



# 3D Printing: Emerging Asia Pacific Market

Market outlook, key trends, industrial  
applications and key players

# 01

## Global Market

Market Overview, Key Trends, Benefits & Values, Industrial Applications, Hype Cycle

# 03

## Leading Global Players

Stratasys, 3D Systems, Materialise

# 02

## Asia Pacific Market

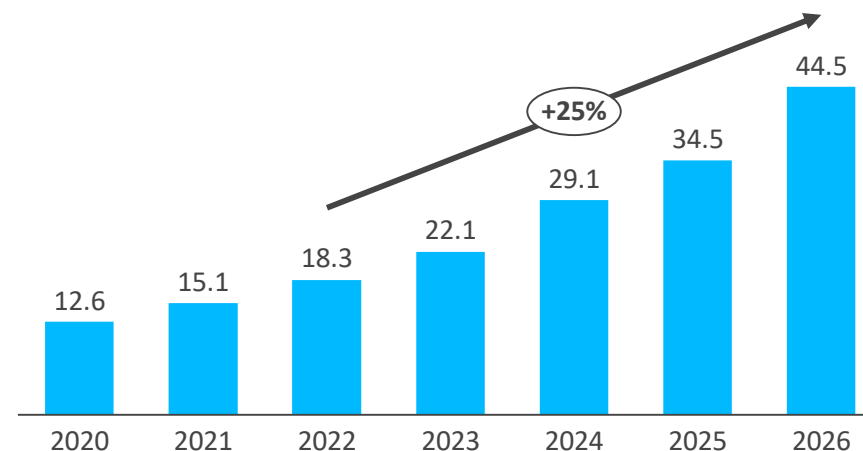
Market Overview, Leading Countries, Regional Use Cases

# The global 3D printing market is expected to grow by 25% by 2026

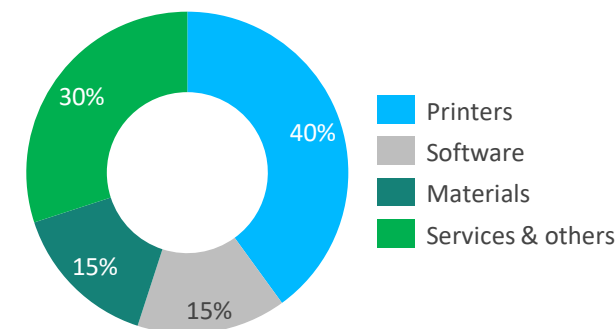
## Overview

- 3D printing technology and its place in manufacturing **have evolved significantly since its invention in the early 1980s**
- In recent years, 3D printing has shifted from consumer markets, moving past household hype to establish itself as a more **widely applied industrial manufacturing process**
- Industry developments in 2021 and 2022 are positioning the technology to **surpass its role in functional prototyping** and become a viable solution for end-use parts and serial production
- Adoption of 3D printing has reached critical mass, and those who have yet to **integrate additive manufacturing somewhere in their supply chain** are now part of an ever-shrinking minority
- 3D printing, sometimes also known as Additive Manufacturing (AM), is currently at a technological and economical inflection point with **potential to re-invent and disrupt the \$trillion global manufacturing sector**

Global 3D printing market size (USD, billions)



AM market segments, 2019 (%)



# 3D printing offers a unique set of advantages over traditional manufacturing processes

## Cost-Efficiency

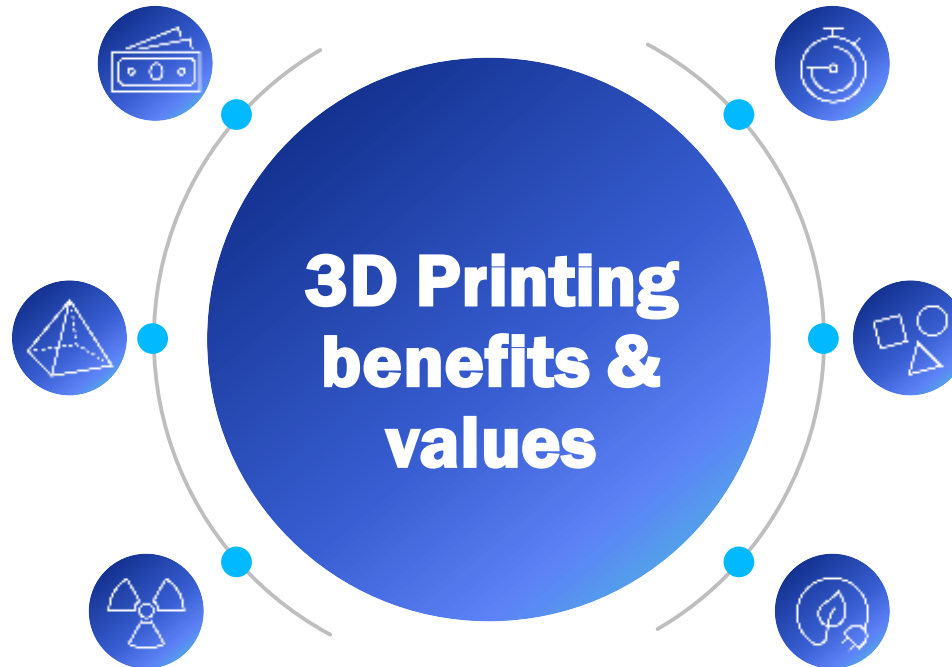
There's no need for the costly tooling and setup associated with injection molding or machining; the same equipment can be used from prototyping to production to create parts with different geometries

