

The Past Present and future of 3D Printers

The History of 3D Printing can go back all the way to about 1980 to a man named Mr Kodama (or Doctor Kodama to be more accurate). The earliest 3D printing technologies first became visible in the late 1980's, at which time they were called Rapid Prototyping (RP) technologies. This is because the processes were originally conceived as a fast and more cost-effective method for creating prototypes for product development within industry.

Most who saw this Machine at this time were amazed but did not believe it could be anything other than junk. This also could be because most didn't believe what it could actually do.

As an interesting aside, the very first patent application for RP technology was filed by Dr Kodama, in Japan, in May 1980. Unfortunately for Dr Kodama, the full patent specification was subsequently not filed before the one year deadline after the application, which is particularly disastrous considering that he was a patent lawyer at the time.

In real terms the origins of 3D printing can be traced back to about 1986, when the first patent was issued for stereolithography apparatus (SLA). This patent belonged to Charles Hull, who first invented his SLA machine in 1983. Hull went on to co-found 3D Systems Corporation — one of the largest and most prolific organizations operating in the 3D printing sector today.

The idea then for a printer was very large and most wanted it for its vast capabilities. But at the same time this idea of an object being made from nothing more than plastic was so foreign to most scientists and some people that the printer almost never “got off the ground”. Most looked at it as a money scam and never looked twice at it after considering it a joke. It wasn't until the early 90's that the printer was actually seen in action by many scientists around the world and at some shows was it considered something of the future.

It was quoted in a Times magazine newspaper that this “magic machine” (what they referred to it as) was the start of a glorious future.

Other 3D printing technologies and processes were also emerging during these years, namely Ballistic Particle Manufacturing (BPM) originally patented by William Masters, Laminated Object Manufacturing (LOM) originally patented by Michael Feygin, Solid Ground Curing (SGC) originally patented by Itzhak Pomerantz and ‘three dimensional printing’ (3DP) originally patented by Emanuel Sachs. And so the early nineties witnessed a growing number of competing companies in the RP market but only three of the originals remain today — 3D Systems, EOS and Stratasys.

Throughout the 1990's and early 2000's a host of new technologies continued to be introduced, still focused wholly on industrial applications and while they were still largely processes for prototyping applications, R&D was also being conducted by the more advanced technology providers for specific tooling, casting and direct manufacturing applications. This saw the emergence of new terminology, namely Rapid Tooling (RT), Rapid Casting and Rapid Manufacturing (RM) respectively.

This whole new era of “Rapid prototyping” (RP) was sadly at a stopping point around 2006 with the focus switching to the smartphone. It wasn't until about 2015 that the Printers came back into focus and now continue to grow today.

The 3D printers today are pretty amazing if you really take into account what they do. The average printer today costs about 800\$ and can range anywhere from about 150\$ to about 30,000\$. This is of course for printers that a person would buy for hobby or maybe that a really awesome school would buy.

Now for massive industrial companies that need printers for prototyping they would look at printers that are very big, very accurate, and very fast. That is what it comes down to when buying a printer. Size, accuracy, and speed. The more you have of each the more the cost is.

Now most printers print plastic and there are a ton of different types of plastic that printers use but the most common are PLA (Polylactic acid) and ABS (Acrylonitrile Butadiene Styrene).

Printers can be used for hobby, educational, and working purposes. There are printers for every time of purpose it's just a matter of what the person is looking for.

Now printers today are still looked at as something of the future and will probably for a long time. Just about everyone has heard of a 3d printer but only a small few have seen one at work actually printing something.

Printers also today are being tested for building. Now these printers are huge and costly but they can do amazing things. There is a printer out there that you can drive to a location and set it up and the printer will lay out layer by layer a concrete house that is about 220 square feet. This has been tested many times and is looked at as the next big thing in 3d printers. Now there is more that these printers can do, but should we continue?

The Future of 3d printers is almost completely unknown just like everything else about the future, but we do have a few clues that could lead us into knowing what the 3d printers future is. Just a little less than a year ago now a new type of printer was made and used.

This printer is able to make a house in less than a day. The capabilities for this are astonishing to just about everyone. The idea is also being developed to use bricklayers and a much bigger machine to make much bigger houses. The math says that a house that is about 2000 square feet could be made in about a day and a half with this brand new idea of a machine.

Where the average 40 home neighborhood today takes about a year to build, a single machine like this could do the same in about half a month. The idea to use a 3d printer to make a house is something that is highly praised right now in the world.

Something else that 3d printers are being tested with are printing living organs and tissue. Less than a year ago now a heart was 3d printed from an extremely advanced printer and given to a man in need of a heart. This man (whose name was never released) is living today perfectly healthy. To an scientist and a few people in the world this is looked at as an miracle and something absolutely amazing. To others it's the exact opposite. To a few others it's looked as a "play on god" and/or a "play of nature". In other words it shouldn't be done and be allowed. Printing living organs is something that could be amazing but at a pretty good cost.

It's here at printing living organs that I feel 3d printers are the most advanced today. This could be the very next big thing in the world. For the future is unknown for most things but for 3d printers and the capabilities of them, almost anything could be possible.