

3D Printing Industry Trends

Sehwan Park¹

¹ReSEAT Program, KISTI, Seoul, Korea
world00117@reseat.re.kr

Abstract

3D printing technology polymeric material or plastic and metallic powder to suit the drafting of additive manufacturing would gradually products soars. 3D printing technology application of a wide variety of industrial sectors. 3D printing technology enables raw materials consumption is less, the supply chain are shorter depending on the load and reduce the use of fossil fuels. Emergence of 3D printing technology so called the third industrial revolution in ICT market, quickly spread worldwide. In the future, 3D printing technology is simply beyond bio-technology, Nano-engineering, the manufacture of the product, incorporating a variety of technologies to improve the quality of life of human beings have played an important role will be.

Keywords: 3D printing, metallic powder, additive manufacturing, materials consumption, Emergence of 3D printing, ICT market, manufacture of the product, incorporating a variety.

1. Introduction

3D printing technology for the manufacture of the product using the basic principle of polymer materials or plastics and metallic powder to suit the design of laminated recipe would gradually products soars. Milling fair use process materials from racks to gradually remove the recipe to create products from reductive manufacturing and can be seen as the opposite concepts[1][2][3]. 3D printing technology is the development of the Internet, collaborative and open source community, culture, software and computing power, and breakthrough technological advances driven by dairy products, food, and pop entertainment, consumer electronics, medical, mechanical and construction in various fields are revolutionizing manufacturing.

2. Technical Trends

Recently, the excellent TRC(Technology Research Center) technology development through projects 3DSystemsKorea Inc. "3D Printing-based Digital Design and Manufacturing Environment, Convergence of Data Processing and Modeling for Building Core Technologies Development" challenges in IT related tasks being carried out showed that in[4]. 3D printing reduces manufacturing time by applying technology and price competitiveness, as well as the commercialization stage of robustness to summarize briefly the development practices, global residential are as follows[1][2].

- *US Applied Research Laboratory* is the next generation of spacecraft parts and hardware for the development of 3D printing technologies. For this purpose, as well as technology-related companies in partnership with geometric improvements produced rocket engine with a competitive price.
- *United Kingdom* to apply a 3D printing technology of titanium aircraft parts manufacturer has developed a way to. This is titanium powder melts with lasers or electron beam manufactures spare parts for titanium

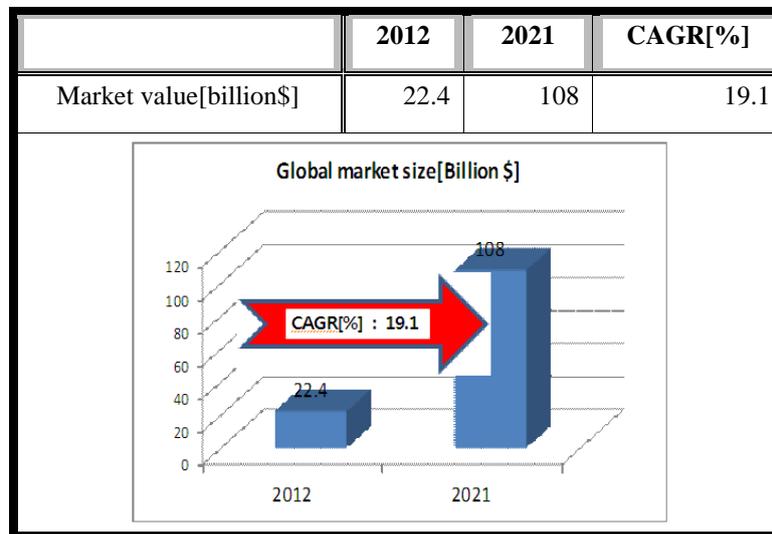
powder can be recycled as the value of commercialization has been very large.

- *Spain's Cunicode* design company is a children's educational cartoon or picture 3D printers, using figures (figure) are produced with innovative services, and take advantage of the wide variety of products, cameras, bikes and planes are produced[4].
- *Netherland*, the world's first 3D printers by using the Möbius strip-like two-story buildings, had planned to print.

3. Market Trends

3D printer systems sales and services revenues doubled between 2009~2013 is growing rapidly, but take advantage of the system's actual 3D printer is United States, Germany and Japan accounts for more than 60 percent of the three countries. By 2016, the enterprise 3D printers should be able to buy at less than \$2,000 and more than 25% of the world 2018 manufacturers will introduce a 3D printer[5][6]. (See the Table 1)

Table 1. Global Market Trends in 3D Printers



June 2013, currently 3D printer has a global market share of industrial *Stratasys* 24.2%, *3D Systems* 17.5%, *Envisiontec* 11.3% is followed by, and other companies full share was 20.1%. Ranking no. 1 in market share due to the *Stratasys* FDM (Fused Deposition Modeling) the core patents and with an ink jet-based poly (Polyjet) technology, and \$7,700 million, \$200 million sales in 2011, six-and-a-half for sales (average price 73,220 dollars). Industrial 3D printing was one of the top 10 conglomerates that are driving global markets *Objet*, *Envisiontec* and *Beijing Tiertime* 3 companies all except United States companies have the highest share of 64.4% represent[7].

4. Conclusion

3D printing technology of manufacturing and spreading a new retail service industry through innovation and change in the midst of the market for future consumption. This expert industry analysis based on the information in the key preoccupation of the global marketplace, and to develop core technologies (patents), a joint effort is needed that the wisdom of 3D printing technology of manufacturing.

5. Acknowledgement

This research was supported by the ReSEAT Program funded by the Korean Ministry of Science ICT & Future Planning through, the National Research Foundation of Korea and the Korea Lottery Commission

grants.

References

- [1] "3D Printing Machine-assisted Engineering Education", *Global Trend Briefing*, KISTI, 2013. 5.
- [2] <http://phys.org/news/2013-05-revolution-dimensions-explore-d.html>
- [3] "3D Printers, the Next Generation of Manufacturing Innovation-driven Prospect", *A Weekly Technology Trends*, NIPA, 2013. 3. 20.
- [4] "3D Printing and the Future", *WIPO MAGAZINE*, No.2, 2013. 4.
- [5] W.S. Changet al., "Revolutionized the Manufacture of 3D Printing in Metal Industry's Response Strategies", *PD ISSUE REPORT*, Vol.13-6, KEIT, 2013. 6.
- [6] "3D Printing(printer, material) Market, Technology and Domestic and Global Participation in Companies Business Strategy", *The IRS Global*, 2013. 7.
- [7] "In 2012, the 3D Printer Market Scale", *WohlersAssociates*, 2012.