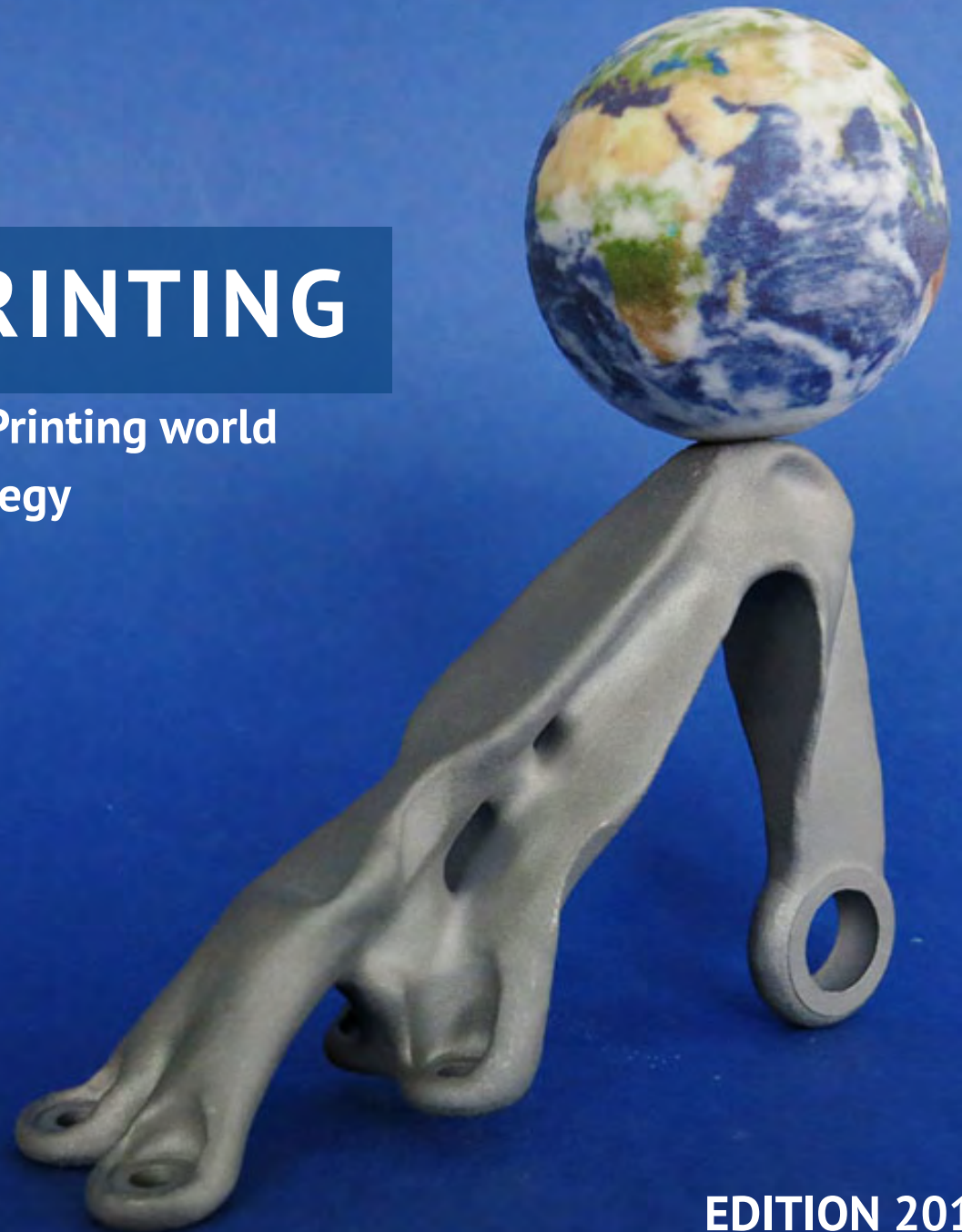




THE STATE OF 3D PRINTING

The data you need to understand the **3D Printing** world
and build your **3D Printing** strategy



EDITION 2017



THE STATE OF 3D PRINTING
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FOREWORD

Welcome to the third edition of Sculpteo's State of 3D Printing 2017.

When we started working on this project, we knew that 3D Printing could be to production and manufacturing what agile methodology is to software: a radical change in mindset. But it was not the case for all users, as our first study demonstrated, except inside the group of aficionados we named the 'Power Users'.

Three years later, I'm pleased to see that many of the nearly 1,000 respondents to this year's survey share this philosophy. For them, 3D Printing is not the future, it is a production method like any other. With clearly established benefits but also necessary innovations and improvements.

The majority of respondents are not Sculpteo clients, but professionals who invent, innovate and produce thanks to 3D Printing. They come from all around the world and from all types of businesses: B2C, B2B, from startups to global industrial groups. They provided us with insights about their use cases, challenges, and they have graciously shared their views on the future of additive manufacturing. Some are new to 3D Printing and others started using the technology more than 10 years ago. This third edition has a range of new insights and ideas. In particular, metal additive manufacturing is given special attention and consideration.

I want to personally thank each of these experts who answered and shared their experience with us. We are truly grateful for your time and insights.

If you wish to compare yourself to this prestigious panel, I invite you to look at the sectorial insights at the end of this survey, and I encourage you to participate in our next survey at www.sculpteo.com/en/state-of-3d-printing. The survey will be up and open all year long.

The challenges that come with additive manufacturing are numerous, both in terms of production and in terms of decision making. Meeting these challenges is what drives us here at Sculpteo to continue to create the best software platform for agile manufacturing.

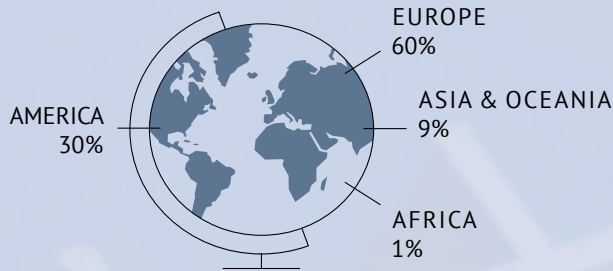
I hope you enjoy this year's State of 3D Printing and I look forward to your thoughts and comments.



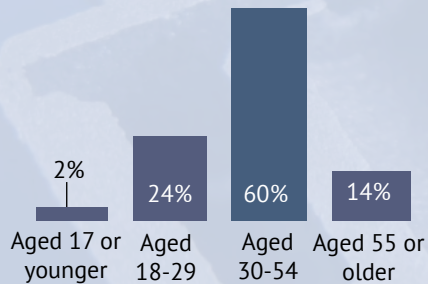
CLÉMENT MOREAU
CEO & FOUNDER

SURVEY DEMOGRAPHICS

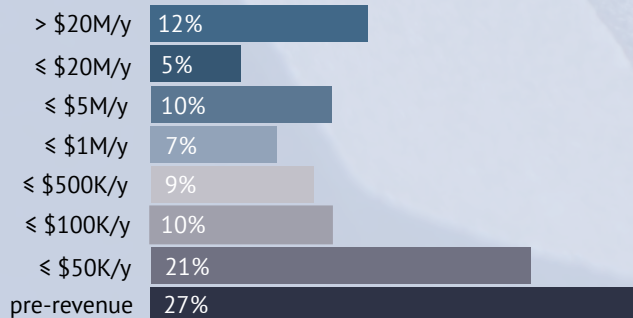
900+ RESPONDENTS



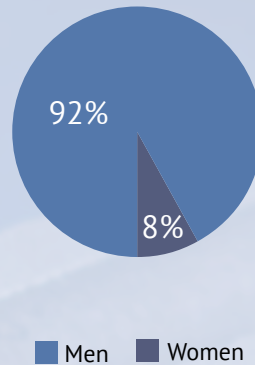
AGE RANGE



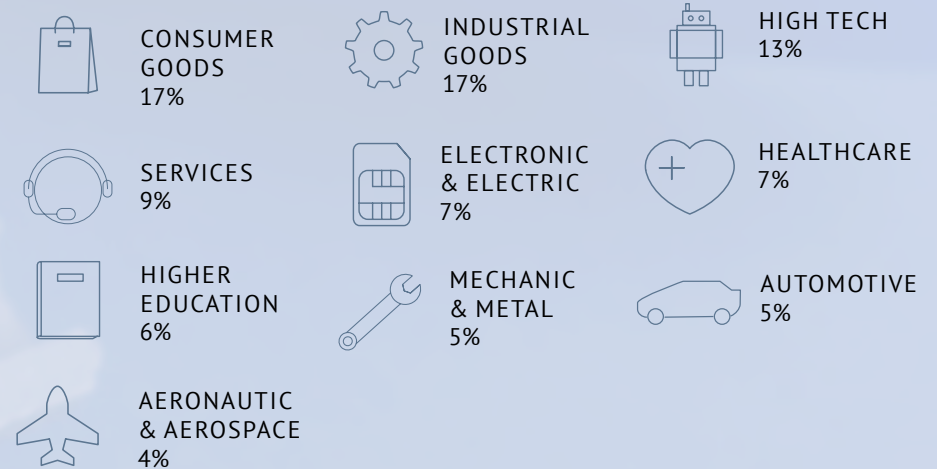
COMPANY REVENUE



GENDER



VERTICAL MARKETS



Our annual State of 3D Printing is an opportunity for Sculpteo to collect data about the additive manufacturing industry. In this year's edition, our principal aim is to give you the keys to understand what is at stake in this dynamic and rapidly evolving industry.

We opened the survey in January 2017 and we received nearly 1,000 respondents from 62 different countries—10 countries more than last year. Most respondents come from Europe (60%) and America (30%). Compared to last year, the number of respondents from Asian countries increased by 4 percent highlighting a clear trend in the adoption of additive manufacturing by Asian companies.

The industry segmentation of respondents was: Consumer goods (17%), Industrial goods (17%) and High Tech (13%) are still the highest represented sectors since last year followed by Services (9%) and Healthcare sectors (7%).

In last year's study most respondents identified themselves as the owner/ CEO of their organization followed by Engineers. This year is quite the opposite, with 29% identifying themselves as Engineers followed by 28% CEOs, and 10% as Freelancers and 7% Designers.

KEY TAKEAWAYS

47%
OF OUR RESPONDENTS SAW
GREATER RETURN ON INVESTMENT
THAN LAST YEAR

3D Printing is showing positive results for companies that use it consistently, delivering an increasing Return on Investment over the years. Our respondents consider this technology a vital part of their business operations.

EXPENSES IN 3D PRINTING ARE
EXPECTED TO RISE

55% THIS YEAR

Respondents expect their investment in 3D Printing to strongly increase this year. The market for additive manufacturing is growing, and growing rapidly.

COST DECLINE
WILL HAVE A MAJOR IMPACT ON
3D PRINTING

Respondents said the declining cost of the technology will have the biggest impact on the continued use and growth of 3D Printing over the next few years.

3D PRINTING MARKET IS MATURING

+72%

expect their spendings on additive manufacturing to increase for 2018

+49%

of respondents increased their expenses in 3D Printing this year

\$9,504

is the average budget for 2017 compared to \$6,132 in 2016



+47%

saw a greater Return on Investment than last year

+90%

consider 3D Printing as a **competitive advantage** in their strategy

Additive manufacturing is still ramping up. 49% of our respondents increased their expenses in 3D Printing this year. And this trend is here to stay: 72% of them expect their spendings to increase again next year. Last year, almost the same amount of respondents had the same expectation (77%).

Additive manufacturing is showing positive results. Indeed, 47% of the respondents saw

a greater return on investment than last year. Moreover, 90% of them consider 3D Printing as a competitive advantage in their strategy.

These elements show that the respondents are loyal to additive manufacturing and that they consider this technology as a real partner for their activity. As a result, we can say that the market is becoming more stable and mature.

THE UNDENIABLE CONNECTION BETWEEN 3D PRINTING AND PRODUCT DEVELOPMENT

3D Printing technology is mainly used to accelerate product development (28%), to offer customized products (16%) and to increase the production flexibility (13%).

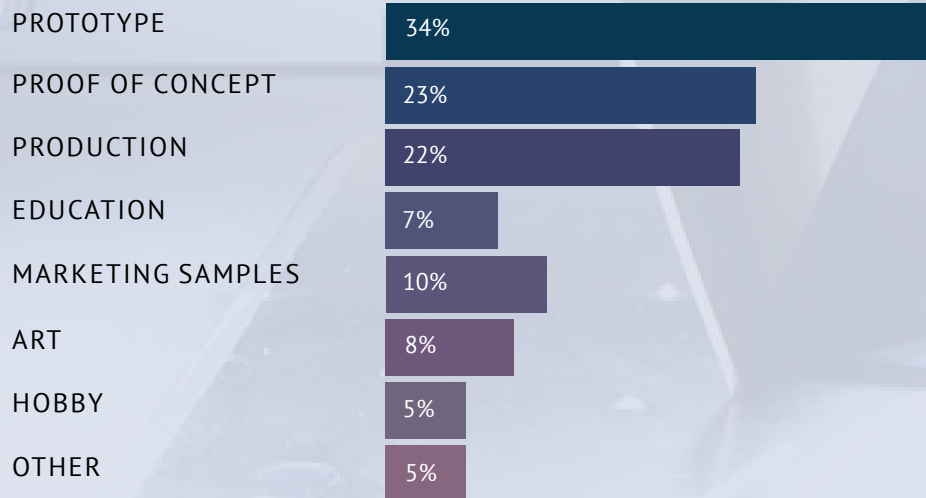
Moreover, prototyping (34%) and proof of concept (23%) are still the leading uses quoted by our respondents. This is clearly correlated to the massive adoption of 3D Printing by Research and Development departments (62%).

