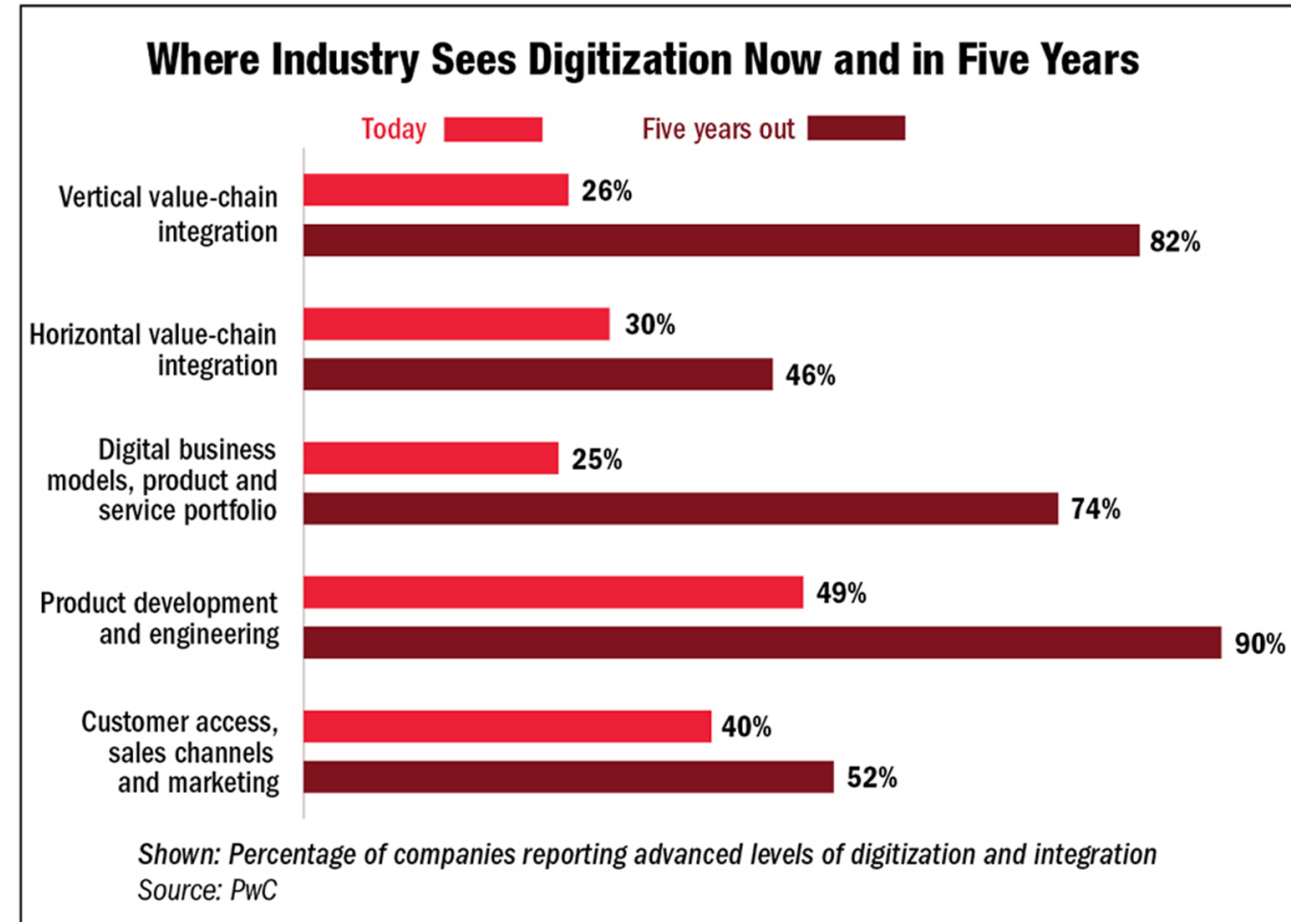
<http://www.warrantyweek.com/archive/ww20160414.html>

