

Production Printing: The Future is Inkjet

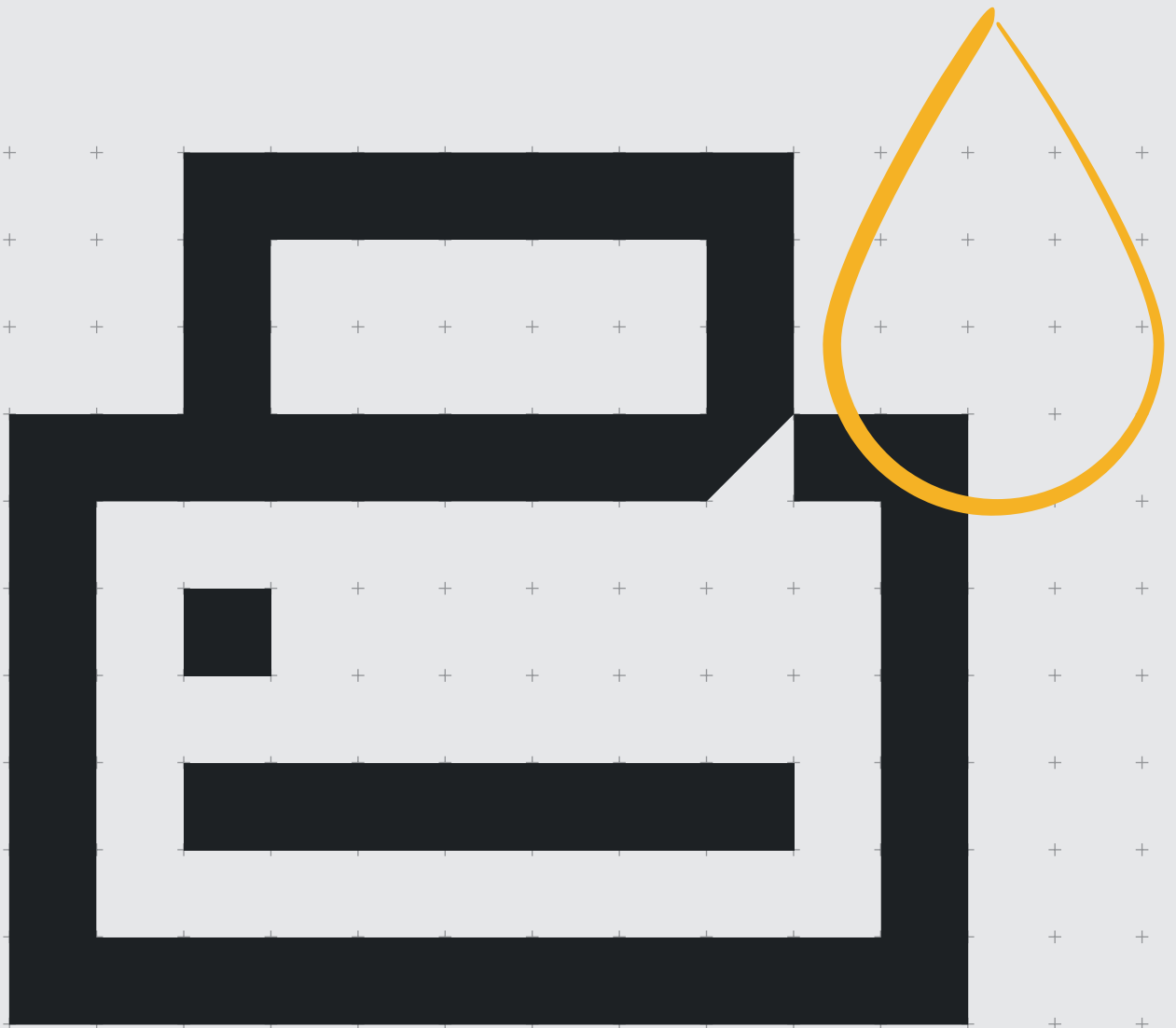


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Abstract

Digital technology is fundamentally reshaping how the modern world works. Widespread access to high-speed internet, mobile devices, and digital apps has diminished the need to print documents in the home and small office environments. Printer sales in these markets are therefore in decline. However, many opportunities for growth can still be identified in other areas, with particular long-term potential in production printing. Since this market has not yet matured, there is still room to innovate, meaning that the technology is evolving at an upbeat pace with printing methods continuously adapting to new realities. While analogue devices continue to dominate production printing for the time being, the shift towards digital print is gaining pace. One reason for this is the growing need for short runs, which are too expensive per page to be worthwhile on analogue presses but are perfectly suited to digital prints. Alongside shorter runs, consumers also demand the ability to personalise their output, which is easy to do on digital printers.

