



# Digital Enterprise Suite industrializes Additive Manufacturing

Munich Technology Conference Additive Manufacturing  
Dr. Karsten Heuser, October 11, 2017

# Additive Manufacturing is one of our Company Core Technologies



## Electrification, automation, digitalization – Siemens' Divisional setup

Digital Factory



Energy Management



Wind Power



Power and Gas,  
Power Generation Services



Process Industries and Drives



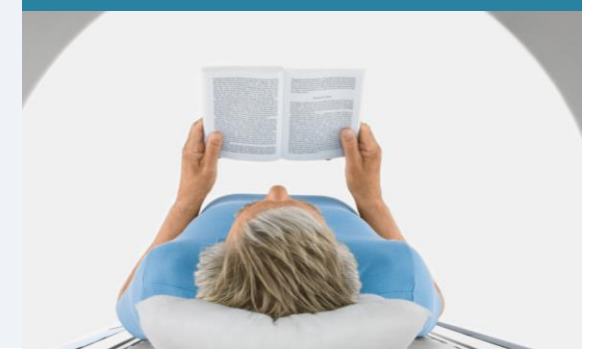
Mobility



Building Technologies



Healthineers



# Digital Factory integrates unique competencies in Product Lifecycle Management and automation under one roof

**SIEMENS**  
*Ingenuity for life*

## Digital Factory Division

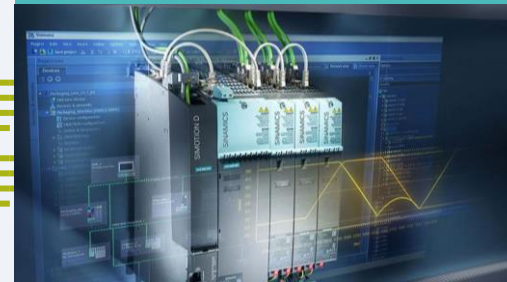
### Product Lifecycle Management



### Factory Automation



### Motion Control



### Control Products



## Customer Services



**Our integrated product portfolio paves the way for the Digital Enterprise.**

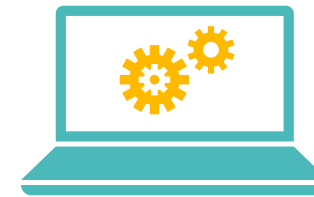
# Today's barriers to industrialize Additive Manufacturing