# Digitization Set To Remake A&D Industry

## Aug 26, 2016 Michael Bruno | Aviation Week & Space Technology

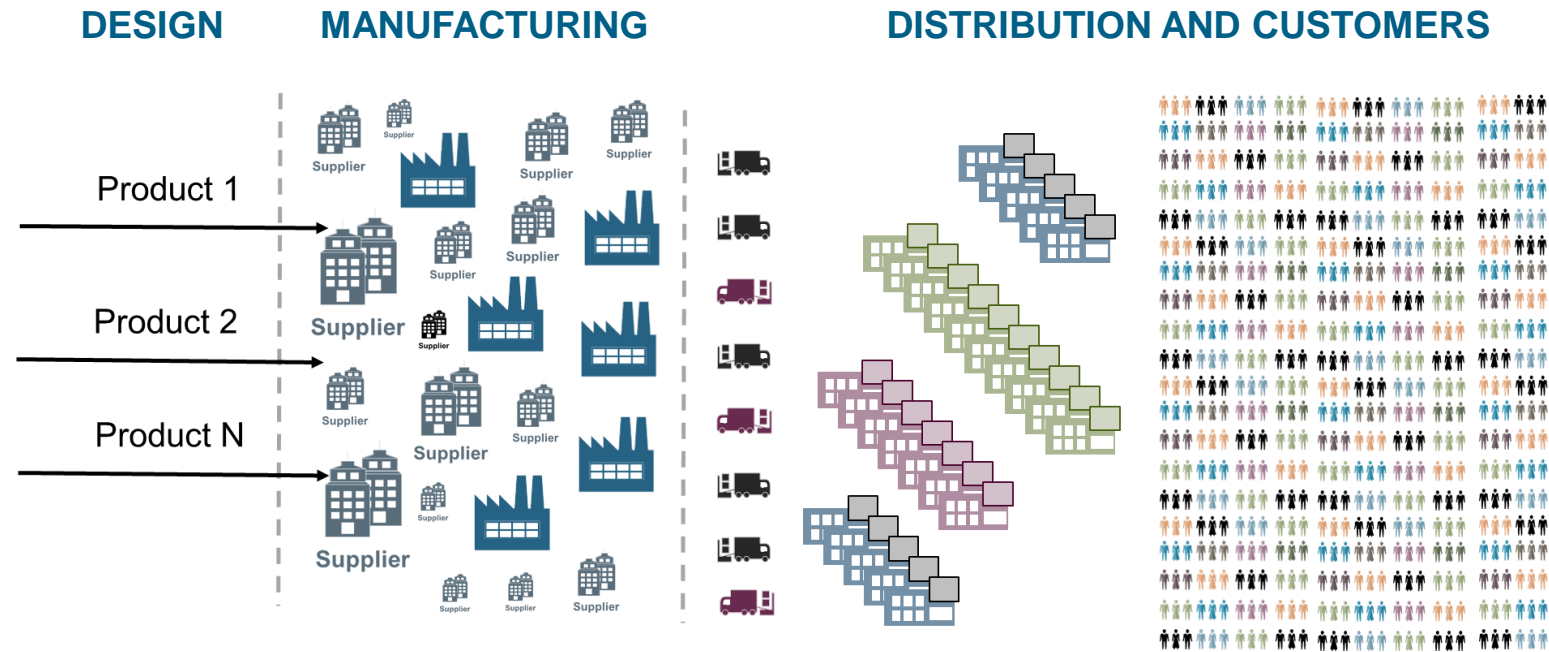
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- **Digitization** is a broad term used to describe the advent and **introduction of new technologies that essentially replace old mechanical practices.**
- Examples include **additive manufacturing**, also known as 3-D printing, as well as **augmented-reality systems, robotics, “big data” analytics**, autonomous systems, **cloud computing**, the **“Internet of Things,”** and cyber, among others.
- **Cutting costs, growing profits and introducing new offerings – especially big data – lead the wish lists of many A&D companies.**



# Closing the loop with Product Performance Intelligence

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Product Quality

Supplier Quality

Customer Experience

# Closing the loop with Product Performance Intelligence

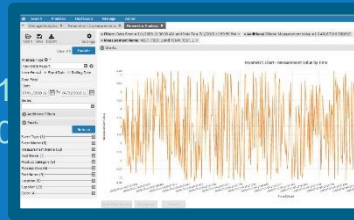
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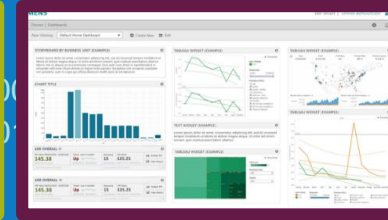
Descriptive



