



Connecting to the Shop Floor with Teamcenter Manufacturing

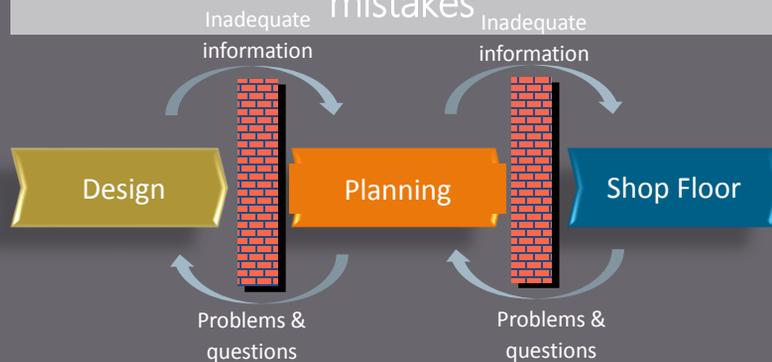
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Current status:
Disconnected serial engineering



Departmental boundaries impede information sharing and visibility, leading to poorly informed decisions, and a high risk of mistakes

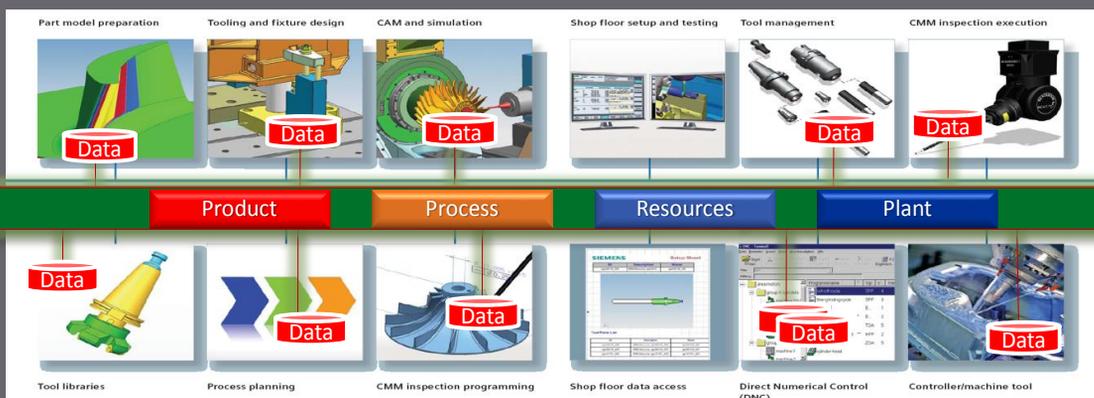


Challenges of the Process Chain

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Challenges of the Data and Process Chain



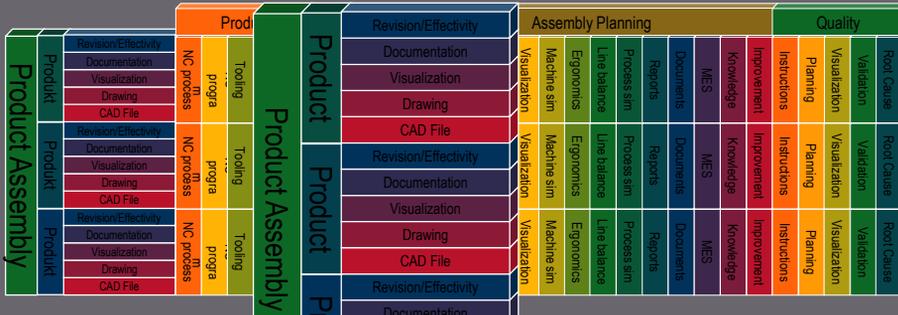
From the idea.....