Design Software



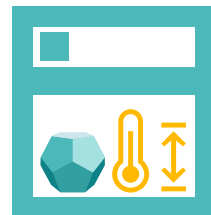
Simulation Software



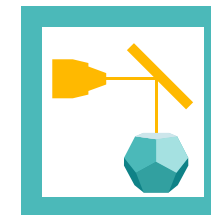
Print Preparation Software



Finishing



Heat Treatment



AM Process

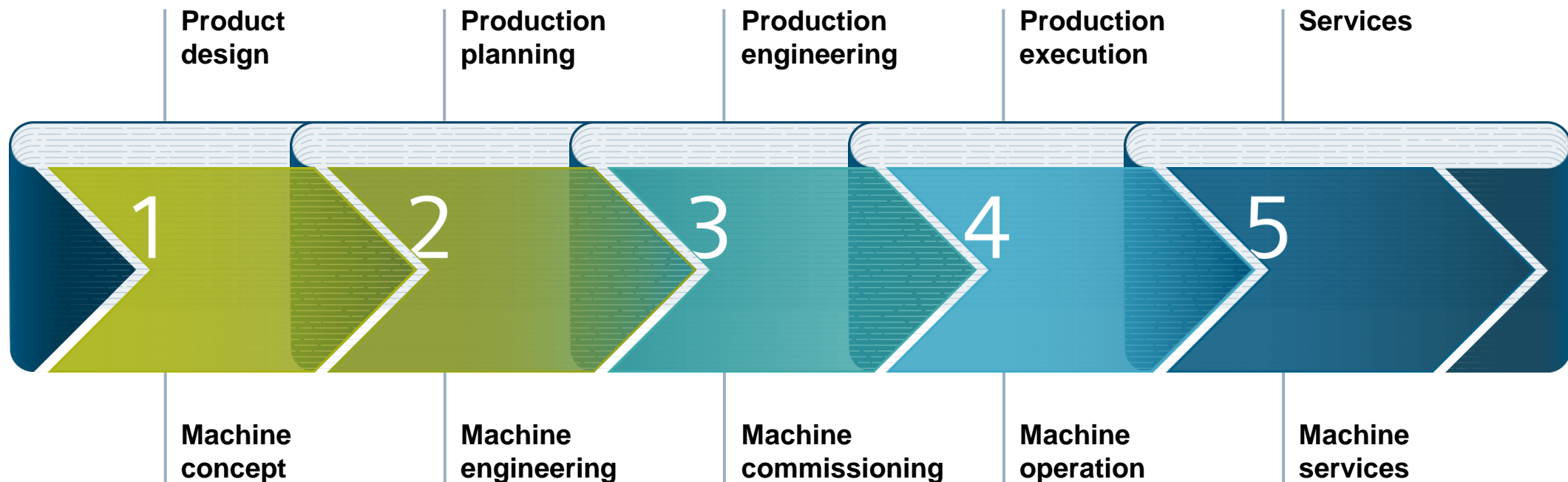


**Disconnected process chain – multiple file conversions – uncontrolled machine performance**

# Our Digital Enterprise approach for Additive Manufacturing



## Product manufacturer perspective



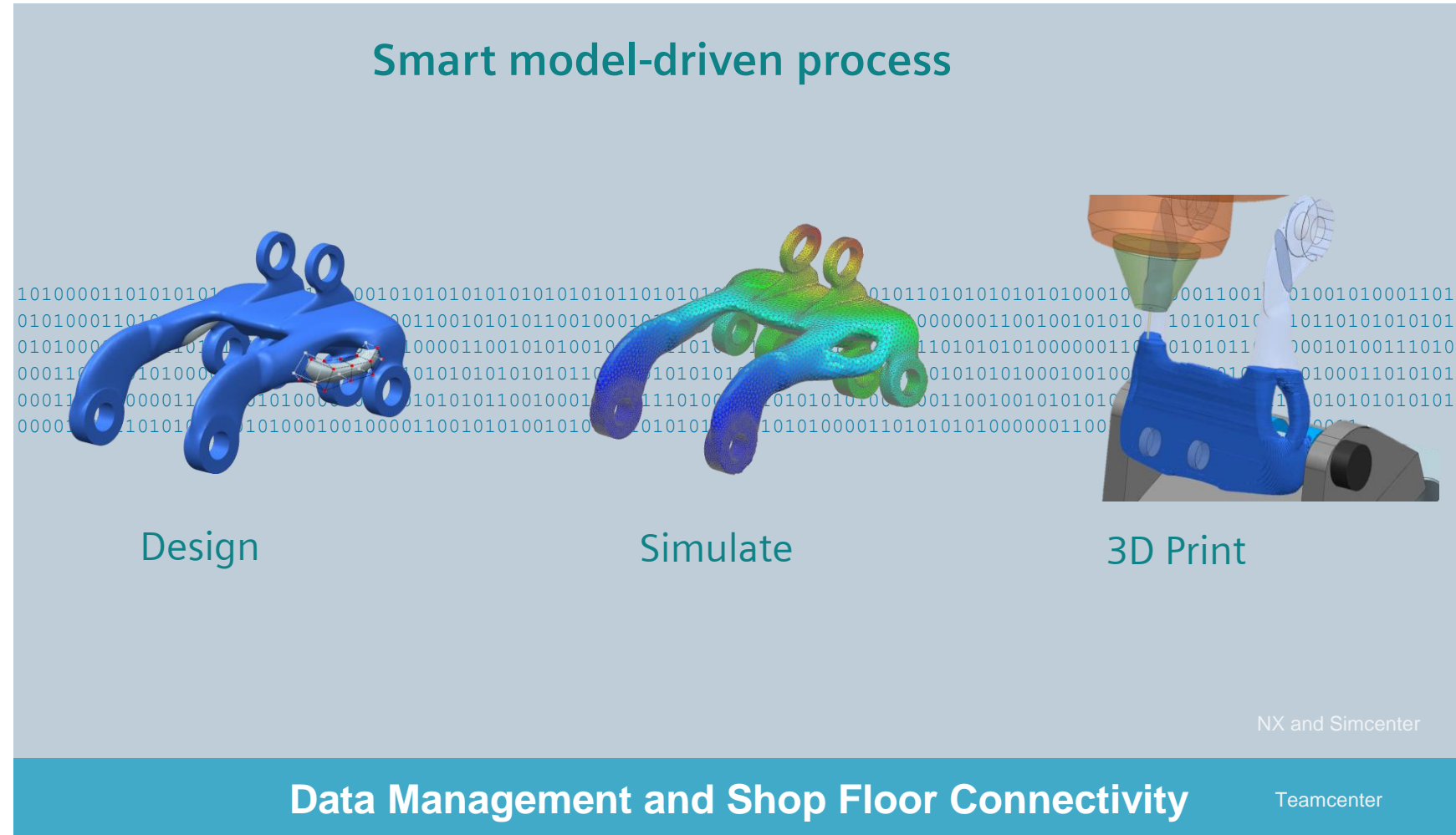
## Machine builder perspective

# Specific Additive Manufacturing software tools unleash AM opportunities and ensure data consistency along the value chain



## Design and simulate the product with NX CAD/CAE/CAM

- Topology optimization
- Lattice structures
- Convergent Modeling™
- Design rules
- Simulation for additive designs



# Industrialize technology based on Totally Integration Automation portfolio - improve speed, efficiency, flexibility and security

## Develop and operate the machine

- NX Mechatronics Concept Designer
- Totally Integrated Automation
- Motion Control
- Fulfillment of IEC-UL/CSA criteria and associated certification



Directed Energy  
Deposition



Powder Bed  
Fusion



Material  
Extrusion



Jetting

# Siemens Part Manufacturing Platform – Global gateway to on-demand design and manufacturing

**SIEMENS**  
*Ingenuity for life*

