MPS Production
The press automation and optimization system

Power and productivity
for a better world™

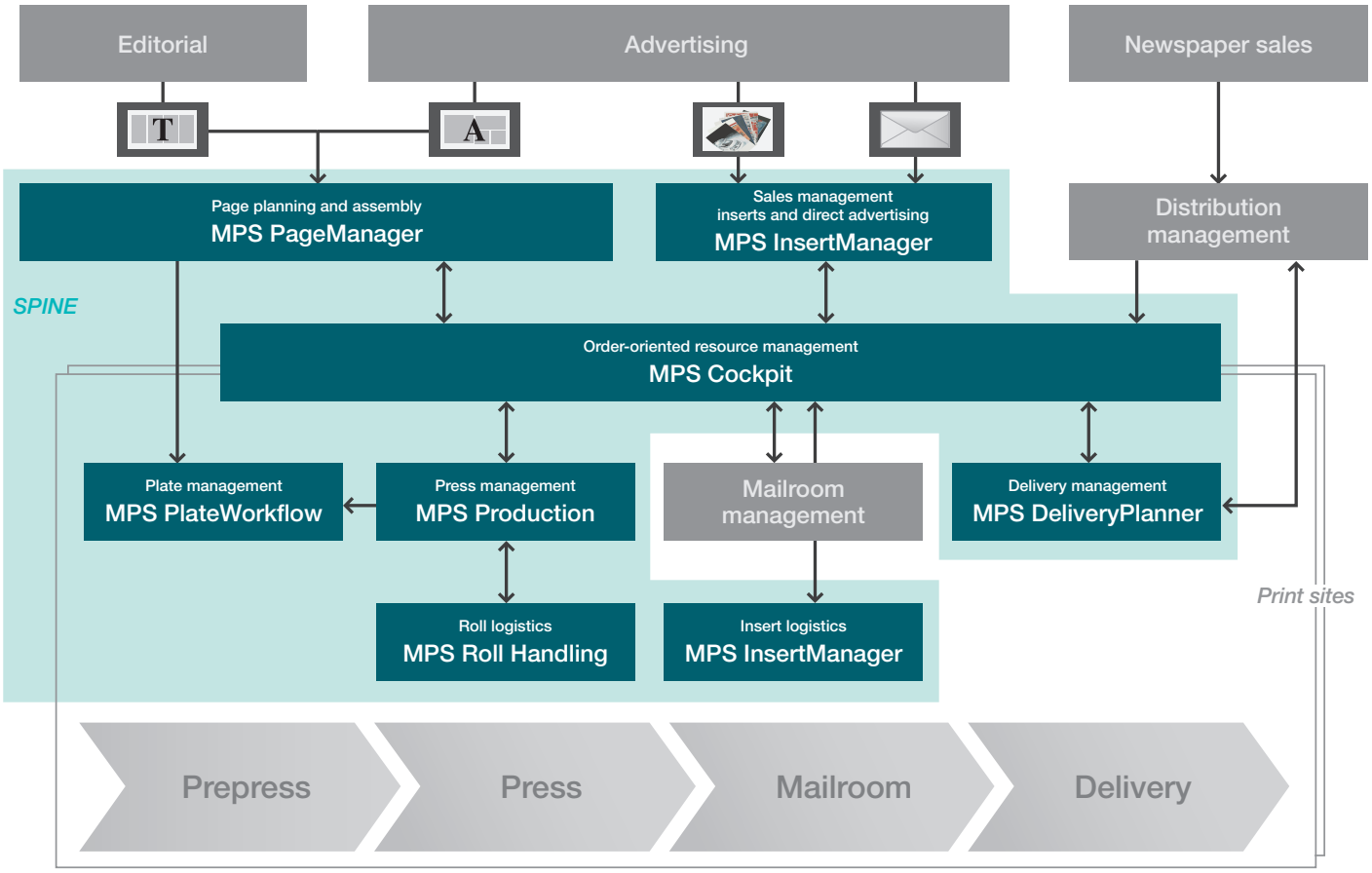
MPS Production in the ABB workflow

Success for publishers and printing houses can only be achieved with suitable systems for the automation of the various processes. The complete integration of these processes and the optimum use of resources are decisive factors in ensuring economic success. MPS Production contributes to this by optimizing the press management and print quality, and supplying other systems within the ABB workflow with information about press capabilities.

