ADDITIVE X

How to reduce costs and lead times with 3DGence?

Customers who chose 3DGence brand solutions:

NASA ZF VW WÜRTH MAGNA SIEMENS Microsoft OSRAM

3DGence F350 a wide range of industrial applications

Prototypes

Jigs and fixtures

Tooling

Small series production

Final product

3DGence F350 Printer

Practical benefits for manufacturing production tools

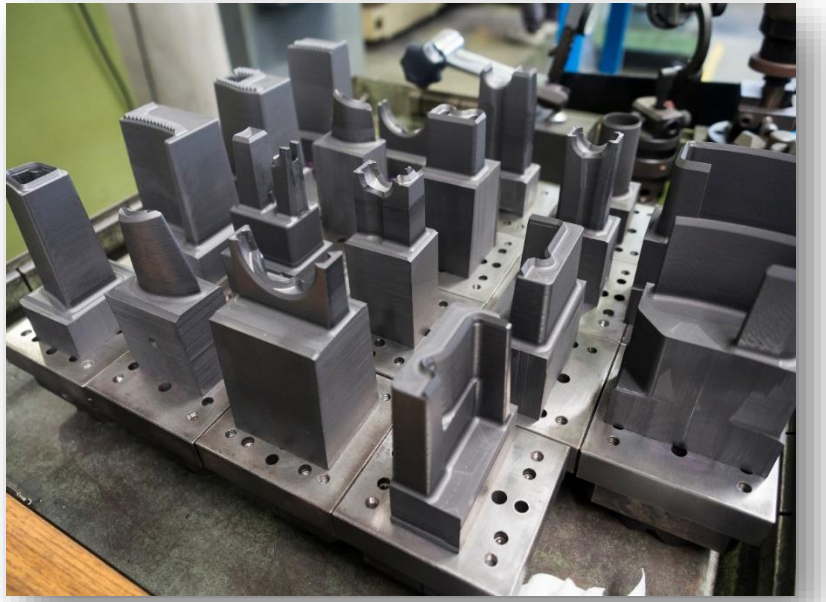
We present to you the results of the 'Make vs Buy' project, carried out together with an automotive customer.
During which the costs and total lead time for a full set of 25 production tools produced using 3D printing and its purchase from existing suppliers were compared.

Aspects reviewed:

- Reduction in tooling lead times
- Reduced cost of new tooling
- Freedom of geometry during design

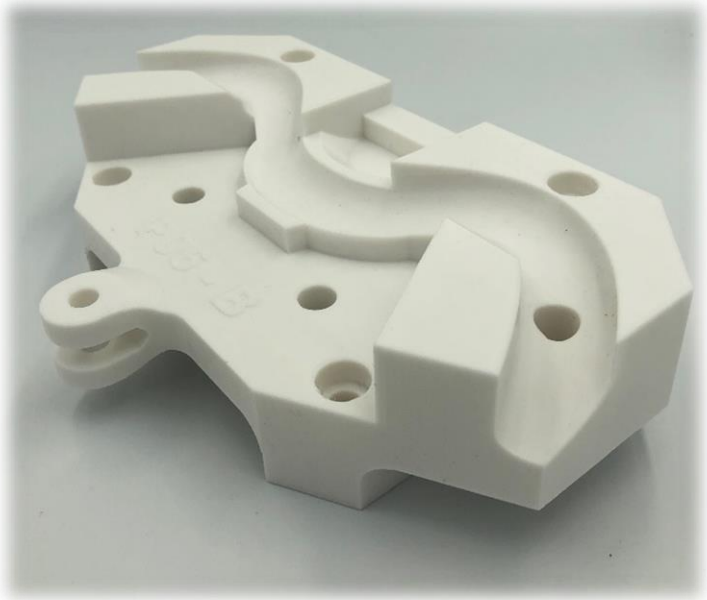
Key findings:

- Return on investment < 6 months
- Tooling cost reduction more than 70% compared to outsourcing
- Reduction in inventory due to production of spare parts on demand
- Easier and faster detection of design errors
- Avoided production downtime in the event of supply chain disruptions or out-of-stock parts.