We also asked the participants what their future priorities for digital manufacturing will be over the next five years. Accelerating product development comes first (25%).

Product customization comes second (18%), followed by production flexibility that is quoted by 14% of our respondents. These results show that priorities remain the same over the years.

The respondents show less interest in buying a 3D printer (one point less than last year), which means they still prefer to use external 3D Printing services to produce and manufacture their products. They show a higher interest in increasing production flexibility (14%) or reducing tooling investment (10%).

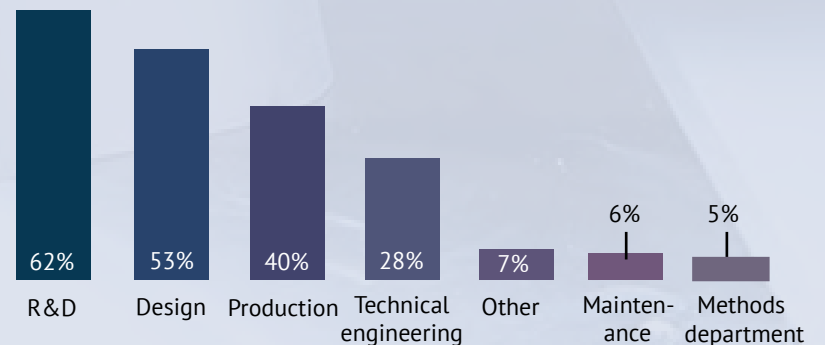
3D PRINTING APPLICATIONS



TOP PRIORITIES RELATED TO 3D PRINTING



3D PRINTING USERS BY DEPARTMENTS



PLASTIC REMAINS THE MOST USED MATERIAL

Plastic is still the most used 3D Printing material. It is used by 88% of our respondents. Resin material, which is very solid and resistant, is used by 35%. The launching of engineering resins in 2016 is one of the reasons this material comes second, like last year. It is then followed by metal (28%).

What are the reasons of this massive usage of plastic? **It is considered the ideal material as it is affordable and offers a wide range of colors.** Moreover, it has a large range of properties. But metal has a great potential.

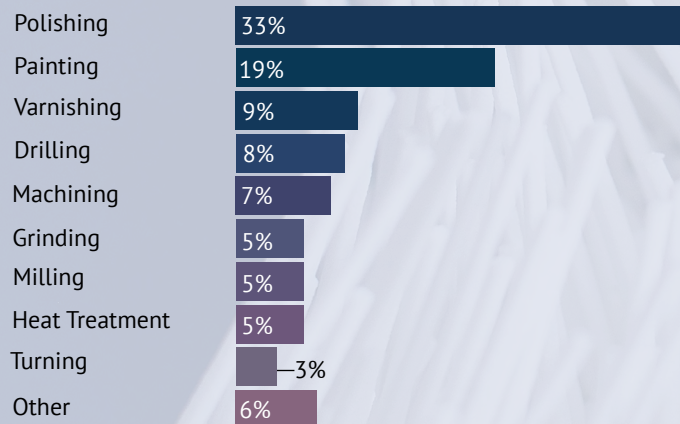
The two 3D Printing finishes that come out as most used are polishing and painting, basic finishes that can be used for all materials. The fact that polishing

is so widely used shows that 3D Printing technologies still face issues in terms of quality of surface. Varnishing comes third. Thus, the three top finishes are aesthetic ones.

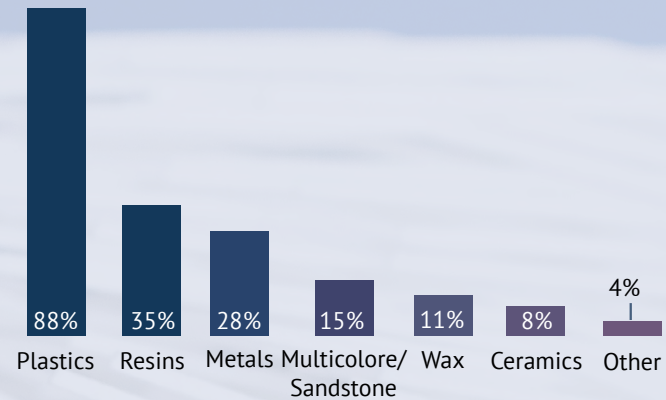
Fused Deposition Modeling (FDM) is the most used technology (36%), followed by SLS (33%) and SLA (25%). Last year, the results were different, as you will see in our Year over year section: SLS came first, and FDM second.

As new materials come up, our respondents also use new technologies like Selective Laser Melting (SLM), Continuous Liquid Interface Production (CLIP) and Fusion Jet. The important use of SLA, DLP, Polyjet and the arrival of CLIP also shows that 2016 has been the year of resin.

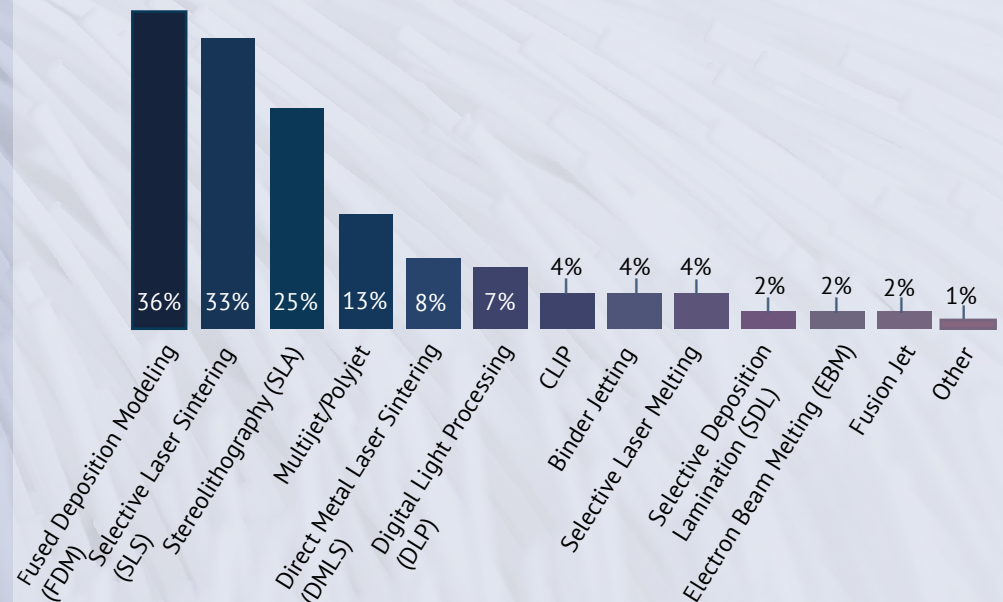
MOST USED 3D PRINTING FINISHES



MOST USED 3D PRINTING MATERIALS



MOST USED 3D PRINTING TECHNOLOGIES



A SPECIAL FOCUS ON METAL 3D PRINTING

For this year's report, we wanted to showcase the data we collected through Sculpteo's new Artificial Intelligence engine we call Business Case.

Each day, more than 2,000 users are taking advice from our Business Case to audit their 3D Printing projects. Since Business Case offers users an extensive audit for Metal 3D Printing, it provides an outstanding summary of metal 3D Printing uses in 2017. Here are the key trends.

For metal types, aluminum is by far the most recommended material (62%) followed by stainless steel (22%). The

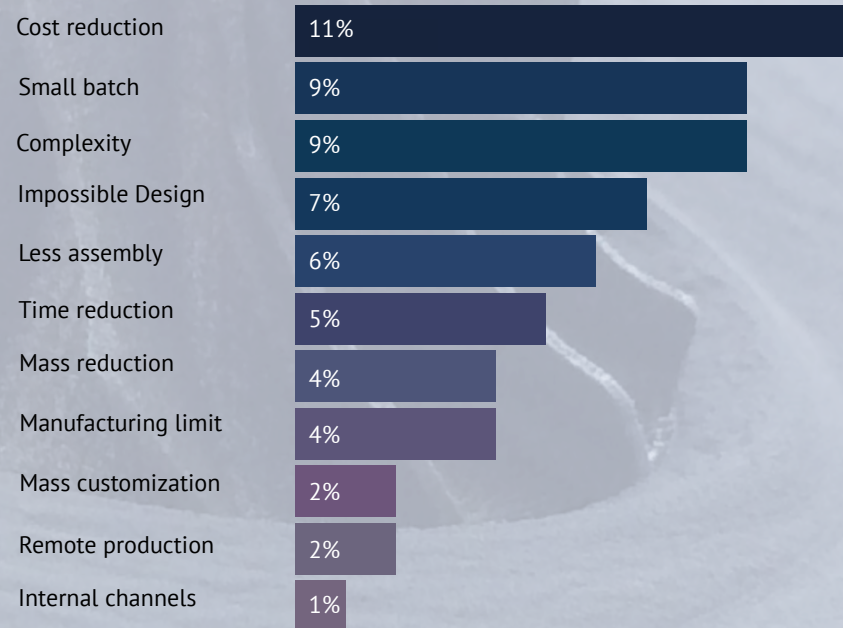
objectives of our respondents when using metal 3D Printing are diverse and unique. The reason is simple: this technology can solve multiple issues. Cost reduction comes first with 11% and production of small batches and complexity come second with 9%. Moreover, on average, users quote multiple benefits from using metal 3D Printing.

In terms of quantity, 46% want to 3D print only one object and 23% want to 3D print between 2 and 9 objects. 12% of our respondents want pieces that are different one from another.

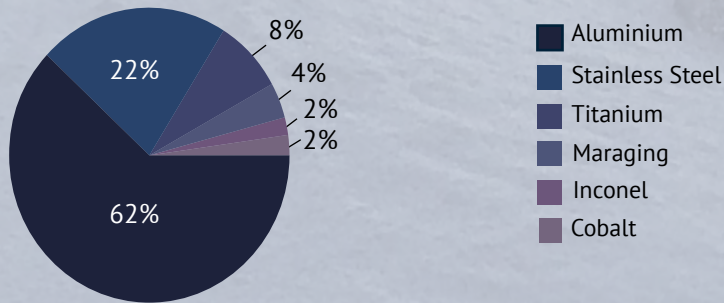
What is Business Case ?

Business Case is the first module of our Agile Manufacturing Technology (AMT), a new software suite designed as a self-learning Artificial Intelligence engine that evaluates whether a CAD file is optimized for additive manufacturing. Business Case helps evaluate which materials are most appropriate, and delivers a recommendation and approach to optimize cost and time for each 3D Printing project.

THE OBJECTIVES OF USING METAL 3D PRINTING



THE MOST RECOMMENDED 3D PRINTING METALS

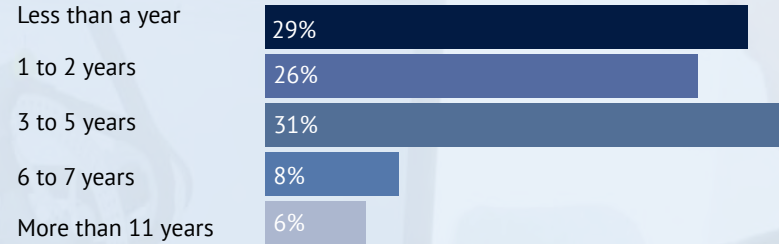


A SKILL GROWTH THROUGH TECHNICAL PROFILES

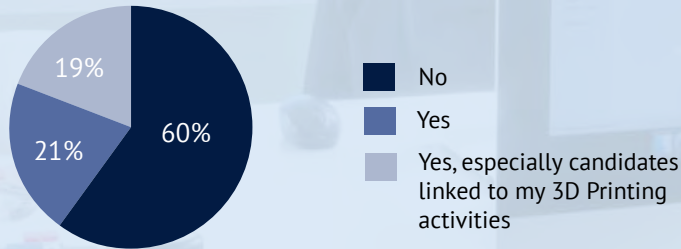
When it comes to 3D Printing, you consider yourself to be...



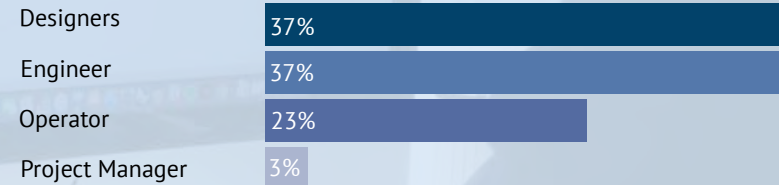
How long have you been using 3D Printing?



