Choosing the Right 3D Printer:
What You Need to Consider Before Buying
Agenda

• Vincent Icart
  • Comparison of printing technologies

• Sherrie Kysilka – CADVantage Modeling Services
  • Are you using the right technology to set you apart from your competition?

• James Cook – Tates Gallery
  • The benefits of owning your own 3D printer

• Diane Trovato - Solidscape
  • Equipment financing overview
Sherrie Kysilka

- Owner CADVantage Modeling Services, LLC
- Master Jeweler
- Former educator for GIA
- AGS CG, Gemology
- GG, AJP, Diamonds, Colored Gems, Pearls, Sales, Gold and Precious Metals
- CAD Designer
Owen Burke

- Director at Solidscape
- 15 years experience in 3D printing
- Supports our global business
Choosing the Right 3D Printer for Your Needs

My 3 Must-haves Criteria:

1. Dimensionally accurate

2. Directly Castable — without issues

3. Beta Parts from all perspective machines for comparison
DIMENSIONAL ACCURACY

Example of dimensional distortion

• Parts made with a single material system are affected by gravity which pulls, causing distortion

Some people modify their CAD designs to try to compensate. My preference is for the two-material system, which gravity has no effect on.

Two-material systems allow me to design exactly what I want without 3D printer limitations.
DIMENSIONAL ACCURACY

Solidscape is true to the CAD design. The competitor is 0.97mm smaller than CAD and the bottom is filled in.
DIMENSIONAL ACCURACY / DIRECT CASTABILITY

Platinum casting from Solidscape

Platinum casting from other material
DIMENSIONAL ACCURACY

This is an example of a two-piece component ring cast from a non-Solidscape material

- Measurements from the STL file vs. after casting in gold

Increasing and decreasing measurements have occurred during both printing and casting
BETA TEST BEFORE YOU BUY

• Have beta-part(s) stl file(s) to obtain printed sample(s) before purchasing machine.

• Give each vendor the identical .stl file model for each beta-tested item.

• Use your personal measuring device, optimally one that is digital (i.e., Mitutoyo digital caliper).

• Measure and record your 3D printed model’s dimensions in the identical locations for accurate comparisons.

• Next, cast sample(s) then collect and document data. Make notations of anything different between the cast models you feel is important.
DESIREABLE CASTING RESULTS

- Layer thickness plus SCP technology provides smooth surface finish
- Directly castable - no ash after burnout to cause spongy/porous castings
- Zero “co-efficient of thermal expansion” - no investment damage
- Not all casting investments work with all printer’s materials and all precious metals
Choosing the Right 3D Printer for Your Needs

• Analyze collected data for critical criteria

• Make Informed Decision

• Download of 3D Printer Criteria
  • Method for comparing printers
About Tates Gallery

• Second-generation goldsmith
• Founded 2006 by James and Sarah Cook
• Located in New Boston, NH
• Member of The League of NH Craftsman
• Personal, custom jewelry designs
  • CAD design
  • 3D printed wax models
  • Casting and stone setting

James T. Cook, Designer Goldsmith
How Owning a 3D Printer Can Help You Grow

• **Saves Time**
  - Less time at the wax bench – nothing to clean up from sprue points
  - Maximized workflow
  - Dimensionally accurate – gets it right the first time
  - Ability to do everything in house – cuts out the middle-man

• **Increased Revenue Stream**
  - Increased margins on custom jewelry
  - 3D printer is the PERFECT employee!

• **Flexibility**
  - Create without limits
  - Fix models easily
  - Quality control
Equipment Financing Made Easy

- **You have repayment term options**
  - Terms up to 72 months available.

- **You may see some tax benefits**
  - Payments on a Fair Market Value lease may be 100% deductible at tax time as an operating expense.

- **You’ll spend less**
  - Equipment financing is less risky since collateral is involved. You’ll almost always get a rate that is cheaper than other financing options.

- **You’ll have the opportunity to own**
  - If you think the equipment you leased will continue to drive in revenue after your financing agreement ends, you can work out purchasing at the end of your term.

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Questions?
Thank You!

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