

30+ Years of 3D Solutions

A timeline of innovation across industries

Interest in 3D printing and additive manufacturing as an advanced emerging technology has increased substantially in recent years, yet the technology has a much longer history than many realize.

For over 30 years, additive hardware, software, materials and applications have been increasingly used in a variety of industries. Explore the timeline below to follow the development of 3D printing as it transforms our world.



1980

First-ever 3D printed part created

SLA, by inventor Chuck Hull

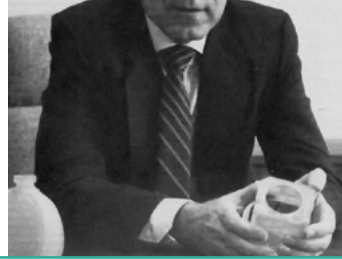
1983

1985

The first commercial 3D printer introduced

The SLA-1, by 3D Systems

Right: Charles (Chuck) Hull, President of 3D Systems, Inc.



1986

Patent issued for Stereolithography (SLA)

Ability to create physical parts from digital files enables unprecedented time and cost savings and is adopted for prototyping to accelerate new product development

1987

First 3D printed medical model from CT scan

First artist works with 3D printing

Forbidden Fruits, by Masaki Fujihata

Patent issued for Selective Laser Sintering (SLS)

1988

Acrylate and epoxy resins commercialized

North American Stereolithography Users Group established

1989

1990

Fused Deposition Modeling (FDM) introduced

SLS systems emerge

A powder-based process, SLS builds are self-supporting. SLS expands the range of materials and applications suitable for 3D printing

Printing with wax emerges

Jewelers begin to take advantage of speed and geometrical complexity of 3D printing

Introduction of ColorJet Printing

By Z Corporation

1991

1992

1993

QuickCast introduced

80% reduction in lead time for metal castings

1994

Emergence of intuitive, voxel-based digital sculpting and force-feedback haptic devices

By Sensable Technology, Inc.

1995

3D printing enables new business model of mass customization for clear dental aligners

By Align Technology, Inc.

Robotic simulation, 3D graphics and haptics advance medical training

By Simbionix

Metal AM introduced

Titanium alloy materials pique interest of aerospace manufacturers

First 3D printed organ

A bladder, Wake Forest University

Additive and subtractive manufacturing available on demand under one roof

By Quickparts

1996

Reverse engineering software enables new design and inspection applications

By Geomagic

Multijet Printing emerges

Offers economical option for parts in plastic and wax

Entertainment industry leverages 3D design, development and manufacturing

Gentle Giant Studios founded

1997

1998

Powdered steel materials emerge

Growth in available metals expands addressable applications

Rise in reverse engineering, 3D imaging and inspection software

INUS Technology founded

1999

2000

Emergence of VR medical simulators

Patient-specific 3D printed anatomical models and surgical templates enable precision healthcare

By Medical Modeling, Inc.

First 3D printed hearing aids

Ongoing material expansion

Composites, high-elongation, low-durometer, high heat and flame-retardant materials emerge, extending range of applications

2001

2004



Successful separation of conjoined twins facilitated by 3D printed anatomical models

Dr. James Goodrich

2005

Commercialization of powdered 17-4 stainless steel material for additive applications

3D Systems expands access to 3D printed parts

Begins offering parts production services

Founding of ASTM Committee F42 on Additive Manufacturing Technologies

Created to produce standards on testing, processes, materials, design and terminology

First full-length animated movie to use 3D printing for characters

Coraline, Laika Animation

2006

2008

First 3D printed prosthetic leg is produced

Creation of Direct Manufacturing Research Center

3D Systems, Boeing, EOS, Evonik of Germany and MTT with the University of Paderborn (Germany)

2009

2010

FDA 510(K) clearance for VSP®

Precision surgical for planning and transferring surgical plans to the OR using patient-specific data

Hobbyist systems popularized

Direct Metal Printing added to 3D Systems portfolio

3D Systems offers broadest range of 3D printing technologies under one roof

2011

2012

Noted growth in use of AM for manufacturing

Increased adoption by hearing aid and dental markets

President Obama announces national Advanced Manufacturing Process Partnership (AMP)

Initiative to bring together industry, universities and the federal government to increase U.S. competitiveness in manufacturing

2013

2014

TIME Magazine names Iris van Herpen's 3D printed flexible dress one of the year's 50 Best Inventions

Chuck Hull inducted into National Inventors Hall of Fame and receives European Inventor Award

For invention of Stereolithography

Industry-leading CAD/CAM software solutions for tool-making and CNC programming offered by 3D Systems

Acquisition of Cimatron (established 1982 and GibbsCAM (established 1983)

2015

Next-gen additive manufacturing introduced with Figure 4™ platform

The industry's first modular, scalable, fully-integrated direct 3D production platform to enable unprecedented speeds and low costs for customized manufacturing, bridge manufacturing, and low volume production

2016

2017

Chuck Hull receives Washington Award

2019



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