Do you plan to hire new candidates this year?



Could you tell me which candidates you're planning to hire?



One of the new questions of this year's study was about the number of years of experience of our respondents have in 3D Printing. The median experience is 1-2 years in average. **This shows our sample is quite experienced overall**, past the discovery stage, but not yet at the expertise level.

We asked, what is the minimum experience to consider yourself as a 3D Printing expert? The answer was approximately five years. Only 20% of the respondents consider themselves to be experts. 40% consider

themselves beginners, and 40% consider themselves to be intermediates.

No surprise, 3D Printing expertise requires highly skilled graduates with technical backgrounds. 97% of the candidates being sought are technical recruits (only 3% of project managers). This shows a need for trained people in the field of 3D Printing.

3D Printing is getting more professional, needs specific departments, and specific experts: designers who can

consider the specific 3D Printing constraints, engineers who study 3D Printing materials and how the printing process impacts an object's properties, operators who understand how to operate each 3D printers. **As a result, expertise should strongly grow in the next years.**

Are you willing to increase your skills in terms of 3D Printing? Check out our ebook series "[Graduate in 3D Printing](#)".

EUROPE AND AMERICA: DIFFERENT USES BUT SAME POTENTIAL

Expenses increase in the same way

American and European respondents invested the same amount of money in 3D Printing. Their expenses increased in the same way over the past year: 59% for Europe versus 61% for America. 90% of respondents from both continents consider 3D Printing as a competitive advantage. 69% of the respondents expect their expenses in 3D Printing to keep rising for next year. This trend is the same for both continents. But the perception of Return on Investment is not the same for both. More American users think they have a better ROI this year than last year : 45%, versus 37% in Europe.

Applications differ

Americans use 3D Printing mainly for design and production (23% and 17% versus 18% and 14% for Europe), while Europe uses it mainly for R&D (26% versus 18%). On average, respondents from both Europe and from America quote more than one main benefit they can see from 3D Printing (1.2 benefits). Dealing with complex geometries is the main motivation.

Different levels of expertise and integration

Americans consider themselves less experimented than Europeans when it comes to 3D Printing, but actually they have more years of experience (3.13 years versus 2.82). 3D Printing is more integrated in American companies programs, than in European

companies: 43% versus 34%. Americans tend to spend more money in external services of 3D Printing. Their first criteria of choice is price, whereas it's quality of prints for Europeans. Though, Americans use more external services for their 3D prints, whereas Europeans prefer to do it in-house.

Materials and techniques

Americans use less plastic (69% versus 75% in Europe). In terms of finishing, there are no big differences between the two continents. In terms of techniques, Americans use more FDM (41% versus 31% in Europe). It's the main technique used there. Europeans use more SLS (35% versus 29%). The use of other techniques is almost the same between each continent.

Our respondents and their competitors

Americans and Europeans don't use the same techniques to differentiate themselves from their competitors. Americans tend to use 3D Printing more to work on this objective (+8 points for convenience and +13 points for customization).

The two continents don't really share the same vision of their competitors. Europeans think they're the only ones to use 3D Printing (41% versus 26% in America), while 23% of Americans think their competitors use more 3D Printing than they do (10 points more than Europeans).

MAIN TRENDS QUOTED OF EUROPE - AMERICA

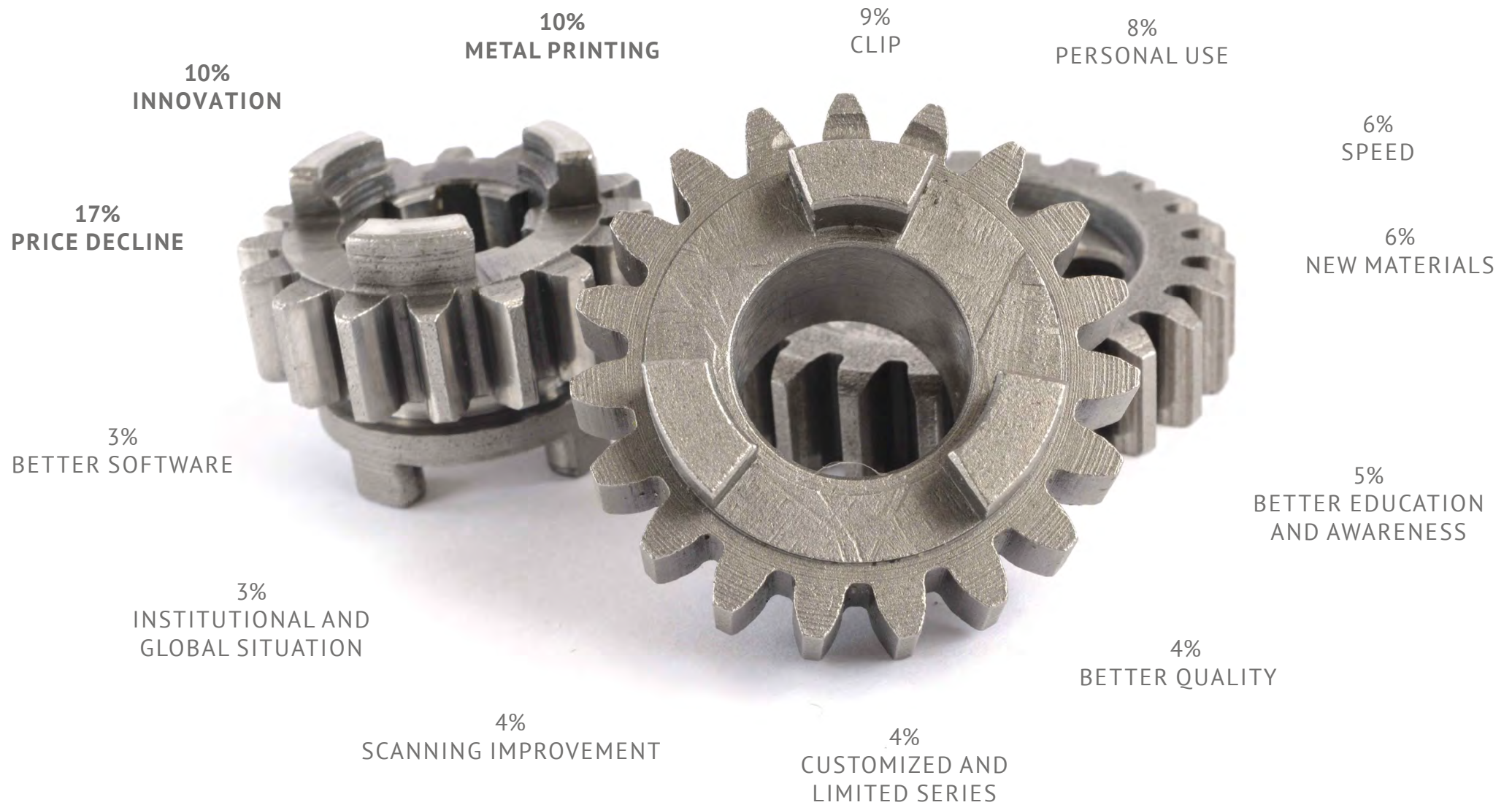
90% OF RESPONDENTS FROM AMERICA AND EUROPE CONSIDER 3D PRINTING AS COMPETITIVE ADVANTAGE

69% + 59% ARE SKILLED 3D PRINTING USERS
EUROPEANS AMERICANS

TOP MATERIALS USED

EUROPEANS
Plastic 75%
Metal 23%
Resin 29%

AMERICANS
Plastic 69%
Metal 23%
Resin 30%



OPPORTUNITIES ARE STILL LARGER THAN THREATS

Once again this year, we asked our respondents to tell us which trends they think could have a major impact on 3D Printing in the next few years. It's a good way to get some powerful insights on what the global threats and opportunities are when it comes to 3D Printing.

To conduct a proper text analysis, we defined some key words and made a semantic classification. The results are the verbatims showed on the previous page. Among the answers we analyzed, 13 keywords and trends emerged quite clearly. The percentages quoted here represent the share of respondents who quoted this keyword as a trend which could have a major impact. Cost decline (17%), metal printing (10%), and innovation (10%) are the top notions used by the respondents.

Innovation

Additive manufacturing is already a very innovative area. If we trust our respondents, new techniques and materials are still going to change it a lot. 10% said innovation would have a major impact. Which innovations will change the face of 3D Printing according to them? When it comes to materials, Metal 3D Printing is quoted by 10% of our respondents. New materials in general is quoted by 6% of them. New technologies also offer new interesting possibilities for 3D Printing, like CLIP. CLIP was quoted by 9% of our respondents. Efficiency, which was mentioned by 11% of our respondents last year, was not quoted in this study. The number of people quoting speed and quality is also decreasing.

Democratization

Global cost decline is the major trend quoted by our respondents (17%). Thanks to this, it makes the use of this technology easier for many companies. Awareness and education are also increasing (5%), which helps make the market grow significantly every year. Moreover, in a world where customers always wish to get the most personalized experience that they can, companies have to satisfy customers needs. 3D Printing is a real partner for them, especially with the possibilities this technology offers in terms of production of customized products and limited series. This trend was quoted by 4% of our respondents. Cost decline also means that the technology is easier to access for final consumers. That's why personal use of 3D Printing is still seen as a major opportunity (8%).

What's next?

Even if there are major opportunities for 3D Printing, some threats still exist. First, the global situation in terms of economics and politics, and the risks of regulatory changes for technology create uncertainty (3%). Moreover, a tech giant could enter the market and totally change the current dynamics. To keep being such a promising market, 3D Printing needs to improve on some points. For instance, 3D Printing softwares could improve in order to make the whole process easier (3%). Globally, there's no issue with education, it's technology which needs to improve. Thus, this sector can still achieve highest and fastest growth.

MAIN TRENDS QUOTED

45% 3D PRINTING TECHNOLOGIES

- New materials
- Techniques

28% EASIER TO USE

- Cost decline
- Speed

EXECUTING A 3D PRINTING STRATEGY - INTRO

To understand what is at stake in the additive manufacturing industry, it is important to know who are its different actors, as well as what are their main objectives and priorities. Since the first version of the State of 3D Printing, we divided the users in two different categories: General Users and Power Users. This last category is defined by its advanced performance in additive manufacturing. They embrace the potential of 3D Printing and perform better than the General Users.

Why do they succeed? They make heavy use of 3D Printing and they use a lot of its many possibilities. To summarize, they are advanced users and high performers.

The proportion of survey respondents we can identify as Power Users went from 26% last year to 30% this year. This increase shows that the gap is decreasing between the two categories.

We will start by determining the candidate of the higher performers, their activities and what their priorities are. Then, we will focus on their usage of additive manufacturing. The section will end by analyzing the ROI of 3D Printing in order to see if digital manufacturing is a competitive advantage and if investing in this technology is the right decision to make for your business.



EXPERTISE IS A KEY FACTOR TO BOOST PERFORMANCE

When looking at the use of 3D Printing inside the organizations of Power Users, this technology is highly integrated into the companies activities. 21% are 3D Printing-first companies, compared to 15% of the regular sample, and only 11% of the Power Users work in companies where 3D Printing is much separated from the rest of their activities, compared to 20% for the regular sample.

Concerning the years of experience in 3D Printing, it gives a wider picture of the difference of experience between Power Users and the average respondents. Only 9% of Power Users

have less than one year of experience in 3D Printing, compared to 29% of the total respondents. 69% of the Power Users have more than 3 years of experience (among which 25% have more than 6 years of experience), compared to 45% in average (among which 14% have more than 6 years of experience).

The median experience is 1-2 years in average, and 3-5 years for Power Users. This shows our sample is quite experienced overall, past the discovery stage, but not yet at the expertise level.

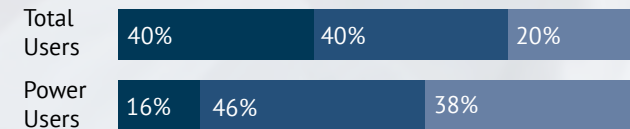
What should you do?

It's easy to see that Power Users are mainly professionals. Due to this fact, they tend to be better trained to use this technology. Their level of experience is significantly higher than in our regular sample.

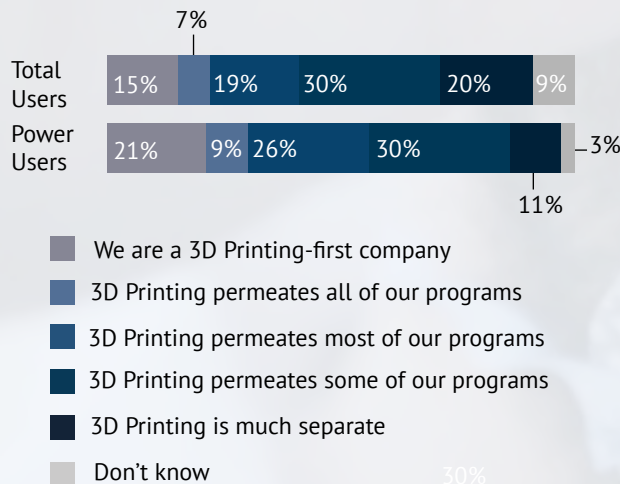
Expertise clearly appears to be the key factor that helps you improve performance when it comes to additive manufacturing. We advise you to work with people with experience in the subject, it will help you gain in efficiency and significantly increase your performance.

