

Beyond Print

By

Cristian DeBendittis

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Sponsor: David Wilson

Second Reader: Benjamin Santiago

Have you ever ordered a poster online and wondered what goes on behind the scenes of a print shop? In my senior project, I provide a glimpse of what it's like working in the print industry. Coming from a school with a high focus on printing, I inherently linked print and graphic design. In the context of the digital era, I decided to explore the print industry's sustainability and relevance.

Since working in this industry, I've witnessed excessive waste disposal and identified pressing sustainability concerns compelling me to dive deeper into these issues. Yet, amidst these challenges, there remains a demand for print in certain applications, ensuring its relevance in the commercial landscape. As I navigate the responsibilities of maintaining and operating a large inkjet printer, I am constantly exposed to the diverse materials and processes that define today's printing industry. From the diverse materials that I use, I notice each material presents unique possibilities and challenges, expanding my understanding of the process and inspiring potential for my work. As I was gathering my research I initially intended my video to be part of a series that explores printing. My senior project not only offers insight into the daily operations of a print shop but also underscores the sustainability challenges within the field.

I work on a large inkjet printer for a small company in Long Island called Unicorn Graphics. I do maintenance, troubleshooting, color corrections, create files, and make sure everything is ready for print. In my position, I see companies utilize numerous different materials which opened my eyes to the potential of the print industry. All these different materials have opened my eyes to a lot of possibilities for my own work. I get to print on a lot of different materials such as polypropylene, foam board, vinyl, magnets, perforated film, and many more materials with varying thicknesses of up to two inches.. The printer that I operate also uses the colors that

a normal printer does like cyan, magenta, yellow, and black but, also uses other colors like light cyan, light magenta, and white. The printer is ten feet wide and can print up to one hundred and fifty feet long. It's the same kind of printer that most people have used in a library or office building but on a larger scale.

When printing commercially there are certain things you need to look out for such as banding to make sure the quality is correct. The printer is over 10 years old so a lot of maintenance needs to go into it to ensure the quality is correct. Whether that be cleaning the ink lines, checking the nozzles, cleaning the ink tank reservoirs, or changing the curing lamps, there is a lot of maintenance that needs to be done even before getting to print.

When materials get trimmed to the correct size there is ultimately some scrap left over. At the print shop where I work, I have noticed firsthand that not all material can be recycled. The local recycling companies do not have the capabilities to recycle the plastic-based materials that we work on, so they unfortunately all end up in a landfill. Although there are some materials that we do recycle that are paper-based, such as cardboard, I have noticed that the amount of waste that we produce is more than what we recycle.

There are other larger companies that practice sustainability. Freeman is a trade show and conference planning company that uses environmentally friendly materials and has a commitment to produce zero waste (Sustainability Assets). They focus on how their actions are impacting the environment which I believe should be a standard. However, this is not always a luxury to a smaller company, like the company I work for, can afford. When customers ask for a specific material to be printed, they expect us to deliver. If we do not provide it for them, customers will do their business elsewhere.

Additionally, there are other types of waste generated by printing that not many people pay much mind to. During the process of printing, not all inks are used, and some even go to waste. According to the New York Department of Sanitation, inks produce volatile organic compounds and hazardous air pollutants (Harmful Products). The United States Environmental Protection Agency states that volatile organic compounds “are compounds that have high vapor pressure and low water solubility” and are a very common ground-water contaminants (What Are Volatile Organic Compounds). They are not only bad for the environment, but they are also harmful and even toxic to people as well. They have very high pollutant levels and can cause respiratory issues. The excess inks are collected in large quantities and need to be picked up by a biohazard waste facility. Another environmental concern in the industry comes from the lamps that cure the wet ink. Printers like the one that I use have ultraviolet lamps that produce ozone which also impacts the environment. These issues are the reason people who want to use sustainable practices may choose digital design over printed media.

The rise of the digital era has led smaller companies to be less useful to larger corporate companies. Companies can get their projects finished at a more rapid pace when using digital design. Industries such as advertising and publishing have accelerated their focus to online, leading to a reduction in their printing. However, traditional printing is still relevant and readily available to most Americans.

A study by Nielsen Homescan states that “traditional printing sources are still alive and well”. Nielsen states that “about 80% of US households still use traditional printing” (Digital Touch Points). Since people are still using print in their homes, design companies will continue to design content for print. Amidst the evolving landscape of the print industry findings from the

United States Bureau of Labor Statistics note a noticeable shift. Industry productivity and costs have decreased over twenty-five percent in the last decade (Bureau of Labor Statistics). This shows that fewer companies are utilizing print and shifting over to digital ways to promote their business.

Some aspects of printing are still rising and aren't easily replaceable by digital means. The Printed United Alliance expects the biggest growth in the print market to include banners, soft signage, poster presentation graphics, and window graphics. Banners and soft signage are expected to grow by approximately fifteen percent by 2026 (Print Business Outlook). These sources of revenue for print companies are important, they may cost less money to maintain when compared to digital content.

At the company where I work the jobs that are most frequent are vinyl banners. They make up a large percentage of the jobs we produce. Our company also produces packing and materials for e-commerce. Each are printed in-house and make up another large portion of all the jobs we see. According to the Printed United alliance, a trade association for the printing industry, e-commerce is the most desired capital investment for print shops at sixty-three percent (Print Business Outlook). In a close second, wide-format inkjet is the next most desired capital investment (Print Business Outlook). Wide format inkjet is the printer that I work on and I have noticed that a large majority of the work produced comes out of that printer. Even though the need for print is declining there will always be specific reasons and jobs where it makes more financial or logical sense to use a print company instead of digital means of design.