## Customization

The nature of 3D printing means that numerous products can be manufactured at the same time according to the end-users' requirements at no additional process cost

## Reduced Risk

With 3D printing, engineers can thoroughly test prototypes that look and perform like final products, reducing the risks of usability and manufacturability issues before moving into production



## Lead Time

3D printing turns CAD models into physical parts within a few hours, producing parts and assemblies from one-off concept models to functional prototypes and even small production runs for testing

## Geometric Complexity

3D printing can create complex shapes and parts, such as overhangs, microchannels, and organic shapes, that would be costly or even impossible to produce with traditional manufacturing methods

## Sustainability

3D printing is emerging as an energy-efficient technology that can provide environmental efficiencies in terms of both the manufacturing process itself and throughout the product's operating life

# 3D printing accelerates innovation and supports businesses across a wide range of industries



## Aerospace & Defence (A&D)



- One of the earliest adopters of 3D printing, with the **first use of the technology** going back to 1989
- Now, **A&D represents a 16.8%** share **of the \$15.1 billion additive manufacturing (AM) market** and heavily contributes to the industry's ongoing research efforts

## Automotive



- A growing user of additive manufacturing: **in 2019** alone, global automotive AM revenues reached **\$1.4 billion**
- Revenues relating to AM in automotive part production are expected to reach **\$5.8 billion by 2025**

## Medical & Dental



- One of the **fastest-growing adopters** of additive manufacturing
- Versatile and wide-ranging applications, including **medical devices, prosthetics, and bioprinting**

## Industrial Goods



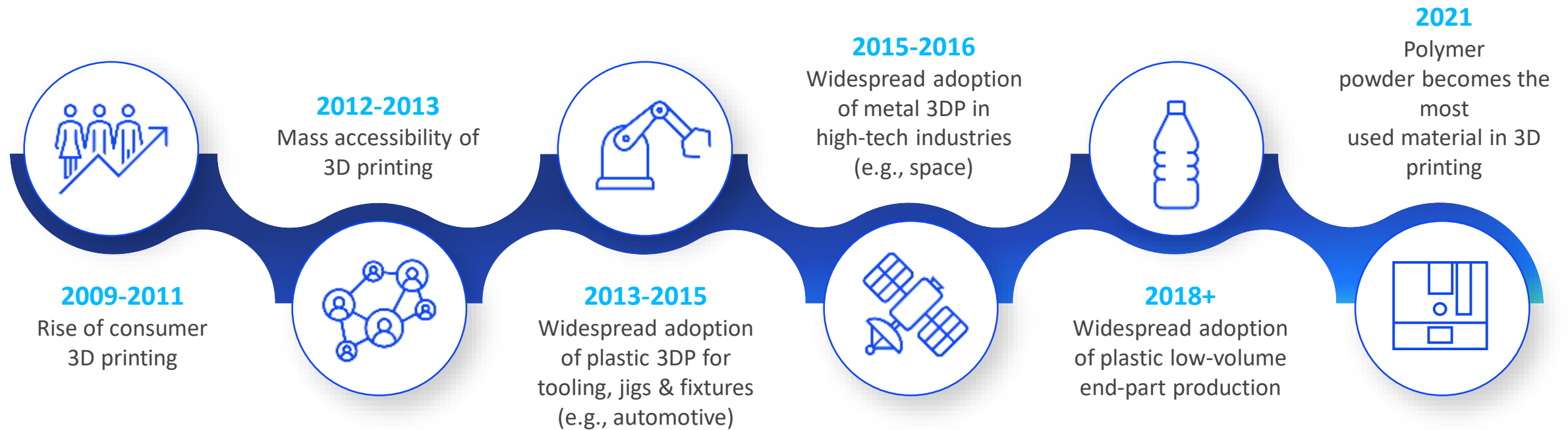
- With increasing production costs and the digitization of manufacturing, industrial OEMs are increasingly turning to 3D printing to stay **agile, responsive, and innovative while keeping costs down**

