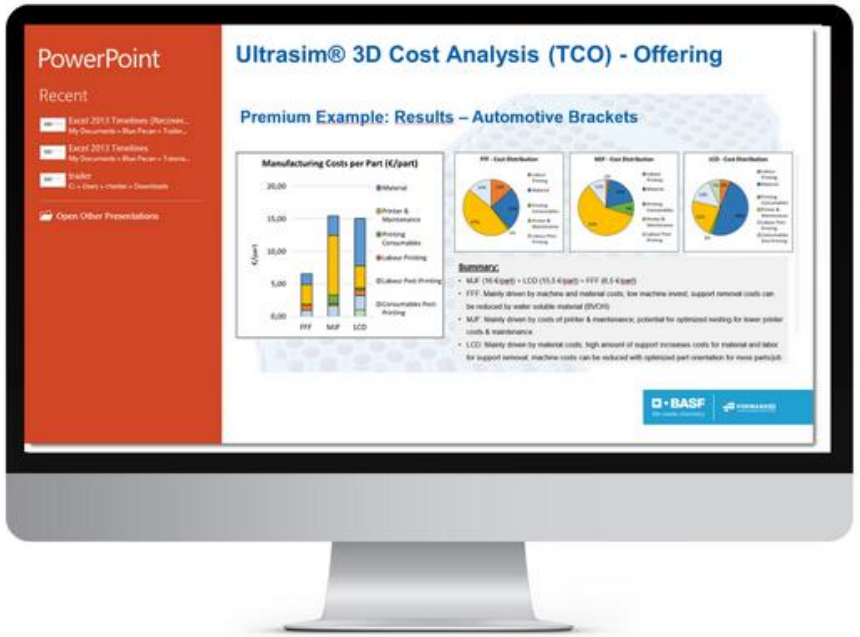
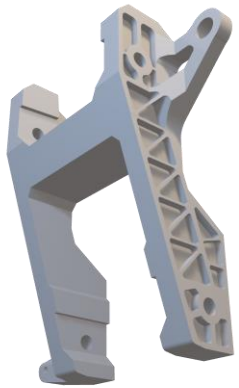
Ultrasim® 3D Cost Analysis (TCO)

Offering

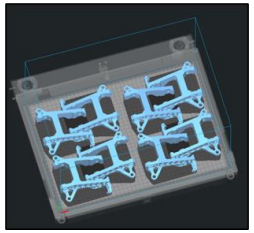


Do you meet your target costs with the material-technology-solution?

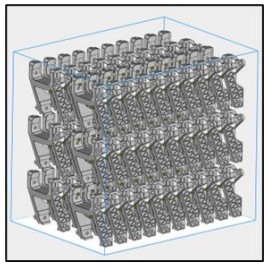
Using FFF, MJF, SLS, DLP, LCD



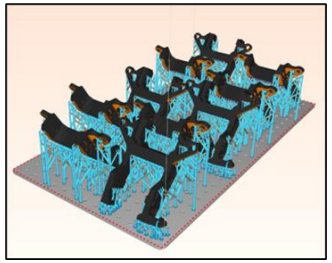
FFF:

