MANUFACTURING THE FUTURE WITH 3DPRINTING 2.0
3D Systems Introduction

3D Systems (NYSE:DDD) is a leading provider of 3D printing centric design-to-manufacturing solutions

Leadership Through Innovation and Technology

- 3DS invented 3D printing with its Stereolithography (SLA) printer and was the first to commercialize it in 1989.
- 3DS invented Selective Laser Sintering (SLS) printing and was the first to commercialize it in 1992.
- 3DS invented the Color-Jet-Printing (CJP) class of 3D printers and was the first to commercialize 3D powder-based systems in 1994.
- 3DS invented Multi-Jet-Printing (MJP) printers and was the first to commercialize it in 1996.
3DPRINTING 2.0

THE WAY WE DESIGN | WHAT WE CREATE | HOW WE MANUFACTURE

DISRUPTIVE | TRANSFORMATIVE | IMPACTFUL
Concept Models

Iterate on Concepts Early to Lower Design Costs

- Concept Development
- Detailed Design
- Build Test
- Manufacture / Ship

Cost per Change
Desired Change Count

Iterate on Concepts Early to Lower Design Costs
Concept Models

- Compare alternative design concepts side-by-side
- Improve early design decisions that impact every design and engineering activity that follows
- Reduce or eliminate costly design changes later
Functional Prototypes

- Test functionality
- Test new inventions
- Identify functional design revisions early
- Test form, fit and assembly
- Hands-on feedback
- Prove design theories through practical application
Functional Prototypes

- Accuracy is important
- Feature detail resolution
- Material characteristics matched to application
Rapid Tooling

• Accelerate manufacturing start-up

• Protect increased investment
  – Rapid tooling verification
  – First run jigs & fixtures

• Confidence to make supply-chain commitments
Production Parts

- **Complexity is free** with additive manufacturing
- Unleash unlimited geometries to reach new levels of functionality
- Improve quality and performance
Production Parts

- Reduce manufacturing steps reducing time and cost
- Reduce manufacturing waste
- Produce metal parts
  - Direct metal printing
  - Casting pattern printing
3D Printers for Every Need

LIVING ROOM | CLASSROOM | GARAGE | DESKTOP | LAB | FACTORY

Under $1,000

Up to $1,000,000

KONICA MINOLTA
Professional 3D Printers

3D Systems ProJet® series
The Widest Range of 3D Printers for the Office, Lab or Workshop
ProJet ® x60 series

Print beautiful full color models quickly and affordably
ProJet x60 Series

Full Color Printing

Highest Throughput

Fastest Print Speed

Easy-to-Use

Affordable
Communicate with Color

COLOR
A picture may be worth a thousand words, but how much money is a full color 3D model worth?
Fastest Print Speed

Get concept models in hours - not days.

- Up to 10x faster than competitive technologies
- Print 1 – 4 layers per minute
- Fabricates and colors in a single step
- *Pro* Draft Mode produces parts up to 35% faster
Test More Ideas Faster

Built in 2 hours using ProJet x60
Quicker Iterations

Highest Throughput. Faster Printing.

Draft Mode prints 35% faster than the already fast ProJet® color modes.
Safe and Office-Friendly

For Office, School, or Production Environments

- Quiet, Safe and Odor-Free
- Zero-hazardous waste AND zero-liquid waste
- All-in-one options available for built-in printing, core recycling, and finishing
- Eco-friendly and safe finishing options available
Print more Parts and Iterations

AFFORDABLE
Test More Ideas to Improve Product Quality

**PART COST**

- $2.50-$10/cubic inch
- Part costs adjusts to your needs
- Fraction of the cost of other professional 3D printers.

### Draft | Monochrome | Basic Color | Functional | Presentation
--- | --- | --- | --- | ---
$2.50-$6 / cu in | ~$3-7 / cu in | ~$4-8 / cu in | ~$5-8 / cu in | $5-10 / cu in
ProJet® 3510 series plastic printers

Print functional plastic parts in high definition with ease
Print Beautiful Parts...

