There are a couple of limitations that 3D printing introduces. One limitation being the mass production of plastics. While there are filaments that exist which are formed from totally or partially recycled plastics, these filaments are expensive to produce and refine. For this reason, many large-scale companies choose to print from extracted raw materials as a cost saving measure. The industry and the planet would greatly benefit from a cost efficient and effective plastic recycling system.

In reality, there are companies that are tackling this problem head on. One notable company is Printerior. Not only do they sell exclusively recycled plastics, but they also offer services to pick up your failed prints, supports, brims and other filament waste. They then recycle this material to use or sell it as printable filament. While it is feasible that more companies begin to grow and offer cheap recycled services for major corporations, I predict the industry will vertically integrate recycling into the supply chain. This involves preexisting manufacturers taking on the recycling process. The main incentive would be the integration of the suppliers and preexisting processes, thus the reduction of supply cost. But this may not outweigh the cost and added complexity of recycling. For this reason, I suggest increased tax breaks for companies recycling their own sourced material.

3D printing is still a largely misunderstood industry. There is a general stigma that 3D printed parts are somehow weak and fragile. There are a couple of key facts that must be looked at in order to disprove this rationale. Firstly, there is a multitude of plastic filament types that all have their strengths and weaknesses. Some are more brittle, while some are more rubber-like and able to bend easily. These filaments are specially picked for each individual part printed. Some more advanced printers are even able to print different types of material in a single print. Another common misbelief that people have is that 3D printed parts don’t hold up to degradation. In fact this couldn’t be less true. Kerry Stevenson states “PLA is the most popular 3D print material due to its ease of printing and wide availability. While PLA is often made from non-fossil sources, it can only degrade in extreme industrial mechanisms. Experiments have shown PLA 3D prints simply don’t degrade when buried on land, as decomposition requires heat and pressure.” () For parts that require especially durable materials, metal 3D printing is becoming increasingly more popular. With this technology, durability rivals that of even custom machined parts.

Critically examining technology in society provides a lens through which to better understand a technology. By looking at the history of a technology, you can get a sense of the problem that the technology is attempting to solve. You get a view as to what the world was like before it existed, how the technology changed society, and a pattern as to where the technology is advancing to. However, this exploration is not without its challenges. Navigating the evolving landscape of technology requires us to grapple with complexities and biases inherent in the process.

History, culture, and technology are all interconnected. People's needs tend to stay pretty much the same. What changes is how these needs are met. As technology advances, jobs are altered to help people meet their needs. In this way, technology affects all cultures. We can see through history how new jobs have become available and old jobs have become obsolete. Following this example, critical analysis of a particular field is crucial when deciding your future career goals. Critical analysis doesn’t only need to apply to work though. It can also help in things such as decision making, daily routines, and even relationships.

Stevenson, K. S. T. K. (2024, January 30). *Eco-friendly 3D printing: Study examines ocean degradation of 3D print materials " fabbaloo*. Fabbaloo. https://www.fabbaloo.com/news/eco-friendly-3d-printing-study-examines-ocean-degradation-of-3d-print-materials