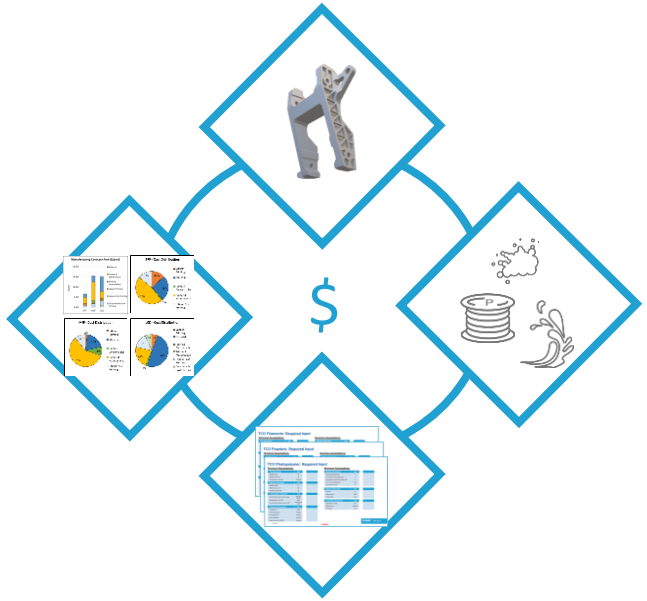


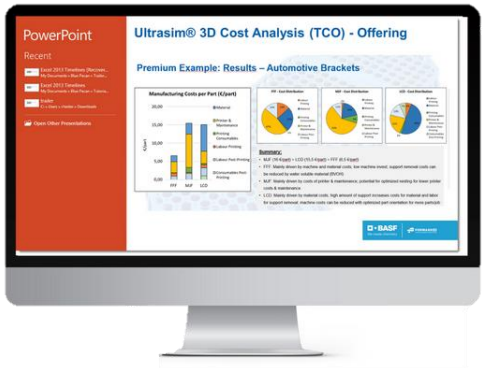
MJF/SLS:



LCD/DLP:







Your part

Benchmarking with 3D printing technologies

Validated TCO tool with years of experience

Cheapest 3DP solution

We only estimate manufacturing costs using industrial or customized production settings. If an offer from a service bureau is needed, please contact Sculpteo or the service bureau of your choice.

BASF We create chemistry | FORWARD AM Innovating Additive Manufacturing

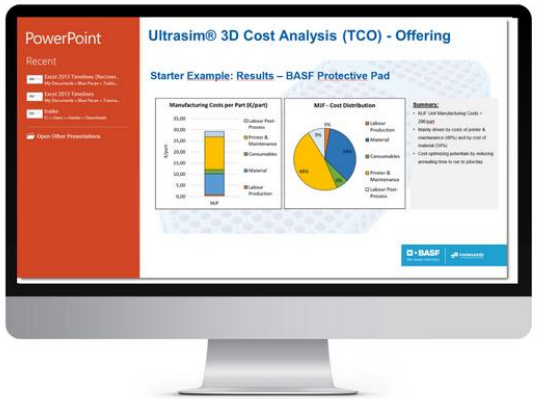
We support you in every stage – from starter to expert

➢In the end, the 3D printed part has to meet your target costs. We offer quick feedback about cost per part, insights into cost structures and help to unlock the full potential for series applications:

Starter

Single Cost per Part:

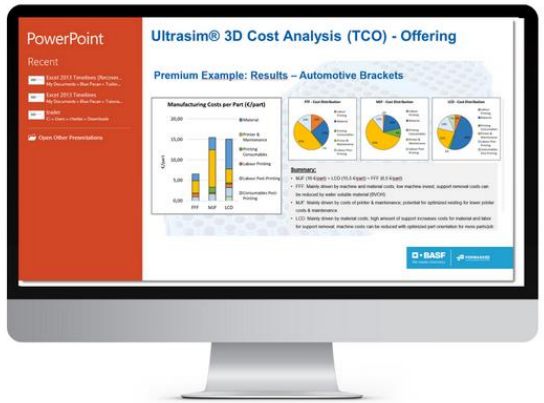
- Understanding the cost structure of your 3D printed part and what drives the costs.



Premium

Cost Benchmarking

- Compare the costs of several AM technologies and understand what technology might be most suitable for you.



Enterprise

AM Cost Tool:

- Use our in-house developed AM Cost Tool for your own calculations.

Coming Soon

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Ultrasim® 3D Cost Analysis (TCO) - Offering

	Starter	Premium	Enterprise
	Single Cost per Part Understanding the cost structure of your 3D printed part and what drives the costs.	**Cost Benchmarking** Compare the costs of several AM technologies and understand what technology might be most suitable for you.	**AM Cost Tool** Use our in-house developed AM Cost Tool for your own calculations.
What you get:			
• Cost report as PDF	✓	✓	✓
• Cost comparison of two AM technologies/materials		✓	✓
• Sensitivity analysis (what-if-analysis of cost parameters)		✓	✓
• AM cost tool			✓
What AM technologies:	• MJF/ SLS/ LCD/ DLP/ FFF	• MJF/ SLS/ LCD/ DLP/ FFF	• MJF/ SLS/ LCD/ DLP/ FFF
What AM materials:	• BASF material portfolio	• BASF material portfolio • External materials	• BASF material portfolio
What we need from you:	• STEP/STL • TCO input data (PPT onepager)	• STEP/STL • TCO input data (PPT onepager)	• 1 hour of your time to understand your problem and derive a solution concept.
Get your Add-on:	-	• Add AM technology or material (+ 500€) • Add cost iterations (+ 250€)	
Price:	**Starting at 990 €**	**Starting at 1.490 €**	**Coming Soon**
Lead time:	**14 days**	**On request**	