You consider yourself to be...

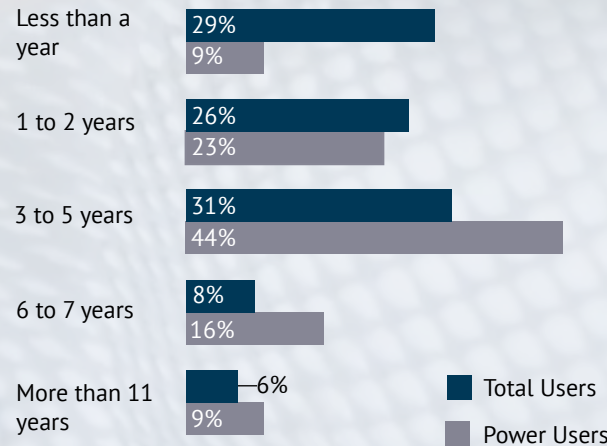
■ a beginner ■ an intermediate ■ an expert



To what extent 3D Printing permeates your activity?

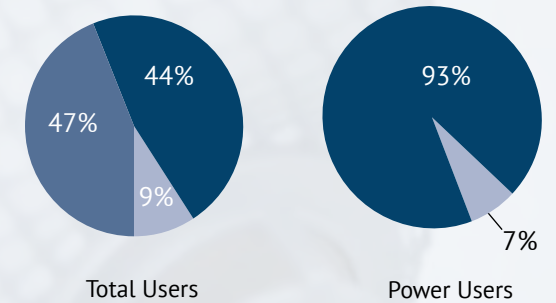


How long have you been using 3D Printing?



Are you...?

■ a professional ■ a hobbyist ■ other



HIGH PERFORMERS ARE 3D PRINTER-AGNOSTIC

It is obvious that high performers use more materials since Power Users take advantage of 3D Printing for different applications. On average, they use 2.4 materials, while respondents of our global sample use 1.9 materials. Plastic is the most used material for Power Users, like for Total Users, followed by Resin, but they tend to test more materials

When looking at how our respondents acquire their 3D models, two interesting trends can be spotted. First, the majority of respondents create the 3D designs themselves. 92% of Power Users have someone inside their company to design their 3D models. This indicates that 3D Printing is settling into companies' processes, and specific departments for 3D Printing are more and more common.

The second trend is the closing of the gap between Power

Users and the average. 67% of Power Users state that they create their own 3D files, compared to 60% on average. Once again, this is an indication that we are in a phase of education of the market, and the gap is closing between different users of the technology.

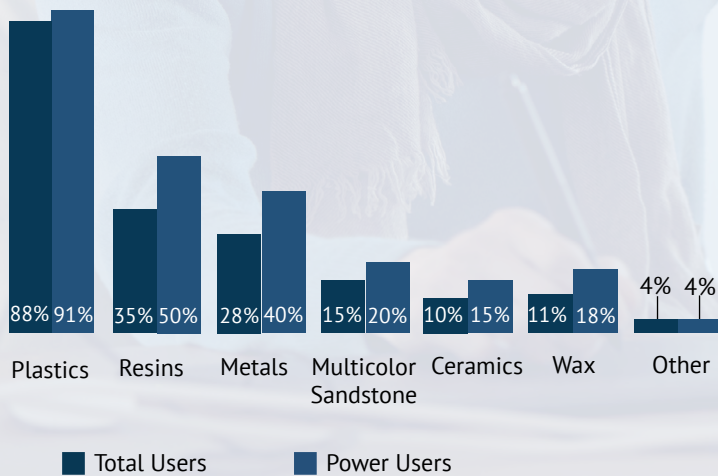
Moreover, 57% of Power Users have their own 3D printer (compared to 36% of Total Users). Among them, 35% possess more than one 3D printer (compared to 15% of total users). For half of Power Users, the 3D printer they possess uses the FDM 3D Printing technology (57%). The second main one is SLA (20%). The big difference with Total Users is that in total, FDM is more largely predominant (85%). Power Users have a stronger tendency to invest in more advanced, more expensive 3D printers than FDM ones.

What should you do?

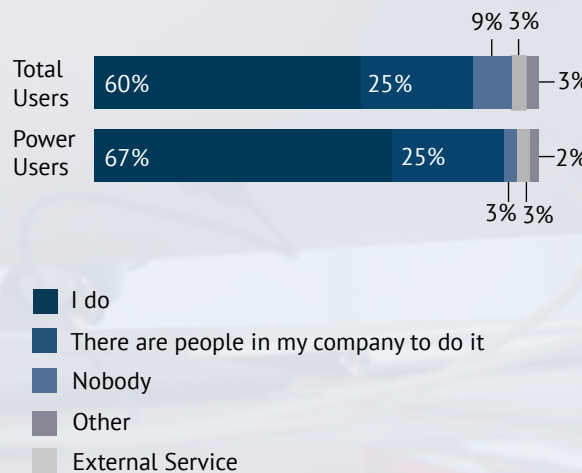
Expertise in terms of 3D Printing is not the only key factor of success. To become a high performer, you need to follow up quickly with new techniques. Using new materials, which perfectly fit your needs, can help you increase your performance significantly. You can also decide to use a less common 3D printer.

Learning 3D design, or training a team in your company to work specifically on 3D modeling can also be important to product development. The advantage of having a specific team working on CAD software is increased mastery and knowledge of the technology. As a result, technical knowledge and expertise inside companies is a real competitive advantage.

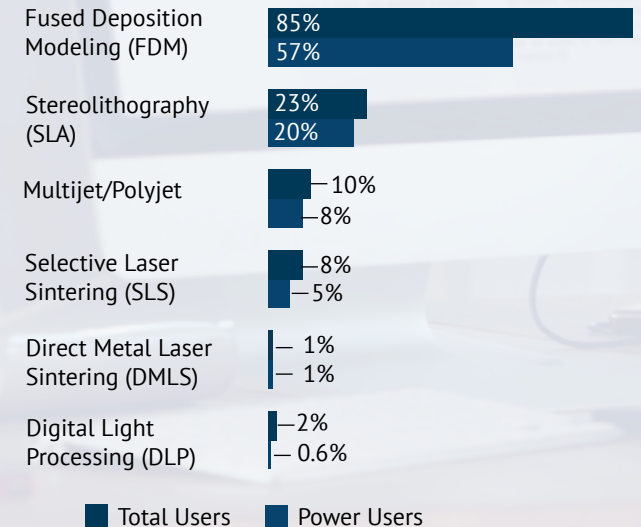
Which material do you use for 3D Printing?



Who works on 3D modeling in your company?



Which 3D printer do you own?



PRODUCT DEVELOPMENT IS THE MAIN PRIORITY

One interesting thing about Power Users is that they quote more than one top priority related to 3D Printing. It shows that they fully embrace the potential of this technology, seeing it as a partner to help mitigate challenges. Since there are more early adopters among them, this trend is logical: they had more time to fully understand how 3D Printing can help them.

Like in our previous studies, accelerating product development remains the main priority. But as the technology is improving, 3D Printing is expanding its scope of uses. It now helps with production itself, especially when a company wants to offer customized products and limited series. Moreover, it helps increasing global production flexibility. In the end, it can be used during the whole lifetime of a product, being also really helpful to produce spareparts for sold products.

In the next five years, our respondents assume their priorities will remain the same, but the gap between Power Users and our global sample is increasing. High performers seem to foresee that 3D Printing's potential is going to improve a lot in the near future.

What should you do?

Of course, 3D Printing can help you a lot with product development. But to increase your performance, we advise you to fully embrace the potential of this technology, for every moment of your product's lifetime. Producing with 3D Printing will especially be helpful if you release short series, or products with complex shapes, or if spare parts management is an important challenge for your activity.

What are your top priorities for your organization in 2017?



3D PRINTING DRIVES COMPETITIVE ADVANTAGE

81% of Power Users believe that their competitors also use 3D Printing, versus 59% for total respondents.

This question can be understood in two different ways: either it means that Power Users work in fields in which 3D Printing is most relevant, and this is how they have acquired their expertise. Or Power Users have a clearer view of their competitors' practices and are more aware that they use 3D Printing, even if it's a marginal part of their activity.

Furthermore, we can see that Power Users saw a greater ROI (57%) than last year, while only 47% of

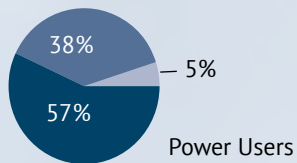
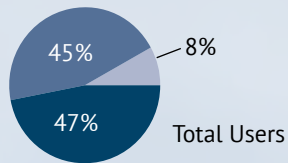
the Total Users saw a greater ROI of 3D Printing. This difference might be due to differences in the usage of this technology. But they have the same will to invest in specialized workforce to boost their performance. 47% of Power Users plan to hire new candidates this year, half of them being candidates specialized in 3D Printing. **Either for Power Users and for our global sample, 97% of the candidates seeked are technical** (there are only 3% of project managers).

What should you do?
Investing in 3D Printing shows great results: Return

on Investment is good for our respondents, and it's increasing year over year. Using this technology is a good way to differentiate yourself from your competitors and to gain a competitive advantage over other companies.

Since it's showing good results, the 3D Printing job market is dynamic. Hiring new candidates is essential to remain competitive and innovative. More specifically, hiring technical candidates is a must in the world of 3D Printing.

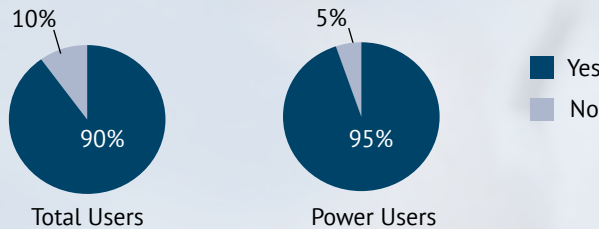
What is the ROI of 3D Printing in your activity this year?



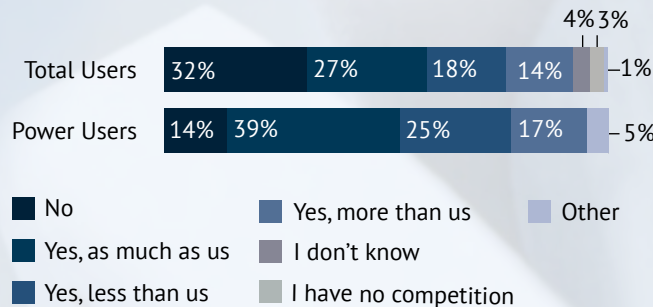
Compared to last year :

- Greater
- About the same
- Lower

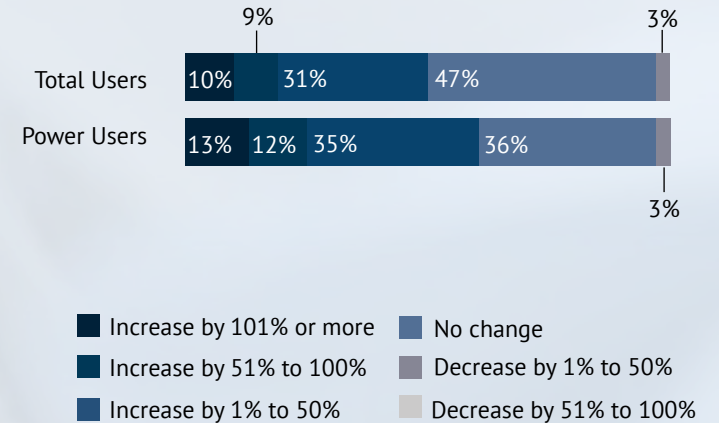
Do you consider 3D Printing as a competitive advantage in your strategy?



In your market, do your competitors also use 3D Printing?



Compared to 2015, what is the evolution of your turnover in 2016?



YEAR-OVER-YEAR CONTRAST

Return on Investment for 3D Printing was greater than last year for 47% of respondents, while they were only 40% to say in 2016.

3D Printing is a very innovative sector where technologies change fast. Comparing this year's trends with last year's results is a good way to understand the changes this industry is going through.

Last year, we started making these comparisons and they helped us get some powerful insights about the evolution of additive manufacturing. This year,

we assume the number of respondents allows us to make some serious conclusions about this topic.

This section is divided in 3 parts, synthesizing the results:

- The growth of the additive manufacturing market doesn't soften
- Accelerating product development remains the main priority of our respondents
- 3D Printing technologies and their uses evolve over the years

We did our best to provide you with an analysis for each topic, explaining to you what these changes actually mean. Thus, we hope this section will help you get a better understanding of the current dynamics.

