# Online Manufacturing Trends Q4/2018

3D HUBS

# Introduction

The Online Manufacturing Trends Q4/2018 provide insight into the current state of online 3D printing and CNC machining, covering data from July to September 2018. Summer months are a low season for students, but engineering and design professionals are as busy as ever. This is reflected clearly in the data of the Q4 Trends report.

3D Hubs Digital Manufacturing Trends is a quarterly update using data from a global network of manufacturing facilities, that produce over 300,000 parts each quarter. It's the only industry report based on real transactional data and the most extensive overview of the latest trends in Digital Manufacturing.

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# Desktop 3D printing

## Most Used Desktop 3D Printers

**Insights**

The Formlabs Form 2 captured the top position as the Most Used Desktop 3D Printer with more than 14,000 parts printed. Interestingly, the Form 2 is the only SLA machine in the Top 10, showing the dominance of this machine in the market.

Prusa Research dominates the rankings with three machines in this list (in #2, #3 and #7 respectively) which printed together more than 33,000 parts. Ultimaker also has three machines in the Top 10 (and two more machines in the Top 25). This shows once again the popularity and reliability of the machines produced by these two manufacturers.

| # | Printer Model | Manufacturer | Technology | Parts printed |
|---|---|---|---|---|
| 1 | Form 2 | Formlabs | SLA | 14,142 |
| 2 | Original Prusa i3 MK3 | Prusa Research | FDM | 13,961 |
| 3 | Original Prusa i3 MK2 | Prusa Research | FDM | 12,674 |
| 4 | Creator Pro | FlashForge | FDM | 10,873 |
| 5 | Ultimaker 3 Extended | Ultimaker | FDM | 7,187 |
| 6 | Ultimaker S5 | Ultimaker | FDM | 6,969 |
| 7 | Original Prusa i3 MK2S | Prusa Research | FDM | 6,546 |
| 8 | M200 | Zortrax | FDM | 5,904 |
| 9 | Tech FT-5 | Folger | FDM | 5,549 |
| 10 | Ultimaker 2 | Ultimaker | FDM | 4,524 |

These are the top 10 most used desktop printers out of 700 printer models listed on 3D Hubs. The data is based on customer prints from the previous quarter.

# Desktop 3D Printing

## Highest Rated Desktop 3D Printers

**Insights**

The Lulzbot Taz 5 barely overtook the winner of the Q3 report, the Zortrax M200, to become the Highest Rated Desktop 3D Printer. The Taz 5 received a rating of 4.89 out of 5 from 157 reviews, while the M200 followed closely in #2 with a rating of 4.89 from 264 reviews.

The Creality CR-10, a popular budget machine that has a huge community, continued to improve its ranking and ended up in #3 with a score of 4.85. Prusa Research dominated also this category, with three of the machines of this manufacturer receiving top scores in the Top 10.

| # | Printer Model | Manufacturer | Technology | Reviews | Rating |
|---|---|---|---|---|---|
| 1 | Taz 5 | Lulzbot | FDM | 157 | 4.89 |
| 2 | M200 | Zortrax | FDM | 264 | 4.88 |
| 3 | CR-10 | Creality | FDM | 241 | 4.85 |
| 4 | Original Prusa i3 MK2S | Prusa Research | FDM | 373 | 4.84 |
| 5 | Original Prusa i3 MK2S | Prusa Research | FDM | 565 | 4.84 |
| 6 | Creator Pro | FlashForge | FDM | 396 | 4.83 |
| 7 | Original Prusa i3 MK3 | Prusa Research | FDM | 444 | 4.82 |
| 8 | Ultimaker 2+ | Ultimaker | FDM | 218 | 4.80 |
| 9 | Form 2 | Formlabs | SLA | 659 | 4.77 |
| 10 | Ultimaker 2 | Ultimaker | FDM | 182 | 4.72 |

These are the top 10 rated printers out of 700 printer models listed on our platform, based on print quality ratings from customer review data. Only printers with more than 140 reviews in the quarter are included in these statistics.

# Industrial 3D printing

## Most Used Industrial 3D Printers

**Insights**

The HP Jet Fusion 3D 4200 captures again the #1 place as the most used Industrial 3D printer, producing nearly 6,500 prints. The EOS P 396 is an old favorite and climbed comfortably to #2 of the podium with a respectable 4,714 prints. In #3, we find the Formiga P 110, which produced about 300 more parts than in Q3 at 2,526 prints.