## Consumer Goods



- From **consumer electronics to toys and sportswear**, key players within the industry are increasingly recognizing the value of 3D printing as a cost-effective approach to product development, testing, and production

# Hype cycle depicting the popularity of 3D printing over time



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## Leading Global Players

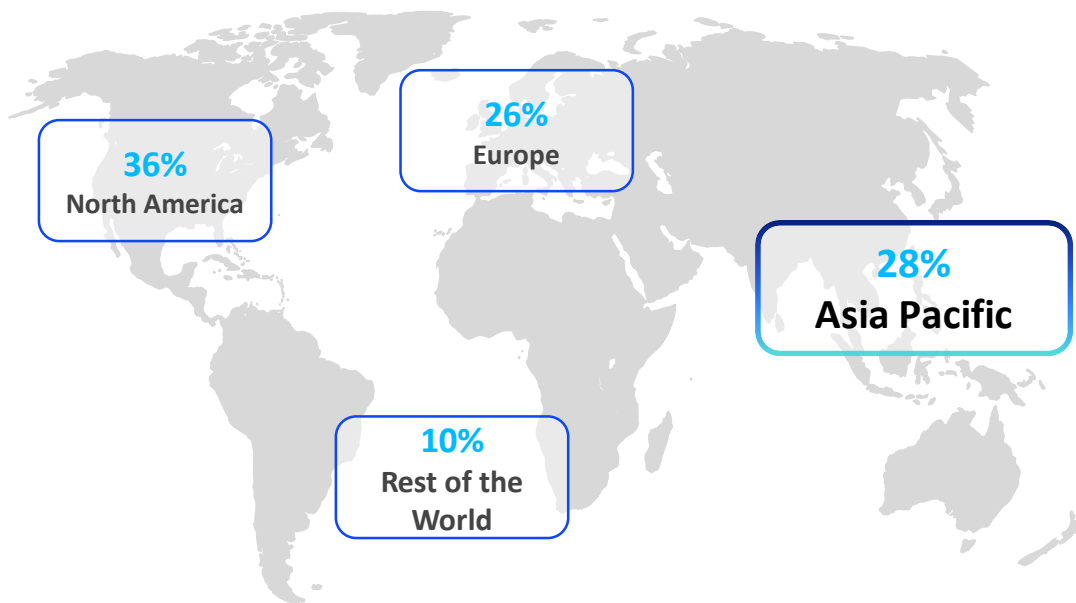
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## Asia Pacific Market

Market Overview, Leading Countries,  
Regional Use Cases

# Asia-Pacific is transforming into the fastest growing 3D printing market



## Leading markets

- **North America led the market** and accounted for more than 30% of the global revenue in 2021. This can be attributed to the extensive adoption of additive manufacturing in the region
- **Europe is the largest region in terms of geographical footprint**. It is home to several additive manufacturing industry players, which hold strong technical expertise in additive manufacturing processes

## APAC: Fast growing market

- **The Asia Pacific 3D printing market will grow by 25.4% over 2020-2030**, with a total addressable market cap of \$10.73 billion, despite the COVID-19 impact
- This rapid adoption of AM in Asia Pacific can be attributed to the **developments and upgrades across the manufacturing industry within the region**
- APAC is also emerging as a **manufacturing hub for the automotive and healthcare industries**
- A stronghold on the **production of consumer electronics, coupled with rapid urbanization**, is also contributing to the rising demand for three-dimensional printing in the region



# Spotlight: Leading Asian Countries



## China

- China is perhaps the biggest force behind 3D printing growth in Asia, due to the huge government support to promote the industry
- China's 3D printing market was estimated to be worth \$1.8 billion in 2018
- Currently, it is the third-largest 3D printing market, after the US and Western Europe



## South Korea

- To keep up with 3D printing innovation, the Korean government is providing national support
- Korea accounted for roughly 4.1% of all installed AM systems in the world in 2018 and has the third-largest number of machines in the Asia-Pacific region



## Singapore

- The Singaporean government plans to invest \$500 million over 5 years to translate 3D printing research into commercial applications
- Singapore is home to many AM research hubs and centres of excellence established by outside companies



