Intergraf Young Talent Award 2022

Sustainability in the print industry

1. How do you see print products (graphics and packaging) in the circular economy?

2. What is your vision for print for a sustainable future?

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The printing industry has had to constantly evolve ever since letterpress printing was invented in 1450. Customer requirements have changed over the centuries, and quality standards and productivity have risen. Sustainability is gaining importance in many industries, and this trend is slowly making its way into the print industry as well. Is 2020 now the decade for sustainability?

The first question of this entry deals with "How do you see print products (graphics and packaging) in the circular economy?".

To answer this question, a brief description of the circular economy follows, as well as a narrowing down of the areas to be considered, otherwise the given framework would no longer be adhered to. In the following, only topics that are directly related to the printing industry are considered. Topics such as the ecological balance of energy generation or the behavior of employees outside the workplace are not considered. For example, the way to work is not assessed, even if the route by bicycle without electric drive or the use of public transport would indisputably be the most sustainable solution, as would green electricity have used for production.

The circular economy describes the process of optimal use of resources, optimal use of energy and, above all, the processing and reusability of used resources. This is more topical than ever for the world's print shops. For almost three years now, the print industry has been extremely dependent on resources from other countries due to the global pandemic.

The example of paper as a resource makes it clear that almost the entire industry has procurement problems. Dependencies like this are dangerous and can threaten the existence of print shops if supplies fail and prices become excessive. A sustainable solution to this would be to work on the circular economy of products. One of the indispensable resources is the printing stock. Whether paper, cardboard or films. Recycling is the key to the circular economy. However, more and more substrate is being imported from abroad for cost reasons, which is not particularly low in emissions. Currently, people buy where available because the scarcity partly threatens livelihoods. In such situations, sustainability and the circular economy are secondary. If there were stricter guidelines or even a clearer change in consumer thinking, this would certainly be a motivation.

There are two groups of addressees who have a great influence to change something on the topic of sustainability: on the one hand, consumers, who must also accept recycled paper, and on the other hand, the industry, which must work on solutions for better recyclability of print products. Especially in the so-called Generation Z, i.e. the young adults born around the turn of the millennium, the topic of sustainability is indispensable. A survey has shown, that 47 % of those surveyed from this generation would pay more for sustainable and eco-friendly products. However, the topic of sustainability is also currently of increasing importance in the older sections of the population, and a rethink is taking place to protect the environment. So, if consumers are paying for it, why aren't print shops producing according to this principle yet?

There are certainly two reasons for this. The first one is quality. With fluctuating paper ratios, due to recycled material for example, consistent print quality is a major challenge, because paper

quality causes color ratios to fluctuate greatly and a Pantone color could then no longer be recognized by consumers on the supermarket shelf. Many manufacturers do not want to compromise on this yet, after all it is not only Generation Z that have purchasing power.

The other reason is cost. Sustainability has not (yet) fully established itself in all households, so not all end consumers can or want to afford to buy sustainably. Status quo, products that go through the circular economy are more expensive. The raw materials have to be processed at great expense and are not yet a match for cheaply produced plastic films. Although there is a general awareness of the issue of sustainability in society, this is not yet reflected strongly enough in purchasing behavior. If, for example, two identical products were offered on a supermarket shelf, with one product being cheaper and printed in a high quality at first glance, this product would probably find more buyers, even though this packaging print has a significantly worse ecological balance.

A solution to the second problem could be regulations that subsidize companies with sustainable production. In addition, higher taxes could be levied on environmentally harmful or poorly recyclable packaging. However, this tax money would then have to flow specifically into projects that promote sustainability and environmental protection. Otherwise, the effect would become obsolete.

How does a production become more sustainable?

Certainly, the circular economy starts in the procurement for the raw materials of the production environment, in the procurement for the raw materials of the production environment. Heidelberger Druckmaschinen AG (Heidelberg) and many other press manufacturers are already pursuing Co2 neutral production. At first glance, this could be understood to mean that the machines produce without any carbon dioxide emissions. However, this is not the case. The presses are produced on a climate-neutral basis. The associated CO2 compensation certification program supports the "Sodo" reforestation project run by the non-governmental organization "World Vision" in Ethiopia, which is itself certified to the "Gold Standard". This means that the machines are produced in a Co2-neutral manner when they reach the customer. Compared to 1990, Heidelberg has reduced the energy required for the printed sheet by 40 percent. The presses are becoming ever more energy-efficient and therefore work more economically and ecologically.