Surprisingly, three Material Jetting systems (including PolyJet) appeared in the Top 10 and they produced a total of 2,492 parts, which is almost 3 times more prints than in past reports. This shows a clear increase in the demand for high accuracy and high detail parts. The improvements in 3D printing materials also make this technology increasingly more appealing to professional users and engineers that can now use these parts not only for visual prototypes but also for functional testing.

| # | Printer Model | Manufacturer | Technology | Parts printed |
|---|---|---|---|---|
| 1 | HP Jet Fusion 3D 4200 | HP | MJF | 6,406 |
| 2 | P 396 | EOS | SLS | 4,714 |
| 3 | Formiga P 110 | EOS | SLS | 2,526 |
| 4 | Objet30 Prime | Stratasys | Material Jetting | 1,100 |
| 5 | J750 | Stratasys | Material Jetting | 858 |
| 6 | Perfactory Vida | Envisiontec | SLA/DLP | 645 |
| 7 | Formiga P 100 | EOS | SLS | 600 |
| 8 | Lite 600 | UnionTech | SLA/DLP | 582 |
| 9 | Connex Objet350 | Stratasys | Material Jetting | 534 |
| 10 | iSLA-650 Pro | Shining 3D | SLA/DLP | 483 |

These are the top 10 most used indsutrial printers out of 200 printer models listed on 3D Hubs. The data is based on customer prints from the previous quarter.

# Industrial 3D printing

## Highest Rated Industrial 3D Printers

**Insights**

We see some big changes in the ranking for the Highest Rated Industrial 3D Printers. Two large-format SLA systems, the UnionTech Lite 600 and the Shining 3D iSLA-650 Pro, grabbed the #1 and #2 spots with a rating of 4.95. In #3 we find a usual suspect, the HP Jet Fusion 3D 420, showing that it can produce consistently good results, even at higher volumes.

Surprisingly, the Top Industrial 3D Printer of Q3, the Formiga P 110, fell to #5, with a very respectable score of 4.90 out of 5.00. The Objet30 Prime, the versatile single material PolyJet system of Stratasys, was the highest rated Material Jetting printer with a score of 4.83.

| # | Printer Model | Manufacturer | Technology | Rating |
|---|---|---|---|---|
| 1 | Lite 600 | UnionTech | SLA/DLP | 4.95 |
| 2 | iSLA-650 Pro | Shining 3D | SLA/DLP | 4.95 |
| 3 | HP Jet Fusion 3D 4200 | HP | MJF | 4.91 |
| 4 | SPro 230 | 3D Systems | SLS | 4.90 |
| 5 | Formiga P 110 | EOS | SLS | 4.90 |
| 6 | P 396 | EOS | SLS | 4.85 |
| 7 | Objet30 Prime | Stratasys | Material Jetting | 4.83 |
| 8 | M200 | Zortrax | Material Jetting | 4.82 |
| 9 | Lisa | Sinterit | SLS | 4.65 |
| 10 | J750 | Stratasys | Material Jetting | 4.58 |

These are the top 10 rated industrial printers out of 200 printer models listed on 3D Hubs, based on print quality ratings from customer review data. Only printers with more than 30 reviews in the quarter are included in these statistics.

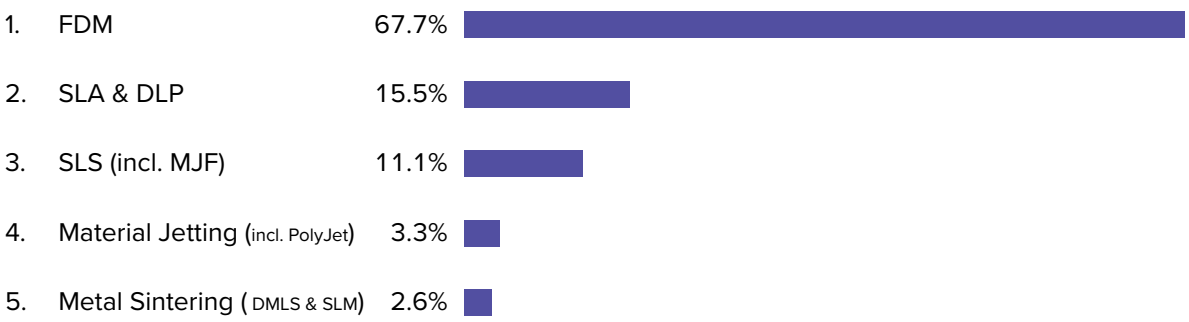
# 3D Printing Tech & Materials

## Most Used 3D Printing Technologies

**Insights**

The Top 3 Most Used 3D Printing Technologies remain unchanged with FDM at #1, SLA/DLP in #2 and SLS in #3.