3D PRINTING MARKET: NO SOFTEN GROWTH FOR 2017

Compared to last year, we see the number of new users of 3D Printing increasing, which shows a certain dynamism of the market. Indeed, 23% of our respondents did not use 3D Printing last year, while they were 20% to say so last year.

3D Printing users seem to be satisfied from their investments in this technology, since they get good results and high Return on Investment. This ROI is even increasing over the years. 47% of the respondents said they saw a greater ROI than last year, while they were only 40% to say so last year.

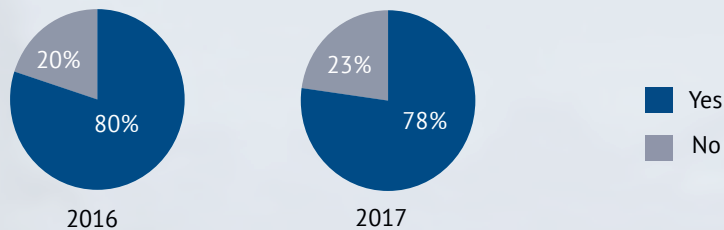
Since our respondents are satisfied from the results they get, they keep investing more and more in 3D Printing. Thus, their expenses increase. The number of respondents spending less than \$1000 per year in 3D Printing dropped from 66% to 60%, while the share of people spending between \$1001 and \$50 000 went from 31% to 34%, and from 4% to 7% for respondents spending more than \$50 000.

On average, our respondents said their budget for 3D Printing in 2017 would be \$9504, up from \$6132 last year, an average budget increase of 55%. These results contradict the Wholers Report, which jumped to the conclusion that the market was observing a pause, due to a market growth that went from 25.9% in 2015 to 17.4% in 2016. But our growth indicators clearly show that it's not the case.

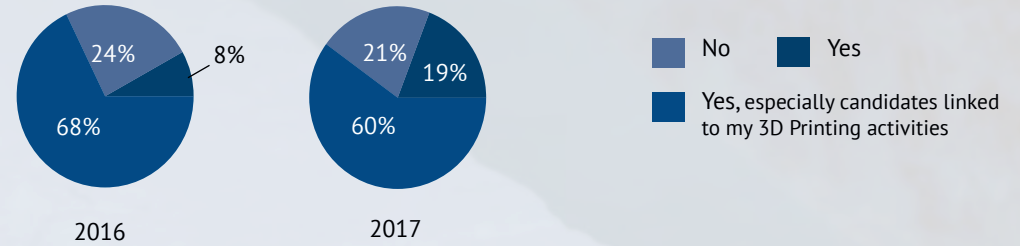
Another consequence from this increasing Return on Investment is the impact it has on the job market. The number of companies using 3D Printing that hire is increasing year over year, especially for candidates specialized in 3D Printing.

This year, 40% of our respondents plan to hire new candidates, especially candidates specialized in 3D Printing for 19% of our respondents. Last year, they were only 30% to plan to hire, with 8% planning to hire specialized candidates.

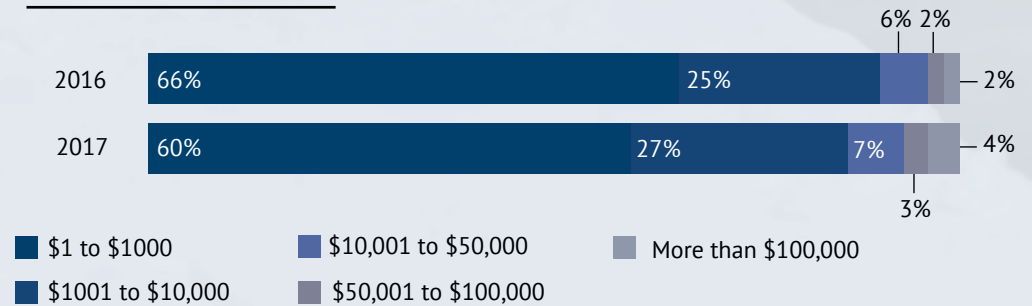
Did you use 3D Printing last year?



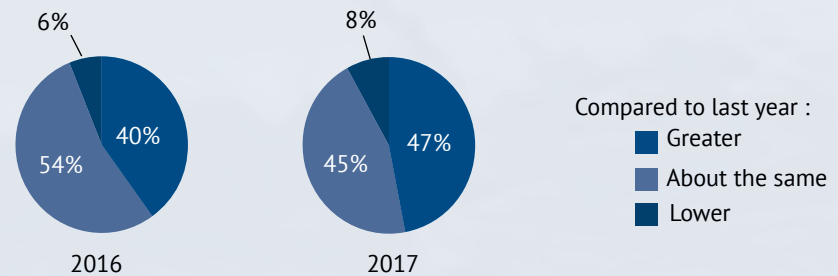
Do you plan to hire new candidates this year?



Amount spent on 3D Printing

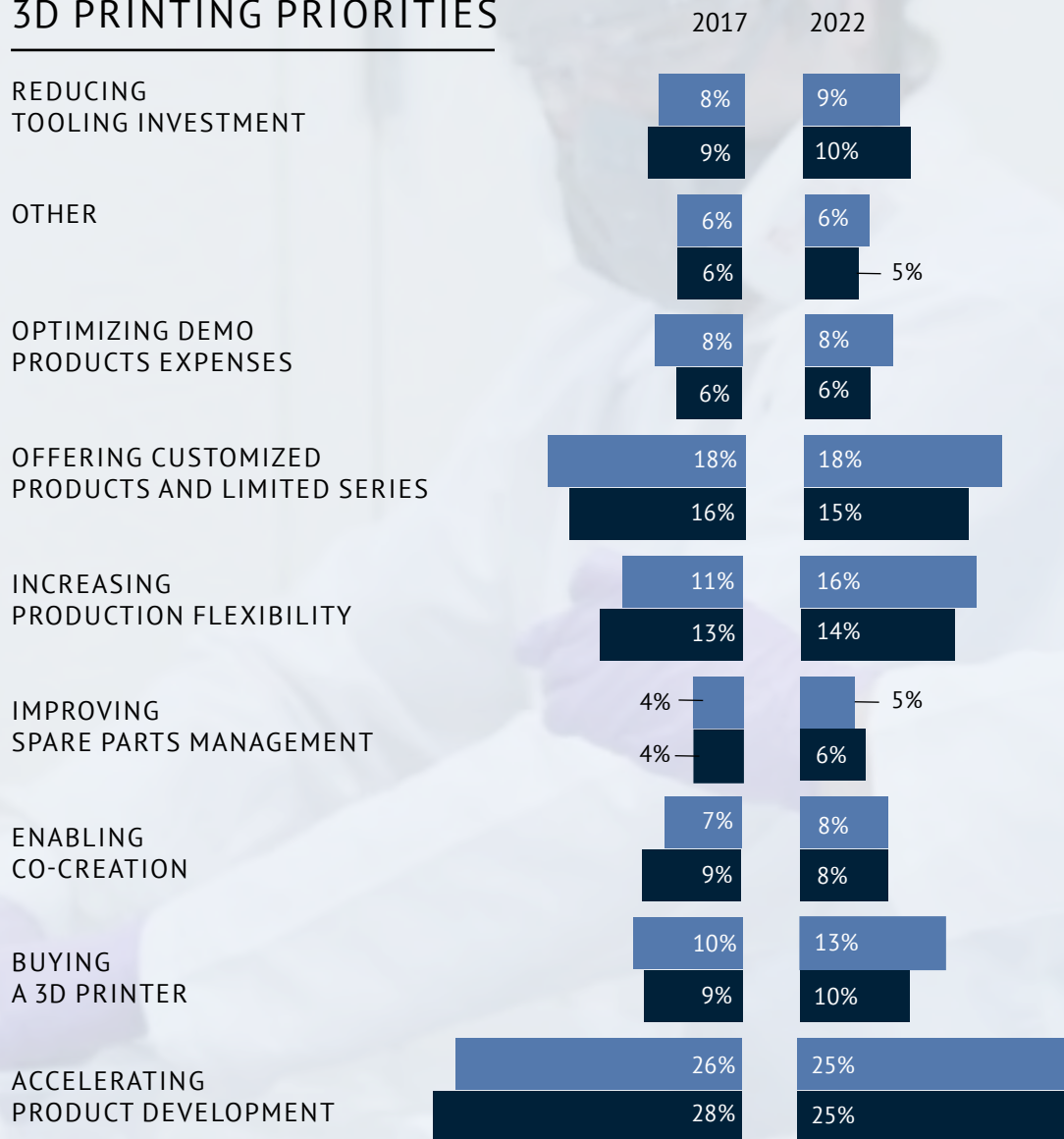


What is the ROI of 3D Printing in your activity this year?



TOP PRIORITIES ARE BECOMING CONSTANT

3D PRINTING PRIORITIES



For this third edition of the State of 3D Printing, there is one trend that becomes more and more striking over the years. Accelerating product development remains the top priority of our respondents for this third year.

Developing better products faster is a great way to deal with competitors and to make a difference. 3D Printing has been since the beginning a great partner of product innovation and there's no reason for change.

Accelerating product development is quoted by

28% of our respondents, which is 2 points higher than last year, showing that this concerns takes more and more importance. The gap becomes even bigger with other concerns. For instance, product customization dropped from 18% to 16%. Globally, top priorities of our respondents are stable in time, even when they think of their future priorities.

In five years, they assume their concerns will be almost the same. Noticeable fact: buying a 3D printer seems to be more of a priority five years from now.

■ Study of 2016
 ■ Study of 2017

RESIN'S INNOVATION LEADS MARKET TRANSFORMATION

The use of plastic is growing, from 73% of our respondents last year to 88% this year, even if it's not the most represented material in the media. Resin material, which is very solid and resistant, is used by 35%, an 8 points increase over last year. It is followed by metal (28%), more used than last year (23%).

What are the reasons of the increasing usage of plastic? It is considered to be an ideal material as it is one of the most affordable and the most versatile. Metal is not growing as fast as one can expect even if it has a great potential.

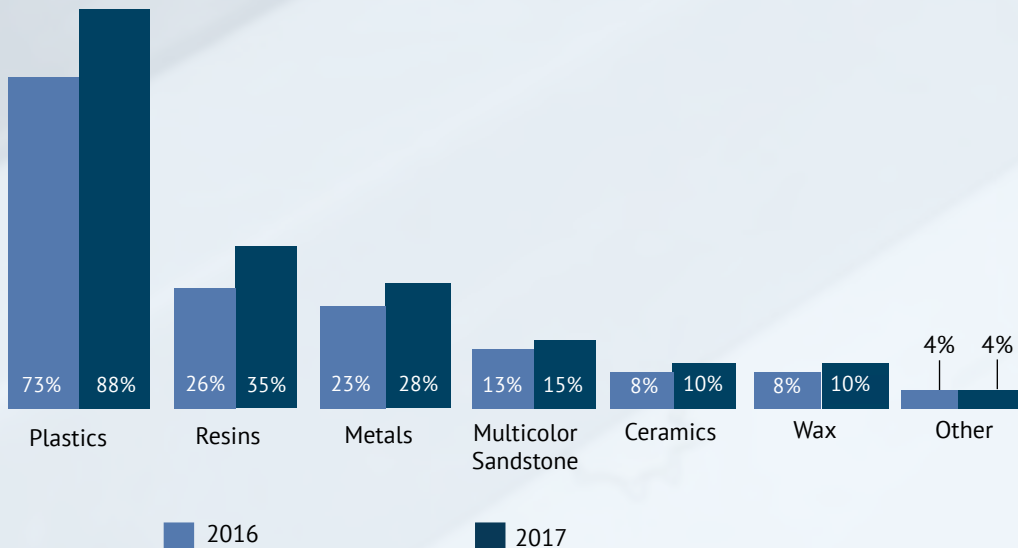
Fused Deposition Modeling (FDM) is the

most used technology (36%), followed by SLS (33%) and SLA (25%). Last year, SLS was the most used one (38%), followed by FDM and SLA. 3 technologies make their entrance in our study this year: SLM, CLIP and Fusion Jet. All technologies are more used than last year, except SLS.

