



3DEXPERIENCE®

Morgan Stanley Digital Day

Helping Capital Goods Companies
Solve Digitalization Challenges

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Dassault Systèmes at a glance

Company OVERVIEW

- ▶ A **Scientific** company
- ▶ One global R&D / **64 labs**
- ▶ **15,000** passionate people
- ▶ **210,000** enterprise customers
- ▶ **12,600** partners
- ▶ Majority shareholder control
- ▶ €3,065.6 million* revenue
- ▶ Operating margin: 31.2%*

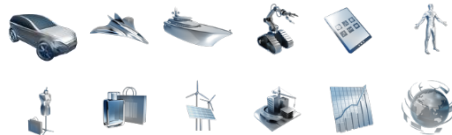
The 3DEXPERIENCE Company

* Figures as of FY 2016 / Non-IFRS

Delivering VALUE



3DEXPERIENCE Platform



Industry Focus

Increase Domain LEADERSHIP



Brand Value Creation

Continuous investments in Scientific and Experience Innovation Companies



Acquisitions

Capital Goods Companies | a selection of Digitalization Challenges

CHALLENGES



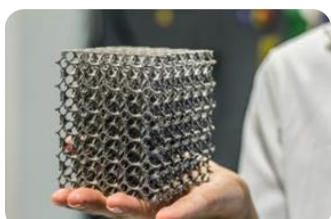
To be **FASTER...**



To be **FLEXIBLE...**



To be **RELIABLE...**

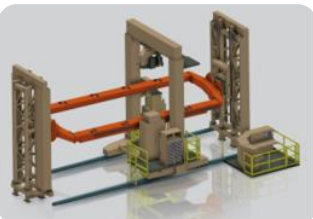


To **FREE UP** design...

SOLUTIONS



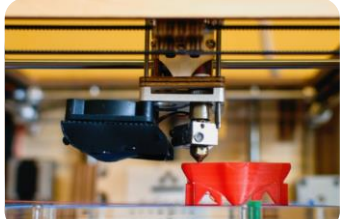
...with a **DIGITAL MODEL**



...in the **SHOP FLOOR**



...with **PREDICTIVE ANALYTICS & OPTIMIZATION**



...with **ADDITIVE LAYER MANUFACTURING**

Digitalization Biggest Opportunities

(Source: Morgan Stanley)

- ▶ Decentralized & Large Equipment Base (Utilities, Telco, Transport infrastructures).
- ▶ Large chemical plants, O&G platforms, drug & food manufacturing, Semiconductors.
- ▶ Large scale industrial products with high number of assembled parts (e.g. Automobile).



| Examples of Dassault Systèmes Solutions | MOSTLY DISCRETE MANUFACTURING | | | | | | | | MOSTLY PROCESS MANUFACTURING | | | DISCRETE & PROCESS | |
|---|-------------------------------|---------------|-------------------------------|------------------------|-----------------------------|-------------------------------|---------------------------|-------------------------------|-------------------------------------|---|-----------------------------|----------------------------|-------------|
| | Connect Robots | Deploy Cobots | Keep uptime / reduce downtime | Improve Product Design | Design Sustainable Products | Perfect Product/No Bottleneck | Reduce Installation Costs | Central Production Monitoring | Machine Digitalization Upgrade Cost | Modularization, Standardization of Plants | Reduce Installation Ramp-up | Faster Design & Production | Reliability |
| Model-based Engineering | • | • | • | • | | | | | | | | • | • |
| Virtual Simulation | • | • | | • | • | | | | • | | | • | • |
| Virtual Manufacturing Simulation | • | • | • | • | • | • | • | | • | • | • | • | • |
| Virtual Twin / Real-time operations / Maintenance Optimization / Global MES | • | • | • | | | • | | • | • | | | | • |
| Design for Manufacturing (DFM) | • | • | • | | | | | • | • | • | • | • | • |
| PLM Analytics | • | • | • | • | • | • | • | • | • | • | • | • | • |
| Additive Layer Manufacturing | | | | • | • | | | | | | | • | • |
| Modular Design | • | • | | • | | • | | | • | • | | • | • |
| Eco-enabled design | | | | • | • | | | | | | | • | |