Notably, the share of FDM dropped by 2% this quarter, which was picked up by Material Jetting and DMLS/SLM. This shows again the rise in popularity of high-end orders for professional applications. Material Jetting can produce parts with an injection-molding-like finish from materials that simulate the properties of ABS. Metal 3D printing is seeing further adoption by large organizations, as its ability to create complex geometries in metal cannot be beaten by traditional technologies.




The data displayed shows the breakdown in revenue as a percentage for each 3D printing technology.

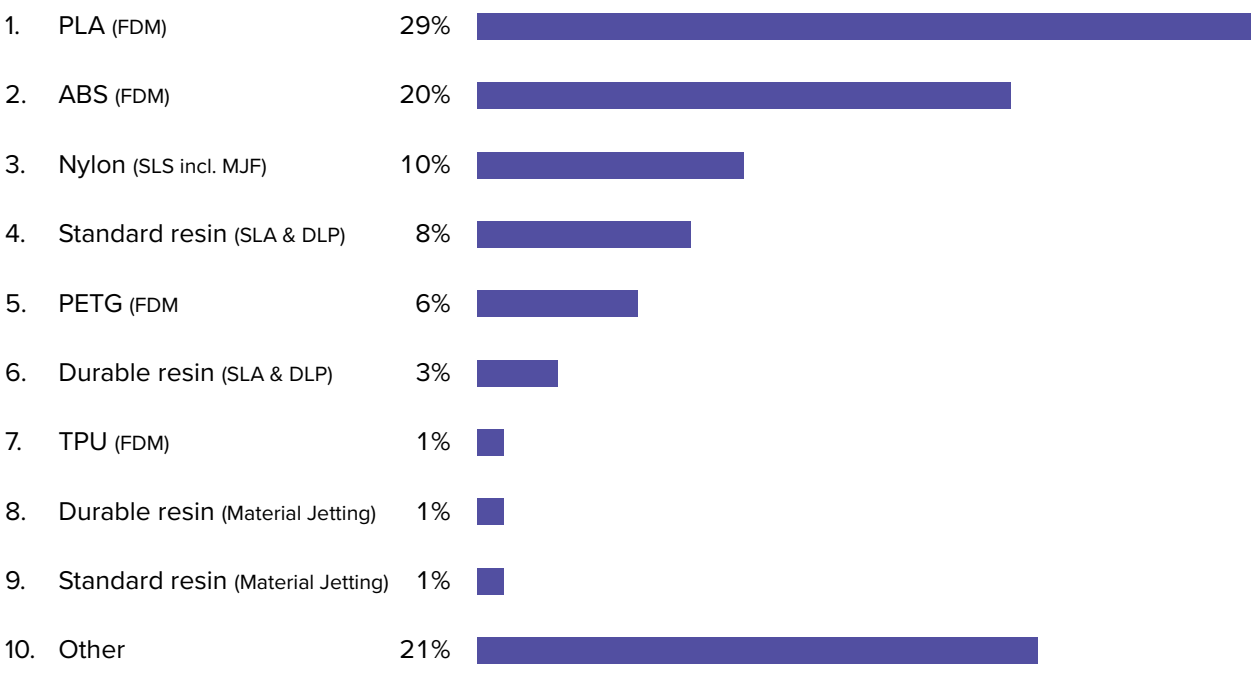
# 3D Printing Tech & Materials

## Most Used 3D Printing Materials

**Insights**

The Most Used 3D Printing Materials saw some drastic changes this quarter. FDM printing continued to receive the lion's share with PLA and ABS capturing the #1 and #2 spots and a combined 49% of the market. SLS Nylon closes the top 3 with 10%, a 1% increase from last quarter.

