

Digital Printing – From Theory To Practice

*Matthias Rübelmann
Druckhaus Beltz
Germany*

I will focus on why we at Beltz, as a publishing house and printing operation, approached POD and Océ.

First of all, allow me to give you a brief description of our group. Beltz was founded as a printshop in 1841 in Thuringia, Germany and has had its headquarters in Weinheim an der Bergstraße near Heidelberg since 1949.

Today, it is a group incorporating publishers and printing operations.

The Beltz publishing group is made up of several publishers and product sectors.

- The origin was a publishing house specializing in educational material which, alongside specialist psychology literature, still represents a large part of the publisher's work today.
- In 1971 the Beltz & Gelberg book program for children and young people was added. Like the specialist book programs, it occupies a leading position in its own field - in this case, high-quality children's and young people's literature.
- Campus Verlag, our subsidiary publishing house since 1975, focuses on economic policy, history and the social sciences.

The second part of the group is made up of the Beltz printing operations, including Druckpartner Rübelmann. We have a specialized operation for each production sector and are therefore in a position to offer the entire spectrum of book printing from one source, i.e. from data structuring right through to delivery. Our operations are:

- Druckhaus Beltz for single- and multi-color book printing in medium run lengths with brochure finishing. This site is more or less the headquarters of the group.
- Thomas Müntzer«, the former parent company, which specializes in scientific, mathematical and chemical printed formulae, as well as single-color book printing. Its largest operation is the new bookbindery with production lines for the manufacture of hard cover and soft cover products.
- Media Partner / Satz & Reprotechnik, offers bookwork composition with single- and multi-color repro and also specializes in the fields of data management, databases and data structuring for loose-leaf products with SGML/XML.
- Druck Partner Rübelmann is our printshop for small runs, which we define as less than 1,000 copies, and is therefore also ideally set up for the introduction of digital printing.

The entire group has an overall turnover of DM 120 million, which consolidates to DM 75 million in external sales, and it employs a staff of around 450.

Digital book printing has been in place at Beltz for 7 years, initially with a Xerox-Docutec unit, but now operating an Océ unit for an extended range of products.

Now, you are probably wondering why we at Beltz are delving into the world of digital printing?

The reason for this was not the new technology itself, but rather the analysis of the market development of our customers, which I will now outline.

Our main target group is specialist and scientific publishing houses.

The principal problems that specialist and scientific publishing houses face in today's economical climate are rapidly dwindling run lengths, particularly those caused by drastic cuts in spending on the part of libraries. Publishers are therefore attempting to spread the risk and counter this development by constantly increasing the number of titles. The consequences of this "overproduction" (over 80,000 new publications per year in Germany) are a large volume of stock, high storage costs, a large amount of tied capital and all the problems that this brings about.

The classical solutions to these problems are to strengthen sales and marketing, increase advertising and set up new sales channels, for example with direct marketing, by organizing reprint runs of products with different covers for other companies, drumming up subsidies etc.

Another approach – and this is **our** way – is to use new production channels and thereby reduce overall costs. Total costs is the key term here, but more of that later.

But why should we think about new production channels, especially in the field of digital printing?

Digital printing complements offset printing, as it opens up new ways of producing print runs more economically.

So What Sets Digital Printing Apart From Offset Printing?

- Shorter production times, since many steps are concentrated at one workplace. This means that the amount of organization can also be reduced.
- Make-ready costs only have to be paid once (scanning, data preparation) and this simplifies reprinting, since the job data can be saved and then called up again at any time. Procedures can be automated, in particular with database applications and connections to data processing systems.

- No more sheets are printed than are needed for the book blocks. Due to the electronic collating procedure, the printed book block is already complete. This makes digital printing more environmentally friendly, since many chemicals used in conventional printing are no longer needed and paper consumption is lower.

What Kinds of Jobs Are Suitable for Digital Printing?

This depends on the products and the chances of grouping them together. The diagram shows actual sales trends of various book types. Due to the relatively high unit costs, digital printing is currently more suitable for short runs. This means that it is well suited to test runs, preliminary runs and reprint runs, small runs in the scientific sector and longer runs with individualization or with a high level of regional variation. The economical limit for digital printing is around 400 to 700 units.

