



# PowerMill History and Workflow

Jon Caliguri

Director of Sales | DSI





Design and  
Software  
International

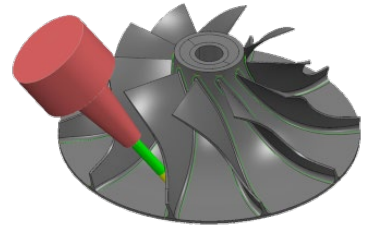
Cincinnati, OH | Rockford, IL | Windsor, ON | Phoenix, AZ | Houston, TX | Denver, CO | Tampa, FL

## Who is DSI?

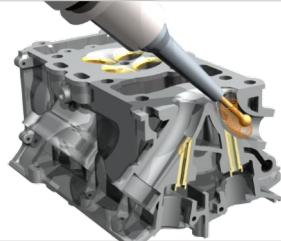
Design and Software (DSI) is an Autodesk Gold Partner specializing in the MAKE Advanced Manufacturing Solutions of Autodesk (PowerMill, PowerShape, PowerInspect, Fusion 360, Fusion Manufacturing Extension, Fusion with FeatureCam, and Netfabb). Founded in 1989, DSI has been focused on selling and supporting CAD, CAM, AM, and Metrology software in North America for over 30 years. In addition to software Support, DSI provides software training, consulting services, and software customization & automation services.

## CAPABILITIES

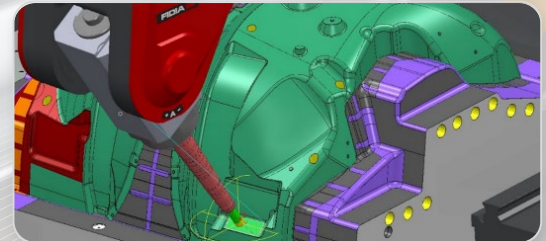
- **Standalone Expert CAM Solution for Milling Complex Parts, Molds & Tooling**
  - *2.5X & 3X Milling* - Ultra-fast prismatic machining & advanced 3-axis surfacing
  - *Indexed Milling* - Indexed machining (3+2) for Mills
  - *Multi-Axis Milling* - Multi-axis swarf, contour & tilting
  - *WCS Probing* - On machine probing accurately locates work coordinates
  - *Wrapped 4 Axis* - Apply 3D intricate toolpaths to cylindrical faces
- **Unparalleled Precision & Control** - Flexible and accurate programming options for highly complex, “organic” parts. Precise surfacing capabilities eliminate manual polishing. Minimize air-cutting time for increased machine throughput and efficiency.
- **Integrated Simulation & Verification** - Avoid costly trial-and-error prototyping with accurate machine simulation.
- **Blade and Blisk**
  - Dedicated roughing and finishing strategies for ultra-efficient machining
  - Advanced control of toolpath offsets and tool axis motion with intelligent collision avoidance
- **Port Machining**
  - Hybrid 3- and 5-axis milling
  - Machine across or along gas flow for extreme surface finish
  - Cutter push-off management to avoid mismatch between operations
- **PowerMill Robot**
  - Dedicated tools for offline programming of industrial robots
  - Virtual pendant allows simple teach-and-learn
  - Avoid axis singularities and other robot-specific issues
  - Output native robot G-code
  - Program up to 18 axes for complex work cells



*Blade and Blisk*



*Port Machining*



*Collision Checking*

# World Class

>\$1Billion in Advan



2006



AM TECHNOLOGY NEWS    EVENTS+    BLOGS+    AWARDS+    3D PRINTING & AM RESOURCE CI

## Autodesk-Delcam acquisition: "Biggest news in the history of CAM"

BY ROSE BROOKE    14 FEBRUARY 2014    09:15



Delcam HQ

### Pan Computing

Process Simulation for Additive Manufacturing



TOD



# Autodesk Advanced Manufacturing

Supporting Advanced and Emerging manufacturing technology

Plan

Program

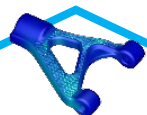
Produce



Generative Design



Design Optimisation



Simulation / Analysis



Additive



Molding



CNC



Metrology



Composites / Fabrication

**M** AUTODESK<sup>®</sup>  
MOLDFLOW

**N** AUTODESK<sup>®</sup>  
NETFABB<sup>®</sup>

**F** AUTODESK<sup>®</sup>  
FEATURECAM

**P** AUTODESK<sup>®</sup>  
POWERMILL<sup>®</sup>

**H** AUTODESK<sup>®</sup>  
HSM

**P** AUTODESK<sup>®</sup>  
POWERINSPECT

**T** AUTODESK<sup>®</sup>  
TRUNEST

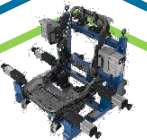
**F** AUTODESK<sup>®</sup>  
FUSION 360<sup>®</sup>



Prototyping



Metal AM



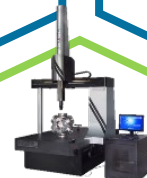
Jigs & Fixtures



Tooling



DED



CMMs



Fabrication



Robots

# Backed by Industry Experts

Unmatched Advanced Manufacturing Resources



**600**

Software Developers



**> \$1 B**

Invested by Autodesk



**6**

Manufacturing  
Innovation Centers

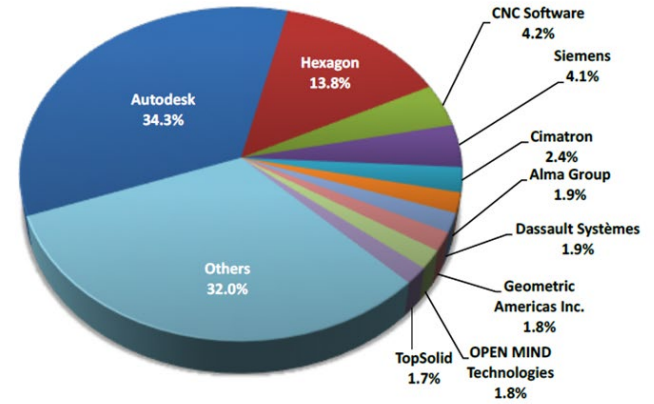
# CIMdata - 2020 Market Analysis Report Series