Things get more interesting towards the bottom of the list, where we see the inclusion of thermoset materials suitable for functional prototyping, such as Durable resin for both SLA (at #6) and Material Jetting (at #8). This shows again the need in the industry for creating detailed prints with higher toughness, probably for engineering and product design applications.




The data displayed shows the breakdown in revenue as a percentage for each 3D printing material.

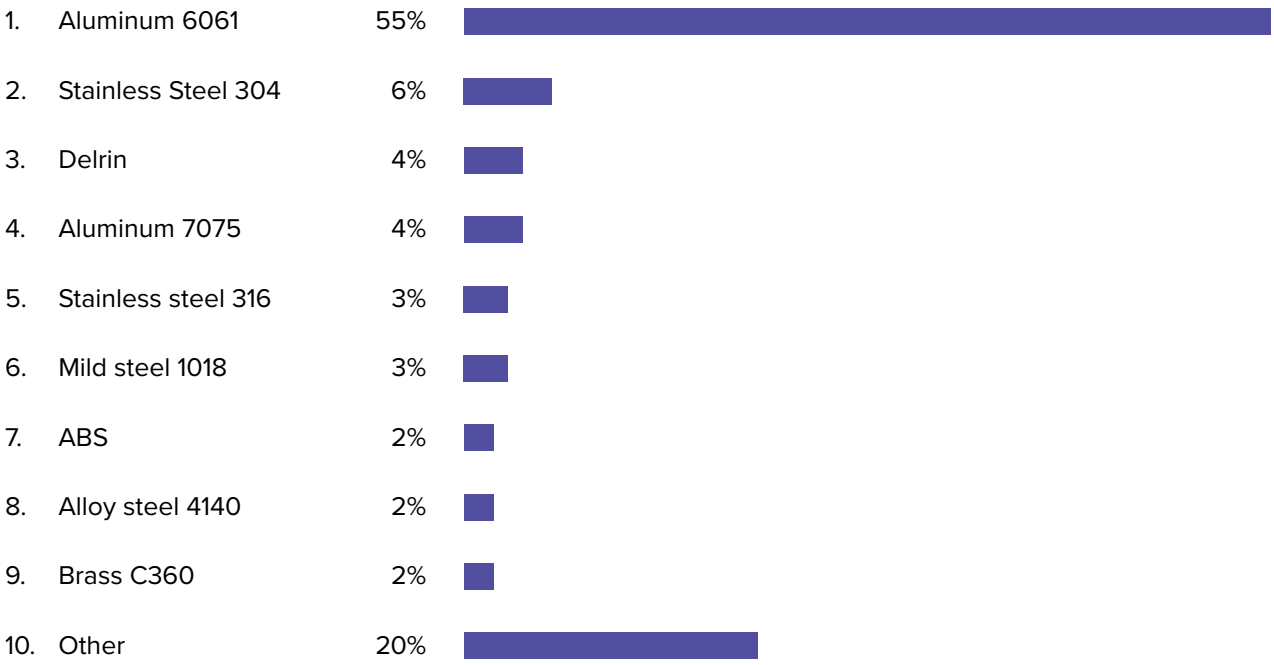
# CNC machining

## Most Used CNC Materials

**Insights**

In the world of CNC, Al 6061 is still dominating the charts with 55% of all orders being placed in this material. Al 6061 is a lightweight aerospace-grade alloy with high strength. It also happens to be easy to machine, keeping the costs low. The rest of the list in the Top 10 remains almost unchanged compared to the Q3 report.

Interestingly, the share of Other material requests (materials that were not included in the list) almost doubled to 20% from 11% last quarter. In fact, many materials captured an order share of between 1% and 2% including PEEK, Polycarbonate, Nylon 6, HDPE, SS 2205 Duplex and Tool steel. This shows the versatility of the CNC process to produce parts from materials that fit the needs of a particular niche application.




The data displayed shows the breakdown of requested material for all submitted CNC machining parts as a percentage. Other denotes materials that are not specified in the list.