- No stair-stepping on curved sidewalls
- Exceptionally Smooth Surfaces
... with Micro-fine Detail Resolution

- Features down to 0.01 inches (0.25 mm)
- No geometry limitations
Consistently Sharp Edges and Corners

- Clean, straight edge definition
- Exceptional small hole definition
High Performance Materials For More Applications

**VisiJet® M3 X**
- White, injection molded plastic look and feel
- ABS-like performance

**VisiJet® M3 Black**
- Black, injection molded plastic look and feel
- High strength and flexibility plastic

**VisiJet® M3 Crystal**
- Translucent
- Tough polypro/ABS-like performance
- Class VI Certified for medical applications

**VisiJet® M3 Proplast**
- Translucent White
- Durable plastic performance

**VisiJet® M3 Navy**
- Blue
- Durable plastic performance

**VisiJet® M3 Techplast**
- Gray
- Durable plastic performance

**VisiJet® M3 Procast**
- Dark blue for improved surface inspection
- Castable plastic

Advanced Performance
Fast & Easy Job Submission

• Intuitive and automated software
  – Automatic part placement and build optimization tools
  – Intuitive extensive part editing tools
  – Automatic support generation
  – Print jobs held in easy-to-manage job queue

• Quick-start print job, as easy as 1-2-3...

1. Remove build platform with completed parts attached
2. Insert clean build platform
3. Press start button on printer
   Printer begins next print job in queue
Optimized Capacity

- Stack & nest parts to use entire build volume
  - Take advantage of longer free periods
  - Gain additional thru-put without sacrificing build time
  - Maximize utilization of the available build volume

_Why print in only 2-dimensions when it’s a 3D printer?_
Automated Process – from File to Ready-to-Use Part

- Fast and easy support removal
  - Wax supports simply melt away with no support scars
  - Hands-free process saves time and labor
  - No geometry limitations
  - Fine delicate features preserved
  - Safe finishing process
Competition?

ProJet™ 3500

Brand X-jet

0.4mm
ProJet® 4500 full color plastic printer

Combine the power of vibrant full color with durable plastic parts.

New for 2014!
High-Quality Full-Color Printing


*Enhance* communication and design

*Improve* marketing

*Impress* customers
Applications

Customized end-use products
Applications

Durable concept models
Key features

Almost 1,000,000 brilliant colors

Amazing small feature detail

Relative size to model
ProJet 4500 Summary

- Prints both flexible and strong high-res CMY color plastics fast
- Ready-to-use parts and assemblies directly from the printer
- Only continuous-tone full-color plastic 3D printer available today
- Green safe print process reduces part cost by as much as 25x
ProJet® 5500X composite plastic printer

Big, engineered composite material parts, with the best quality, accuracy and toughness.

New for 2014!
ProJet 5500X

Big, engineered composite material parts, with the best quality, accuracy and toughness.
Multiple engineered composite materials

- Rigid, ABS-like white plastic
- Rubber-like black tires
- Moderately flexible front wing
Multi-material benefits
Accurate parts
New VisiJet® Composite Materials

- VisiJet® CR-WT Rigid White ABS-like Material
  - Durable
  - Rigid
  - High temperature resistance
New VisiJet® Composite Materials

- VisiJet® CF-BK Black Rubber-like Material
  - Rubber-like look and feel
  - Extreme flexibility
  - Absorbs shocks and impacts to enhance durability
New VisiJet® Composite Materials

- VisiJet® CR-CL Clear Polycarbonate-like Material
  - See-thru clarity when polished
  - Simulates polycarbonate or glass
  - Functional durability resists scratching
ProJet 5500X Summary

• High-performance simultaneous engineered composite printing
• Multi-material linking up to 2X faster than comparable printers
• Highest quality, most accurate and toughest multi-material parts
• Larger or more parts with 60% greater capacity than others
• Industrial grade print head equipped with a 5-year warranty
Production 3D Printers

3D Systems ProX™ series
High-Throughput 3D Printers for the Production Floor
ProJet® SLA printers

Transform how you manufacture with SLA, the gold standard in 3D printing
Why Choose SLA 3D Printers?

- Broadest Range of Applications
- Best Surface Quality
- Cost-efficient Scale-Up
- Unmatched Accuracy and Precision
- Lowest Unit Cost Production
- Produce Large, Whole Parts
Unmatched Accuracy and Precision

0.25 mm
# 3D Systems SLA Printers

<table>
<thead>
<tr>
<th></th>
<th>ProJet 6000</th>
<th>ProJet 7000</th>
<th>iPro 8000</th>
<th>ProX 950</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Build volume</td>
<td>10 x 10 x 10 in (250 x 250 x 250 mm)</td>
<td>15 x 15 x 10 in (380 x 380 x 250 mm)</td>
<td>26 x 30 x 22 in (650 x 750 x 550 mm)</td>
<td>59 x 30 x 22 in (1500 x 750 x 550 mm)</td>
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<tr>
<td>Accuracy</td>
<td>0.001-0.002 inch (0.025-0.05 mm) per inch of part dimension</td>
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</tr>
<tr>
<td>Maximum Resolution</td>
<td>0.075 mm, 0.050 mm layers</td>
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<td>0.075 mm, 0.050 mm layers</td>
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ProX™ 500

