

MANUFACTURING

IN THE AGE OF EXPERIENCE™



3DEXPERIENCE®

Operational Excellence
via Smart Manufacturing

4.0
It's here.

Topics

Introduction of 3DS

Challenges

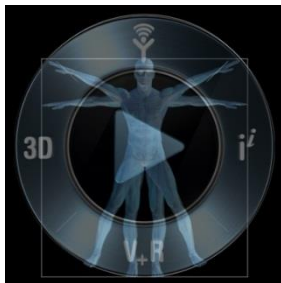
Operations Excellence

Mass Customization

Solutions

Summary

Our Company



a Scientific company

Combining **Science**, **Technology** and **Art** for a sustainable society



14,000 passionate people

- 123 nationalities / 172 sites
- One global R&D / 56 labs
- Game changing **3DEXPERIENCE** solutions



>200,000 enterprise customers

- 12 industries in 140 countries
- 25 million users



12,600 partners

- Software, Technology & Architecture
- Content & Online Services
- Sales
- Consulting & System Integrators
- Education
- Research



Long-term driven

- Majority shareholder control
- **Revenue:** \$3.2 Bn*
- Operating margin: 30.8%*

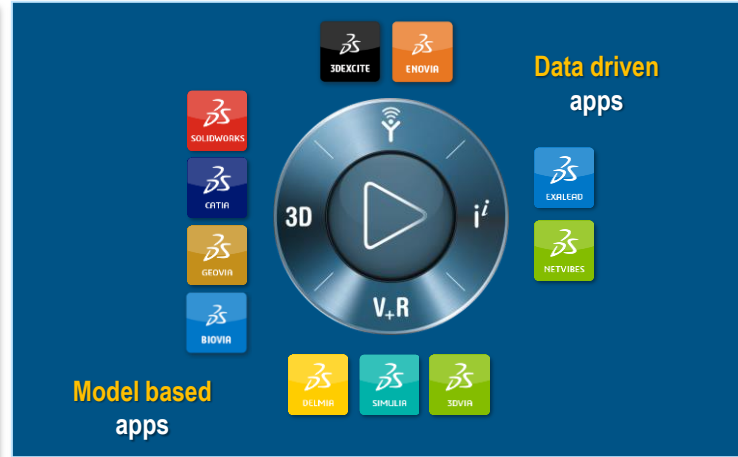
* Figures as of FY 2015 / Non-IFRS

The Digital Enterprise powered by 3DEXPERIENCE

INDUSTRY SOLUTION EXPERIENCES



Model Connectors



Data Connectors



Specialized Apps and Connectors

Challenges



Challenges

- Maintaining the right inventory levels



Source: <https://www.managers.org.uk/insights/news/2015/september/four-companies-that-failed-spectacularly-and-the-lessons-of-their-premature-demise>

Challenges

► Maintaining the right inventory levels

► Maximizing production and ensuring high product quality

BALANCE



Challenges

- ▶ Maintaining the right inventory levels
- ▶ Maximizing production and ensuring high product quality
- ▶ Optimizing inefficient processes



Operational Excellence in Manufacturing

- ▶ Improve productivity + quality:
 - ▷ (Faster + Better = Cheaper).
- ▶ Agility, Flexibility, Responsiveness
- ▶ Application of a variety of principles.
 - ▷ (PDCA, Kaizen, Lean, 6σ, TOC, Design Thinking, BPR)
- ▶ To satisfy the needs and wants of customers (VOC).



Operational Excellence in Manufacturing

- ▶ Disconnect of People and Departments (collaboration of the larger business).
- ▶ Lack of progress: (e.g. compliance; burden)
- ▶ Data too complicated / tedious to consolidate
- ▶ Lack of a coherent management plan or system to manage.



Mass Customization



\$18 **Trillion** in product demand,
7% YOY increase since 2000

Daily introduction of new
products

Unprecedented product diversity
and **mass customization** –
“Order of One”

Solution

DELMIA Digital Manufacturing



AGILE

- Re-Configurable facility to cope with volatility in product and in volume.



FLEXIBLE

- Facility to absorb and accelerate new product right first time



COST EFFICIENT

- Continuous Improvement of Operations to optimize costs while Adding Value to customers



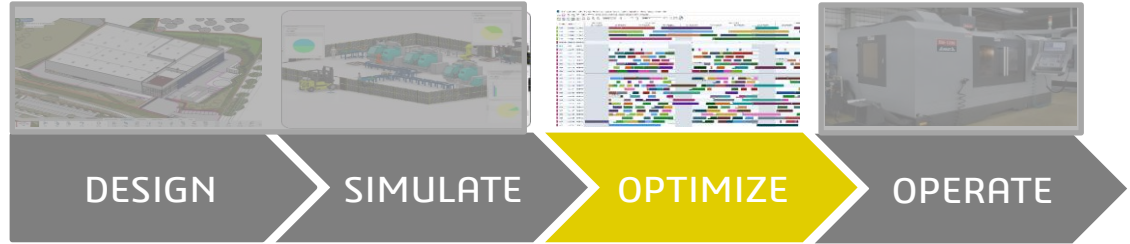


PPR All Seats X



Solution

DELMIA Ortems



AGILE

- Re-Configurable facility to cope with volatility in product and in volume.



