Calculation Assumptions for OpenAM™ ROI / Cost Savings

Calculating OpenAM ROI

Anytime you have an existing piece of capital equipment and you have the opportunity to get more return on your investment into that equipment, it is worth a discussion.

Based on actual customer experiences, what we are showing you in the ROI calculator is an example based on known customer geometries printed in the material they chose to fit their applications. The parts we chose have financial data provided by the customer.

Stratasys then took a group of these parts that, when combined, would provide a utilization rate of 42% on a Fortus F900 Printer to provide a baseline of savings over CNC costs.

With us so far?

Then, what we did is add OpenAM software to allow this same printer to produce parts in a material that was previously not available on the F900®. Based on printing a similar number of parts as the baseline parts, in a defined geometry, we then show the added value created on an existing F900 by adding one more application that could not be achieved without the use of OpenAM software.

When comparing the costs of CNC or traditional methods of manufacture to printing on an F900, we show an improved ROI for an existing asset.

Every customer has different parts for different applications, and we invite you to contact us to have a Stratasys application engineer walk you through your own calculation of expanding your application reach using OpenAM software for your F900 or Fortus® 450mc printer.

Selected Geometries*

Material	Boom Tooling App #1	Boom Tooling App #2	UTC Duct Part Replacement	Angel Trains New Grab Handles	Dassault Falcon Jet Layup Tool
Geometries Used					
Model Material	Nylon 12CF	ULTEM™ 9085 Resin	ULTEM™ 1010 Resin	ULTEM™ 9085 Resin	ULTEM™ 1010 Resin

The blend of production parts was 20 of each use case in a calendar year, which accounted for 42% machine annual machine utilization. The difference in part cost between traditional manufacturing and AM accounts for the annual part cost savings.

The model assumes a 30% increase in machine utilization based on increased applications and uses. The overall increase in revenue with OpenAM has the cost of an annual OpenAM license, a new head, and the chip cost (based on material volume) already removed to account for additional expenses.

*Savings does not account for value of availability of previous capital, quantifying the value of reduced lead time, or the value design optimization and part consolidation. These are additional opportunities based on individual circumstances.

Calculation Assumptions Outlined - 1

Based on 5 Published Use Cases

Methodolgy

1. Comparing real material volume and machine time estimates to estimated cost of traditional manufacturing methods.
2 Conservative assumptions were applied to create a more realistic approach by including additional cost factors, such as labor, consumables, etc.
3 Use cases included: tooling fixtures, replacement parts previously CNC' machined or injection molded, plus a composite layup tool.

Machiine & Consumables Cost

1. Electrical costs were based on the power consumption for a given material and the average national electrical cost (US).
2. Machine cost is the machine hourly rate for the F900 depreciated over 5 years with a machine utilization of 40%
3. Build sheet and tip costs are prorated.
4. For use cases utilizing a soluble support, the cost of the wash tank purchase was factored in, by apply a proportional quantity of the wash tank depreciated over 5 years.

Stratasys Cost Source

1. Material and machine costs are based on list price, from March 2023.

Calculation Assumptions Outlined - 2

Based on 5 Published Use Cases

Methodolgy

1. For FDM, the engineering and programming labor rate were $75 per hour. This is slightly higher than the 2021 ASME fully burdened engineering rate of $68/hour.
2. For FDM, the machine operator and post processing labor rate was $35/hour.
3. For traditional methods, the engineering labor rate is $75 per hour, matching that of FDM.

Machiine & Consumables Cost

1. For AM, tuning labor was 8 weeks of engineering time on 3 different materials (40hrs/week*8weeks/mat'l*3mat'ls =960 hrs).
2. Above was equally divided across the 5 use cases and split across 20 parts of each type.
3. Ultimately, the 8 weeks equates to tuning a very difficult material, when 2 weeks would be a very simple material.

Stratasys Cost Source

1. Engineering labor duration rate was assumed constant between traditional and FDM production methods.
2. FDM programming, machine operator, and post-processing duration estimates were provided by a FDM AE.
3. A machinist was consulted for CNC labor times insights.
4. In all instances, the labor rates of the traditional method were significantly cheaper per part (primarily due to the cost of tuning the additional materials).