Hardware in the 3D-Loop – Prerequisite for Efficient Lab Tests

Goal: 1 billion test kilometers in 1 day

- ▶ Improving DevOps, Speed + Safety
- ▶ through innovative methods

1 DevOps 2 Lab Tests 3 Field Tests 4 Bus Operations 5 Maintenance 6 Value Add. Services

BOSCH

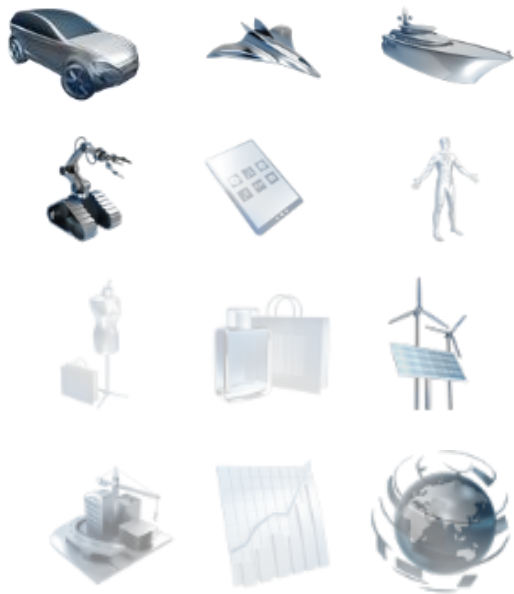
2017
Bosch
CONNECTED WORLD
THE POWER OF PARTS CONNECTION



Bosch Connected World – Dr Hoheisel

Dassault Systèmes and Capital Goods Industry

Capital Goods Industries



Building on **VALUE**

- ▶ Capital Goods Industries represent 60%+ of 3DS 2016 revenues
- ▶ DELMIA software revenue up +17% exFX in 2016
- ▶ QUINTIQ software revenue up +23% exFX in 2016
- ▶ Acquisition of Ortens (Agile Planning & Scheduling) in 2016

▶ **Bridging value from Users to Teams to Enterprise** **Companies who adopted 3DEXPERIENCE Platform in 2016**

- ▶ **VALMET** → pulp, paper and energy
- ▶ **DCNS** → Marine & Offshore
- ▶ **AIRBUS** → Aircraft manufacturing
- ▶ **DOOSAN (Bobcat)** → Compact Heavy Mobile Machinery
- ▶ **GE POWER** → Power generation
- ▶ **ERICSSON** → Telco equipment

3DEXPERIENCE Business Platform

3D MODELING Applications



- Industrial Design
- Real Time Rendering
- Mechanical Design
- Cyber Systems Modeling
- City Modeling
- Material Science



SOCIAL & COLLABORATIVE Applications



- Fast ideas sharing
- Ideas & project Management
- Requirement Management
- Social Network



INFORMATION INTELLIGENCE Applications



- Social Intelligence
- Customer Knowledge
- Customer Trends
- Connected Objects & Big Data
- KPI monitoring



Virtual + Real SIMULATION Applications



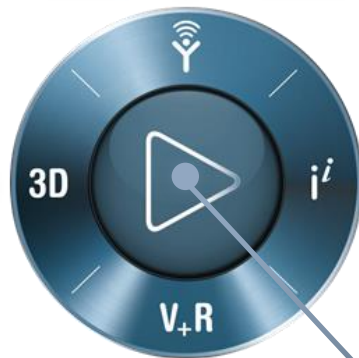
- Systems Simulation
- Ergonomics Simulation
- Multi-physics Simulation
- Manufacturing Simulation