Importantly, despite the unstoppable rise of digital in every aspect of our lives, printing continues to play a vital role. Tablets and apps may provide greater convenience, but

a significant number of people prefer to own and read a physical book, magazine or leaflet. Promotional materials are also highly effective in paper format, even among the youngest generations, which suggests that marketing teams will still be printing in large quantities for the foreseeable future. Given the preference for short runs in the areas which are driving growth in the industry, digital printers are expected to grow in popularity. Toner devices were invented to meet the need for affordable low-volume printing. However, once output reaches a certain level, printing on toner devices becomes extremely costly. Innovation in the industry was therefore targeted at developing a new digital technology that could produce both short and long runs in high quality and at a reasonable price: inkjet. This technology's arrival and subsequent evolution is turning the printing industry on its head. Its flexibility not only allows companies to produce short runs affordably, but to generate value and achieve a high return on investment by combining the power of digital with the continued importance of print.

Time to Turn the Page?

Following the dramatic rise of digital technology in recent years, printer sales have been on the decline, a trend that is most notable in office and consumer markets. Take for example the office environment; in the past, people had to print out all the materials they intended to present in a meeting. Now, an internet connection and a tablet suffice for them to present their ideas, edit, and share them – all in real time. In addition to this, people today are a lot more aware of the environment and their impact on it, which also dissuades them from printing unnecessary copies. Despite this, and contrary to popular belief, paper is far from dead. Printing will not only continue to exist, it will be a highly profitable industry for years to come. Offices and private consumers represent just a fraction of the entire printing market, while opportunities for growth can still be found in other areas. The greatest long-term potential lies in production printing.

Although digital technology continues to grow in strength and popularity, printing is enjoying somewhat of a revival at the moment. Printed books appeared to be doomed when eBooks and eReaders first burst onto the scene, as the latter offered a way to conveniently buy, store, and transport entire libraries in a single device the size of a small book. But the initial hype was short lived. Although eBooks continue to grow in popularity, sales revenues have slowed, and printed books seem to be back in fashion. An article published by Forbes in 2018 puts this down to the different feelings each format provokes. According to research by two US universities, the psychological experience of owning

an eBook differs greatly from that of owning a printed one. Readers feel a stronger emotional attachment to paper books, and digital devices fail to stimulate other senses that contribute to the overall experience, such as the seemingly trivial but distinctive smell of a real book.

Bookworms are not the only consumers that the printing industry can rely on, however. There are many businesses that still need to produce large quantities of printed output, for either internal or external use, including commercial printers, book and magazine publishers, as well as large marketing departments and agencies with in-house print rooms. These high-volume users have needs that go beyond the small-scale technology commonly used in offices and the consumer sector. They therefore need specialised technology that can cope with their immense operational requirements. This is where the potential of production print becomes clear, as it provides a way for businesses to achieve extremely high output at low cost, without sacrificing quality.

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Once Upon a Time... In Analogue



From the outset, the production printing environment has been dominated by analogue technology, most commonly in the form of offset printing. According to research from Smithers Pira in 2017, analogue technology controlled the majority of the global print market, accounting for 83.8% of the market value and 97.1% of the volume. The dominance and success of offset printers are the result of several factors. First off, they provide an effective long-run manufacturing process for extremely high output, as they are designed to create thousands of copies of the same thing. Secondly, this technology is also capable of printing at very high-quality on various paper types, to meet the specific needs of its users. A range of other advanced features also make offset presses the tool of choice for printers looking for high output with additional effects, such as spot or flood coatings, perfectly blended brand colours, and metallic or fluorescent inks.

Thanks to the extremely high productivity, quality, format range, and special effects offered by offset devices, they will continue to be used in production environments for many years to come. However, according to Smithers Pira, by 2022 analogue's share of global volume is expected to fall to 70% and will be mainly limited to relatively low-value publication printing such as newspapers, magazines, and directories. The main cause for analogue technology's dramatic fall from glory is the unattractive price tag. Since a lot of the cost is built into the components and setup, it is only cost-effective

for huge print runs. At low volumes, the per-print costs are astronomical. Ideally, for a decent return on investment, printers need to be in constant use, producing thousands, of copies of the same thing. This final point sums up another of the drawbacks associated with offset printing: every page within a print run is completely identical. That represents a serious problem today, as static content is uninteresting and ineffective in our rapidly changing digital environment where personalisation is a demand, rather than an added bonus.