Diagnostic



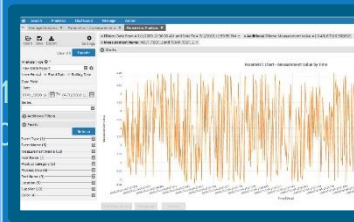
Predictive



Prescriptive



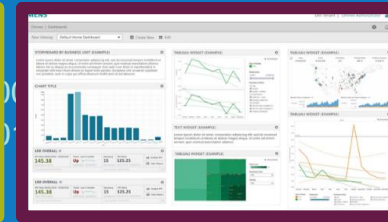
Descriptive



Diagnostic



Predictive



Prescriptive

# What happened?

# Descriptive - What happened?

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Customer



Support



Team



# Disconnected Data Sources

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# Unify Disconnected Product Data into Contextualized Data Lake

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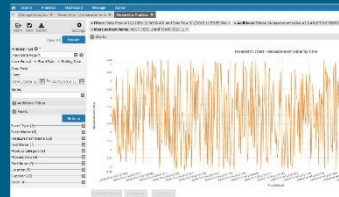


THE REAL VALUE

# Search and analyze contextualized big-data in seconds.



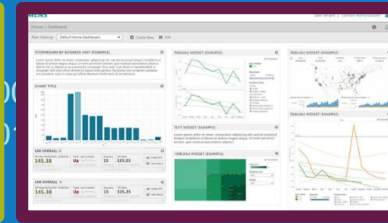