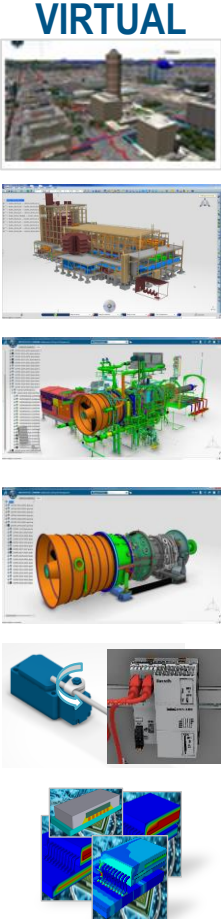
PLAY 3DEXPERIENCE



- High-End Rendering
- User Experience Validation
- Virtual Sales Configurator



Bridging “Digital” and “Physical” with an Experience platform



City

Plant

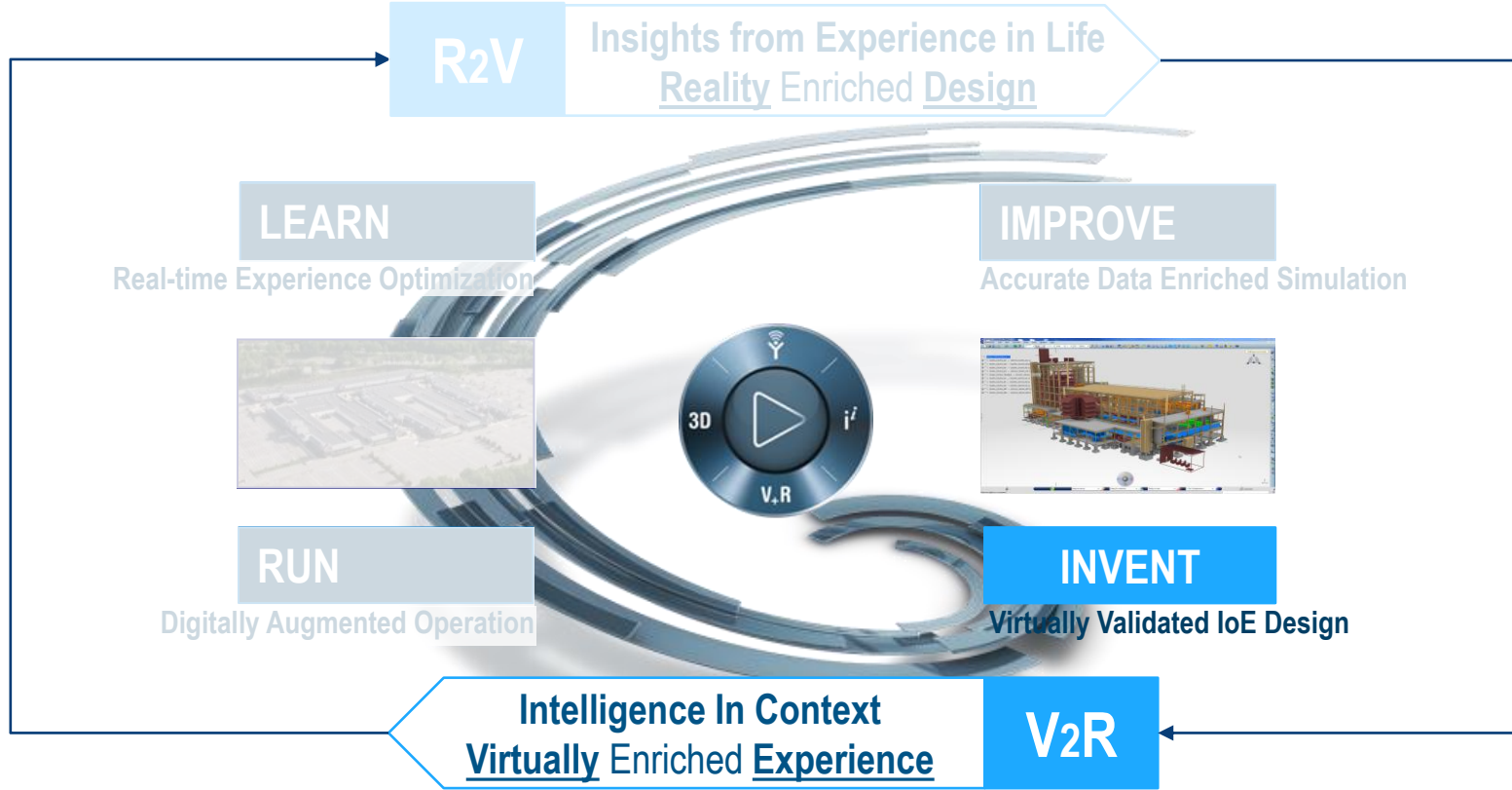
Line

Equipment

Sensors & Controllers

Chips

Internet of Experiences Value | Continuous Experience Value Creation



INVENT



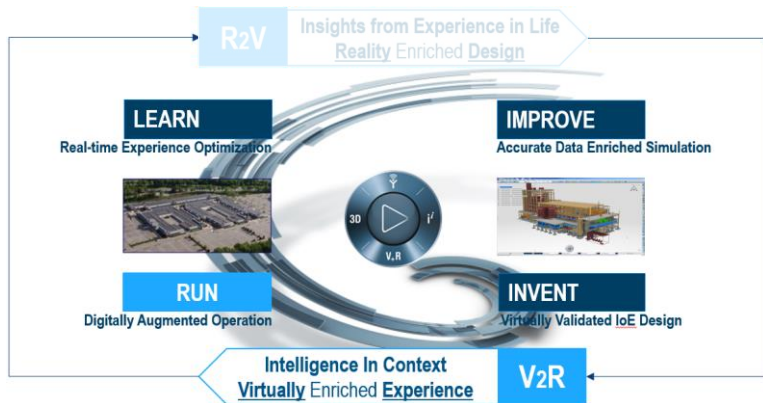
Software enabled value creation

- ▶ Engineering productivity
- ▶ Reduced use of materials
- ▶ Improved Product Reliability
- ▶ Cost Optimization & Waste reduction
- ▶ Rapid prototyping & Open Collaboration

3DS Additive Manufacturing Solution



RUN

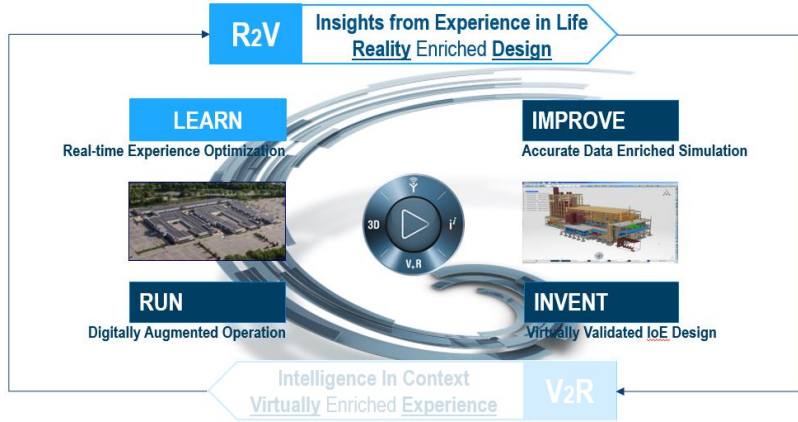


Software enabled value creation

- ▶ Reduce cost of training
- ▶ Minimize safety / security risks
- ▶ Optimize Process & Assets
- ▶ Reduce cost of Reactive maintenance