In addition to reducing Co2 emissions, the responsible use of water as a valuable resource also plays an important role if the printing industry wants to become more sustainable. Water consumption is particularly high in offset printing, but water also plays a major role as a resource in other printing technologies. According to the German Federal Statistical Office, a study from 2016 values the water consumption of paper products at 8.3 %. Chemical products, which also include consumables required in the print industry, have an even greater impact. Solutions to this are to raise awareness and to question the products used.

But fortunately, there is also already progress in the development of sustainable technologies. It exists already a wide range of products on the market that promise to be more environmentally friendly.

The Saphira Eco product line is a segment within the Heidelberg consumables portfolio, such as water conditioner, washing agents, and inks. This ecological product line stands for lower emission values than most comparable products. In addition to ecological benefits such as reduced emissions of volatile organic compounds (VOCs), ammonia and particulate matter, Saphira Eco also stands for lower chemical consumption and less wastewater.

Another promising innovative approach with entirely natural ingredients is offered by the ink from the company PureInk. Below are some examples of the approach. PURe Ink is intended to be an environmentally friendly solution in the ink segment, completely free of toxic substances to protect producers and consumers, and of course the environment in the process. At the same time, the ink is free of fossil carbons to reduce emissions. In addition, there is no soy, coconut or palm oil in order to avoid monocultures and protect the rainforest from deforestation. Only sustainable raw materials are used and less Co2 is emitted. This is also an advantage for the circular economy because the paint can be dissolved up to 100% and is therefore enormously recyclable. At the same time, the manufacturer promises a brilliant color result and fast drying for further processing. Producers should therefore not suffer any loss of quality. PURe Ink is around three times as expensive as conventional inks, and the manufacturer is paying a good price for cradle to cradle and improved drying. However, this is perfectly feasible for print shops, as the ink content of print products is around 1-3% (cf. Christian Hoeke) and is therefore relative if it really does produce a major sustainable effect.

Heidelberg also wants to contribute to a climate-neutral and sustainable society. The goal is to increase the overall recycling rate of fiber-containing packaging to 90 percent by 2030. The main focus is on packaging that currently has a lower recyclability rate, i.e. packaging used at private households, especially those used to go. But it is not only packaging containing fibers that needs to be considered. After all, not all foils are the same. There are now nonabsorbent substrates that promise recyclability. However, this is often only the case under certain conditions and if the consumer then "disposes" of it incorrectly, it can no longer be recycled at all. Thus, the circular economy breaks down and resources disappear from the circulation system.

A solution for this would be a standardized and clear symbol to show the recyclability and the right way to dispose. Another existing solution that would need to be further developed is apps that assist with recycling. The smartphone application tells the consumer the best way to dispose of the product so that it can be reintroduced into the production cycle. This is especially essential for finished products because these are often mistaken for foils, whether perhaps a water-soluble varnish was used. Accurate labeling would be an enormous step in this regard, supporting end consumers, but also companies that want to recycle used resources. Certificates such as the Blue Angel show how it can be done. This certification has been established in Germany for 40 years and points consumers to environmentally friendly products in everyday life. More than 20,000 goods bear this seal and there should be even more throughout Europe.

The second question to answer is: What is your vision of print for a sustainable future?

In order to be able to answer how I see the sustainable future for the print industry, the term "sustainability" must be defined. Sustainability is a principle of action according to which the conservation of resources is aimed at by means of natural regeneration to further satisfy needs.

I believe in a sustainable future for the print industry, and it won't be unpackaged stores and the demise of print products. But rather packaging and advertising materials that are properly labeled, that use seals and codes to help consumers dispose of them properly so they can be reintroduced into the circular economy. Support should come from apps that understand and educate about the certifications. After all, recycling is only possible if it is done correctly. In the same way, people need to become more aware of what they eat. Packaging must not be a mere wake-up call, it must become a precious commodity that we encounter again and again throughout our lives in various forms.

As we move generationally away from a throwaway society to a more sustainable one, promotional products and custom digital printing could also gain in value and attention. In this way, perhaps less will be consumed, but it will be finished to a high standard and will last longer.

Conclusion: The printing industry is on the move, a rethink is taking place, the target of two degrees Celsius has been set, but a clear implementation is not yet in place. Sustainability is becoming more important across all sectors, including the print industry. Niche producers are already successful with a sustainable business model, but this has not yet reached the masses. Even though products are increasingly adapting to sustainability, the incentive for companies is probably not yet great enough to incur additional costs.

This will only change when ways are identified in Europe and globally and incentives are offered so that large companies voluntarily commit to finding intelligent and sustainable solutions. So far, the idea of competition is not yet big enough. No one wants to be the "most sustainable," but shouldn't that be the goal?

Thank you for your attention and time.