How it Works

Heidelberg, 13.06.22

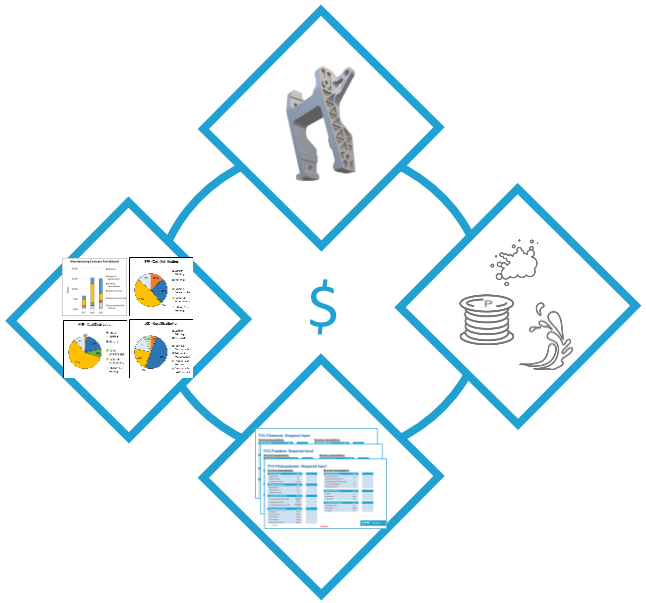
Starter Workflow: Single Cost per Part

1. Input data

You receive a input report to define your production scenario.

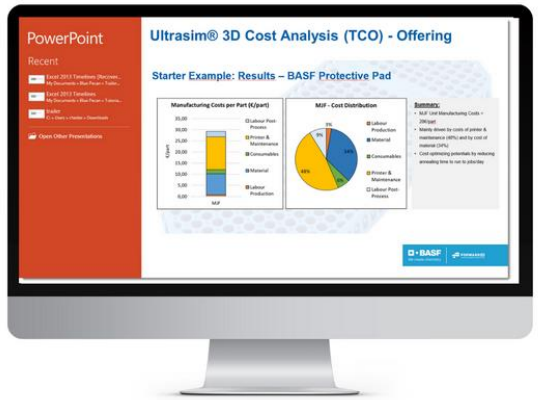
2. Cost per Part analysis

We use our internal TCO tool developed over years to calculate the cost per part for your application.



3. Cost Report

You receive the detailed cost report as PDF.



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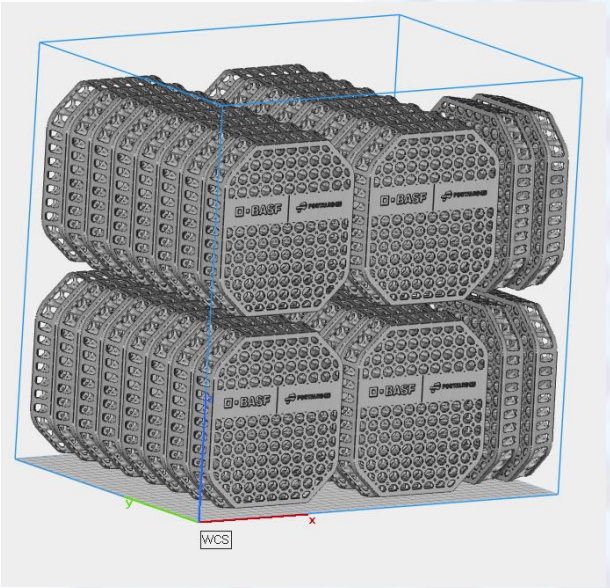
Starter Example: Ultrasint TPU01

Scenario Context:

- 1.000 3D-printed BASF-ProtectivPad Demonstrator
- Cost per part analysis for Ultrasint TPU01 with MJF
- Dimensions: 145 x 160 x 25 mm
- Volume: 121 cm³

Print Scenes:

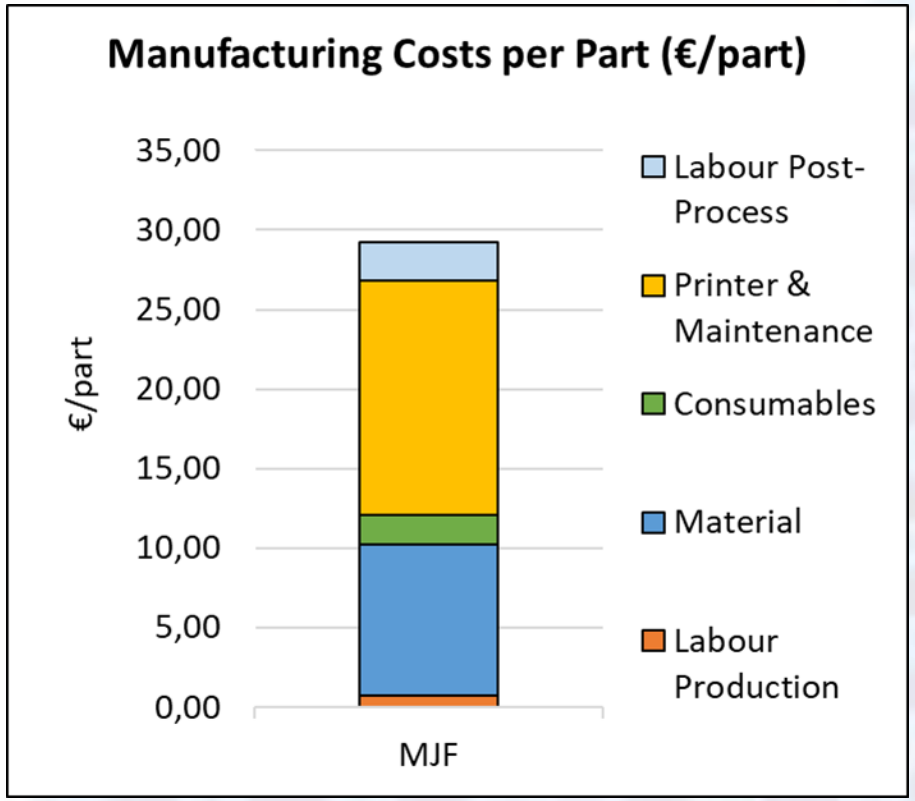


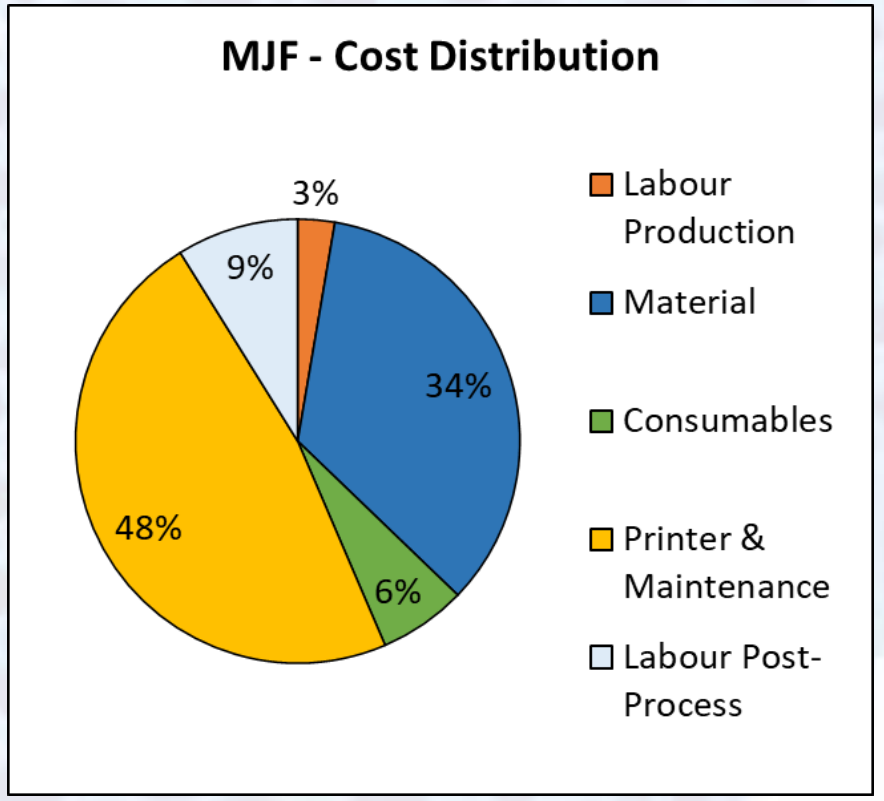
Material Information	Unit	MJF
Material name	[.]	Ultrasint TPU01
Material price	€/kg	List price
Refresh-rate	old/new	80:20
Part density	g/cm³	1,1

