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3D printing is the newest excitement in the world of printing. It has a lot of people really excited because of its staggering potential. The basic principle is the same as 2D printing. You can take virtually any 3D design, input it in the machine, and the machine creates a prototype of the design. The prototype is constructed one layer at a time with either liquid raw or particle material.[1] Like any technology, the pros and cons to 3D printing in the molding industry are worth considering in order to determine whether it is a good fit for your personal or professional use.

Pros

Processes finish more quickly

When a company creates a new product, the first step is to create the design for the product. Once the design team has gotten approval, they send it out to a third party company which manufactures the prototypes. The prototypes are returned to the company which does a final check and makes any necessary changes.[2] This entire process can take weeks or even months. A 3D printer makes the process go considerably more quickly because it enables a small organization to make an in-house prototype at a very affordable price.

Safety concerns

Typically, the process of creating a prototype is done manually. While a machine may be able to complete some of the process, people must take on the remainder of the work. The manual labor ensures that all of the small details of the design are included and that the prototype is of an acceptable quality. The manual work not only takes longer, but it also puts workers at risk of getting injured.[3]

Some companies use large machines to manufacture prototypes, but they still must have people actually running the machines, which leaves them susceptible to injury. When you weigh the pros and cons to 3D printing in the molding industry, you can argue that the 3D printer would substantially decrease the risk of danger to the individuals manufacturing the prototypes.

Multiple materials

3D printers can be used with a wide range of materials including wood, resin, plastic, and metal.[4] This capability enables printing for everything from Christmas ornaments to ceramic vases to acoustic guitars.

Cons

The potential to manufacture anything, including weapons

There are patterns and tutorials available online for everything from camera lens covers to medical models to high-tech weapons. Many of these patterns are free or very affordable. Most of the time people are printing items that are harmless, but if a design falls into the wrong hands, the consequences can be detrimental. As anyone who has access to the Internet and a 3D printer can potentially print any pattern available online, there is an increased risk of minors accessing weapons.[5]

In addition to manufacturing weapons, 3D printing also opens the door to counterfeiting, including 3D printers themselves, which is a serious criminal offense.[6] For example, it would not be hard to duplicate an expensive handbag and then sell copies of it to unsuspecting customers.

When people discuss the pros and cons to 3D printing in the molding industry, the topic of replacing cheap labor will inevitably be part of the discussion. Manufacturing companies are likely to see this factor as a pro because on a long-term basis, it can save them a lot of money.[7] Other people are concerned because replacing labor means that many people will lose their jobs. Labor workers have specialized skill sets to put together specific items and may not be able to find work in other industries.

[1]http://www.responsiblenanocode.org/erik-technology/pros-and-cons-of-3d-printing.html

[2]http://www.responsiblenanocode.org/erik-technology/pros-and-cons-of-3d-printing.html

[3]http://www.responsiblenanocode.org/erik-technology/pros-and-cons-of-3d-printing.html

[4]http://www.iccs.info/ron-all/3d-printing-determining-its-pros-and-cons.html

[5]http://www.iccs.info/ron-all/3d-printing-determining-its-pros-and-cons.html

[6]http://www.iccs.info/ron-all/3d-printing-determining-its-pros-and-cons.html

[7]http://www.responsiblenanocode.org/erik-technology/pros-and-cons-of-3d-printing.html