.....to finished product

Challenges of Data Volume



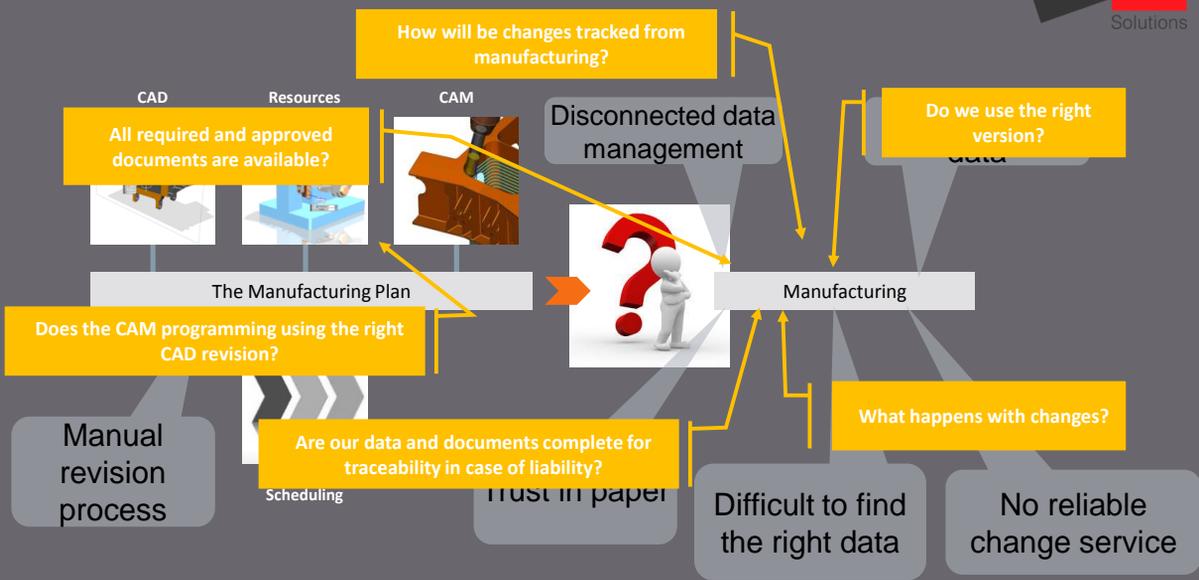
The data volume for the production can be a hundred times the development ...



100 components can easily generate 10.000 production data



Challenge Processes



Challenges of Data Management

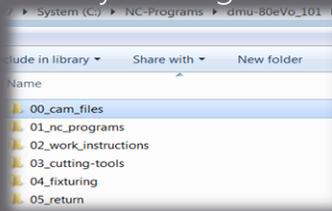


What do we see today:

- CAD data and processes are predominantly managed via a PDM/PLM solutions (parts, drawings, documents)

but

- CAM, Manufacturing data und processes with approx. 100 times more data are however mostly managed and guided over folder structures and people



Manufacturing Data and Process Challenges



Impact:

- Unsafe
- Faulty
- Waste
- Liability
- High organizational effort
- Time consuming
- Knowledge in individuals



