

Annual Additive Post-Printing Survey: Trends Report 2019

The first ever survey of trends in the 3D Post-Printing industry

FIRST ANNUAL EDITION 2019



INTRODUCTION

PostProcess is excited to launch the first *Annual Additive Post-Printing Survey: Trends Report 2019*, conducted with support from the Society of Manufacturing Engineers (SME). In this report of end-user survey data, we will explore the often under-reported third step in Additive Manufacturing after the Design and Print steps - Post-Processing, or as we refer to it, Post-Printing. This critical segment includes several processes that are instrumental to the successful output of a final, customer-ready 3D printed part.

The aim is to deliver insightful data and perspective on this segment of the booming Additive Manufacturing market that has never been captured before. As a pioneer of the automated 3D Post-Printing space, it makes perfect sense for us also to pioneer analysis of this market segment - one that is poised to become increasingly critical to the scaling of the industry as printing moves in greater volumes to the factory floor. The early identification of the trends and challenges in Post-Printing is instrumental to continued innovations and advancements to support the overall market's forecasted growth.

In the years to come, this annual survey will generate thought leadership with insightful year over year trends on the Post-Printing market. We thank all who participated this year for their time and insight.

75% of respondents indicate Length of Time to Finish Parts as a key challenge in their Post-Printing.

The bottleneck is real. Regardless of company size, print volumes, or print technologies used, Post-Print cycle times are a critical hurdle for Additive Manufacturing.



MORE THAN 50% of respondents use two to three print technologies. **33%** use more than four.

The reported number of Post-Print challenges increases when more print technologies are added to the workflow. Utilizing process automation to streamline Post-Printing early in your additive journey can help.

KEY TAKEAWAYS

66% of respondents reported two or more challenges with their current Post-Printing.

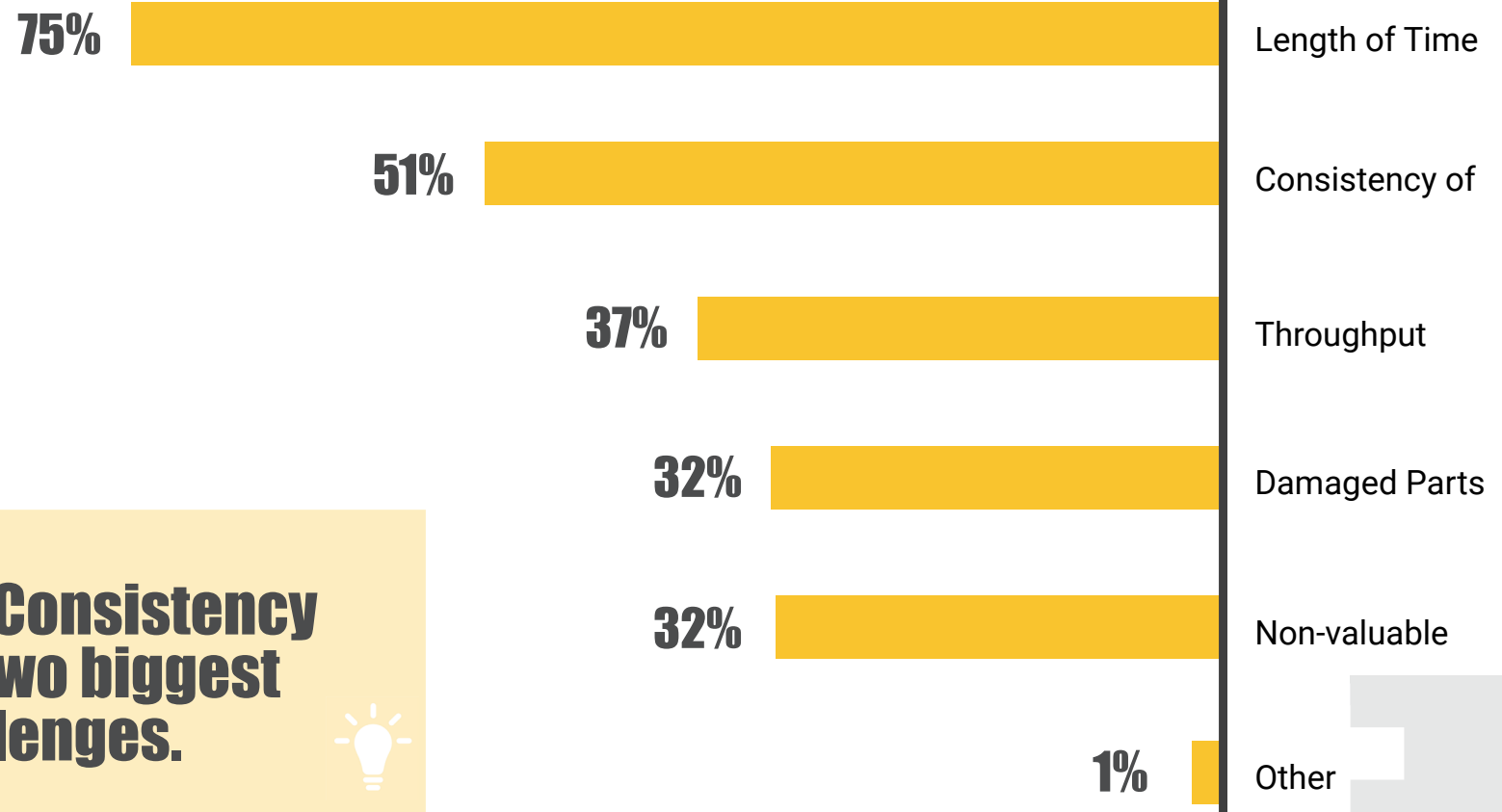
As most companies plan to grow volumes over the next 3-5 years, these challenges will correspondingly grow, thus increasing the Post-Print bottleneck. Tackle these challenges today to ensure success in the future.