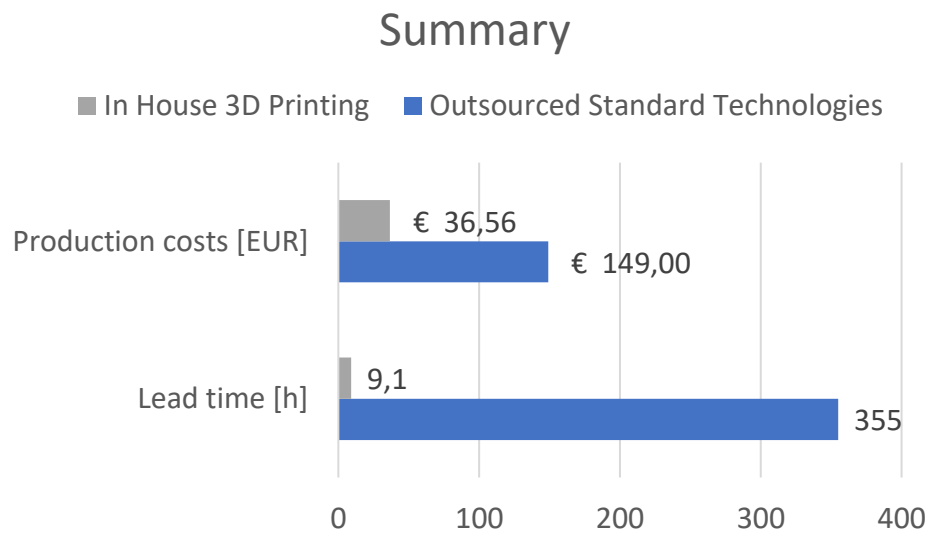


Direct cost comparison

In-house 3D printing vs outsourcing



3D Printed Part_2 4v3 Example



In House Printing Process Lead Time				
M, Code Preparation	Process Time	Cleaning Models	Quality Check	Total
[h]	[h]	[h]	[h]	[h]
0,26	8,15	0,42	0,31	9,14

Labour Cost		Cost of Energy		BOM
Average work content	Labour	Energy consumption	Cost of Energy	Filament Cost
[min]	[Eur]	[kWh]	[Eur]	[Eur]
59,4	10,03	8,6	1,8	24,75

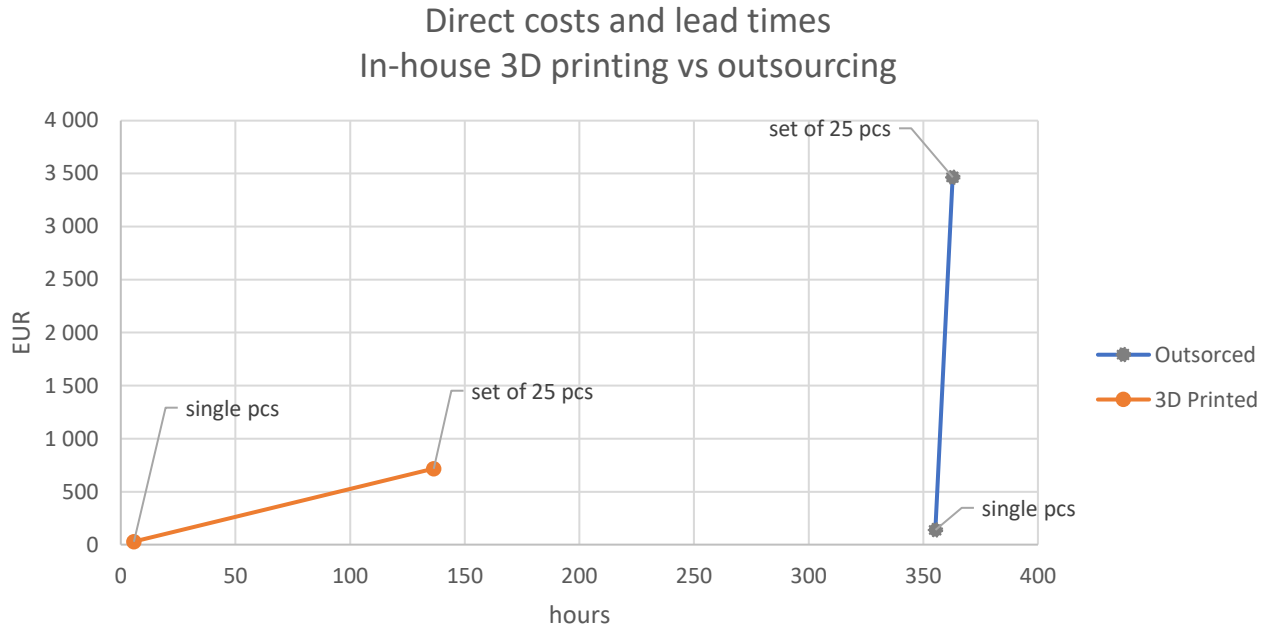
Dir Cost
Dir Printing Costs
[Eur]
36,56

Outsourced Process Lead Time			
Sourcing Process	Delivery Time	Quality Check	Total Lead Time
[h]	[h]	[h]	[h]
19	336	0,31	355

Outs. Costs
Purchased Price
[Eur]
149,00

Comparison of direct costs and lead times

In-house 3D printing vs outsourcing



3D printing has a positive impact on reducing costs and lead times. The technology is much more flexible for smaller production batches or frequently changed parts. It supports organisations in quicker response to quality problems (QRCM) and Kaizen activities.