Machine Information	Unit	MJF
Machine name	[.]	HP 5210
Build volume	mm	380 x 284 x 380
Assumed machine price/printer plus PPE and services	€	List price
Depreciation period	y	5

Production Information	Unit	MJF
Production volume	parts/year	1.000
Parts per build	parts/ build	36
Workdays per week	d/y	5
Production days	h/y	250
Shifts per day	shift(s)/d	1
Total production time (print+setup)	h/job	16
Depowdering removal	min/part	2
FTE salary, operator	€/h	EU
Overhead (POH, IPOH & SGA)	%	Not taken into account

Starter Example: Results – BASF Protective Pad





Summary:

- MJF Unit Manufacturing Costs = 28€/part
- Mainly driven by costs of printer & maintenance (48%) and by cost of material (34%)
- Cost optimizing potentials by reducing annealing time to run to jobs/day

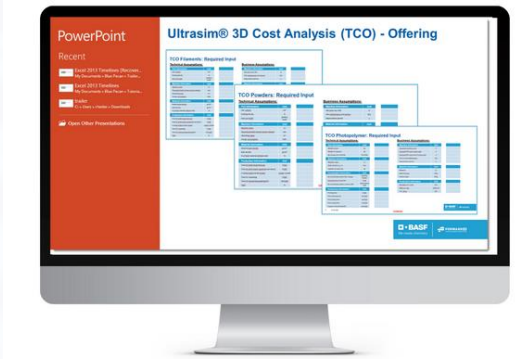
Premium - Workflow: Cost Benchmarking

1. Schedule a 30min call

Set up the customized production setting of your 3D printed part.

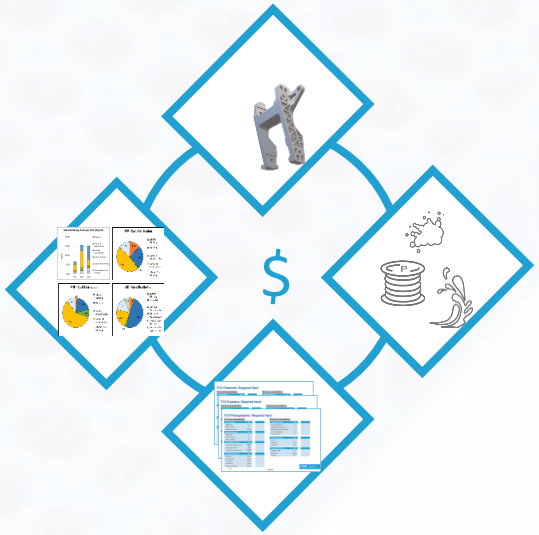
2. You provide input data

Technical and business assumptions needed for TCO.



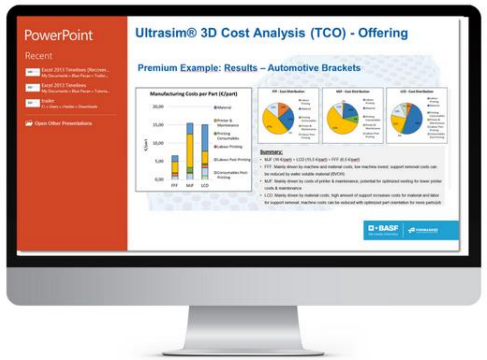
3. Cost per part analysis

We perform the cost per part analysis, and additional what-if-analyses.