TODAY'S POST-PRINT CHALLENGES

Challenges with Post-Printing are not limited to small companies with potentially fewer resources. The data shows that the percentage of participants experiencing two or more different kinds of challenges is equal regardless of company size. As a matter of fact, 70% of companies in the categories of *25 employees or less* and *500 employees or more* have two or more Post-Printing challenges. The primary difficulties experienced include issues of throughput, high-quality parts, scrap rates, and use of human resources.

What are your current Post-Printing challenges?

Participants were able to pick multiple choices.

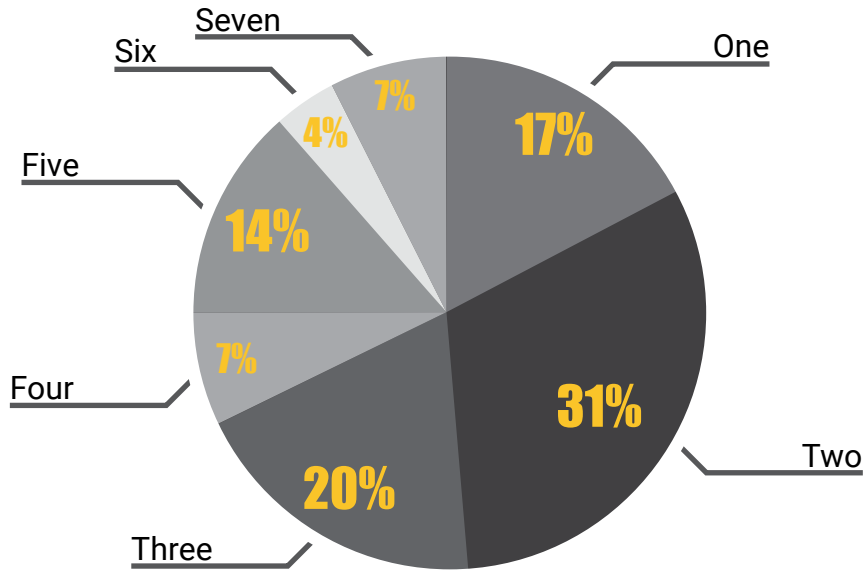


**Time and Consistency
are the two biggest
challenges.**



TODAY'S POST-PRINT CHALLENGES

How many Print Technologies are you using?



Over 80% of respondents are using two or more different AM technologies in their businesses. When a greater number of print technologies are employed, an increased occurrence of different Post-Printing challenges is observed. This seems obvious, yet serves as a notice to those with plans to expand with more 3D print technologies. How can your Post-Printing operation today be improved to address your challenges before the pain becomes exponentially worse when adding more printers?

Additionally, with different technologies and materials necessitating different Post-Print processes, users can expect this complexity to grow further as new types of print options are launched to the market regularly.