The unique ABB integration concept SPINE (Seamless Process Integration for Newspaper Enterprises) provides the backbone for the communication between the various subsystems. This foundation enables the building up of a level of overall process optimization previously unseen in the newspaper industry.

Industrial production and total optimization: this is the recipe for success.

Overview of the production planning workflow with the ABB systems



MPS Production for optimized print quality and efficiency

The illustration opposite shows the network of systems that ABB offers for planning and managing the entire newspaper production process from page-making to delivery. MPS Production has a central role in this workflow and is the brain behind the printing process itself. It is the link between the plant-wide network and the control systems of the printing press, and its primary job is the optimization of the print process.

In the maximum configuration shown opposite the product planning is carried out in MPS PageManager and the planning for entire newspaper production process is made in MPS Cockpit. However, the ABB concepts also cater for smaller plants with restricted planning needs. These needs can be met using the planning functions available in MPS Production itself.

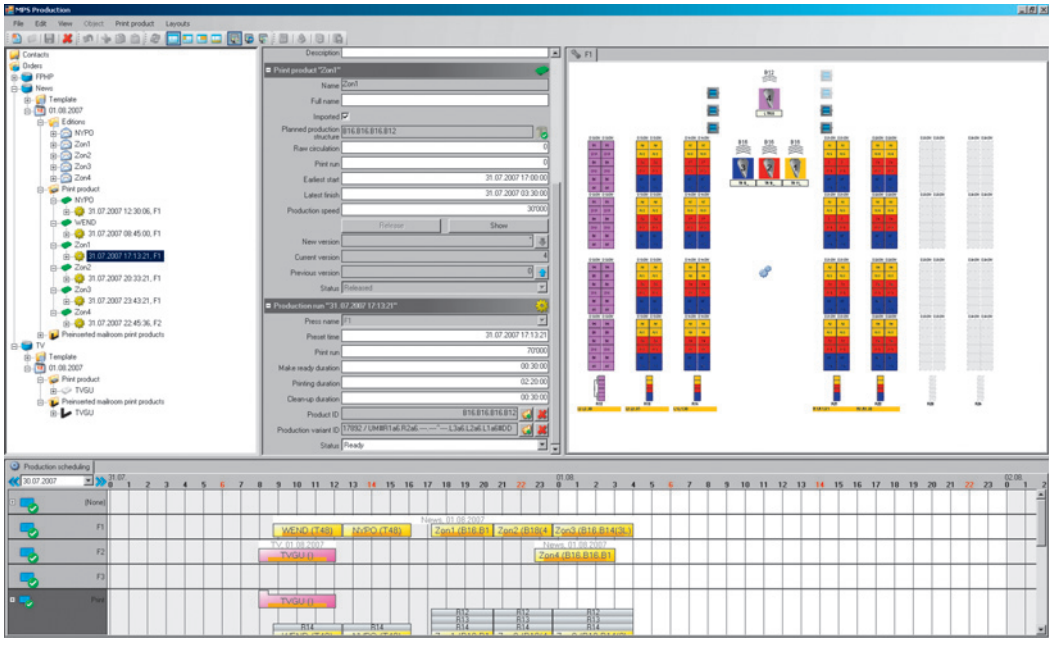
MPS Production includes a virtual representation of the printing press as installed at the relevant site(s). This means that the system is not only able to establish which products can be produced on these presses, but also what options are available for the productions themselves, and how these productions can be optimized. The integration concept SPINE makes this information available to other systems in the network and thereby ensures that these other systems can, for example, validate the product definition against the press capabilities.

MPS Production has not only the complete overview of the virtual press but also the paper leads that can be used. It also includes an imposition generator.

