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“A future without connexivity? – unthinkable!”

We specialize in book production and rely almost exclusively on finishing systems from Muller Martini, both in conventional production and in the digital sector – for hardcover as well as for thread sewing, perfect binding and saddle stitching. The Connex data and process management system plays a key role here, as the business model for a Smart Factory will not work without a touchless workflow solution.

At 90%, traditional printing processes still make up the lion's share of the overall volume at our company. And I expect this to continue to be the case for the immediate future. This is because for us, the break-even between offset and digital is 1,000 copies per title. In the four-color segment, however, we currently print an average of 3,300 copies per job. The figure for black and white books is 2,600.

However, because publishing companies are changing their business models and increasingly ordering publications on demand, we want to prepare for the future by offering our customers a comprehensive service offering. That is why we have set up a completely digital production center in Riga, which covers all areas of the printing industry – hardcover, thread sewing, perfect binding and saddle stitching.

Digital is today at the level of offset

However, I do not see our new smart factory, in which production processes, material flow and data exchange are optimally interlinked, unnecessary steps eliminated and sources of error avoided, and everything that makes sense is automated, in the same category as the

classic digital printing market. This is because book production is too difficult for traditional online printers.

But the fact that we won ten of the 23 prizes awarded three years ago for Finland's most beautiful books, including one in the art book category for a digitally printed book that was up against offset competitors, shows that digital is now at the same level as offset. So we can decide for ourselves how we print – and this has no impact on quality.

When it comes to fiction, non-fiction, reference books and guidebooks, readers, booksellers and most publishing house employees will not notice any difference in quality between offset and digital printing. The only things that are not economically viable in digital printing today and in the foreseeable future are printing with special colors, exotic printing materials such as Japanese paper, a material mix in the same book block, print varnishing or lamination on the inside, color cuts and die-cutting.

Machines need to be able to communicate with one another

As in traditional production, we also rely exclusively on finishing systems from Muller Martini in the digital sector. For hardcover books we use a Diamant MC Digital bookline, for thread sewing two Ventura MC Digital machines, for perfect binding an Alegro Digital and for saddle stitching a Presto II Digital. They all enable us to produce even digitally printed short runs on an industrial scale because the high level of automation means that there are practically no make-ready times.

While the Diamant MC Digital and the Ventura MC Digital are used exclusively for digitally printed books, the two other machines will be used for both digital and offset productions – from runs of one to the thousands. And we even use the Presto II Digital for hybrid products. It is the ideal machine for combining offset and digitally printed signatures. This gives us additional flexibility in processing.

All 22 print finishing systems from Muller Martini – as is the case with the POPP6 bookline from Hunkeler and our printing presses – are networked with the Connex data and process management system in keeping with Muller Martini's Finishing 4.0 philosophy. This allows them to communicate with each other. We see this as an important key in terms of our goal of total integration.

Mapping a dynamic calculation in real time

Because our business model will not work without the touchless workflow solution. The removal of all barriers between our conventional and digital production is a top priority. Using individual machines for production without them being connected is outdated. Connex also makes it easier to monitor production and set delivery times. So if you ask me whether I see a future for our industry without connectivity, my answer is clear: unthinkable!

Muller Martini uses Connex LineControlPro to integrate digital printing presses from Océ, performing tasks such as the imposition of PDF files, including job management, on the printing press. In addition, Connex LineControl was used to integrate the Hunkeler bookline for the production of roll to roll on digital printing systems and both the Ventura MC Digital and the Diamant MC Digital into the customer workflow.

All equipment is integrated via the Connex LineControl module with the Keyline management information system (MIS) from Crispy Mountain, which serves as the highest-level system. We worked with Crispy Mountain to develop our own portal for order taking, which can be used by publishing companies to submit orders. The portal sends all the data to the

MIS, which organizes each production process virtually. This allows us to develop a dynamic calculation for each product in our portfolio in real time.

Setup processes are initiated automatically

The MIS acts as the brain of the entire solution. Preliminary cost and product costing analysis, materials management, production planning for printing and finishing, and internal and external logistics are controlled flexibly and monitored continuously using the system. All the data is available not only in the workplace but also remotely via tablet and smartphone as well.

An intermediary system acts as the language center and translates the order data into a language that a machine can understand. That enables seamless data integration throughout the process. For example, the Keyline job data is delivered in JSON format and translated in real time into JDF data for LineControl. The same thing happens during production with the production data delivered by Connex.Info (which is translated from JMF into JSON). Thanks to seamless integration, set-up procedures, for example, are initiated automatically.

Handling all workflows at a click of the mouse

Thanks to this combined B2B platform, I can well imagine that one day, not only publishers who want to reduce their storage costs, but also end customers will order their books directly from us in order to shorten the time between order and delivery. Self-publishers are already using this model now.

Contrary to the common opinion that introducing new processes is complicated and ties up resources unnecessarily, the connection of print on demand to one's own processes is becoming increasingly simple. Publishing software provides publishers with fast and seamless entry into print on demand and comprehensive title management. All workflows can be handled at a click of the mouse – from the production of the print data to title notification through to order processing.

Your

Trond Erik Isaksen, founder and managing director of Livonia Print, Riga (Latvia)

Livonia Print: 22 times Muller Martini

Livonia Print has no fewer than 22 Muller Martini machines. In 2018 there was a 36.4 million books output which has increased in 2019 by 10% to more than 40 million – thanks to greater automation and with the same number of employees.

For offset production

- 3 Diamant MC 60 booklines
- 2 Colibri backgluing lines (as part of an integrated system with 2 of 3 Diamant MC 60s)
- 6 Ventura MC thread sewing machines (integrated to form 3 Connect systems)
- 2 Ventura MC 200 thread sewing machines (integrated to form a 1 Connect system)
- 1 Ventura thread sewing machine
- 2 Alegro perfect binders
- 1 Acoro A5 perfect binder

For digital production

- 1 Diamant MC Digital bookline
- 2 Ventura MC Digital thread sewing machines (with an upstream Heidelberg automated Stahlfolder TH-66, a 4-pocket folding unit and the FFH-66 flat pile feeder)
- 1 Alegro Digital perfect binder (for digital and offset production)
- 1 Presto II Digital saddle stitcher (for digital and offset production)