50% of companies use 2-3 print technologies. 33% use over 4 technologies.



How many different Post-Printing challenges do you have?

3 or more Challenges

38%

51%

Using 1 Print

Using Multiple Print Technologies

MORE THAN 50% of respondents reported using **THREE OR MORE** different Post-Print processes.

As Post-Printing workflows become more complex with volume and number of print technologies increasing, take advantage of the opportunity to streamline with a platform solution that drives optimization across multiple processes.

Respondents report that **REMOVAL PROCESSES**, including support, powder, and resin, are the most common Post-Print need.

These removal processes are a requirement for every single part produced, not an optional step depending on customer requirements such as surface finishing or dyeing.

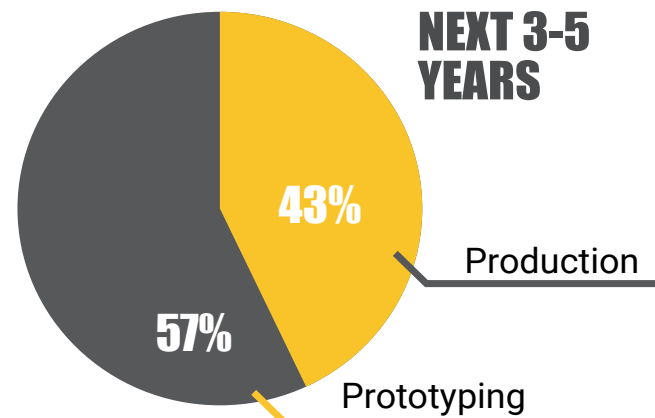
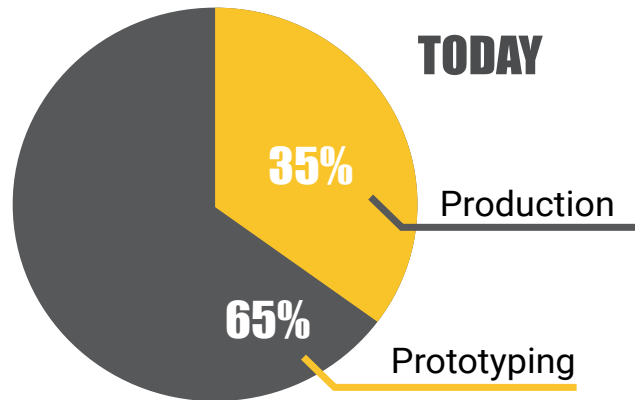


KEY TAKEAWAYS

SUPPORT REMOVAL is the most time-consuming Post-Print process.

Respondents report Support Removal accounts for 50% or more of their post-printing time more than any other process.

The majority of respondents plan to grow their production volumes over the next three to five years. This well-documented trend will drive increased complexity for Post-Printing operations.



**Removal processes
(support, resin, powder)
account for 51% of
post-printing.**



Top Post-Print Processes



The two most often employed AM Post-Printing processes, Support Removal and Surface Finishing, are performed by over 50% of respondents.

For those who are performing a Support Removal step, the majority are spending more than half of their time just on that one operation. Additionally, 75% of those performing Support Removal are then also undertaking a Surface Finishing step.

The third most popular Post-Print operation in the survey, Resin Removal commonly used for Vat Photopolymerization print technologies, also requires a Surface Finish step 80% of the time, according to respondents.



APPENDIX:

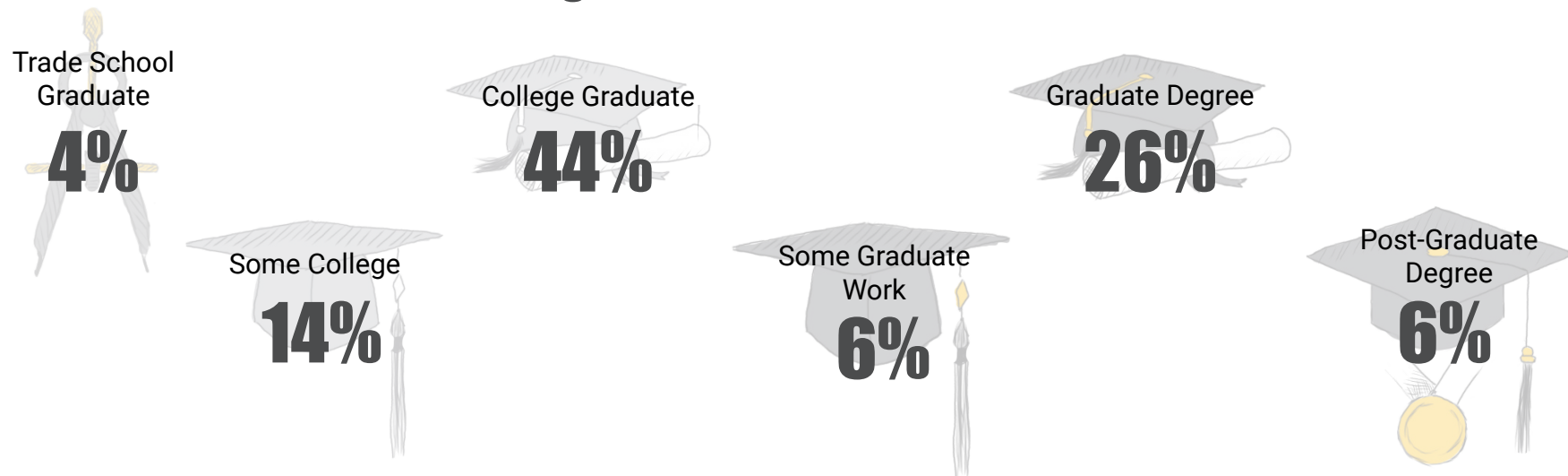
MEET OUR RESPONDENTS

4 out of 5 respondents have college and/or graduate degrees.

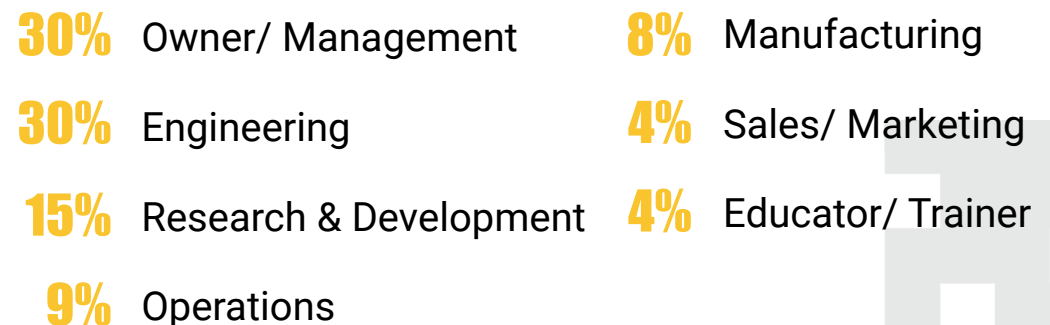


ABOUT OUR RESPONDENTS

Highest Level of Education



Primary Job Function

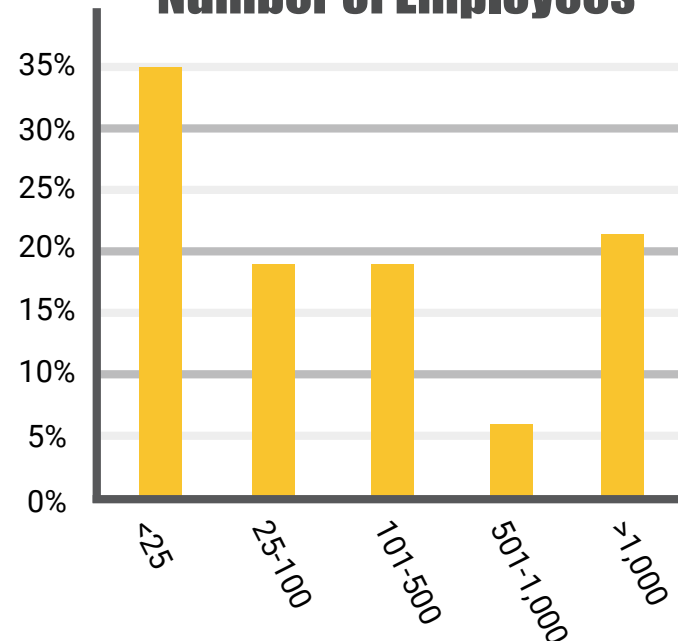


Meet our survey respondents, the majority of which are in functions that hold a high degree of authority over their business' additive manufacturing operations. This group is highly educated, with more than 80% reported earning a college and / or graduate degree. Almost half of respondents have a technical job function.

