3D Printing: An Analysis of a Growing Technology

An Honors Thesis (HONRS 499)

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Abstract:

We have created a website highlighting 3D printing and the effects of the growing technology. The website provides the user a history and description of the technology. We addressed the effects on different industries as well and the financial, legal, and environmental effects. A cost analysis of one of the printers at Ball State was also performed to show the university's role in this emerging technology.
Ashley Chambers  
Author’s Statement

During my summer internship, I flew back and forth between Indianapolis and Boston. During these flights, I would read business magazines such as Fortune and Bloomberg BusinessWeek. I was blown away by how many articles in these magazines were about, or referenced, 3D printing. I had an immediate interest in the technology and could see how many opportunities the technology could create in the future. I mentioned this to my thesis partner, Erica Wurst. I shared the articles I had read with her, and we both saw the possibilities of creating our thesis around this emerging technology. We are both very interested in technology and have had many technology based projects in the past, so this seemed like a perfect fit for our thesis.

We determined that the best way to present this thesis was through a website. We felt that with an emerging technology such as this one, it was important to use technology and a modern outlet, to present the information. The website format allows us to link pages and create a more engaging atmosphere. It allows for images and graphics to be used to visualize the content and better understand the information that is being communicated. We both agreed that we enjoy working on projects that use a variety of our skills and creativity. We felt that the website would be a great alternative to the typical research paper. I had some previous experience creating websites, which allowed us to get started.

I spent the majority of my time working on the Industry Impact pages of the website. I researched and analyzed the impact 3D printing will have on four different industries: retail, manufacturing, transportation, and medical. This was a great fit for me since I was so intrigued with the future of 3D printing technology and the impact it will have on our society. I researched the process changes these industries face, and how 3D printing is going to affect them, both now and in the future. I created an introduction page to the Industry Impact section, where site visitors can look at the industries I researched and choose the industries they would like to read more about. I research each industry extensively and found some really interesting ways that 3D printing is already being used in some of these industries. This only made my pages more dynamic, since I was able to offer the current uses and possibilities in each section.

I also researched and created the Legal page of the site. We decided to take a look at the effects of 3D printing in areas that did not fall under a specific industry. Erica looked at the effects regarding sustainability, and I chose to look at how our current intellectual laws and guidelines would line up with the possibilities 3D printing presents. I took a look at current copyright, patent, and trademark laws. I was able to look at the current laws and examine how they might be insufficient for 3D printing. I used research to pinpoint some possible problems 3D printing and the companies that choose to use it might face.

I also created the introduction page to the Effects section of the site. Erica and I both worked on some of the more general information pages such as the Home page and the About the Authors page. We spent a great deal of time creating a site that uses multiple types of media and will be interesting for site visitors. We both worked to format the site in a way that would
make it easy to navigate and would keep our visitors reading and learning about the future of 3D printing.
Resources

21. Kuruvilla, Carol. "Doctors Replace 75 Percent of Patient's Skull with 3-D-printed Polymer Impl
Website:
http://3dprintingthesis.wix.com/3d-printing