

Is 3D printing facilitating Communism? Will 3D printing facilitate the redistribution of wealth?

Samuel White  
Spring 2014

History shows that technology drives economic change and major shifts in those economies that embrace it. Past groundbreaking technologies and the attitude Americans have toward them provide proof that society is both curious and willing to accept innovative technology and utilize them to their full potential. The telegraph and printing press are prime examples of past technologies that were slow to be perfected, but gained momentum and revolutionized the entire culture, economy, and politics of the world. Both inventions began with a prior mundane and time-consuming process, such as copywriting and message transmission, and greatly improved the speed, accuracy, and ease of the production process. The iPhone, a more current technology, provides insight to how fast and immersive consumers adoption of new technology has become. 3 dimensional printers have been in use since the 1980's (notes) however they have never been made accessible to the common citizen. From past consumer behavior, we may infer the future popularity of 3D printers and consider the cultural paradigm shift it could bring to the modern world of capitalism. Karl Marx, a German philosopher during the first Industrial Revolution, makes accusations against the greedy economical approach of capitalism in his world-renowned book *The Communist Manifesto*. He claims the financial segregation from years of capitalism causes unequally distributed power throughout a society. Marx also argues about the means of production, stating that capitalism has lead to an emphasis on materialism and has alienated the

relationship between a laborer and their work. It is from a Marxist approach that I will evaluate the possible changes personal additive manufacturing will institute within a capitalistic society.

The basic ideas proposed by Marxism center around the economical and political schism between the rich and the poor. "The history of all hitherto existing society is the history of class struggles. Freeman and slave, patrician and plebeian, lord and serf, guild master and journeyman, in a word, oppressor and oppressed, stood in constant opposition to one another, carried on an uninterrupted, now hidden, now open fight, that each time ended, either in the revolutionary reconstitution of society at large, or in the common ruin of the contending classes." Marx boasts a communist liberation of equality where people are paid in regards to their ability to work. Many modern economies thrive on a capitalist approach to creating revenue. Capitalism is the principle that few people at the top of the fiscal food chain hold most of the power and capital in a society through private business. The basic business model consists of a spending less on resource material, labor, and production than the retail price. Private property enables owner's complete control over production, receiving the aggregate of the capital while laborers facilitate the process of production for a fraction of the revenue income. "In the past 200 years, the elements of production have been refined, but the underlying economics have remained: competitive advantage goes to the company or companies (organized into a supply chain) that can produce the highest quality part at the lowest cost." (Petrick 2) 3D printing will eliminate the corporate middleman,

giving control of production to who was once the laborer. A result of the laborer having the ability to self-produce goods will be a shrinking of the class inequality gap. Forthcoming 3D printing could have the potential to print any material, eliminating the current manufacturing and distribution techniques. This takes all power (and capital) away from the capitalist, or what Marx calls the bourgeois. However the manufacturer is not removed from the consumption process, rather the power is transferred to the consumer, putting them in control of the labor and production (Printer). This redistribution of power vulgarizes capitalist based society. Marx insists that big business, or bourgeois “is unfit to rule because it is incompetent to assure an existence to its slave (employee) within his slavery (labor), because it cannot help letting him sink into such a state that it has to feed him instead of being fed by him. Society can no longer live under this bourgeoisie; in other words, its existence is no longer compatible with society.” (Manifesto) 3D printing will give the working class, or proletariat, the ability to “feed itself,” or satisfy its own materialistic needs, extending the argument on impeding class extinction.

Marxism’s view on understanding a society was through its means of production; the forces or materials, and the social relations of production, or who controls the forces and how. (Manifesto) Marx’s contrast to common belief was that conflict of ideas does not propel history, rather conflict of our relation to material goods. He believed that the change was made when we grow attached to our work; we were producing things for others rather than personal use. This emotional state

when creating with no value is described by Marx as alienation, which in turn produces unhappiness of the laborer and in the work place. (Manifesto) However, capitalism calls for minimalizing expenditures on production to maximize profit. Production methods for most mass manufactured goods involve exporting the good from Asian based factories. At the factories, workers are inexpensively hired from impoverished communities due to the abundance of willing workers. It was proven to be more cost efficient to ship materials and products to and from these factories than to hire domestic laborers, making the marginal profit increase. This process withholds a consumer-product relationship until the point of purchase, resulting in only superficial interaction, leading to consequential disconnected behavior. 3D printing will involve the users participation in the design and creation process; reinstitute a sense of ownership that will eliminate alienation. "Before the Industrial Revolution, goods were produced by local artisans... and they sold these products in their own small shops or out of their homes. In this environment, the customer was directly linked to the producer; there was no middleman and no supply chain." (Alex Smith) It is possible that through desktop 3D printing our economy will return to this type of artisan marketplace. However, physical items will not be the product of the future, rather people will purchase virtual files that can be exchanged on the internet and printed from ones computer to their desktop printer.

