

YOUNG TALENT AWARD 2021 – INTERGRAF

Pauline BRIOT
Engineering student
Grenoble INP-Pagora
Promotion 2021

Since the invention of modern printing by Gutenberg in 1454, the printed word has played a leading role in the development of European society. Until now, printing has made it possible to convey information to almost all social classes, regardless of their background or wealth, using the press and books in particular. However, today, with the advent of the Internet, this informative role is gradually diminishing; a misconception then arises in the minds of most people, the idea that printing is outdated and irrelevant to our current technological society. But then, how will the printing industry be able to develop in the future?

As explained above, printing is no longer just an information medium. All existing studies on the evolution of the print media make the same observation: newspapers are selling less and are being replaced by digital information. Books, on the other hand, are still selling, but are also competing with digital books, especially in the school field where children no longer have ten or fifteen school books but a shelf with digital versions. The printing industry has therefore evolved towards new growth markets.

Indeed, functional printing is gradually emerging. Functional printing, as its name suggests, aims to make objects of daily life functional, in many fields ranging from architecture to industry and aeronautics. For example, it is possible to manufacture a demonstrator in an architect's office, capable of making light or sound, by 3D printing and then printing circuits in printed electronics.

In addition, today, the development of technology such as smartphones, computers, increasingly solicits the printing sector for the printing of electronic circuits, in printed electronics. Indeed, this process is very efficient; with conductive ink, such as silver or copper, circuits are printed quickly, are light and easily integrated into small objects. Thus, machine operators on traditional machines see their work evolve, but the gestures remain quite similar for printing electronic circuits as for traditional printing, and the training remains the same.

As far as the operators are concerned, the printing lines are more and more autonomous. One might think that the operators are useless, and that companies in the packaging sector employ less of them, but this is not the case. In fact, some actions can only be carried out by multi-skilled operators, such as line set-up. Many companies have tried these new machines, but quality is being lost and the large companies in the luxury sector have returned to traditional techniques, particularly for hot stamping or other processes requiring high precision of execution. In sectors where precision is less important, the work of the operators is evolving, but could be of interest to the new generation: the work is less strenuous, but requires a good knowledge of computer tools, which young operators very often master.

In today's societies, the environment is also becoming an increasingly important concern. Printing, in people's minds, consumes a lot of paper, therefore trees, is bad for the environment, but this image is changing. Bleaching and paper refining techniques are polluting, because they use polluting bleaching agents and a lot of energy; but to align with these environmental concerns, paper is now being printed with fewer treatments. In addition, the emission of volatile organic compounds during printing is increasingly low, thanks to the use of solvent-free inks, or even vegetable inks.

Moreover, this use of vegetable-based inks on paper or cardboard creates a biodegradable, even recyclable complex. Indeed, normally, in order to be able to recycle printed paper or cardboard, it is necessary to de-ink the paper, a process that is costly in energy. However, using a vegetable-based inkSubscribe to DeepL Pro to edit this document. Visit www.DeepL.com/Pro for more information. paper complex makes it possible to skip this step and thus, recycling is almost immediate. These techniques should even be developed in the future in order to further improve the ratio of recycled printed paper.

Finally, in the printing sector, packaging is also evolving. The packaging no longer has only an advertising function, of attractiveness of the product, it becomes more and more functional. Many studies on traceability are in progress, for the food field in particular. The packaging is therefore emerging on new markets, and uses new printing techniques. The current plastic bashing is also in favor of printing, since cardboard is a good candidate to replace it.

In conclusion, printing is not at all old-fashioned or uninteresting. In the future, it will have been able to carve out a place for itself in new markets, particularly in the printed electronics sector, or functional printing. In addition, it respects the new codes of environmental concern, replacing plastic in the packaging sector, and using solvent-free or vegetable-based inks.

For a young printer, a young engineer in the printing industry, or a young production operator, or any of the other trades covered by the collective agreement for the commercial printing and graphic industries, the working environment is essential. But which work environment attracts the most, and how could a printing company provide it?

For my part, I have just finished my three years of engineering studies, in the field of printed communication engineering at Grenoble INP-Pagora. Today I'm starting my last six-month internship in a printing company. While looking for my internship, I asked myself a lot of questions about the companies I was going to apply to.

My most important criteria was to be in a company with a dynamic and creative environment. Indeed, it is essential to get up in the morning with the desire to work for a company that we like and where we like to work. Dynamism is therefore essential for a company, because without dynamism, employees risk getting stuck in a routine and decrease their productivity and their desire. A printing company can be dynamic, especially adhesive label printing companies: indeed, in the company where I am doing my internship, the orders are different every day, follow different processes, customers evolve thanks to the salesmen who seduce new companies with innovative solutions... We are far from being bored, and the collaborators realize it very well because they too are carried by this dynamism.

In addition, printing is a creative sector. Before going into production, you have to think about the design of your printed matter, choose the most suitable printing process, do some tests... So you have to have a certain creative side when you work in printing.

Finally, the working atmosphere is also important. I have already worked in different companies, where the human resources aspects were totally different. During my internship as an assistant engineer, I

was in a large company that was a leader in luxury packaging; the relationship between the drivers and the management was not necessarily easy, there was no cohesion and only productivity counted; if a worker was not performing well, he was replaced and we did not try to find out why he was not productive. I think that's a shame, because one of the other companies I worked for showed me that it was quite possible to work in a pleasant environment, where the drivers appreciated the management. They are listened to, days are organized to create team cohesion; so even if these days are not worked, everyone comes out happier and this is reflected in the productivity statistics, which are better. A printing company can therefore provide a positive working environment that is attentive to the well-being of its employees.

To conclude, I am looking for a dynamic, creative and pleasant working environment. A printing company has all these criteria and that's why I chose to be a printing engineer. Companies that don't make the effort to listen to drivers and other employees are not worth the effort because you are just a pawn that will be replaced; getting up in the morning with the desire to work for your company is paramount, and if a company allows you to feel that way, then stay there because you may have found the right one!