## Japan

- Japan was one of the first adopters of AM for prototyping purposes
- Japan has invested \$22 million through its New Energy and Industrial Technology Development Organization (NEDO) to spur the growth of highly advanced 3D printing mechanisms for human tissue regeneration



## India

- The government has released a national strategy for 3D printing to encourage collaboration between academia, government, and industry
- One of the objectives of the strategy is to achieve a market share of 5% in the global 3D manufacturing landscape and contribute nearly \$1 billion to the GDP by 2025

**Sources:** AMFG "AM Around the World: How Mature is 3D Printing in the Asia-Pacific Region?"; Press search

# 3D printing proposes high-impact use cases that go beyond a single model (1/2)

## Autonomous driving cars



Pix Moving, an automotive start-up in Guizhou Province, is developing autonomous-driving cars by combining 3D printing and generative design techniques.

## Prosthetics for victims



Startup ArcHub PNH, has co-created 3D printed artificial hands for Cambodian victims of land mine explosions together with a Canadian NGO Project. Each hand prosthesis takes around 40 hours to print and costs about \$320.

## Wastewater membranes



Nanosun, a startup in Singapore, has developed and mass produced a self-cleaning, 3D-printed micro-filtration membrane. They secured \$12 million in funds in 2017 and have already deployed solutions in China, Indonesia, and the Philippines.

## 3D printed house in 24hrs



The Japanese company Serendix was able to print a 20-metric-ton reinforced concrete frame for the house, with assembly of the pieces taking just three hours. From start to finish, it took 23 hours and 12 minutes to build the house, which Serendix says meets Japanese earthquake and European insulation standards.

# 3D printing proposes high-impact use cases that go beyond a single model (2/2)

## Restoring old cars



Automotive enthusiasts all over the world are using 3D-printed parts to restore old cars. One such example is when Australian engineers printed parts to bring a Delage Type-C back to life. In doing so, they had to print parts that had been out of production for decades.

## Fighting the pandemic



A hospital was built in Wuhan, China, in only 2 weeks with the help of 3D-printed materials. Shortly afterward, fifteen isolation rooms for medical staff and people infected with COVID-19 were built in the city of Xianning.

## 3D printed fuel for rockets



Singapore/Australian start-up Gilmour Space Technologies launched the first hybrid rocket to an altitude of 5 km using proprietary 3D-printed fuel in June 2016. The fuel combines hydrogen peroxide (nontoxic and storable at room temperature), a non-toxic liquid oxidizer, and other proprietary materials.

## Farming tool prototypes



In Myanmar, Proximity Designs makes prototypes for specially adapted farming tools like irrigation systems, solar pumps, and plastic sprinkler nozzles. Farmers' indicated costs have gone down by 50%.

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## Leading the global shift to additive manufacturing with innovative 3D printing solutions

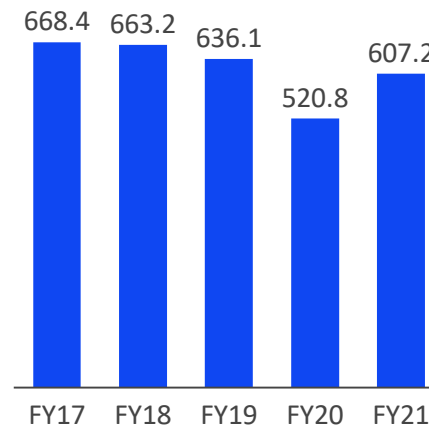
### Overview

- Stratasys is an American-Israeli manufacturer that was **founded in 1989**
- It manufactures 3D printers and 3D production systems for **in-office prototyping and direct digital manufacturing systems**
- It serves the **aerospace, automotive, consumer products, dental, medical, education, railway, art & fashion, and government sectors**
- Its 3D printing applications include **manufacturing, jigs and fixtures, production parts, rapid prototyping, packaging, design, and composite tooling**

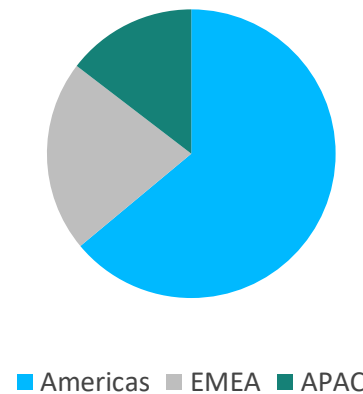
### Key Figures

- As of 2022, the company employed **~2400 people in 14 facilities** around the world
- The company invested **USD 88.3 million in R&D in 2021**, which accounted for 14.5% of the company's total revenue