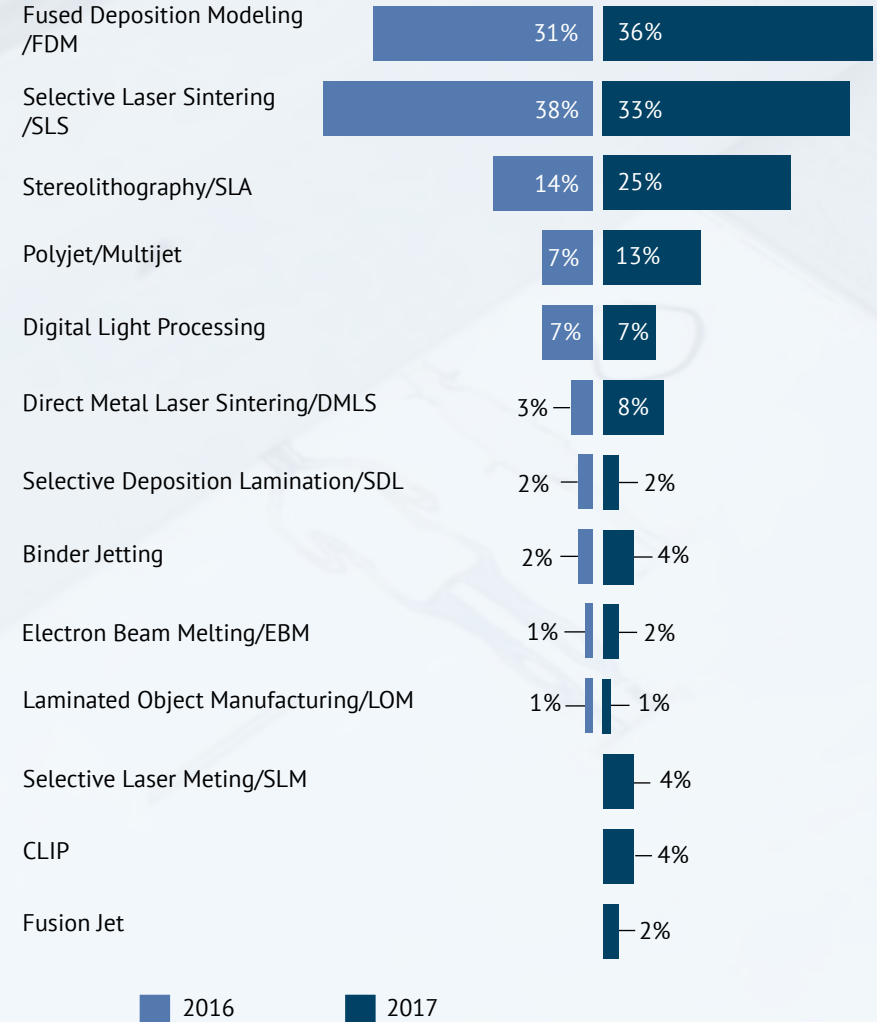
This shows that our respondents have a better expertise in 3D Printing and embrace the potential of each technology.

In terms of finishes, the use of polishing increased (4 points more than last year). The use of painting and varnishing are quite stable over the years.

TOP 3D PRINTING MATERIALS



TOP 3D PRINTING TECHNOLOGIES



SECTORIAL INSIGHTS



Since our first edition of the 'State of 3D Printing', we want this survey to be a real decision-making tool for you. That's why we provide you a global overview of the main trends, strategy orientations, powerful insights and the maximum amount of accurate data that we can.

To help you make even better decisions, we go even deeper in our research. In this last part,

you will find a detailed sector analysis. Our goal is to give you an overall idea of how each sector changes and deals with 3D Printing, so that you can make clarified decisions.

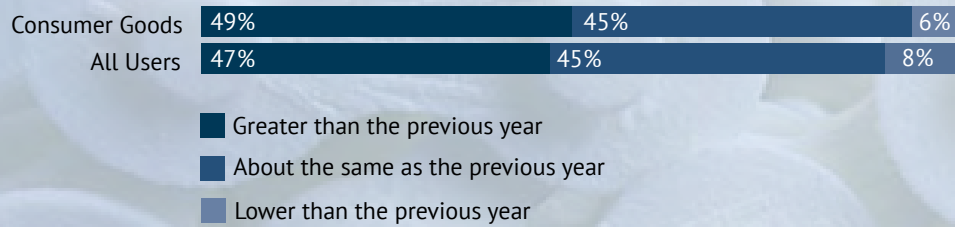
Our respondents are mainly coming from four sectors: consumer goods, industrial goods, high technologies and services. For each sector, you will find a point-by-point comparison between the sector

and the total of our respondents, showing you what are the main significant differences.

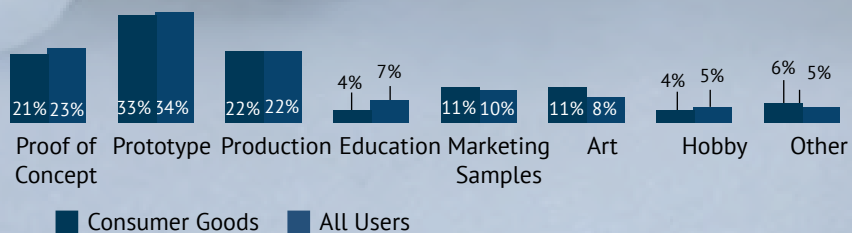
We wish that this survey will help you benchmark your activity to other companies, either in your own sector or in other ones.

SECTORIAL INSIGHTS
CONSUMER GOODS

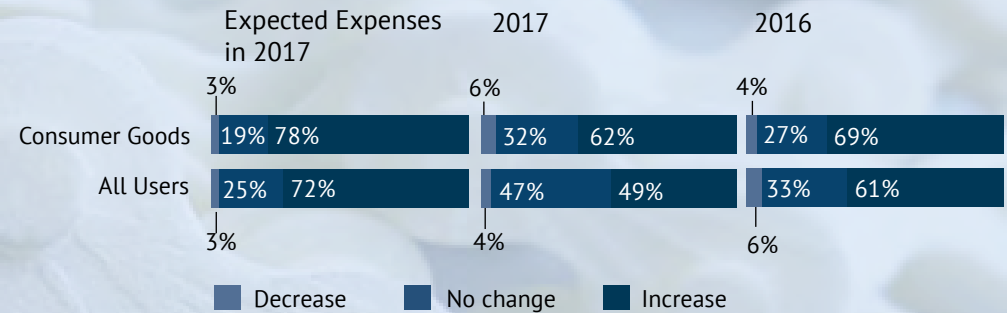
RETURN ON INVESTMENT OF 3D PRINTING



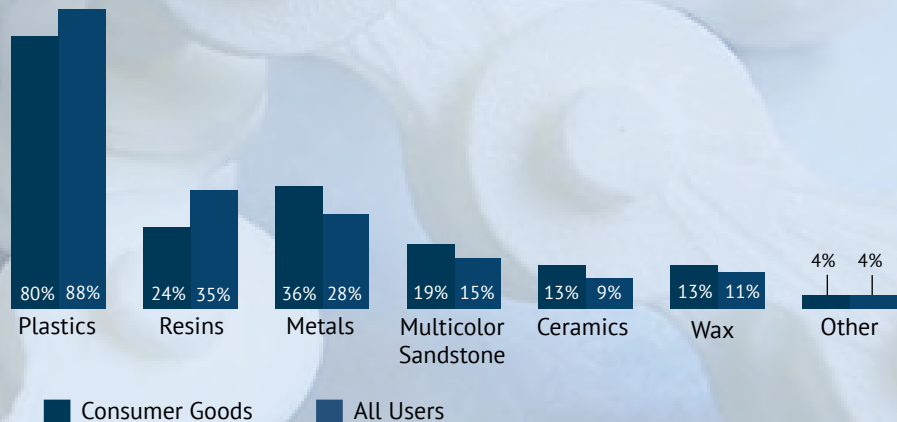
APPLICATIONS



EXPENSES

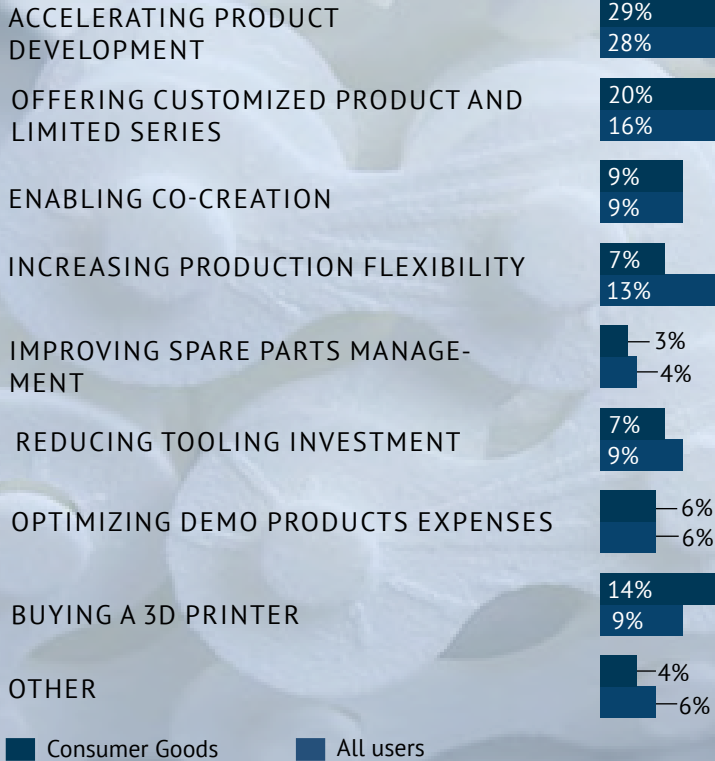


MATERIALS

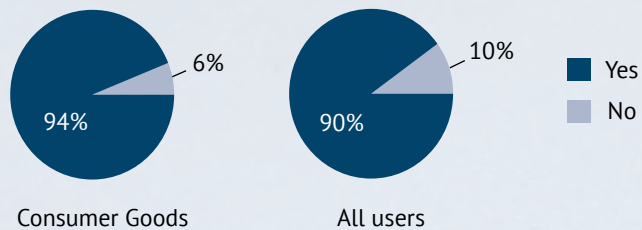


SECTORIAL INSIGHTS
CONSUMER GOODS

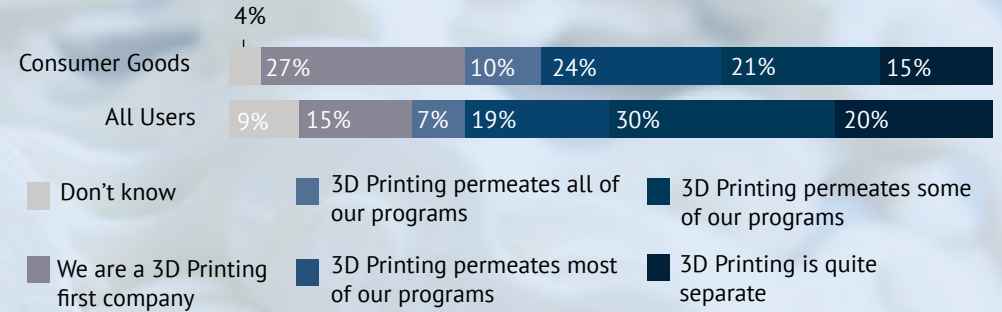
TOP PRIORITIES



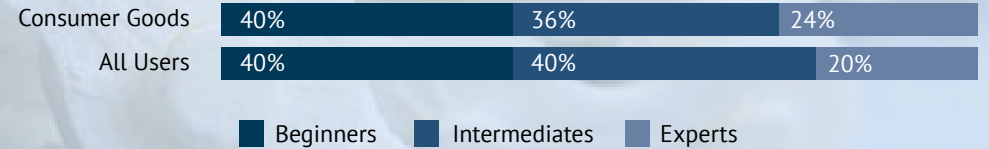
Do you consider 3D Printing as a competitive advantage in your strategy?



INTEGRATION



EXPERTISE



Consumer Goods is a very dynamic sector for 3D Printing. This year, expenses in 3D Printing increased significantly more in this industry than average (62% versus 49%), and 78% of the respondents expect it to increase again in 2017.

Return on Investment is strongly growing: 49% of our respondents said they saw a greater ROI than last year, compared to 40% for our previous study. 3D Printing is definitely seen as a competitive advantage (95%).

The main priority for this sector is to accelerate product development (29%). 3D Printing is a real

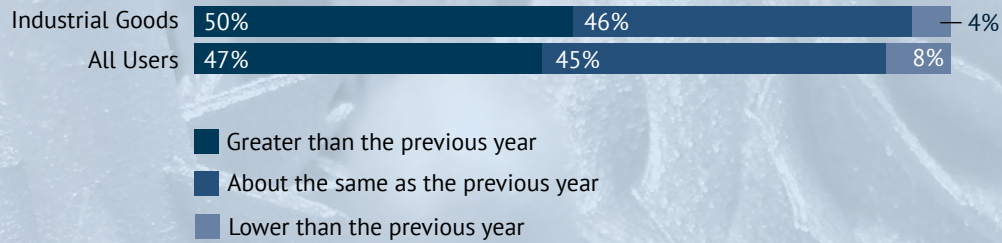
partner for these companies to achieve those goals. It is mainly used for prototyping (33%) and for production (22%).

Even though plastics are still the most used materials for 3D Printing in the Consumer Goods sector, the use of metals is strongly increasing.