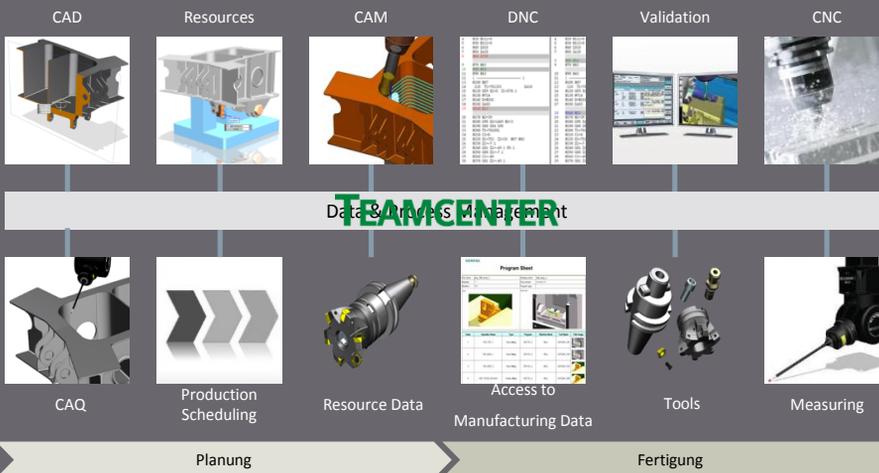


Seamless Process Chain

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Process Chain



Process and Operation Scheduling Part Planer



Engineering

Production Engineering

NC-
Programming

Pre-Setting

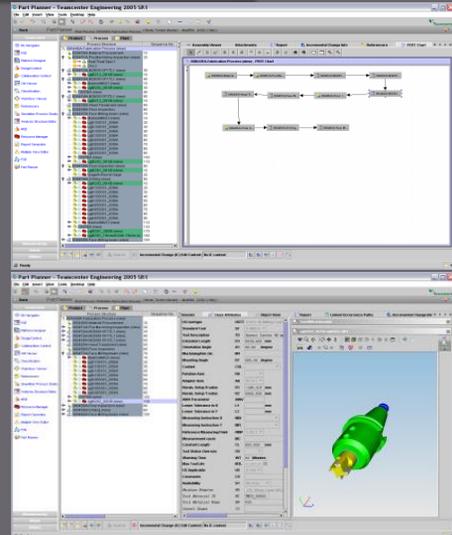
Shop Floor

Functions

- Planning of production sequence
- Use of process templates
- Assignment of part revision to production revision
- Assignment of resources
- Creation of work instructions

Benefits

- Reduction of the costs for the production planning
- Increase process quality by reusing proven processes
- Transparent knowledge management of production processes



Manufacturing Data Management



Engineering

Production Engineering

NC-
Programming

Pre-Setting

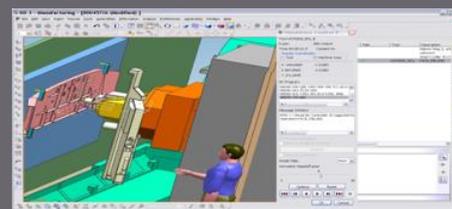
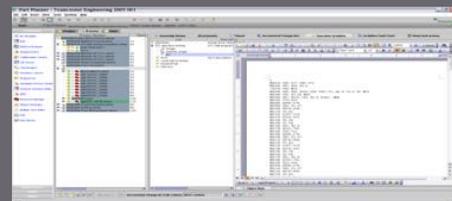
Shop Floor

Functions

- Revision of manufacturing data
- Management of manufacturing data and resources
- Management of shop docs and fixture plans
- Integration of different CAM solutions (CAM Integrator)
- Reference to part revision

Benefits

- All production-relevant data are automatically stored in a data administration
- Where used list of the used resources
- Secured usage of only released data



Manufacturing Resource Management Manufacturing Resource Library



Engineering

Production Scheduling

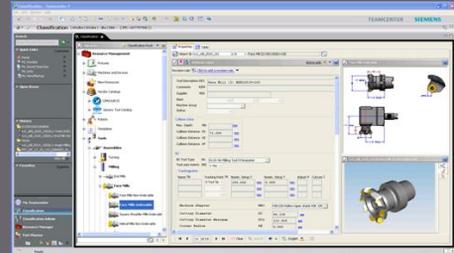
NC-
Programming

Pre-Setting

Shop Floor

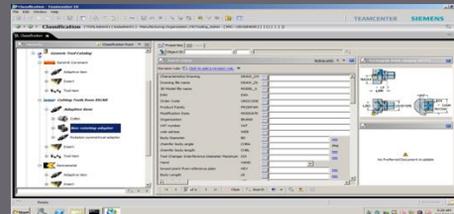
Functions

- Complete classification and library functions to manage manufacturing resources
- Organisation of tools, fixtures, machines, measurement equipment, process plans and templates
- Customer specific management structures possible
- Default characteristic classification DIN/ISO



Benefits

- Central manufacturing resource management for all manufacturing and manufacturing related areas
- Where used references in all programs where manufacturing resources are used
- Easy integration of tool manufacturer catalogs



Manufacturing Integration Shop Floor Connect



Engineering

Production Engineering

NC-
Programming

Pre-Setting

Shop Floor

Functions

- Easy to use browser based user interface for operator to access all approved data and information
- View of NC-programs, shop docs, tool lists, drawings, 3D models etc.
- NC-program download to control
- Upload of changed NC-programs from control

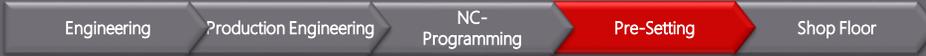


Benefits

- Revision secured access to the actual approved engineering and manufacturing information and data
- Process and information of engineering as well as data of manufacturing in one single data management environment
- Reduction of reject rate in case of lack of information flow through the machine