A global, digital collaboration platform for distributed, industrial additive manufacturing (AM) and co-innovation solutions

The screenshot shows the Siemens Part Manufacturing Platform website. At the top, the Siemens logo and tagline 'Ingenuity for life' are displayed. Navigation links include 'Products & Services', 'Market-specific Solutions', and 'Company'. A search bar is located in the top right corner. The main content area is a grid of interactive tiles:

- Register** (with an image of a key) and **I'm a Member Login**
- Expert Community** (with a network diagram icon)
- 3D Model Check** (with an image of a 3D model and a printer)
- Solid Edge ST9** with the subtext **Expand your horizons** and **Co-innovate a New Design**
- I'm a Designer** (with an image of a hand using a tablet)
- I'm a Manufacturer (Production Capabilities)** (with an image of a robotic arm)
- Learn from our Data Analysis** (with a 3D bar chart)
- Find Available Machines** (with a world map icon)
- I would like to Manufacture My Parts** (with an image of a 3D printed part)
- Collaboration Tools** (with a headset icon)
- Online Guides** (with an image of a mechanical part)
- I'm a Machine OEM** (with an image of a 3D printer)

At the bottom left of the screenshot, the URL `3yd-siemens.netlify.com/user/upload` is visible.





**Thank you.**

**Dr. Karsten Heuser**  
VP of Additive Manufacturing  
Center of Competence  
Siemens Digital Factory