The digital warehouse strategy allows for 3D file storage and print-on-demand (JIT) of spare parts. This reduces the need for warehouse space, downtime costs and the value of frozen capital.

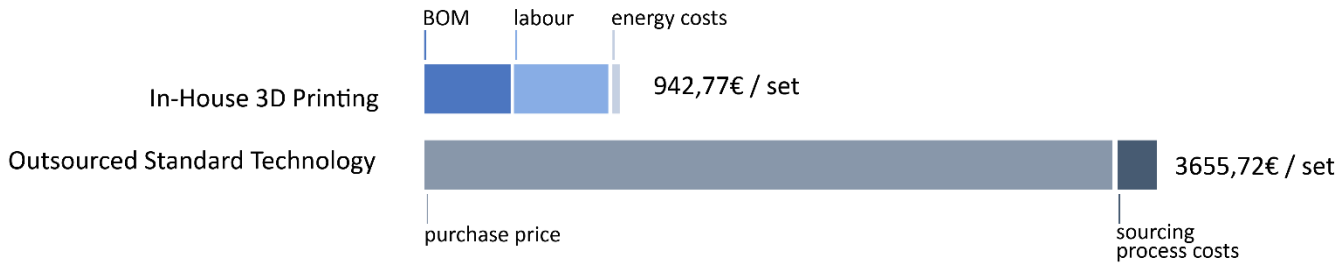
Direct comparison of "Make vs Buy"

Make vs. Buy summary (Full Set of 25 Tools)		
Outsourcing		
Purchasing Price	3464,00	Eur/Set
Sourcing Process Costs (OH)	191,72	Eur/Set
Total Cost	3655,72	Eur/Set
In-House Printing Process		
BOM	436,25	Eur/Set
Labour	471,23	Eur/Set
Energy Costs	35,29	Eur/Set
Total Direct Costs	942,77	Eur/Set
Print vs. Buy	**-2712,95**	**Eur/Set**
3D Printing Process - Capacity Study		
Printing time	8125	min/Set
Capacity*	28	Sets/yr
Total Saving	**76 931**	Eur/yr
Capex (F350 Printer)	**38 000**	Eur
Payback Time F350 Printer**	**5,9**	Months

* 250 days/yr, 3 shifts/day, OEE 85%, process utylization 80%
**Cost of money not considered

Return on investment: 5.9 months

Cost Structure Inhouse 3D Printing vs Outsourced Standard Technology



3D printing reduces the burden on the company's organisational structures in the purchasing process.
Parts are made by those directly responsible for the availability and implementation of production tools.

Sourcing and Purchasing Process Costs	Work Content	Average cost	Single Tool order	25 Set of tools order
	[min]	[Eur/h]	[Eur/tool]	[Eur/Set]
Preparation of the sourcing doc.	45	17,07	12,80	12,80
Supplier sourcing process	120	17,07	34,15	34,15
Purchase request acceptance	20	17,07	5,69	5,69
Quality check	18,75	17,07	5,34	133,38
Invoice acceptance process	20	17,07	5,69	5,69
	223,75		**63,67**	**191,72**

3DGence F350 Printer

SOLUTIONS FOR INDUSTRY

Harness the power of 3D printing technology in your industry - the INDUSTRY F350 is a 3D printer designed for professionals.

FULL AUTOMATION

Don't waste your time on printer calibration. Tensometric system automatically calibrate the printer. All modules are equipped with internal memory where calibration values are saved. New calibration values are loaded automatically upon module change.

SAFE WORKING ENVIRONMENT

Work in controlled condition – air filtration system that is used in the printer stops dangerous particles and smells.

CONTROLLED PRINTING CONDITION

Create high quality and durable prints with actively heated chamber.

EASE OF USE

Make your work easier with advanced solutions provided within the INDUSTRY F350 – the SMM system recognizes loaded material, weight and automatically feed's it to the printing modules.

DEDICATED SOFTWARE

Prepare models for 3D printing in a quick and easy way with the use of intuitive 3DGence Slicer software.

3DGence F350 Printer

PRICE INCLUDING M280 MODULE

Want to know more?
Get in touch with Additive-X 3DGence printer specialists.

01765 694 007 team@additive-x.com

Until the end of November the price of the
INDUSTRY F350 printers includes module M280.