

# How 3D Printing is Changing the World

Initial versions of 3D printing date **BACK TO THE 1980s**

**FROM 2014 TO 2017** the total number of desktop 3D printers sold tripled

3D printing is predicted to become a \$30 billion market by **AS EARLY AS 2022**

## THE IMPACT OF 3D PRINTING

### Environmental Impact

3D-printed products are up to **50% LIGHTER** than those produced with standard methods, meaning they require less energy to transport

Some 3D printers only accept **RECYCLED MATERIALS**

In manufacturing, 3D printers use only the amount of material necessary for the product, **REDUCING OVERALL WASTE**

It's not all good news: One study found that 3D printers utilizing heat or lasers use **50 TO 100 TIMES MORE ELECTRICITY** than traditional production methods

### Commercial Impact

Many industries are relying on 3D printing to **DIFFERENTIATE** their businesses in terms of:

**QUALITY** **SPEED** **CUSTOMIZATION**

93% of companies that use 3D printing **REDUCE TIME-TO-MARKET**

**PROTOTYPING, PRODUCTION** and **PROOF OF CONCEPT** models are the three most popular 3D printing applications today

HP Metal Jet is a **LEADING INNOVATIVE TECHNOLOGY** that is fast-tracking global industrial applications

HP Metal Jet allows manufacturers in numerous industries to produce high volumes of parts, making them 50x more productive



## INDUSTRY EXAMPLES

### 1 Automotive Industry

3D printing allows rapid prototyping

• Ford used 3D printing to make car parts for testing, saving up to \$493,000 per month



### 2 Aviation Industry

Boeing plans to begin using 3D-printed titanium parts to construct a 787 Dreamliner jet

• This is projected to save \$3 million on each jet

Manufacturers are using 3D printing to develop aircraft

GE used 3D printing to create a new turboprop engine called the GE Catalyst

• Engine designers combined 855 separate parts into just 12 using 3D printing

### 3 Healthcare Industry

Scientists use 3D printing to create artificial organs for transplant patients

Not Impossible Labs used 3D printing to create prosthetics that cost under \$100

A mouse with 3D-printed ovaries gave birth to healthy pups

## Educational Impact

Thanks to 3D printing, children are now learning about:

3D DESIGN

COMPUTER-AIDED DESIGN (CAD): USING COMPUTERS TO CREATE, MODIFY, ANALYZE, OR OPTIMIZE DESIGN

PROGRAMMING

MANUFACTURING PROCESSES



3D printing can be used to produce tactile models for teaching purposes

3D printing has been used to create Braille picture books for blind or low-vision students