Figure 21:  
Market Share of CAM  
Providers Based on  
Industrial Seats  
Shipped

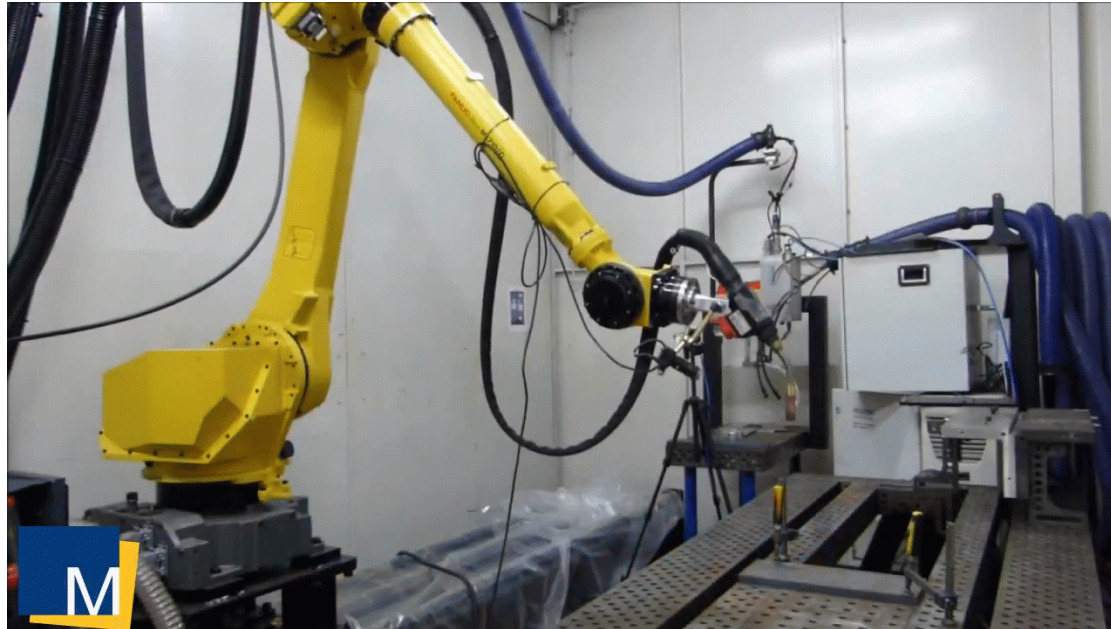
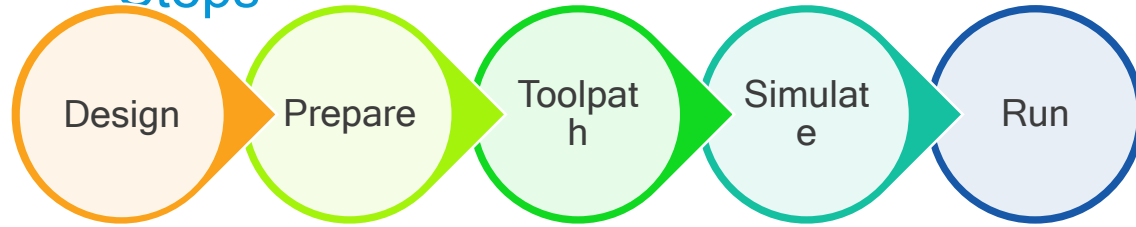
CIMdata 2020 Market Analysis Report Series  
CAM Market Analysis Report—Version 28

Table 8: Forecast 2020 Ranking of CAM Providers Based on Direct Revenues

2020 Ranking	Company	2019 (\$M)	2020 (\$M Est.)
1	Dassault Systèmes	232.5	212.8
2	Siemens	210.0	196.4
3	Autodesk	172.2	182.5
4	Hexagon	167.5	157.4
5	OPEN MIND Technologies	85.0	82.5
6	Cimatron	65.1	60.5
7	CGTech	56.8	57.9
8	Tebis	61.4	57.1
9	CNC Software	59.8	56.7



# PowerMill Robot Additive Solution Steps





# PowerMill Robot Additive Requirements

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## PowerMill License

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Fusion 360 with PowerMill Ultimate includes additive & robot functionality.

## Post Processor

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Translates PowerMill's internal code to your robot's specific native language. Kuka, Fanuc, ABB, etc...

## Digital Twin

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A digital twin, or Machine Tool Definition, of your robotic cell is critical to output accurate motion and prevent unsafe or unwanted movements.

## Software Training

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PowerMill Robot Additive training from DSI or DSI/EWI for in person, hands-on experience.

## Support Partnership

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DSI and Autodesk support all of our subscription customers with always available live expert technical support, advanced and custom training available, and custom development services available.

## Design for Additive

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Often producing quality AM parts requires a Design for Additive step of adapting, modifying, or adding to the part design to best support the AM process.

# DSI/EWI Training Partnership

The Greatest Access to Expertise & Equipment



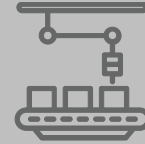
**Autodesk Certified  
Instructors**

**EWI Expert Engineers**



**Training Licenses  
Provided**

**PowerMill Robot  
Additive Certificate**



**EWI Robot and CNC  
Additive Platforms**

**First-Hand Exposure to  
WAAM**



# AUTODESK®

Make anything™

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mfg.com



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