Descriptive



Diagnostic



Predictive



Prescriptive

# Why did it happen?

# Diagnostic

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**Problem identified**

**Analyzed in  
context**

**Fast problem  
resolution**

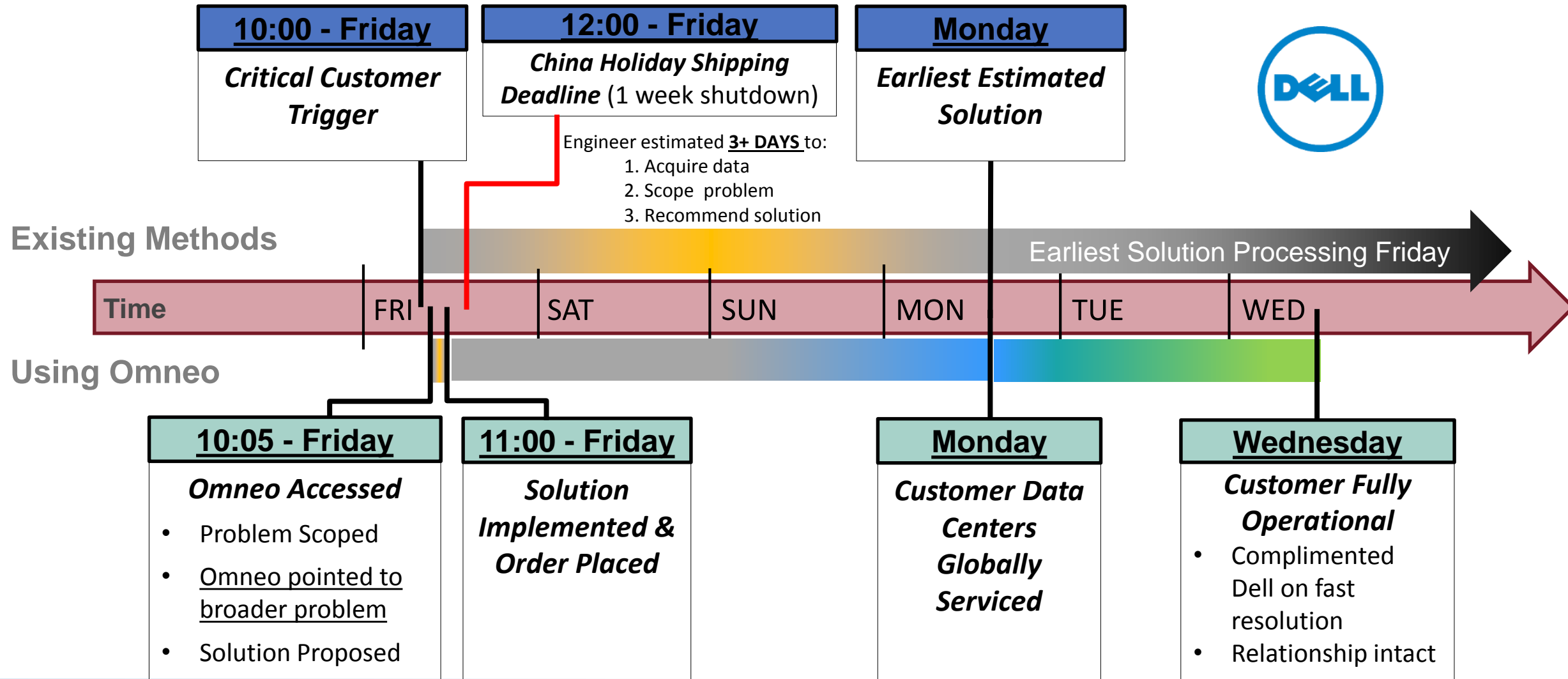




# Big Data Analytics: Improving our Customers' Experience

Michael Shepherd, Senior Strategist

Global Product Data Interoperability Summit | 2016



# Unify Disconnected Product Data into Contextualized Data Lake

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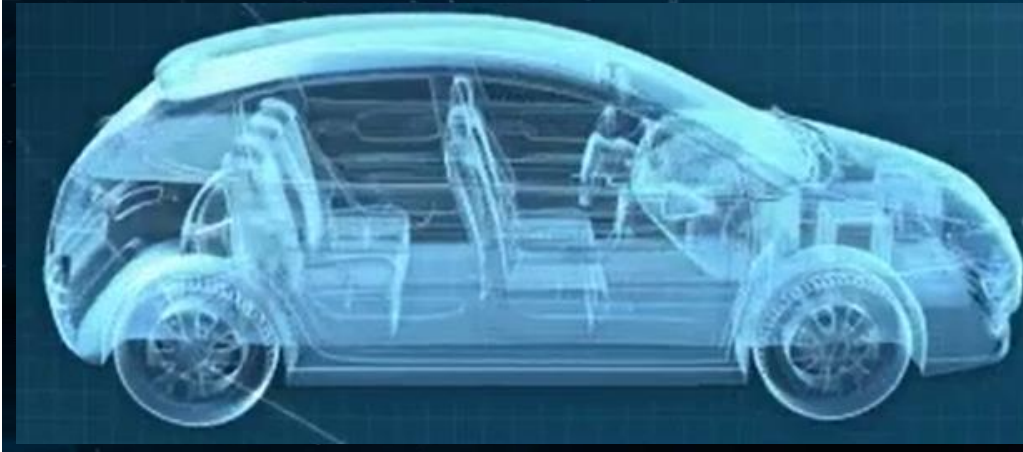