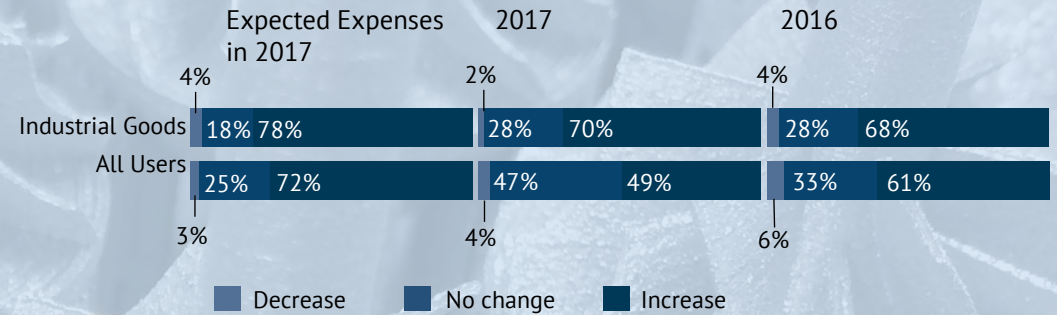
Last year, they were only used by 31% of our respondents from this industry. This year, this number goes up to 36%. Multicolor sandstone is also gaining new users: its usage in this sector saw an increase of 4 points in one year.

SECTORIAL INSIGHTS
INDUSTRIAL GOODS

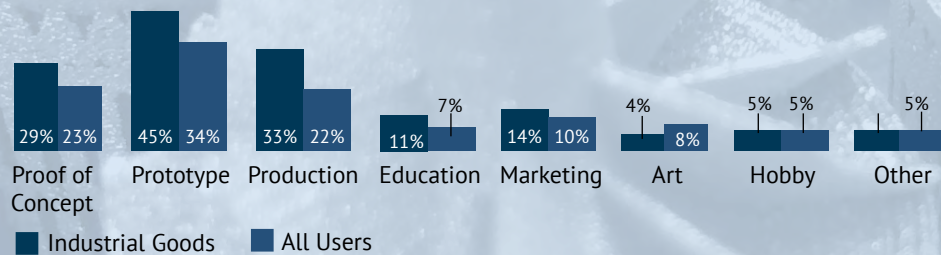
RETURN ON INVESTMENT OF 3D PRINTING



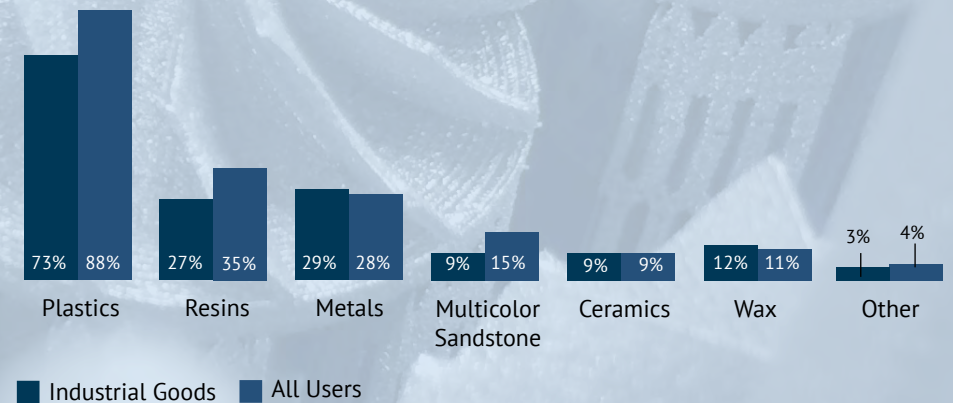
EXPENSES



APPLICATIONS

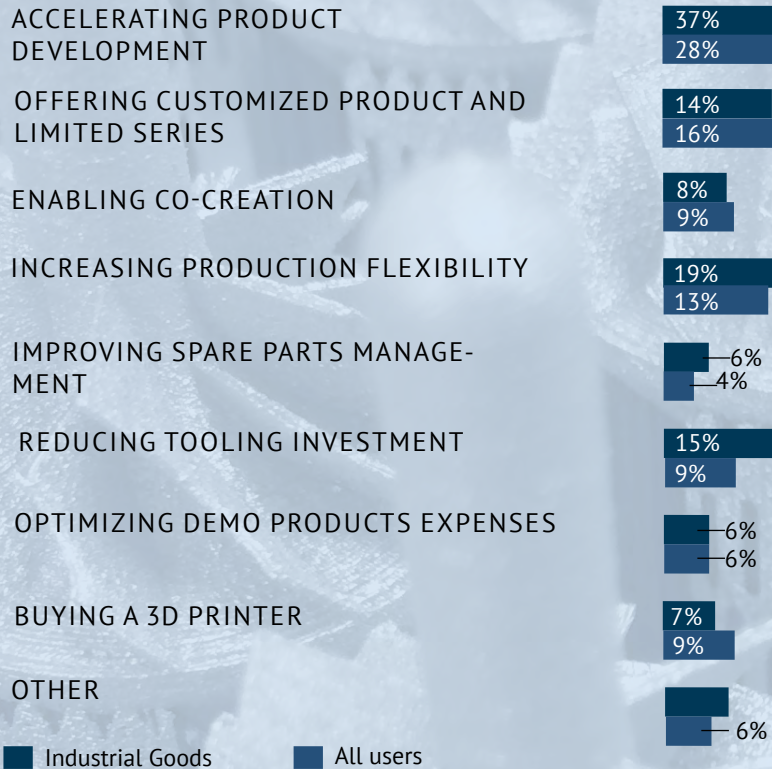


MATERIALS

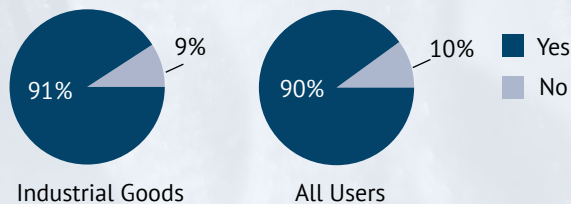


SECTORIAL INSIGHTS INDUSTRIAL GOODS

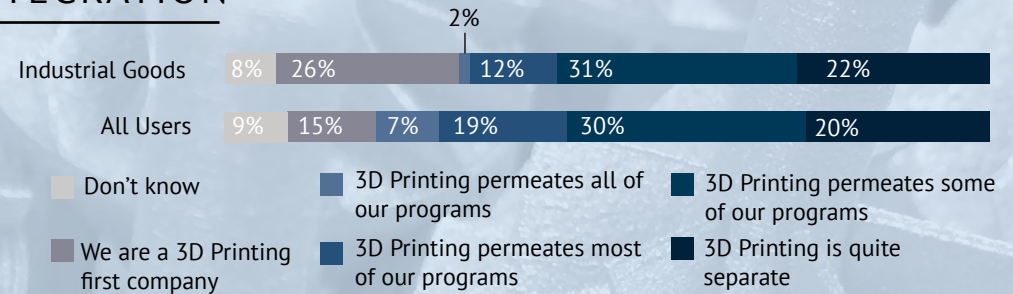
TOP PRIORITIES



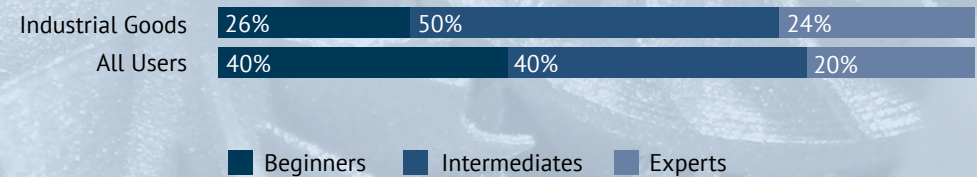
Do you consider 3D Printing as a competitive advantage in your strategy?



INTEGRATION



EXPERTISE



Industrial Goods is also a very dynamic sector when it comes to 3D Printing. This year, expenses in 3D Printing increased significantly more in this industry than average (70% versus 49%), and even more than in the Consumer Goods industry (62%).

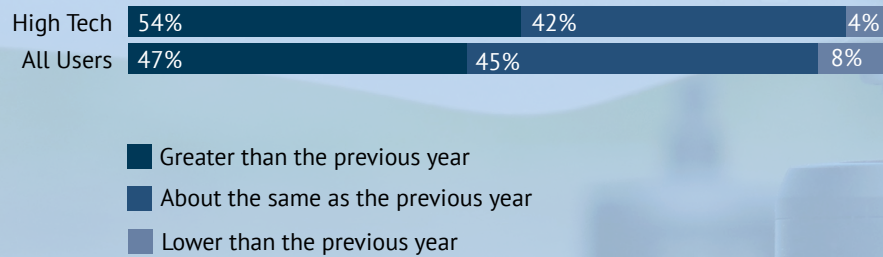
This trend is here to stay: 78% of the respondents expect it to increase again in 2017. Return on Investment is strongly increasing : 50% of our respondents said they saw a greater ROI than last year. 3D Printing is definitely seen as a competitive advantage (94%).

The top priority for our respondents is to accelerate

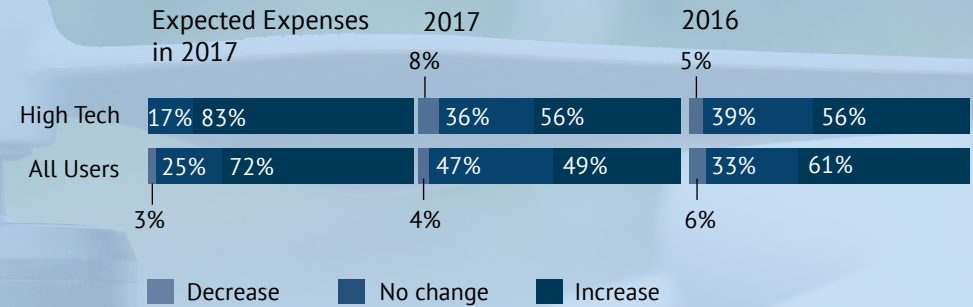
product development, even more than in the Consumer Goods industry (37% versus 29%). The other main priorities are quite different from the global results of the survey : increasing production flexibility and reducing tooling investment are significantly more quoted than average (19% and 15% versus 13% and 9%).

The Industrial Goods sector has fully embraced the large potential of 3D Printing and companies use it for more than one usage : prototyping is still the main one, but production and proof of concept are also really important compared to the global results (33% and 29% versus 22% and 23%).