Physical Tools Shop Floor Integrate Resource Management

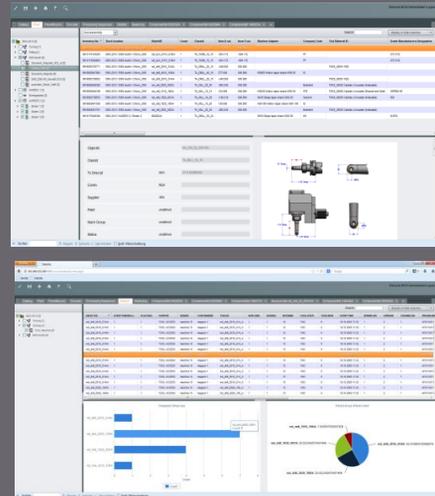


Functions

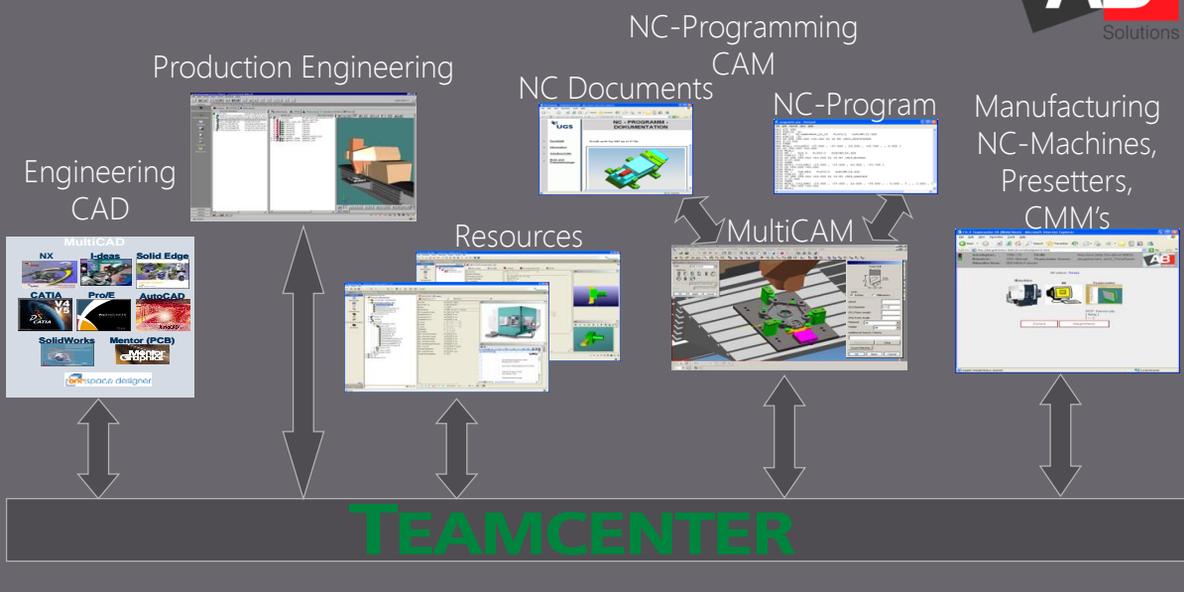
- Actual tool overview and tool statistic over the whole network (inventory control)
- Balancing
- Tool planning
- Operator supported load and unload of tool magazines