FLEXIBLE

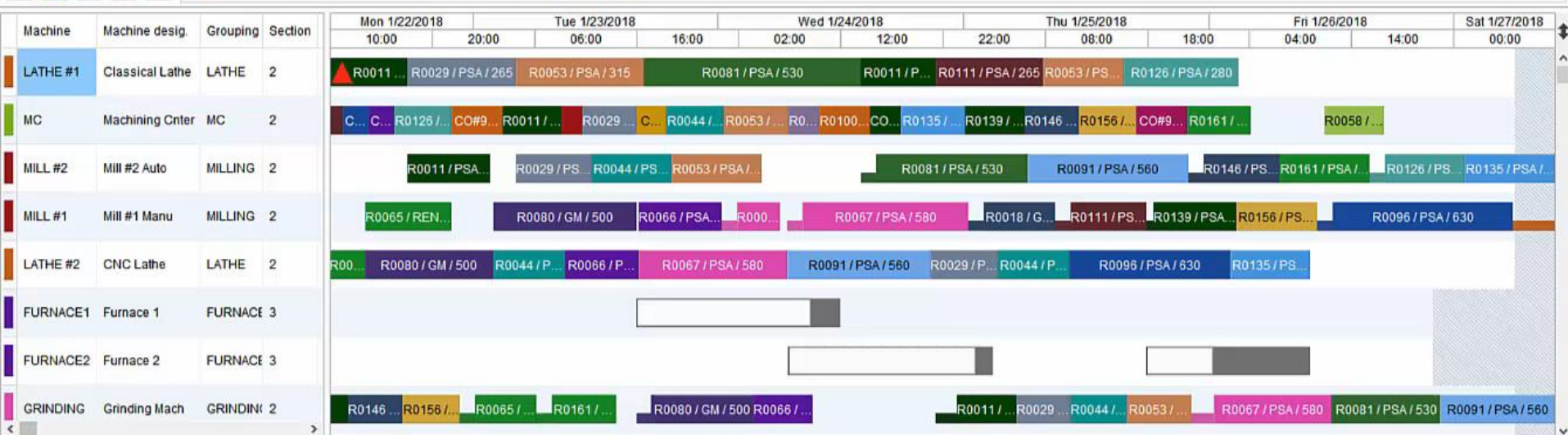
- Facility to absorb and accelerate new product right first time



COST EFFICIENT

- Continuous Improvement of Operations to optimize costs while Adding Value to customers





| Machine | Machine desig. | Grouping | Section | Mon 1/22/2018 | Tue 1/23/2018 | Wed 1/24/2018 | Thu 1/25/2018 | Fri 1/26/2018 | Sat 1/27/2018 |
|----------|-----------------|----------|---------|---------------|---------------|---------------|---------------|---------------|---------------|
| LATHE #1 | Classical Lathe | LATHE | 2 | 38 | 38 | 38 | 38 | 38 | 38 |
| MC | Machining Cnter | MC | 2 | 38 | 38 | 38 | 38 | 38 | 38 |
| MILL #2 | Mill #2 Auto | MILLING | 2 | 38 | 38 | 38 | 38 | 38 | 38 |
| MILL #1 | Mill #1 Manu | MILLING | 2 | 38 | 38 | 38 | 38 | 38 | 38 |

1/22/2018 < 100% Op : (100,1) Hundredths of h. Unit - Standard 7/2/2018

Solution

DELMIA Apriso



AGILE

- Re-Configurable facility to cope with volatility in product and in volume.