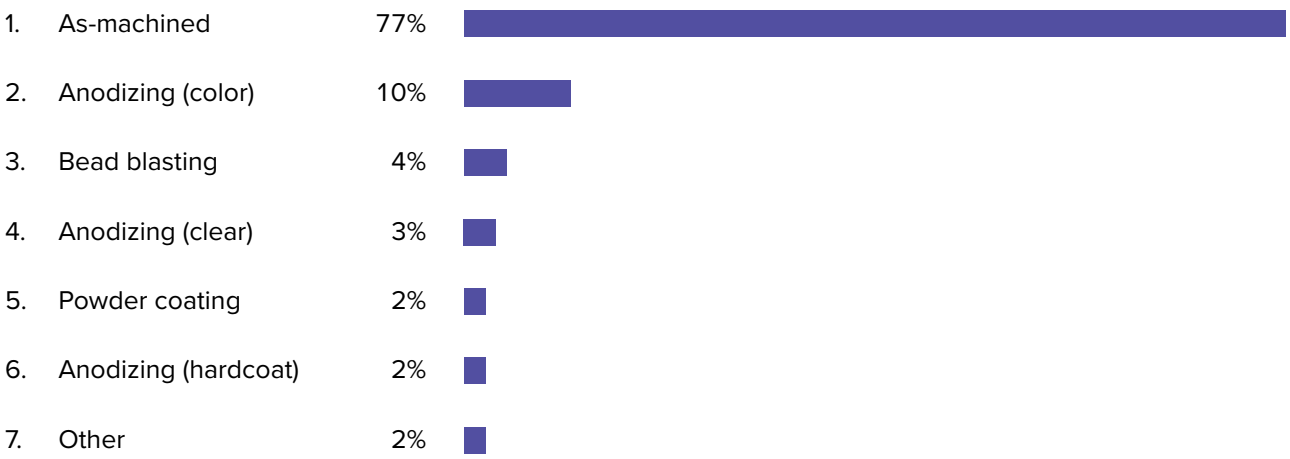
# CNC machining

## Most Used CNC Finishes

**Insights**

For functional parts, finishing is often almost as important as material selection. Nevertheless, the overwhelming majority of all CNC orders requested an as-machined finish. That could be either because specific tolerances are required (finishes often interfere with the tolerances of a part) or to keep the cost to a minimum.

After that anodizing (color, clear & hardcoat) is the most popular finish, acquiring a combined 15%. Anodizing is a very common finish that helps improve the chemical and abrasion resistance and aesthetics of aluminum parts, which is by far the most requested material.




The data displayed shows the breakdown of requested surface finish for all submitted CNC machining parts as a percentage. Other denotes surface finishes that are not specified in the list.