Revenues in USD million



FY21 revenue by region



### Key Activities

The business operates in two segments: **products and services**

- The product segment** offers 3D printers, 3D printing materials, and software
- On-demand manufacturing is offered under **the service segment**

### Key Customers



# 3D Systems

## Leading additive manufacturing solutions for industrial and healthcare applications

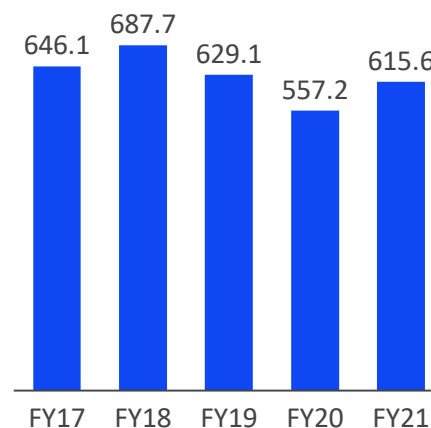
### Overview

- **3D Systems was founded in 1986** in Valencia, California. It is currently headquartered in Rock Hill, South Carolina
- The company offers **3D printers, materials, and software**
- 3D Systems' solutions address a variety of advanced applications for prototyping through production in **markets such as aerospace, automotive, medical, dental, and consumer goods**
- The Application Innovation Group at 3D Systems collaborates closely with their customers **to solve complex design and additive manufacturing challenges**

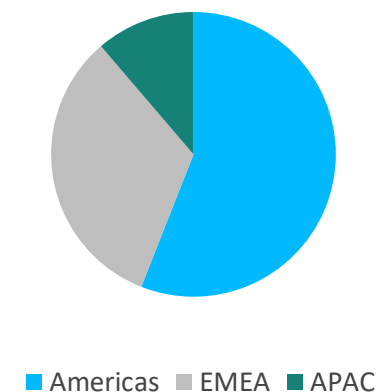
### Key Figures

- As of 2022, the company employed **~1900 people**, **serving 30K+ customers per year** in more than 68 countries
- 3D Systems invested **USD 69 million in R&D in 2021**, which accounted for 11.2% of the company's total revenue

Revenues in USD million



FY21 revenue by region



### Key Activities

- **Industrial:** Industry-specific guidance from in-house experts helps users maximize the results and returns of choosing this technology
- **Healthcare:** With a dedicated healthcare facility and application experts across the globe, 3DS helps improve patient outcome

### Key Customers



# Materialise

## Leading provider of AM & medical software, and 3D printing services

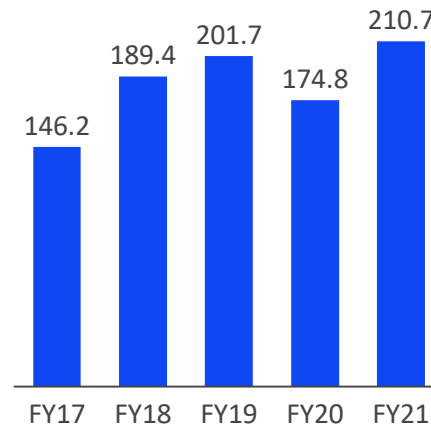
### Overview

- Since Materialise **was founded in 1990 in Belgium**, the company has created a range of software solutions and 3D printing services, which together form the backbone of the 3D printing industry
- They offer their open and flexible platforms to players in various industries, **such as healthcare, automotive, aerospace, art and design, and consumer goods**
- Some of the company's first 3D printing activities included **anatomical models for both dental and hearing aid products**
- Materialise also produces **eyewear and automobile products**

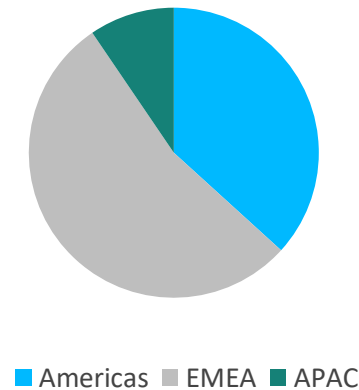
### Key Figures

- The company has a portfolio of **over 95 patents and 165 more pending**
- 3D Systems invested **USD 27.6 million in R&D in 2021**, which accounted for 13.1% of the company's total revenue

Revenues in USD million



FY21 revenue by region



### Key Activities

The company **operates through three segments:**

- Materialise Software
- Materialise Medical
- Materialise Manufacturing

### Key Customers





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