FLEXIBLE

- Facility to absorb and accelerate new product right first time



COST EFFICIENT

- Continuous Improvement of Operations to optimize costs while Adding Value to customers



Step 1 : Log on as Assembly Operator



DELMIA Apriso 2017
Portal

Name/Badge
BPMU01

Password

Log In



Digital Continuity Case Study

Business pains:

- Quality, OTD, Costs

Requirements:

- Extended PLM
- Better operators guidance

→ *Digital Continuity*

Initiatives

- Integrated Product + Process Engineering + Apriso

Results

- 40% on transfer costs
- Significant productivity improvements (reduced NC instances)
- Shop floor guidance on 15+ plants



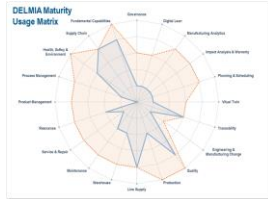


3DEXPERIENCE™

DS DELMIA

Solution

Consulting Engagement



Financial Performance Analysis (FPA)

- Top down EVA financial analysis (financial tool)
- Competitor and Industry benchmarking
- Manufacturing transformation potential

A screenshot of a 'Benchmark Report' table. The table has multiple columns including 'Performance and Risk', 'Metric', 'Value', 'Unit', 'Target', 'Variance', 'Risk', 'Status', and 'Comments'. It contains various financial and operational metrics with corresponding values and risk assessments.

Operational Performance Review (OPR)

- Project Success Assessment
- Configuration Gap Analysis

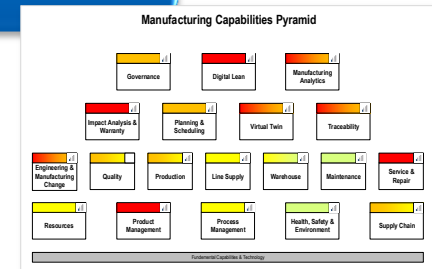
Operational Maturity Assessment (OMA)

- Pre-scoping and phasing
- Maturity of manufacturing IT best practices
- Establish baseline of functional capability



Operational Value Assessment (OVA)

- Business process analysis capability
- DELMIA scope and roadmap development
- Business Case development



DS would identify journey through BVA : A Structured Approach

Several steps to investigate business value

3 - Build the Business Case for Improvement

Justify the identified solution with a '**Business Case**' based on key benefit metrics by defining an ROI, Pay Back Period, IRR, NPV.

2 - Define the Solution Architecture

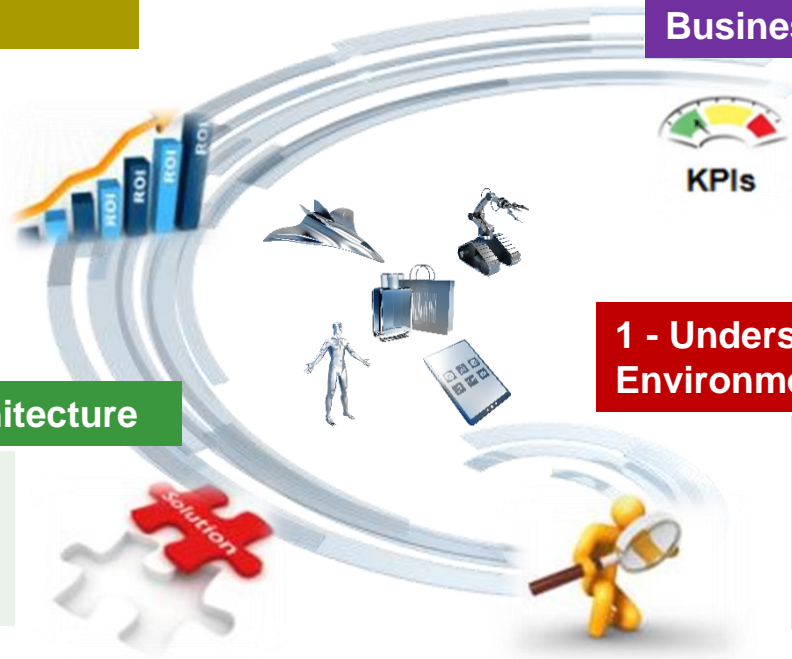
Develop further the improvement initiatives in order to '**Identify Solutions**' for consideration that are aligned with your business goals and challenges.

4 – Quantify and Measure Business Value

Implement the solution and control business value through the control of a set of **KPI's**

1 - Understand the Current Business Environment

Engage in a '**Value Discovery**' to understand your current business environment including goals, drivers, challenges in order to recommend improvement initiatives.



Helping The World Deliver Innovation



Proven in:

- More than 9 industries
- 1,000's of plants
- 10,000+ users in 58 countries
- Companies of every size



Leader in Multi-site Solutions

| | |
|-------------------|-----------------|
| Amcor: | 60+ sites live |
| Becton Dickinson: | 20+ sites live |
| GM: | 30+ sites live |
| L'Oréal: | 25+ sites live |
| Saint-Gobain: | 60+ sites live |
| Valeo: | 115+ sites live |

Summary

- Manufacturing is getting more complexed
- Mass Customization is the new normal.
- Being Effective + Efficient is not enough. Companies now have to be more Agile + Flexible.
- Digital Transformation can boost Operational Excellence throughout entire business operations.