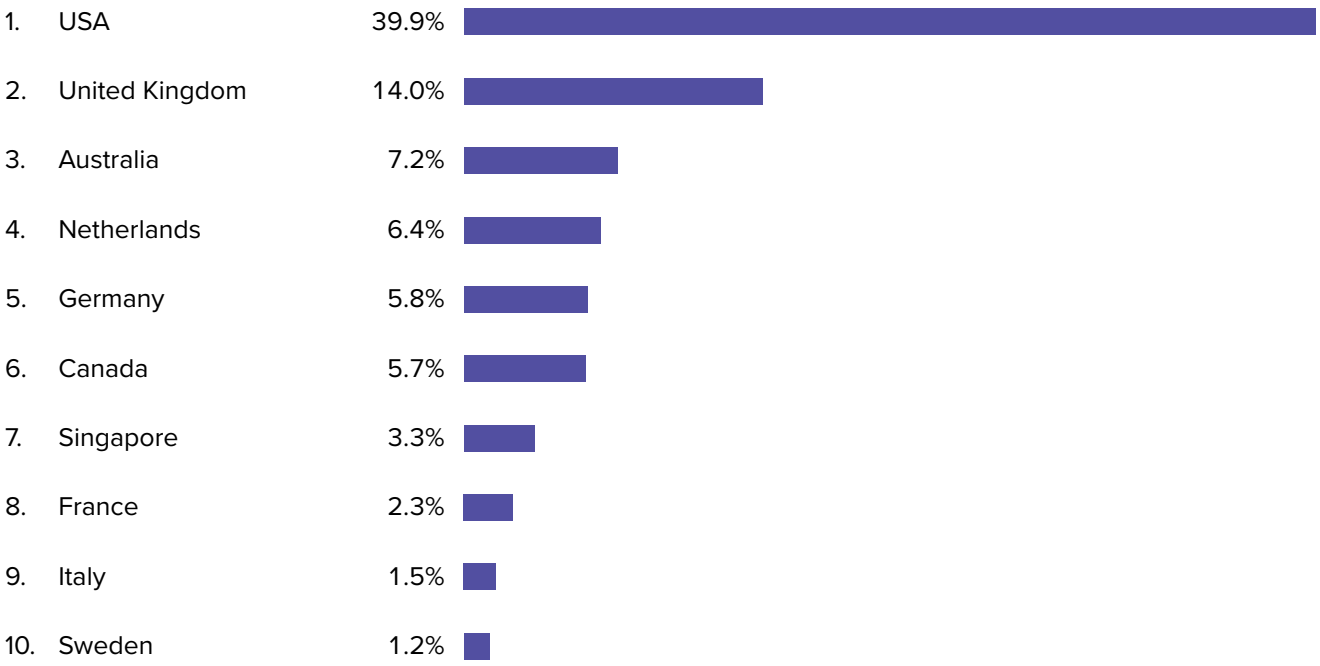
# Geography

## Top 3D Print Countries

**Insights**

We see some changes in the ranking of the Top 3D Printing Countries. The USA remains strong in #1 with 39.9% and the UK in #2 as usual with 14%, but Australia jumped on #3 with 7.2%, which is a respectable 1.5% increase from last quarter.

Interestingly, we see Sweden entering the Top 10. This brings the combined share of 3D printing in EU to 31.2%, which is comparable to the share of the USA.




The data displayed shows the number of prints ordered last quarter per country as a percentage of the total. Other has been omitted to emphasise the difference in the top ten countries.

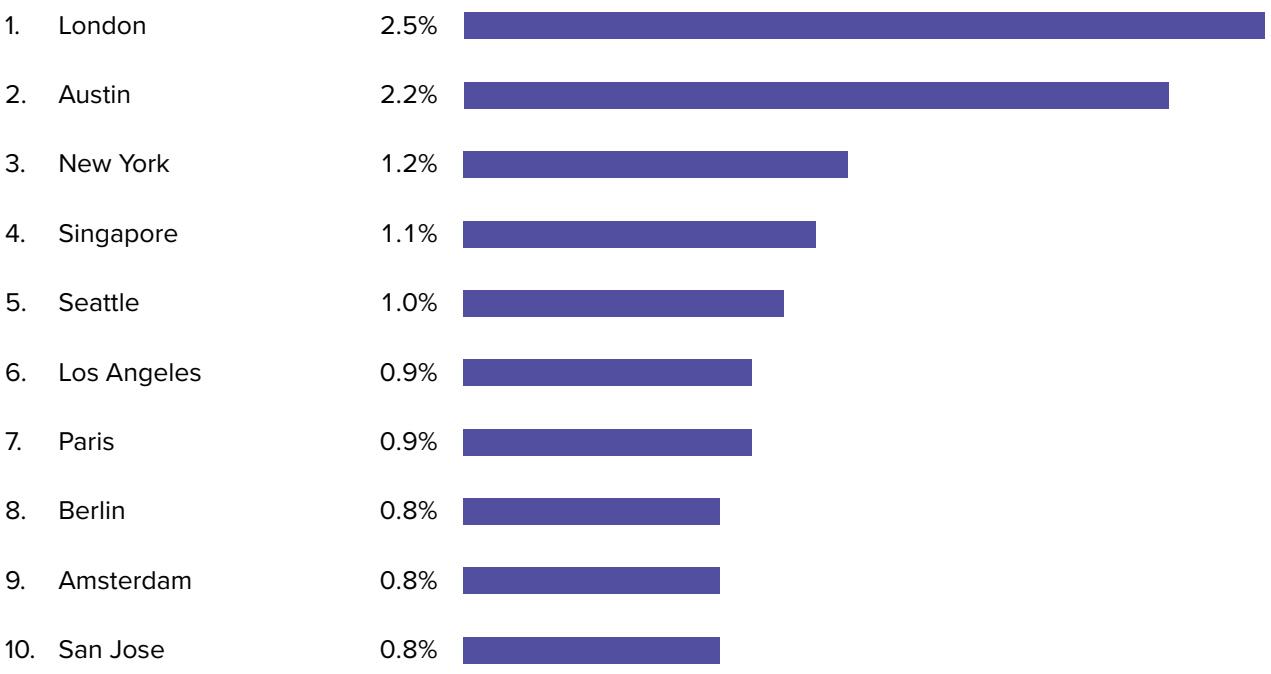
# Geography

## Top 3D Print Cities

**Insights**

When we move down to a geographic distribution of 3D printing requests by city. London captured #1 with a respectable 2.5%, which is 1% lower though than its share in Q3. Surprisingly, Austin, a newcomer to the list, is on #2 with 2.2%, pushing New York to #3 with 1.2%.