Economically manufacture injection molding-grade plastic parts for demanding end-use applications

New for 2014!
SLS – Manufacture Flight Hardware On Demand

Representative Parts
ProX 500 Summary

- Tough and durable parts with true 3D mechanical properties
- Fast build speed and high throughput with automated 3D part nesting
- Best-in-class part surface finish, resolution and definition
- "Green" process with little material waste
- Reduced part manufacturing cost enables volume manufacturing applications
ProX 100, 200, 300 Direct Metal Production Printers

High density, metal printed parts from a large choice of materials with the highest detail and precision
Print fully functional metal parts in hours
Large choice in standard metal alloys and ceramics

• More than 15 materials tested and available
• Steel, CrCo, Inconel, Al and Ti alloys
• Al2O3 ceramic

Inconel 718    Al2O3    AlSi12    Pure Cu
Unmatched design and manufacturing freedom
Highest accuracy, best detail resolution

150 micron wall thickness
ProX 100, 200 and 300 Direct Metal Printers - Summary

Print fully functional metal parts in hours

• Reduce time and cost of manufacturing complex metal parts
• Gain flexibility – in cycle time + part complexity
• Benefit from large choice of materials
• Finest detail resolution and highest precision in metal printing
• High repeatability guarantees true manufacturing applications
CubePro

Professional 3D Printer for large, multi-color, multi-material prints

For schools, office & business

MSRP US $2,799 to 4,399
CubePro Three Models

CubePro
Single Jet

CubePro Duo
Dual Print Jets

CubePro Trio
Three Print Jets
Print Big - Make Precise

Largest Print Volume in its class
275mm x 265mm x 240mm
10.8 in. x 10.45 in. x 9.5 in.

Controlled Print Chamber
High quality ABS printing
Large accurate reliable prints
# Print Volume

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<thead>
<tr>
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<th>X</th>
<th>Y</th>
<th>Z</th>
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</thead>
<tbody>
<tr>
<td>Single Color</td>
<td>275mm 10.75”</td>
<td>265mm 10.45”</td>
<td>240mm 9.5”</td>
</tr>
<tr>
<td>Duo</td>
<td>230mm 9.1”</td>
<td>265mm 10.5”</td>
<td>240mm 9.5”</td>
</tr>
<tr>
<td>Trio</td>
<td>185mm 7.3”</td>
<td>265mm 10.5”</td>
<td>240mm 9.5”</td>
</tr>
</tbody>
</table>
New Durable Engineering Materials

ABS, PLA, Nylon print materials

Nylon & ABS – Durable, Functional & Prototyping Materials

PLA - High fidelity and feature detail

Mix & match up to three colors or materials in same print
Superior Accuracy & Thinnest Layers

- High accuracy, feature detail & resolution
- Thinnest layers at 3 mil (70 µm) for smooth surfaces
- Standard prints at 8 mil (200 µm) & 12 mil (300 µm)
- 2X accuracy compared to sub-3K printers in the market
Wide Array of Color Choices

25 vibrant print colors in ABS & PLA

Glow-in-the-dark colors for special creations
Cube – 3rd Generation!

Ultra portable, plug & play 3D Printer with advanced printing features under $1,000

For homes, schools, offices & business
Most versatile

Only printer in its class with
dual color &
dual material printing

6” x 6” x 6” (152 mm) print vol.

ABS & PLA in same prints
Hi-res 70 microns (3 mil) layer thickness
Smart Technology

**PrintJet**
Integrated with cartridge
Renewed with each cartridge
Enables instant loading of cartridge
Eliminates clogs

**Print Plate**
Auto-levelling
Zero Calibration
Ensures reliable prints

**Support Generation**
Fully Automated
Award Winning Technology

• Awards for: ‘Reliability,’ ‘Easiest to Use,’ ‘Best Technology’
Target Market

- **Finders**: Gadget centric technology geeks
- **Families**: Providing children with an academic edge
- **Makers**: Hobbyists, inventors and tinkerers interested in consistent modeling
- **Designers**: Artists, animators, architects, engineers and innovators
- **Businesses**: Seeking competitive edge through affordable rapid prototyping and innovation
MANUFACTURING THE FUTURE WITH 3DPRINTING 2.0

Thank You

For more information, visit 3dsystems.com