4. Cost Report and TCO Presentation

Deep dive into cost structure and how to unlock the full potential for series applications



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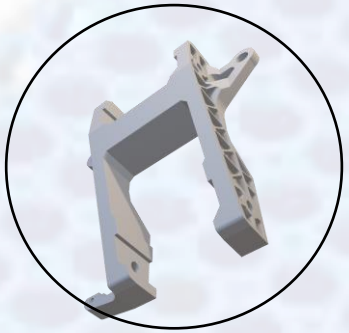
Premium Example: 3 Technologies

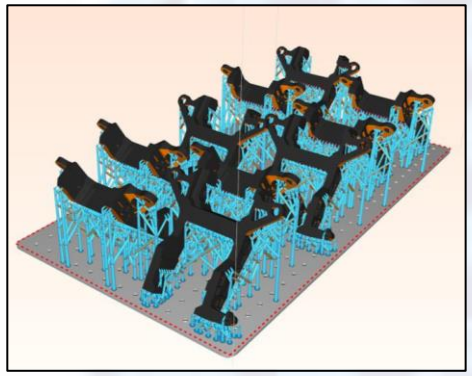
Scenario Context:

- 1.000 3D-printed automotive brackets per year
- Cost per part analysis for 3 different materials/technologies
  - LCD: Ultracur3D EPD 2006
  - MJF: HP PP
  - FFF: Ultrafuse ABS

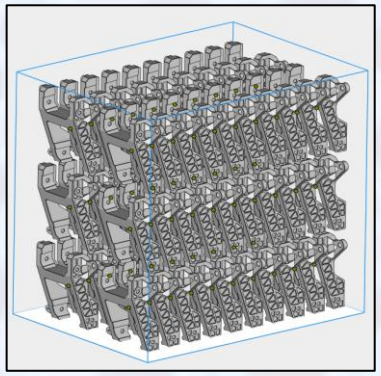


Print Scenes:

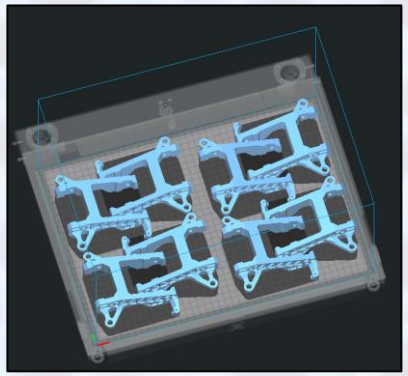
LCD: Ultracur3D EPD 2006:



MJF: HP PP



FFF: Ultrafuse ABS

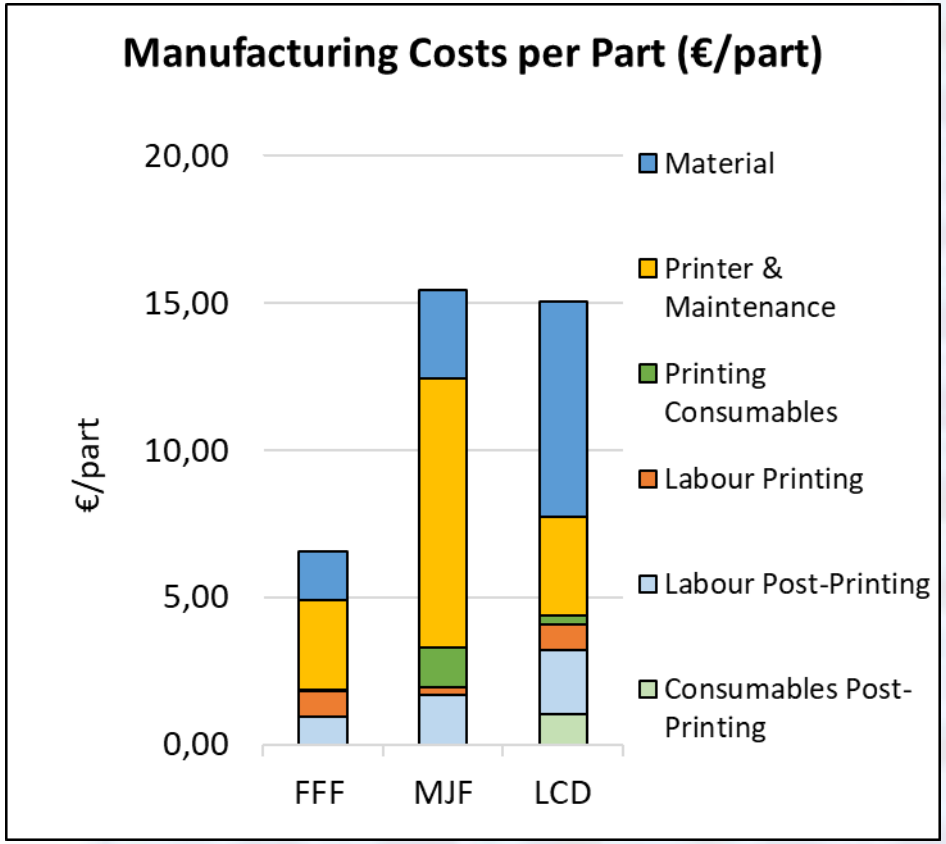


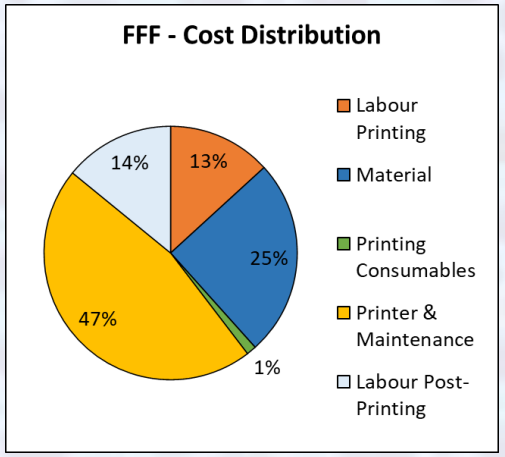
Material Information	Unit	FFF	MJF	LCD
Material name	[.]	ABS	PP	EPD 2006
Material price	€/kg			
Refresh-rate	old/new	-	80:20	-
Part density	g/cm³	1,04	0,89	1,2

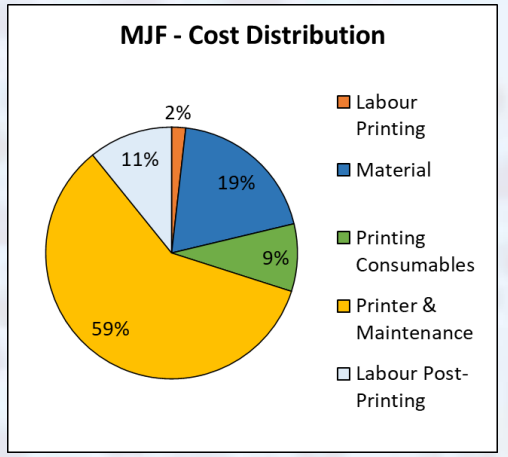
Machine Information	Unit	FFF	MJF	LCD
Machine name	[.]	Ultimaker S5	HP 5210 Pro	LC Magna
Build volume	mm	330 x 240 x 300	380 x 284 x 380	510 x 280 x 350
Assumed machine price/printer plus PPE and services	€			
Depreciation period	y	5		

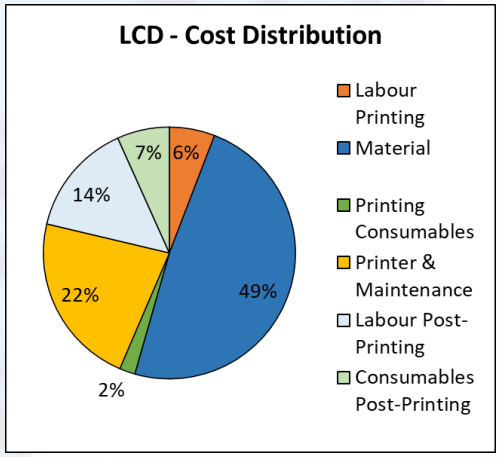
Production Information	Unit	FFF	MJF	LCD
Production volume	parts/year	1.000		
Parts per build	parts/ build	8	60	10
Workdays per week	d/y	5		
Production days	h/y	250		
Shifts per day	shift(s)/d	1		
Total production time (print+setup)	h/job	48	12	11
Manual support removal/ Depowdering	min/part	1	2	5
FTE salary, operator	€/h	25		
Overhead (POH, IPOH & SGA)	%	Not taken into account		

Premium Example: Results – Automotive Brackets









Summary:

- MJF (16 €/part) > LCD (15,5 €/part) > FFF (6,5 €/part)
- FFF: Mainly driven by machine and material costs; low machine invest; support removal costs can be reduced by water soluble material (BVOH)
- MJF: Mainly driven by costs of printer & maintenance; potential for optimized nesting for lower printer costs & maintenance
- LCD: Mainly driven by material costs; high amount of support increases costs for material and labor for support removal; machine costs can be reduced with optimized part orientation for more parts/job

Any Questions? Contact Us!

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