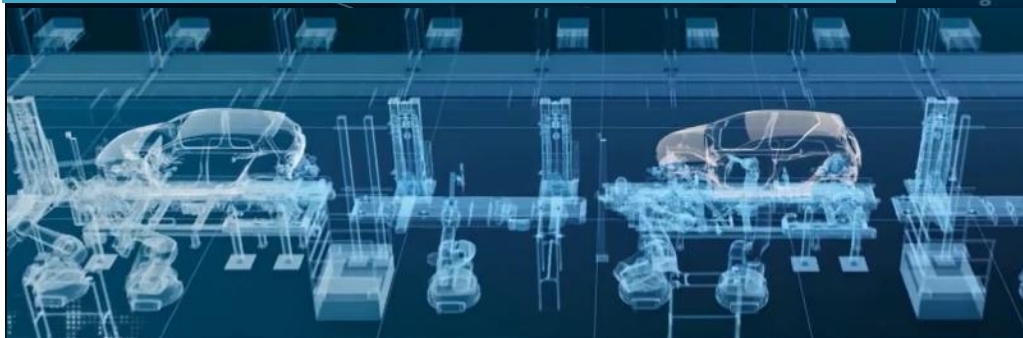
# The Internet of Everything

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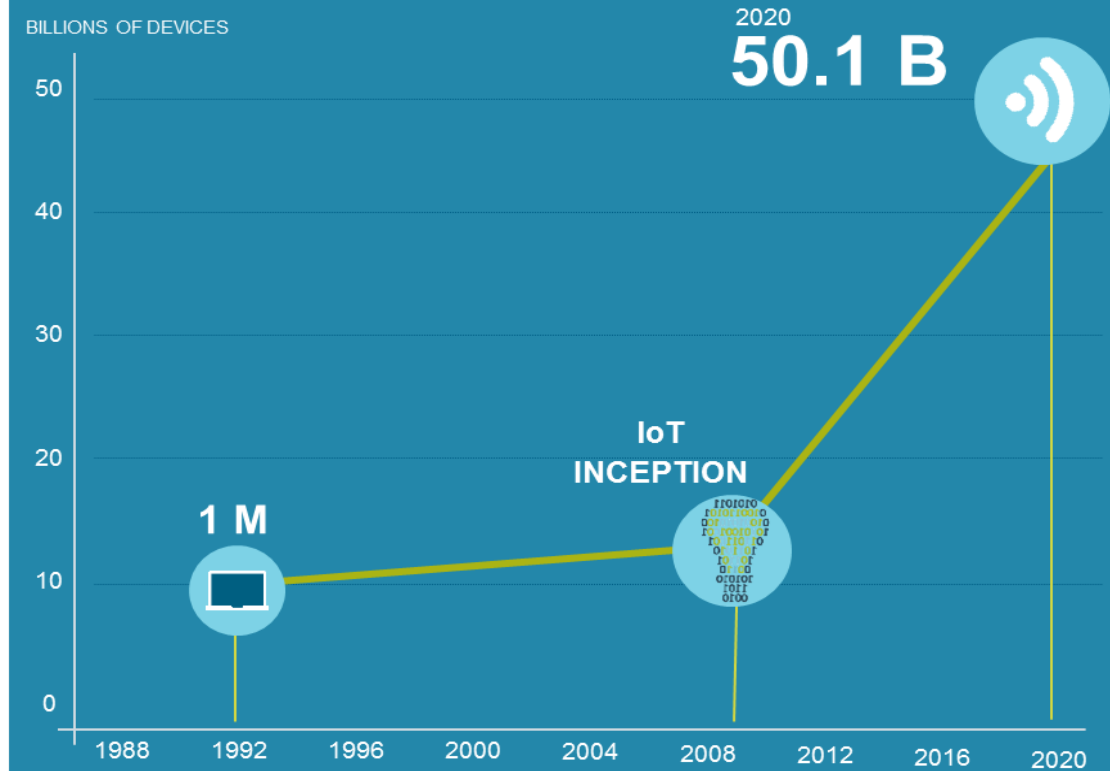
## Connected products



## Connected plants and machines



## Growth of internet of things





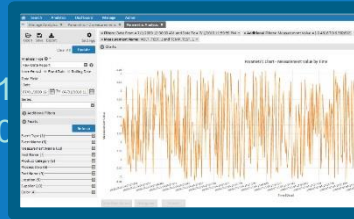


## THE REAL VALUE

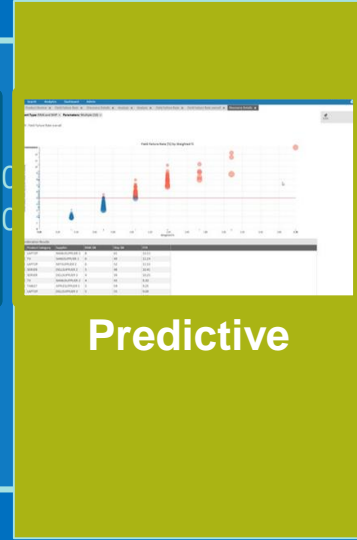
**Speed time to problem resolution  
with greater visibility into product  
and supply chain performance.**