This idea brings up a completely different argument about how the sales process of these files will work. One argument can be made that capitalism will prevail through skilled 3D designers creating innovative products, placing

intellectual property trademarks on their designs. However, much like the music industry, many people download free files from the Internet rather than purchasing the physical album or buying songs from a music marketplace like iTunes, these files can be illegally edited, shared, or broadcasted without the consent of the owner. The opposing argument is that open sourced markets for printable objects should be established and shared. Marx believed that a community that shares ideas is one that thrives (Adam Smith). In this perspective we can see an open sourced marketplace like “Thing-i-verse” could prove to be a beneficial network to all mankind. “Thing-i-verse” is an open sourced free marketplace for people to upload their own designs so that others may be able to download and print their product. ‘Open sourced’ is term that means intellectual property laws do not apply to the content distributed by the creator. This principle gives people the ability to change the original design, making customization or personally tailored products available to suit the consumers own specific needs, another aspect that will tighten the inequality gap. In this theory’s epitome of a hyperbole 3D printed world, the ability to freely download and print objects would be the equivalent to a modern day individual buying the very inexpensive resources for a pair of shoes, followed by choosing any style of shoe and having them professionally custom fit and produced for no cost in the comfort of their own home.

Capitalism runs along side consumerism, appealing to the materialistic need of humans. The lucrative combination thrives on brand recognition that appeals to, and subliminally segregates, classes in a society. If the same levels of convenience and luxury, same design, and same quality products could be additively

manufactured for a fraction of the price, it will eliminate brand and big business ventures, potentially ending competitive consumerism and brand prejudice. If all models and designs become open sourced by designers, the future could hold a very unique, yet equal class.

Marx states, "The bourgeoisie cannot exist without constantly revolutionizing the instruments of production." From his perspective, introducing a new method of obtaining goods is a product of, and advancement in, dialectical materialism, or the theory of concretely understanding and controlling human evolution. Although 3D printing will put the means of production in to the hands of the consumer, it is important to remember that working class citizens still emphasize great importance on possessions and material things. 3D printing technology has been used for over 30 years and yet it is still not a launched into mainstream culture. Marx tells that once liberation is instated "Then the world will be for the common people, and the sounds of happiness will reach the deepest springs. Ah! Come! People of every land, how can you not be roused." The capitalist process has been so ingrained in the culture of society that it is difficult to foresee a future that involves complete control of a market by individuals. Conventional methods of product production and consumption are the backbone our existing economic structure. The elimination of the current production process would leave millions unemployed, however it would open greater opportunity to pursue non-material based studies such as sciences. A large increase in service-oriented occupations will potentially result without the competitive product marketplace, meaning income will continue to differentiate, leaving the class system intact.

## Work Cited

*Adam Smith Vs. Karl Marx - The Industrial Revolution Philosophers*. YouTube. N.p., 10 Mar. 2013. Web. 12 Dec. 2014. <<https://www.youtube.com/watch?v=E4YlOyugato>>.

*Capitalism and Socialism: Crash Course World History #33*. YouTube. N.p., 6 Sept. 2012. Web. 10 Dec. 2014. <<https://www.youtube.com/watch?v=B3u4EFTwprM>>.

Marx, Karl, and Frederick Engels. *The Communist Manifesto*. N.p.: n.p., n.d. Print. Used 2 different copies of the book and an eBook

Simpson, Timothy W., and Irene J. Petrick. "3D Printing Disrupts Manufacturing." *Research-Technology Management* (2013): 12-16. Print.

Tucker, Robert C., ed. *The Marx-Engels Reader*. 2nd ed. New York: W W Norton & Company, 1978. Print.