In conclusion, my journey through the print industry, documented in my senior project, has revealed both the challenges and opportunities deeply rooted in the field of printing. From my

perspective at Unicorn Graphics in Long Island, I've witnessed firsthand the intricate processes involved in large-scale printing operations. Despite the advancements of the digital era, traditional printing methods remain relevant, particularly in sectors such as banners, soft signage, packaging, and e-commerce.

While sustainability concerns loom large, with waste disposal and environmental impact at the forefront, there's also a recognition of the unique advantages that print offers in certain contexts. Even with efforts to minimize waste, the limitations of the local recycling companies highlight the pressing need for sustainable practices within the industry. Over the last decade there has been a noticeable shift towards digital alternatives. However, the need for print in certain contexts ensures its ongoing significance. Moving forward, the print industry must navigate a delicate balance between innovation, sustainability, and meeting the diverse needs of its clientele, ensuring its enduring place in the modern commercial landscape.

Work Cited

“Bureau of Labor Statistics Data.” *U.S. Bureau of Labor Statistics*, U.S. Bureau of Labor Statistics, 2017, data.bls.gov/timeseries/IPUEN323___T010000000?amp%253bdata_tool=XGtable&output_view=data&include_graphs=true.

“Digital Touch Points Are Making Their Mark in U.S. Retail, but Print Is (Still) Not Dead.” *Nielsen*, 21 July 2022, www.nielsen.com/insights/2017/digital-touchpoints-are-making-their-mark-in-us-retail/.

“Harmful Products.” *DSNY - the City of New York Department of Sanitation*, www.nyc.gov/assets/dsny/site/services/harmful-products/businesses-harmful. Accessed 10 May 2024.

“Monitoring Information By Industry - Printing and Publishing.” *EPA*, Environmental Protection Agency, 26 June 2023, www.epa.gov/air-emissions-monitoring-knowledge-base/monitoring-information-industry-printing-and-publishing.

“Print Business Outlook.” *Printing United Alliance*, Cannon U.S.A inc., Apr. 2023, www.printing.org/docs/default-source/research-docs---public/commercial-printing-report_pbos_april-2023_key-results-final.pdf?sfvrsn=14c75f7e_12/A2304033_RSCH23_PBOS_KeyResults_Comm_April_Canon_v2.pdf.

“Sustainability Assets.” *Freeman*, 2 Jan. 2024, www.freeman.com/about/impact/.

“What Are Volatile Organic Compounds (VOCs)?” *EPA*, Environmental Protection Agency, 5

Mar. 2024, [www.epa.gov/indoor-air-quality-iaq/what-are-volatile-organic-compounds-](http://www.epa.gov/indoor-air-quality-iaq/what-are-volatile-organic-compounds-vocs#:~:text=Volatile%20organic%20compounds%20are%20compounds,paints%2C%20)

[vocs#:~:text=Volatile%20organic%20compounds%20are%20compounds,paints%2C%20](http://www.epa.gov/indoor-air-quality-iaq/what-are-volatile-organic-compounds-vocs#:~:text=Volatile%20organic%20compounds%20are%20compounds,paints%2C%20)

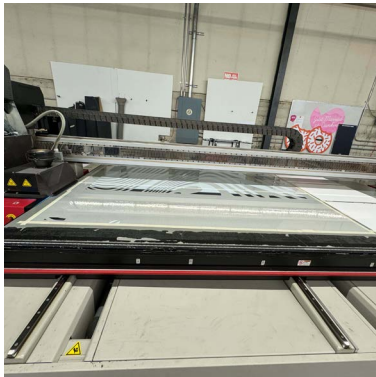
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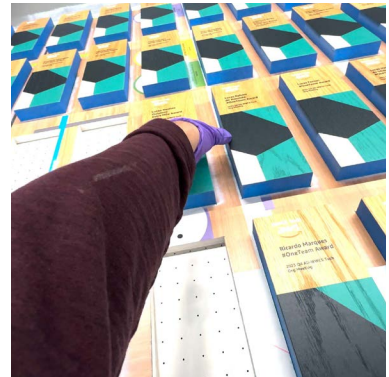
Refilling ink reservoir
04/04/2024
Photograph



Printing on wood
12/16/2023
Photograph



Printing white ink
10/05/2023
Photograph



Collecting finished prints
02/06/2024
Photograph



Ink nozzle check
10/31/2023
Photograph



Working
11/15/2023
Photograph



Standing in front of the printer
11/27/23
Photograph



Inks for the printer
01/12/24
Photograph



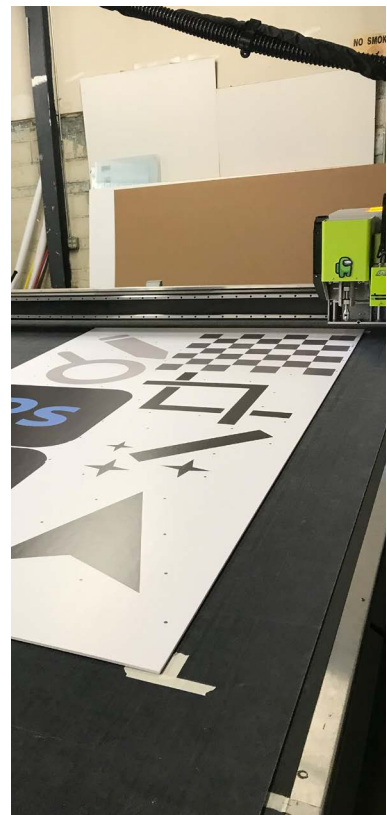
Thumbs up
04/04/24
Photograph



Checking print quality
04/04/24
Photograph



Emptying ink waste
11/08/23
Photograph



Mechanical cutting machine
09/12/23
Photograph