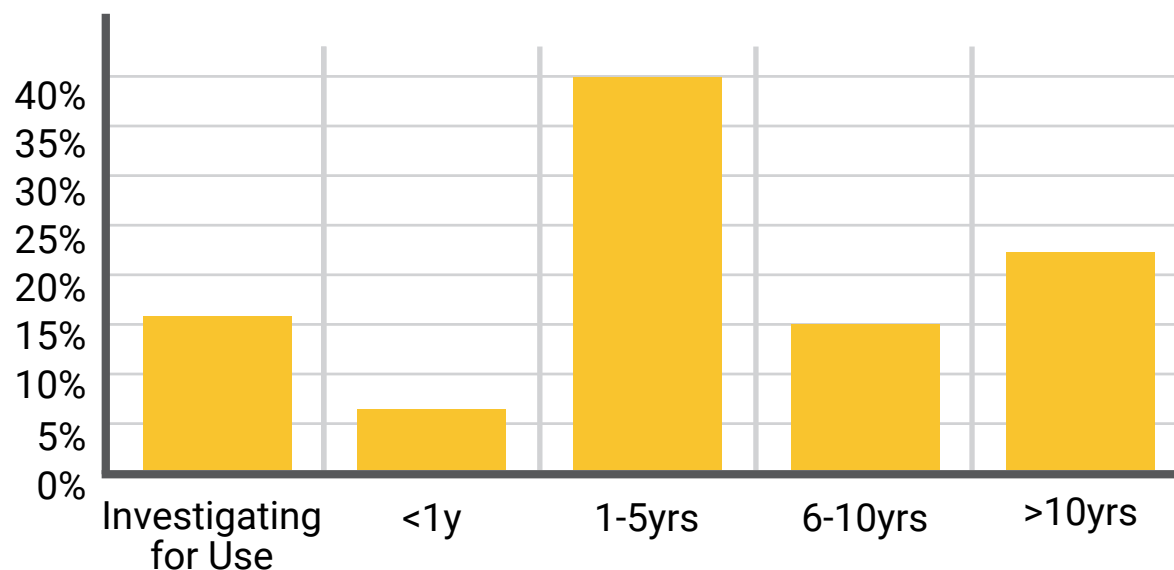
OUR RESPONDENTS: Business Profile

The respondents' companies represent a range of end-use markets as well as service providers. The size of businesses participating in the survey span the spectrum, as seen in the Number of Employees chart. Their years of experience in Additive echoes trends in this growing industry, with close to 40% of respondents new to AM with 1 to 5 years of use.