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Onto the Next Chapter... In Digital



Digital technology is changing the world faster than anybody could have foreseen. Every aspect of our lives has been affected, from how we study and work to how we socialise and spend our free time. By and large, we have embraced these positive changes and seen our lives made easier as a result. The printing industry is no different, evolving to meet the needs of consumers and their ever-increasing expectations. In fact, guaranteeing a positive customer experience has become priority number one for businesses across the board. As a result, there has been a noticeable shift in how customers are targeted, with campaigns relying less on mass marketing and more on personalisation. Combined with the growing demand for performance, these developments are shortening print runs further than ever, pushing the boundaries on cost and speed.

Toner printers were the first digital devices to revolutionise the industry by responding to the need for affordable short runs. This need arose with the emergence of made-to-order products, and labels or packaging that require “just in time” delivery, as well as increased demand for personalisation. Users no longer want to produce thousands of identical sheets, instead they are looking for ways to include variable data. The arrival of digital printing made this possible and enabled businesses to avoid expensive, traditional methods. Furthermore, in the past, commercial printers frequently had to turn down work from potentially lucrative clients looking for short runs because they would not be profitable on an offset printer. In contrast, toner devices have a flat cost

structure, which makes them ideal for short runs and quick-turnaround work, as the per-page cost is always the same, regardless of run length.

As already touched upon, another significant advantage of digital printing is the ability to personalise output and produce runs where every sheet is unique. But such high levels of customisation come at a cost, with toner devices struggling to compete with offset presses in terms of productivity. What’s more, a glance at the per-page cost reveals that these devices are unsuitable for high-volume printing; after a certain number of pages it becomes significantly more expensive than offset. For a short-term fix to this issue, some businesses use an offset press (or outsource jobs to a print services provider) in order to produce large quantities of high-quality colour printouts, which are then used as templates onto which variable data is added using a more affordable monochrome toner printer.

Variable data printing is incredibly valuable for marketing departments and agencies, as it enables them to make the most of data to target customers more effectively and create leads. Until recently, this solution appeared to be the best way to combine the high volume of offset with the personalisation power of digital. But then, digital printing technology evolved further.

To Be Continued... In Inkjet

It is worth emphasising that the introduction of toner technology represents only one stage in the digital print revolution; the next stage belongs to inkjet. We are currently witnessing highly disruptive times for the industry, as innovative inkjet technology pushes the values of digital print to an entirely new level. High-speed roll-fed inkjet printers first appeared on the market in 2008, quickly replacing analogue presses for short runs as they are easier to set up and can deliver customised content on every sheet. The technology then achieved an extremely important milestone when it developed the ability to print 600 dot-per-inch resolution (and higher) at very high speeds; it has since improved to such a point that it is now suitable for very high-volume printing and can compete directly with offset. Alongside these important improvements in performance, inkjet retains all the existing advantages of digital printing, such as electronic collation, just-in-time manufacturing, and workflow automation.

Perhaps the biggest advantage of inkjet technology is the ability to print in both full colour and monochrome on a single device. This enables users to print more efficiently, requiring just one pass to add both static and variable content, immediately eliminating the need for hybrid offset-toner solutions. Freed from the constraints of using pre-printed templates, consumers can switch to a more efficient "white paper in, full colour out" workflow. Rather than pay to create and store templates for overprinting, they can make substantial savings by using blank rolls of paper. In addition to the financial benefits, users can avoid wasting time on logistical nightmares, as they no longer need to calculate

template quantities in advance, place orders, ship materials, and manage complicated inventories. Furthermore, sidestepping the need for template inventories makes it easier to update forms on the fly and respond immediately to any compliance or regulatory changes. The ability to print efficiently and affordably on site also represents a plus for companies that cannot outsource due to privacy concerns.

Due to inkjet's ability to produce both monochrome and colour on a single device, it is very attractive technology for marketing purposes. Analogue users are understandably unhappy with the exaggerated cost of producing documents on colour offset presses, especially if the majority of the run's documents are totally monochrome or include large areas of monochrome content. Fortunately, advances in digital inkjet technology have made colour printing faster and more cost-efficient than ever before. In a world shaped by data and personalisation, marketing departments can finally harness the power of colour to redesign their output to better capture their customers' interest, boost impact, and increase responses.

Since graphs, charts, and scales are easier to understand in colour, inkjet can add clarity to utility bills and financial statements. The ability to produce vibrant, highly-personalised sheets enables marketing teams to adapt content to match customers' interests and buying habits. This ultimately helps companies to enhance communications and strengthen relationships with customers, boosting engagement and maximising returns on marketing investment.



How Will the Next Chapter Unfold?

The production print industry is set to undergo drastic changes in the next five years or so. Unlike office and consumer markets, production print has not yet matured, meaning that there is still room for innovation and growth. Although inkjet is not new technology, it is evolving rapidly.