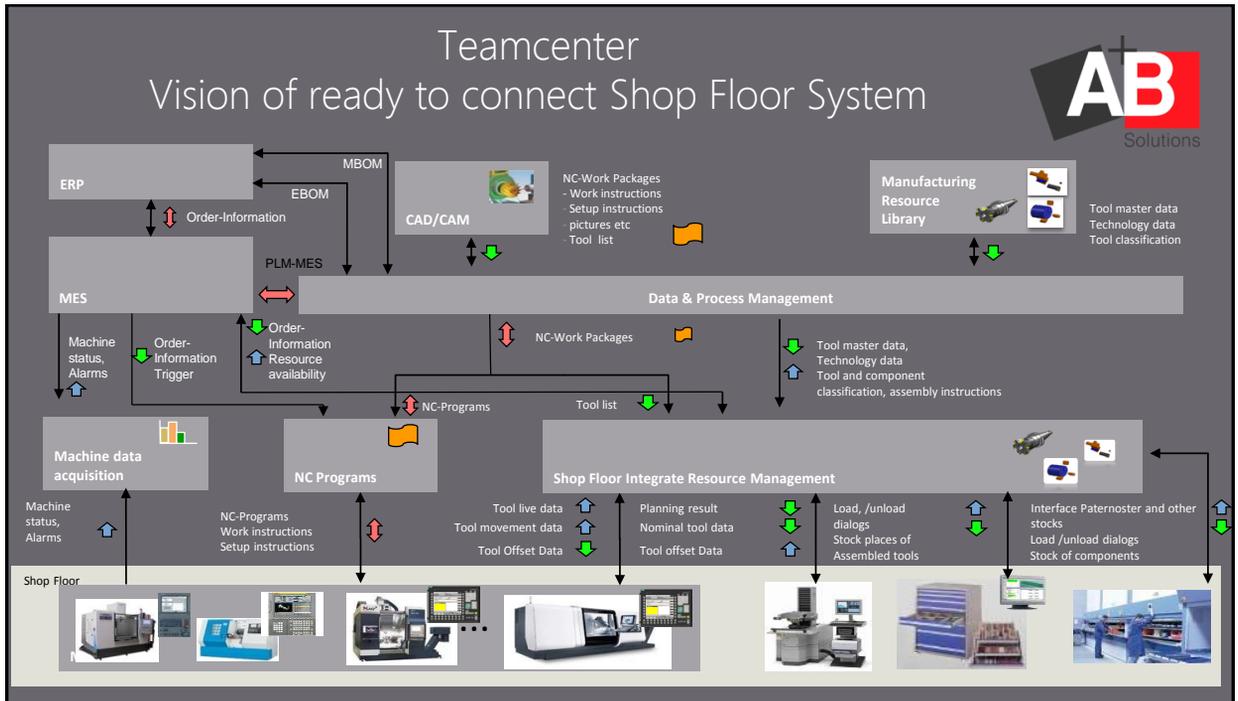
Benefits

- Inventory management
- Detection of potential savings of tools as well as tool costs
- Closed data chain from purchasing to spindle



Seamless Process Chain from Top Floor to Shop Floor





Customers

AB
Solutions

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Customers



Berthold Hermle AG (Mill Center Machines)

- NX CAD, NX CAM, TCE, TCM, SFC
 - Integration of 12 mill centers and tool presetting
- ✓ "We have decided for the integration of manufacturing in PLM because it fits perfect in our system landscape. The integration is key for a shorter project cycle time, higher process security and decrease of reject rate."

Mr. Schworer, Division Manager Production

Customers



➤ Callaway Golf (Golf Equipment)

- NX CAD/CAM, TCE, TCM, Volumill, SFC
- Shop Floor Connect for 15 NC machines in the prototype shop
Every operator is working with an iPad/Surface to view, download and upload the TC data over the Shop Floor Connect interface

- ✓ "With the seamless process chain from Engineering to the shop floor we are 50% more productive and in addition with Shop Floor Connect we saved 80% of papers in the shop floor (nearby paperless production)"

Steve Aguilár, Manager CAM & Tooling

Customers



➤ Oskar Frech GmbH + Co. KG (Die Casting Machines)

- NX CAD, NX CAM, TCE, TCM, SFC
 - Integration of 14 milling, drilling and turning machines and 2 tool presettlers
- ✓ "The usage of the integrated solution Manufacturing solutions of Teamcenter reduces our cycle time, decrease our process based reject rate down to 0%, gives us a direct feedback from production and thereby a higher quality, productivity and delivery reliability."

Dr. Norbert Erhard, Technical Managing Director

Customers





Our Company

Ralf Stetter, A+B Solutions GmbH

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The A+B Solutions GmbH



- 15 motivated employees
- More than 35 years of experience of manufacturing connection and integration
- Over 400 customers with more than 420 installations worldwide
- Manufacturing Solutions
- Products and Solutions for
 - DNC
 - Machine Data Acquisition
 - PLM in Manufacturing (Teamcenter Manufacturing)
- Development, Consulting, Integration, Service and Support
- Technology Partner of Siemens PLM (Foundation, OEM and Service Partner)



Competence



Process Analysis,
Projection,
Management
and Consulting



Implementation,
System Integration,
Connection (PPS/ERP) as well as
different machines and controls,
PLM integration of production
adaption and training



Web Client Technology,
Internet Technology,
Customer
Developments and
Customization



Thank You! Questions?

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