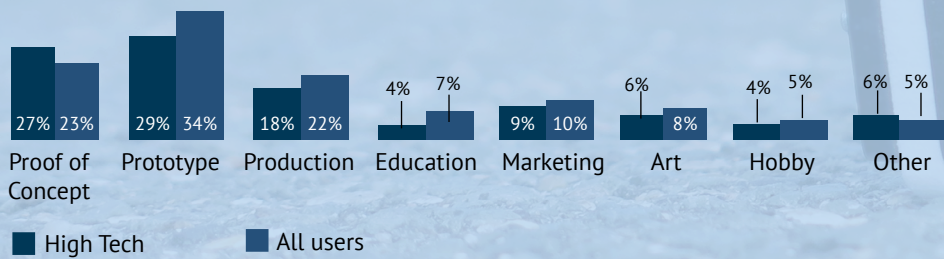
RETURN ON INVESTMENT OF 3D PRINTING



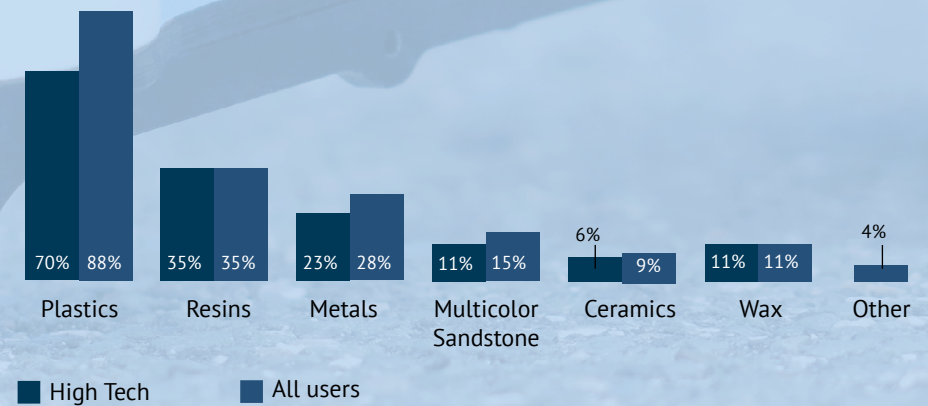
EXPENSES



APPLICATIONS

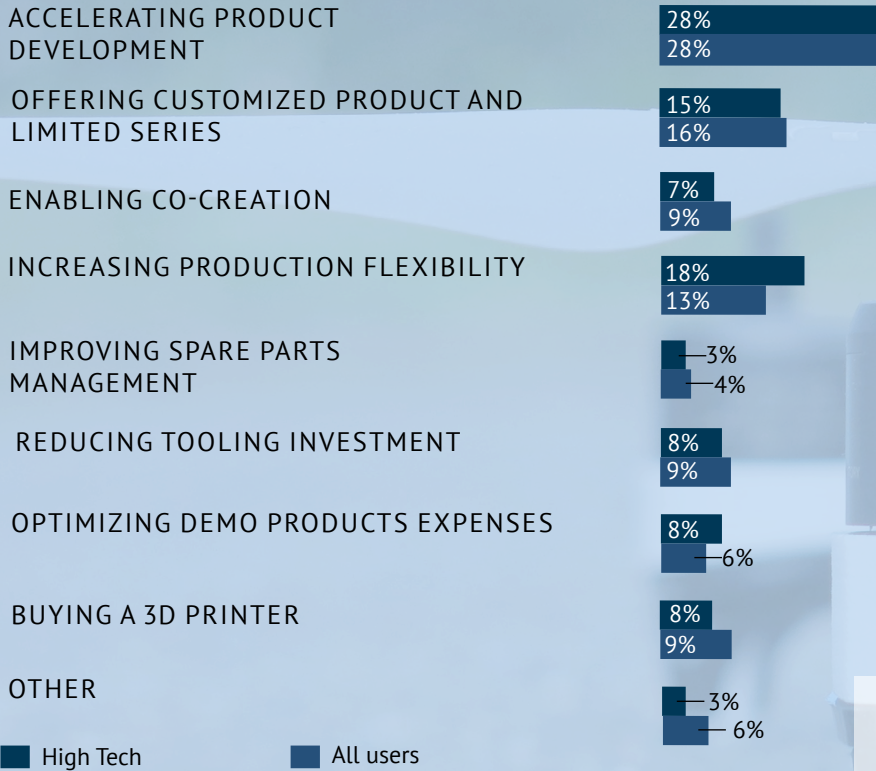


MATERIALS

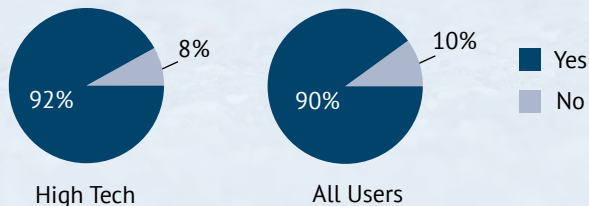


SECTORIAL INSIGHTS
HIGH TECH

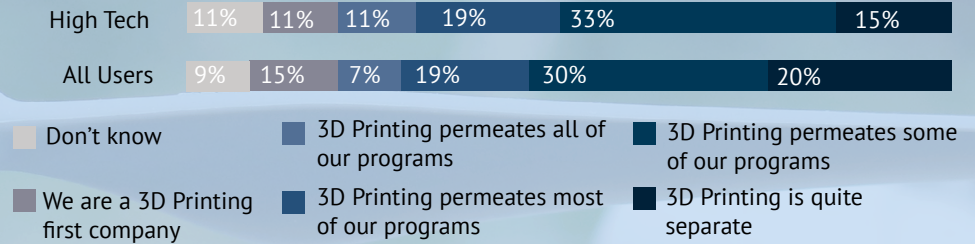
TOP PRIORITIES



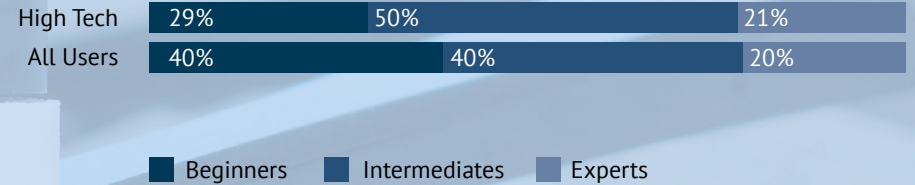
Do you consider 3D Printing as a competitive advantage in your strategy?



INTEGRATION



EXPERTISE



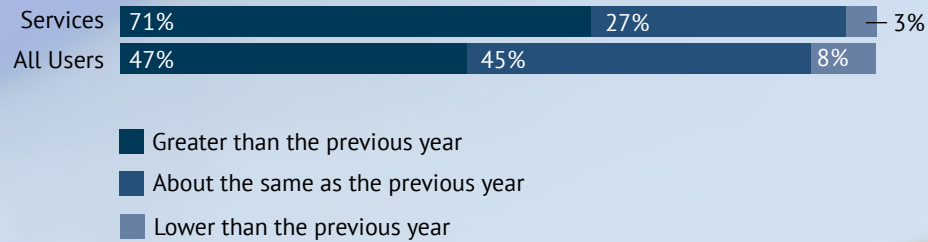
High Tech is a sector with high potential for 3D Printing. The respondents tend to see greater Return on Investment than in other sectors. 54% said they saw a greater ROI than last year, while 47% of our global respondents said so. And this dynamic is here to stay: 83% expect their expenses to grow in 3D Printing for next year, while only 72% of our total respondents said so.

People seem to have more expertise when it comes to 3D Printing in the High Tech sector. 71% consider themselves either intermediate or expert, while they're only 60% to say so in the global survey.

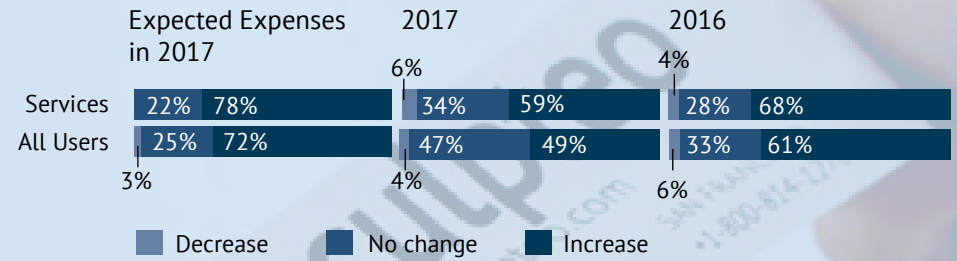
3D Printing is mostly used before products are launched. It helps companies to accelerate their product development, but it's not the only usecase quoted.

People working in High Tech companies tend to use 3D Printing in order to increase production flexibility (18% versus 13% for the global sample). Thus, they use it mainly for prototyping, but also for proof of concept which is a particular trend of this industry. 27% of our respondents use 3D Printing for this, while they are only 23% in our global sample.

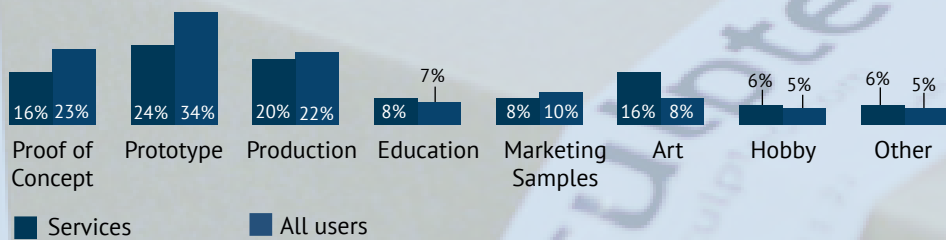
RETURN ON INVESTMENT OF 3D PRINTING



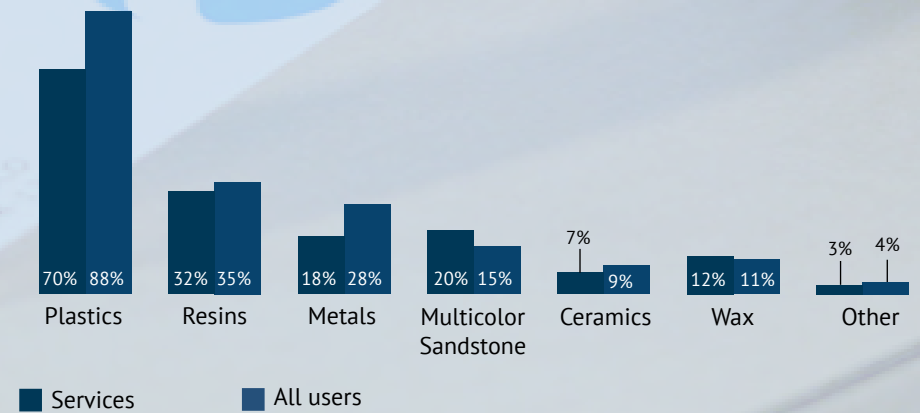
EXPENSES



APPLICATIONS

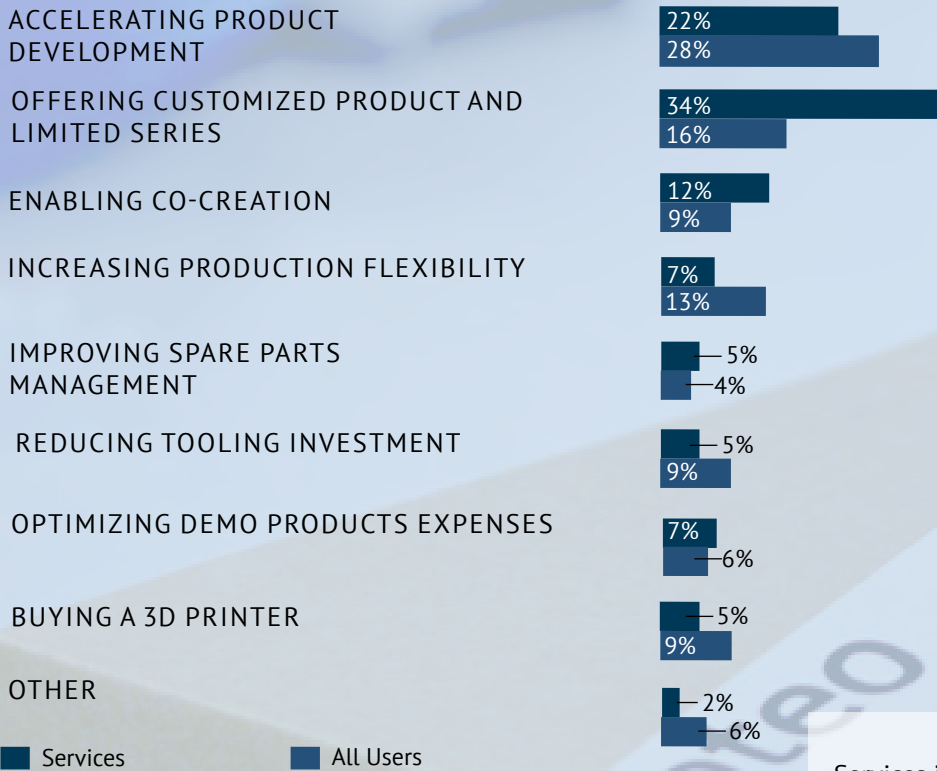


MATERIALS

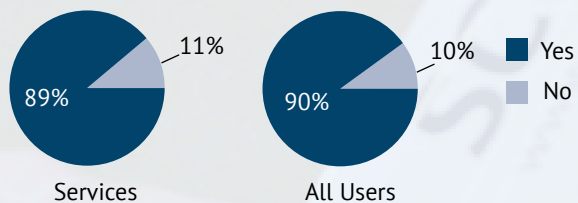


SECTORIAL INSIGHTS SERVICES

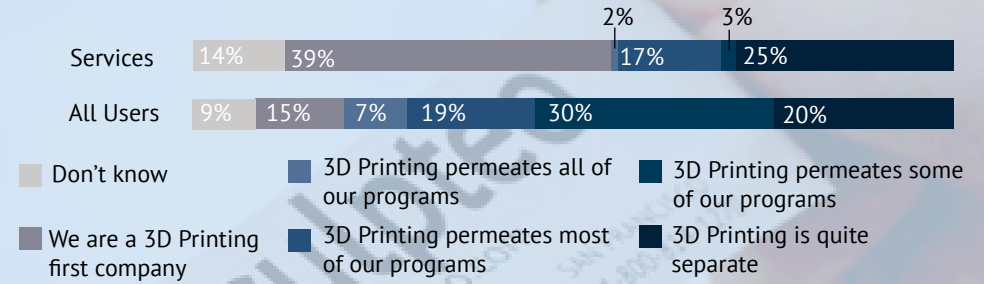
TOP PRIORITIES



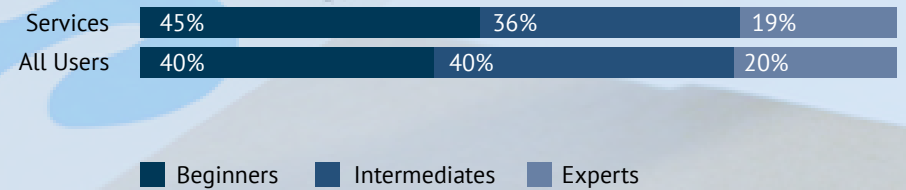
Do you consider 3D Printing as a competitive advantage in your strategy?



INTEGRATION



EXPERTISE



Services is a very promising market, quite different from other industries when it comes to 3D Printing. 71% of our respondents from this sector said they saw a greater ROI than last year on 3D Printing, while only 47% of our global respondents said so.

Integration of 3D Printing inside companies is quite special: either companies said they are 3D Printing first companies (39% versus 15% for the global sample), either they said 3D Printing is much separate (25%). 45% said they are beginners in 3D Printing.

Priorities also differ quite a lot from the general survey. 34% want to offer customized products and limited series, while they are only 16% when we take into account all the different sectors. Enabling co-creation is also a main priority.



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