Number of Employees



Number of Years Using Additive Manufacturing

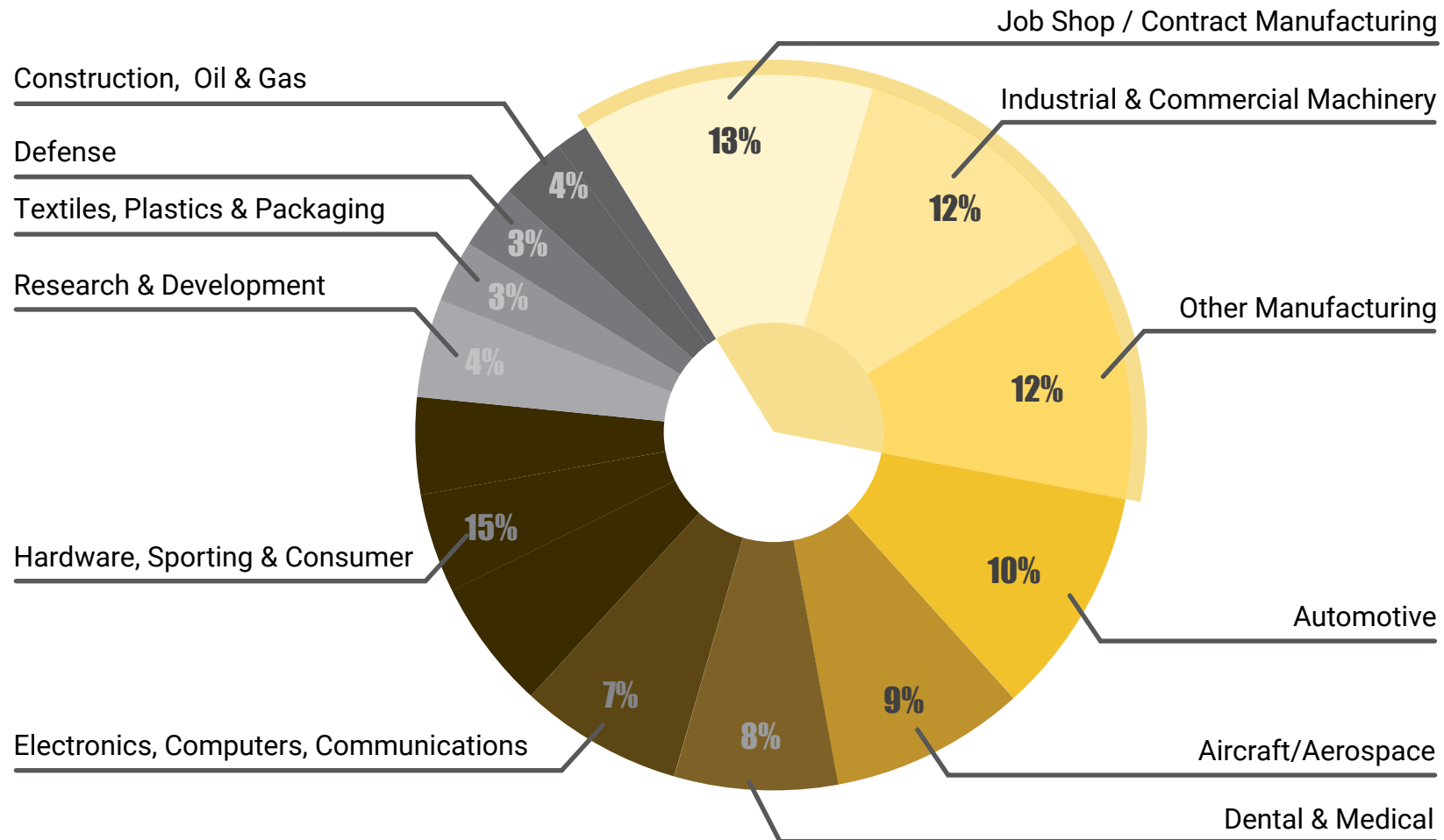


**Greater than 60%
of respondents
have less than
5 years of
experience.**

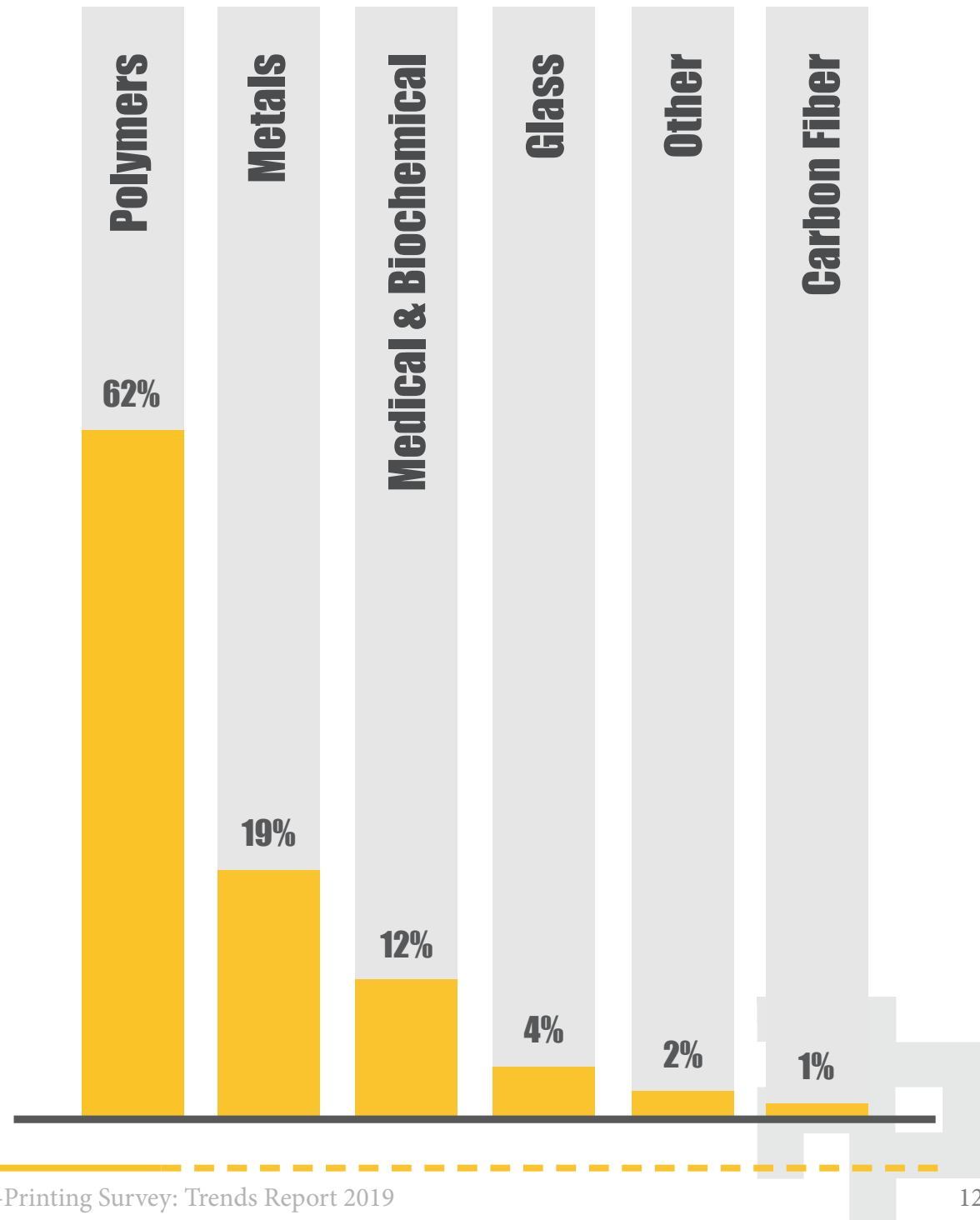
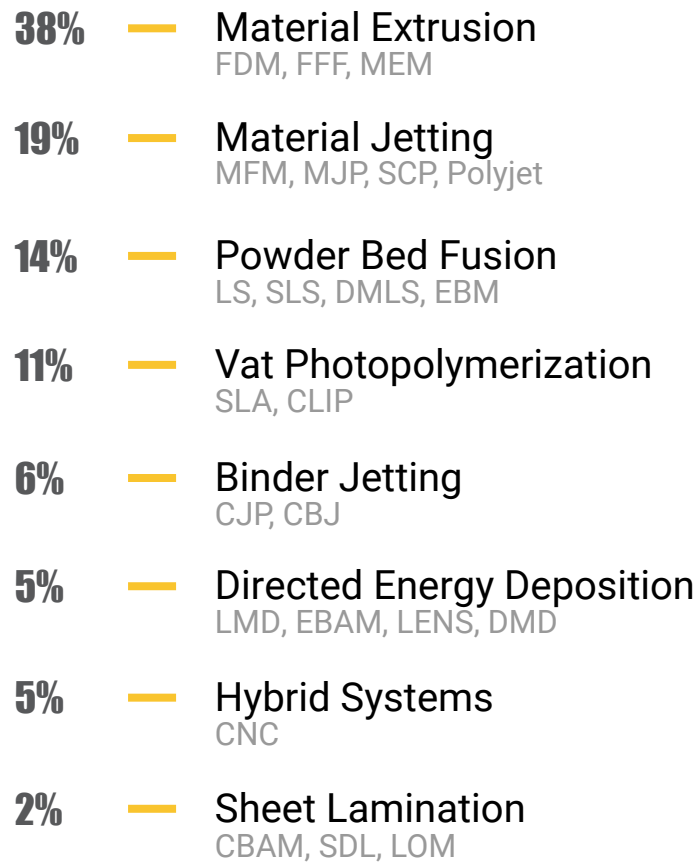


OUR RESPONDENTS: Business Profile

Our audience's response indicating the industry in which they work mirrors the trend of many companies' strategy of outsourcing through service bureaus and job shops. In a separate question, more than 60% of respondents replied that they outsource some part of their Additive Manufacturing. In organizations such as service bureaus and job shops, the Post-Printing operation is even more complex, as these businesses often print with multiple technologies and materials in constantly changing geometries.



OUR RESPONDENTS: Technologies & Materials





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