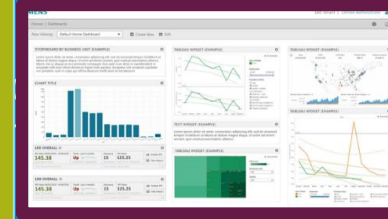
Descriptive



Diagnostic



Predictive



Prescriptive

# What happens next and when?

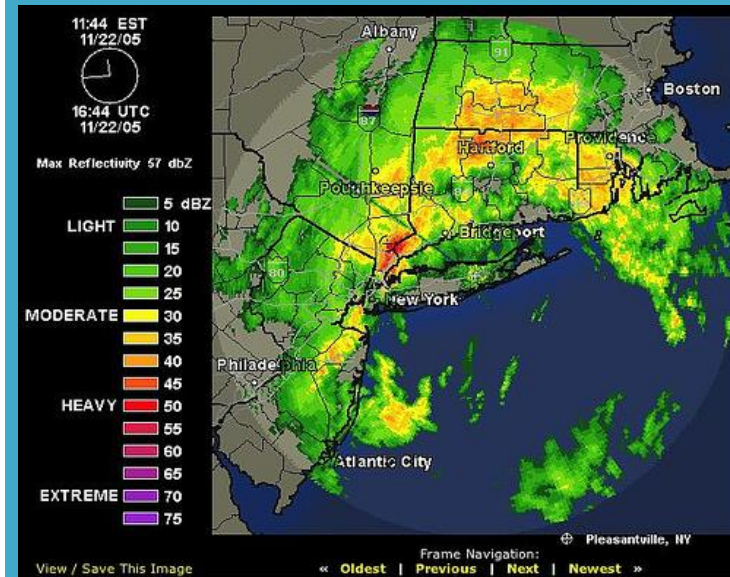
# Product Performance Intelligence

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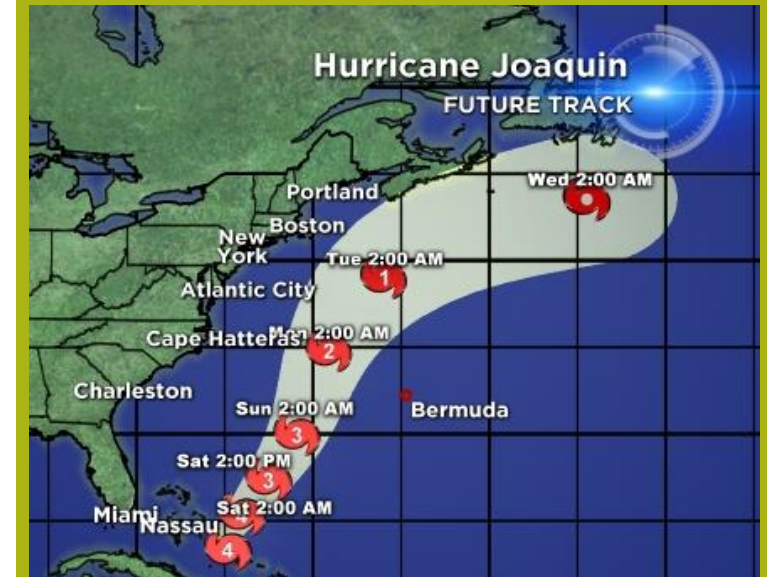
## Guess