The advantages we see for our customers are:

- The products can be kept up-to-date and produced quickly, which is important for books of topical relevance, for example folders for loose-leaf products, operating manuals, specialist catalogues etc.
- Economic efficiency, since short runs become feasible. This enables additional turnover to be generated from printing books that would otherwise go out of print and for which low sales would make any offset reprint too costly. This turnover can be generated with digital printing.
- The calculation is relatively run-independent. This means that more books can be produced according to the anticipated sales figures and are not governed by the minimum run lengths associated with other production processes.
- Cost advantages result from the inclusion of the additional costs. The unit costs are higher than in offset printing, but if unit costs were the only factor, web presses would be used for all scientific works, since this is clearly the printing process with the lowest unit costs of all.
- Digital printing enables stock turnover figures to be increased, while capital tie-up, storage costs and waste costs are significantly reduced.
- Another advantage for our customers is that value adjustments, which are otherwise common and needed on a large scale, can be avoided.
- Looking into the future (e.g. at the development of special write-offs and price-fixing) the process has advantages, too, as in the question of securing publishing rights, which is important for publishers. As a publisher only retains the publishing rights for books in stock, it can be important to keep as many books in stock as possible.

The Strength of the Process Lies in the Reduction of Overall Costs, the Key Term Already Mentioned

Costs outside the actual manufacturing process are generally not taken sufficiently into account by publishers. There are several reasons for this: publishers are natural optimists and do not see things like storage and scrapping costs, or remainders, as anything worth worrying about. The commercial manager is the best person to be in charge of capital costs. Manufacturers are normally trained compositors or printers and do not generally have business management qualifications. They are only responsible for the unit costs of manufacture. Storage or opportunity costs do not fall under their purview and are therefore not taken into account. A further factor is that it is not the copies manufactured that are taken as the basis for an overall cost comparison, but rather the copies sold.

This kind of rational cost analysis brings the strengths of digital printing to the fore.

Several years ago we at Beltz looked at the results of this analysis and decided to offer our customers, most of whom are specialist book publishers, the advantages of production using digital printing processes. This all takes place within the scope of the overall strategy of the Beltz printing operations, the aim being to offer the full spectrum of book production from A to Z.

So Why Did We Go for an Océ-Demandstream?

Several factors were involved. We needed a web press, so that we could process lighter papers, which are important in the loose-leaf sector, and also to overcome the typical limitations experienced with single-page printers with regard to paper quality (thin, easy-to-turn book paper instead of stiff copying paper). Another important area, and one which is often underestimated, is finishing. Digital printing on the Océ unit results in a folded signature which is, as such, suitable for all kinds of book finishing, including loose-leaf work, adhesive binding, thread-stitching and stiff board binding. Last but not least, we decided to opt for good print quality and good service with correspondingly rapid response times.

Alongside good data, it is the cover and the binding that are the decisive factors. We therefore offer various formats and types of paper. In cover printing our customers can choose from color copies up to 200 g/m², high-quality digital printing up to 300 g/m² and regular offset quality cover board up to 350 g/m².

Since specialist books generally see heavy use and therefore need to be easy to flick through, we also offer dispersion adhesive binding, spine thread-stitching and hard covering with thread-stitching, alongside hot melt, in order to ensure undistracted and enjoyable reading as well as durability.

Here is an example, calculating the comparative costs of conventional and digital printing.

If we compare the various total cost calculations, we can see that in this instance both processes are almost identical, and so we offer both of them. However, should we then receive another order, a complete reprint would

be necessary with offset processes, but this is often not done on cost grounds (expected demand is too low). In digital printing, however, a reprint can be done practically at standard production cost. To exploit this important advantage requires a rethink of the way publishing houses look at calculation and disposition.

To sum up: the decisive reasons for us to offer digital printing were a market analysis of our customers and the results of the total cost comparison.

We have had positive experiences, both internally and with other publishers for whom we produce orders. The increasing demand for digital web-fed book printing underlines this decision. Don't miss the boat. Target success by exploiting the potential that this new technology opens up.