From there, we see a flatter distribution with many cities capturing from 0.8% to 1.1% of the total market share. This can be attributed to the higher adoption of the technology by professional users as well as the low season for students and home users. In fact, cities with a high density of hardware startup, like London, LA and Paris, were less affected from the summer seasonality.




The data displayed shows the number of prints ordered last quarter per city as a percentage of the total. Other has been omitted to emphasise the difference in the top ten cities.

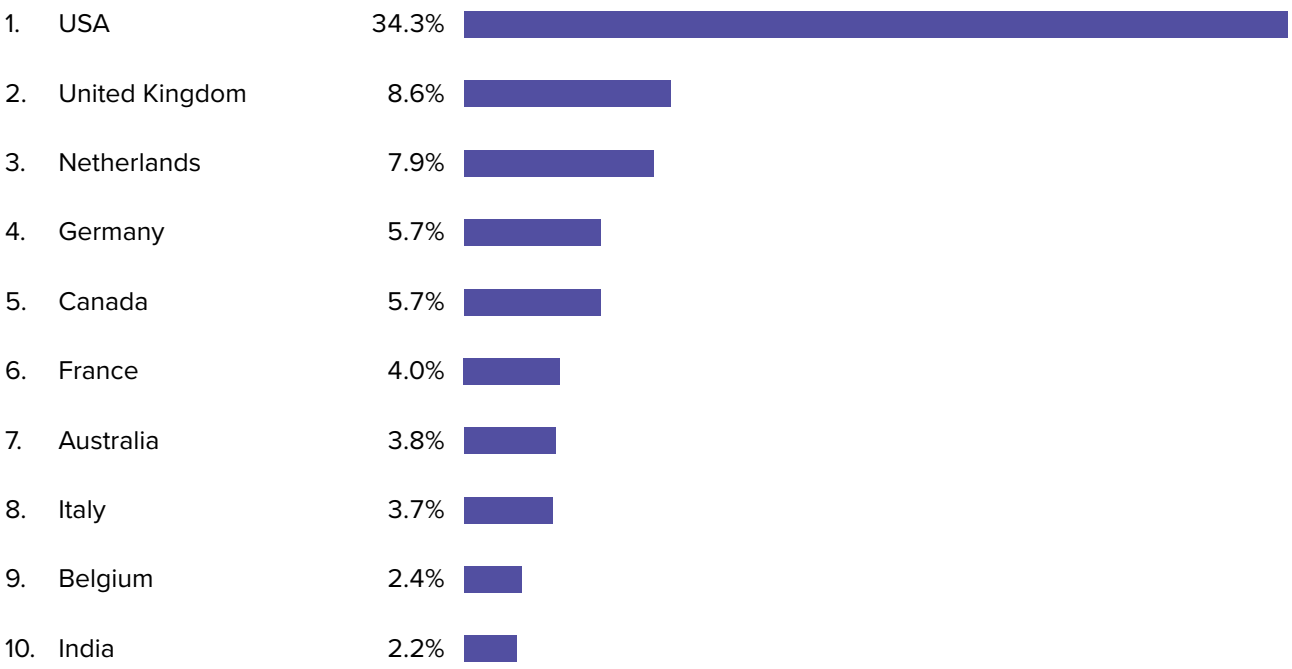
# Geography

## Top CNC Countries

**Insights**

In this edition of the 3D Hubs Trends, the geographic distribution of the CNC machining market is introduced for the first time. Like in 3D printing, USA takes the lead in #1 position with 34.3% of the market share. The UK follows in #2 with a respectable 8.6% of the global market share and the Netherlands follows closely in #3 with 7.9%.

The trends observed in 3D printing continue here, as all Europe countries combined captured a respectable 32.3% which is comparable to the market share of the USA.




The data displayed shows the number of CNC parts ordered last quarter per country as a percentage of the total. Other has been omitted to emphasise the difference in the top ten countries.

# Resources

**Get an Instant 3D Printing , CNC or Injection Molding Quote**
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