## Know



## Predict



# Predictive

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**Automated  
analytics**

**Trends  
and predictions**

**Insight /  
actionable  
intelligence**



# Leveraging Omneo To Fuel Our Ability To Learn

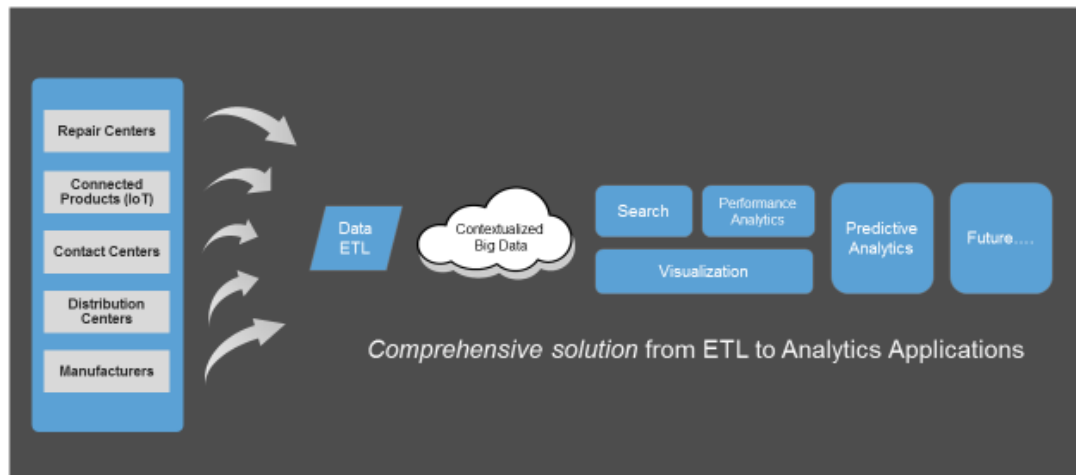
David Morgan, Senior Quality Manager Bose

Global Product Data Interoperability Summit | 2016

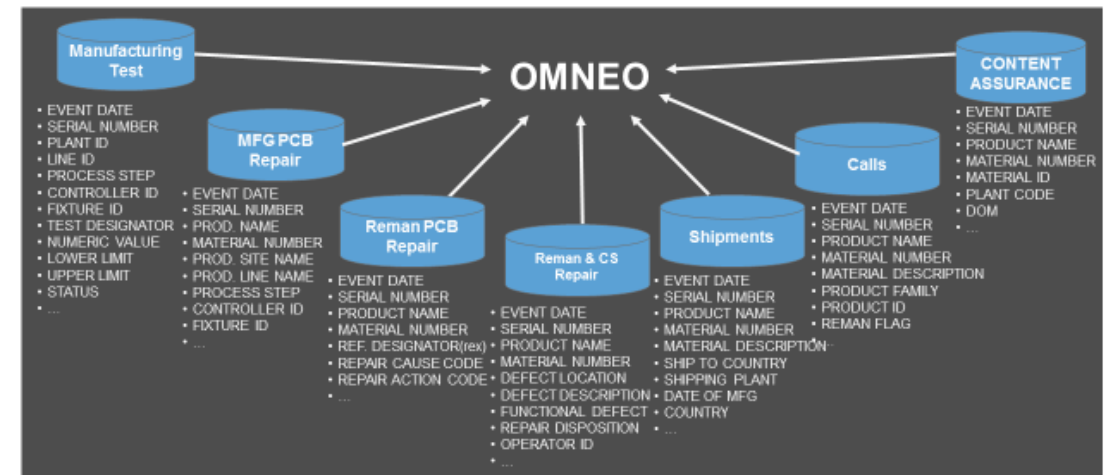


Learning from our customers and from our products...

- Not about *fixing* quality issues (although important)...
- The game changing value is **learning** from the data and feeding it into new designs.
- Always improving and delivering **wow** customer experiences.



The Omneo Advantage



Our Data Solution

# Performance Analytics - Key Capabilities

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## Insight Discovery

- Patented discovery algorithms
- Automatically analyze billions of data combinations
- Global and user-defined dashboards



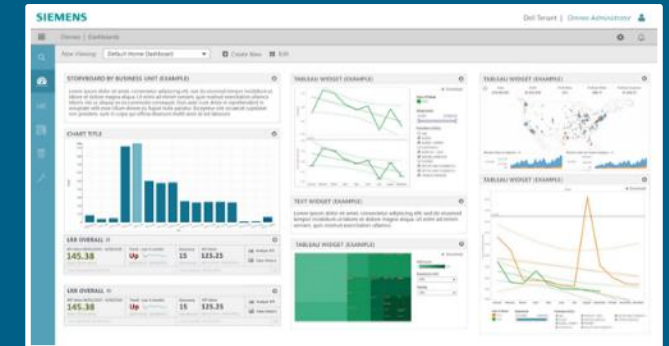
## Parametric Data

- Analyze sensor-based data
- Quickly access relevant test data and performance measurements
- Export data for further analysis



## Advanced Data Visualization

- Tableau inside of Omneo
- Create compelling visualizations
- Combine Omneo results with other visual data