- ▶ Better planning of costly resources

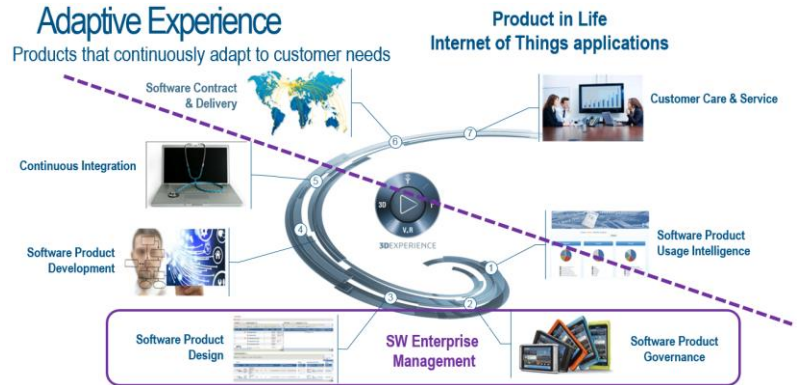
Partnership with  OSIsoft.

LEARN



Software enabled value creation

- ▶ Continuous software delivery (Agile)
- ▶ Enrich simulation models with real data
- ▶ Increase reactivity to Real Life situations



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IMPROVE



Software enabled value creation

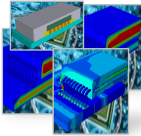
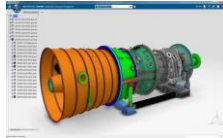
- ▶ Reduce cost of 'over-engineering'
- ▶ Faster reconfiguration of assets
- ▶ Optimize Operations Management

Physical Controller Interacting With Virtual Master And Real Machine



Bridging “Digital” and “Physical” with an Experience platform

VIRTUAL



REAL



City



Plant



Line



Equipment



Sensors & Controllers



Chips

Multi-scale, IoT-aware
System Modeling &
Simulation of Connected
Experiences

Continuous
Experience
Value Creation