Given the high purchase price of roll-fed inkjet systems, significant work has gone into developing cut-sheet inkjet devices to shake up the market with speeds faster than toner but affordable acquisition prices. In addition to all the benefits of digital printing already mentioned above, these ground-breaking devices also offer the possibility to switch between high and low volumes, monochrome and colour, on a single device. In short, inkjet is edging out the competition because it can do precisely what other print technologies cannot: it is fast, convenient, and flexible. These new devices offer a way to successfully compete with offset for high-volume runs while simultaneously replacing toner devices for short runs, giving companies the agility to cope with emerging opportunities.

Inkjet's unique feature set has made it the technology of choice for several markets, including publishing and promotional materials. Book publishing represents a key but mature market for inkjet printing, because digital technology specialises in short, high-quality production runs. This enables publishers to experiment with smaller volumes before committing to long runs, so they can measure the market response and produce in quantities they know will sell. Inkjet therefore helps prevent overproduction and waste, making operations more environmentally friendly. Modern consumer trends, such as environmental awareness, are among the main drivers of inkjet's success. Another important trend is the renewed popularity of printed books. Following the initial excitement surrounding eBooks, people are realising that they prefer print.

A similar trend can be felt regarding transactional and promotional materials. The marketing world has been enhanced by technological developments in many ways, though not always as expected. Direct mail is a particularly interesting area, as it was expected to be killed off by email, but that never happened. Despite the omnipresence of the internet, social media, and digital apps, consumers are still more responsive to printed marketing materials than digital. Increased technology frequently raises privacy concerns, whereas consumers trust the post they receive, and they react differently to it being personalised — they are less suspicious about it compared to email spam.

On a more scientific note, the US Postal Service carried out a study that showed printed ads performed better than digital ones in a range of key brain activity categories such as review time, emotional reaction, and memory retention. Even younger generations, the so-called digital natives, are more responsive to print; this is because the human brain reacts differently to printed and digital stimuli. The latter is slightly harder to understand and remember, which

explains our preference for print and the unexpected continued success of direct mail. Given the improvements in quality, consistency, and productivity, inkjet now provides an affordable way to create highly effective print communication. It enables marketing teams to combine the quick turnaround and personalisation powers of digital technology with the trusted medium of print.

Inkjet outperforms the competition by doing what other print technologies cannot: It is fast, convenient, and flexible.





Conclusion

It's clear: the future of production printing belongs to inkjet. Although analogue devices currently dominate the market, the shift towards digital is accelerating as the printing world adapts to new realities. This trend can be put down to the growing need for short runs, which are economically unfeasible with analogue, but ideally suited to digital. Personalised products represent an area for growth, as consumers increasingly expect uniqueness. Although these short-run jobs may involve printing smaller amounts, they can be highly lucrative for professional printers. What really sets inkjet apart from other digital technologies is the flexibility it provides. Consumers want the ability to produce both short and long runs affordably, combining monochrome and colour content, in extremely high quality and at great speed. By meeting these needs, inkjet is carving out a large share of the market and edging out its competitors at both ends of the scale, in high-volume work where traditional offset presses still dominate, and in low-volume work where digital toners used to dominate.

There are many reasons behind the success of inkjet's impressive market conquering. First of all, this technology is ideal for affordable printing at a range of volumes, allowing consumers to adapt to meet changes in demand, which provides a serious competitive advantage in today's volatile markets. On top of this, the ability to print both static and variable data in a single run means that users are no longer forced to make do with expensive, complicated solutions such as pre-printed offset templates. Companies can therefore save money on outsourcing print runs, as well

as transporting and storing templates. But more importantly, it prevents overproduction, reducing waste in terms of time, money, and materials. By making efforts to limit waste and respect the environment, companies can portray themselves as eco-friendly and differentiate themselves in increasingly narrow and competitive markets.

However, the number one reason for inkjet's dramatic rise to glory is that it drives business growth. Inkjet devices provide the perfect combination of technological features that are required to take advantage of the continued importance of printing in our digital world. High-quality, on-demand printing empowers marketing teams in several key ways. It enables them to harness the power of whatever data they have collected and use it to personalise printed materials in order to target potential or existing customers more effectively. Since the human brain responds better to print than digital media, and also trusts it more, sending vibrant promotional and communication materials in paper format is highly likely to capture readers' attention and encourage a response, which can be converted into a lead and possibly a future customer. Inkjet and the personalisation that it offers is a secret weapon for marketing departments, as it enables them to coordinate campaigns that make the most of both print and digital media to deliver messages and information efficiently and effectively. Acquiring an inkjet printer will help companies maximise their relationships with customers and quickly achieve a positive return on their investment.

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KYOCERA Document Solutions (U.K) Ltd
75-77 London Road, Reading, Berkshire RG1 5BS
Tel: 03330 151855



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