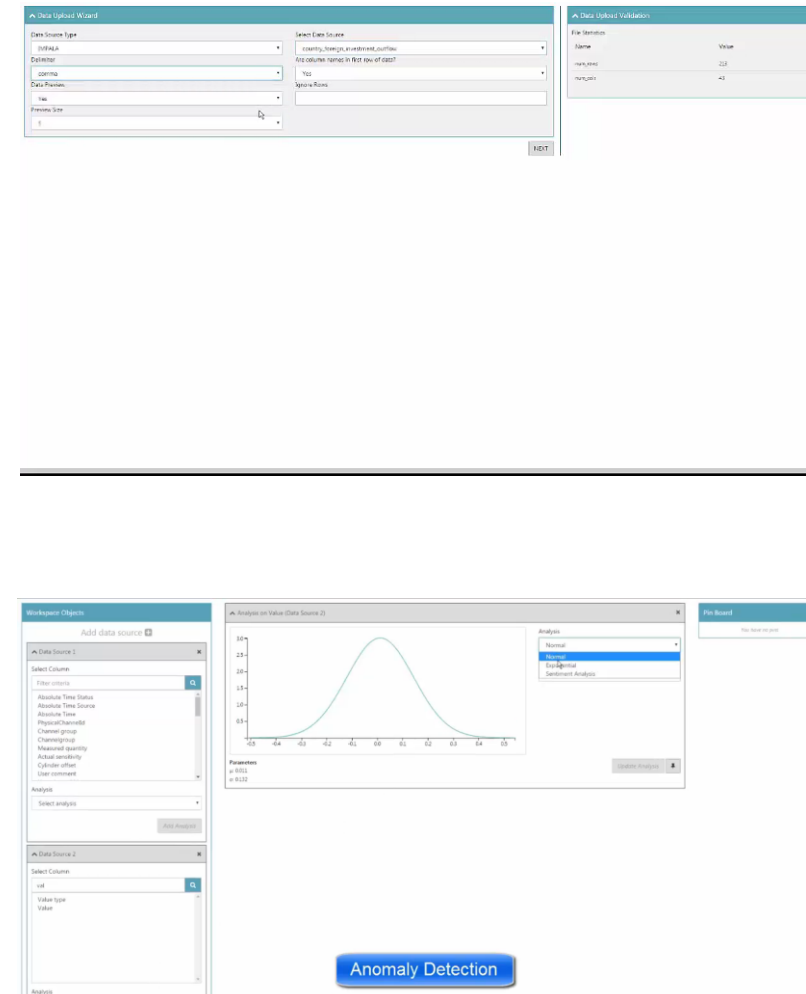
# Unify Disconnected Product Data into Contextualized Data Lake

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Omneo and Teamcenter

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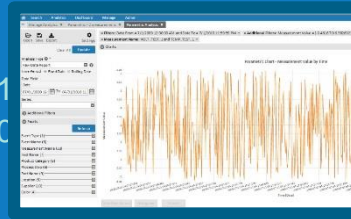


THE REAL VALUE

# Discover insights into actual and predicted product performance.



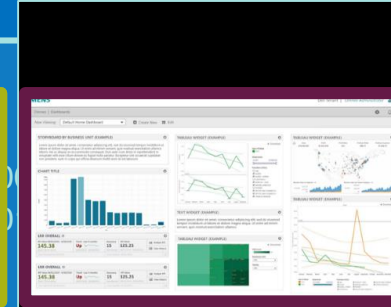
Descriptive



Diagnostic



Predictive



Prescriptive

When this happens, take these steps.

# Prescriptive

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**Alerts and  
notifications**

**Pre-defined  
steps**

**Repeatability  
and  
Predictability**

## Product Performance Intelligence

- **Leverage big data** to transform your business
- **Search and analyze contextualized big-data** in seconds
- **Discover insights** not possible using traditional Business Intelligence (BI)
- **Cloud-based, software-as-a-service (SaaS)** solution platform

**What you  
think your  
products do.**



**MIND THE GAP**

**What your  
customers  
experience.**





**BRIDGE THE GAP**

**...with Product Performance Intelligence.**

# Thank you.

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