Major reductions in make-ready time and start-up waste

The greatest benefits of MPS Production are realized in the area of presetting the press. The combination of proven paper-lead or imposition-specific values for registers/compensators and web tension, that have been read back from the press, together with ink and water presetting with detailed calibration and speed dependent curves means that MPS Production brings major reductions in make-ready time and start-up waste. Significant cost savings result.

The benefits go on much longer. During and after completion of the newspaper printing the report functions within MPS Production provide the manager with detailed information about the course of the production, the materials used, changes made on the press etc. The data recorded during the production can be analyzed in detail using additional tools such as MPS Inform or MPS Insight.



An example of the user interface of MPS Production showing:
Top left: the tree structure for selecting the order, edition, print product or production etc.
Middle: The area for the inputting of parameters.
Top right: Graphical display showing, in this example, the basic imposition on the press.
Bottom: The scheduling of the production jobs.

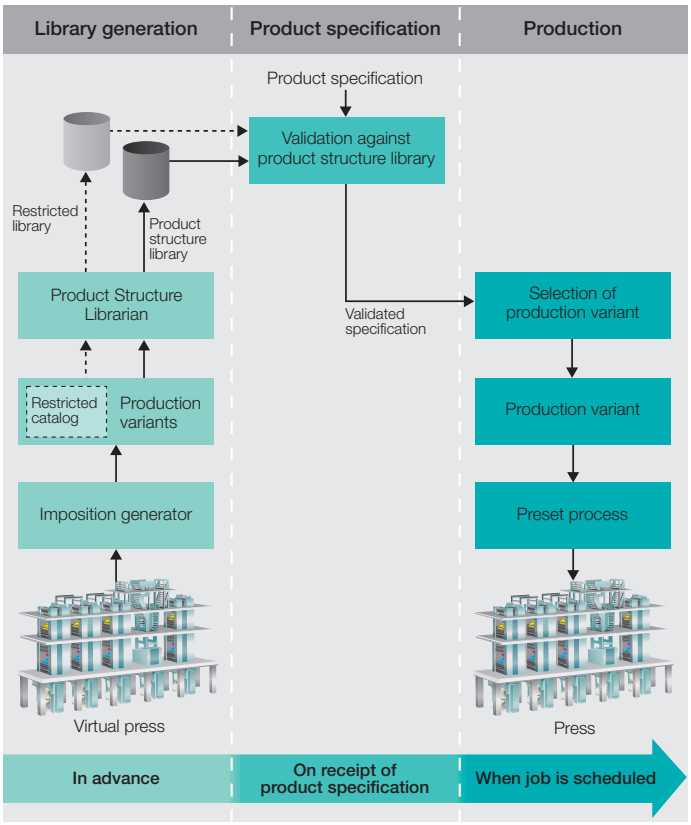
The functions…

Product Structure Librarian

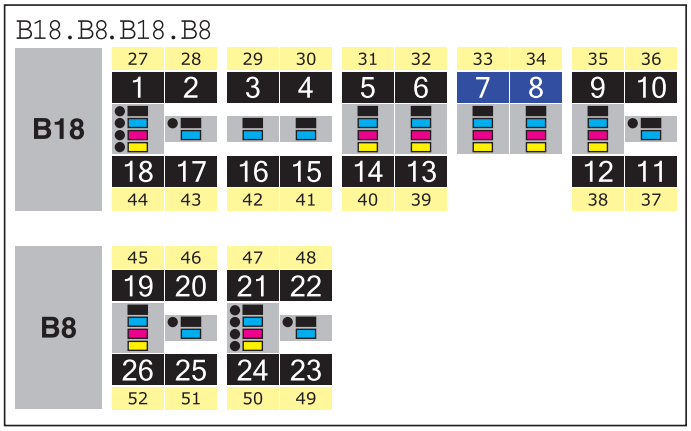
The range of products that can be produced on a given press is extensive. Depending on the press configuration, the number of possible impositions for producing these products can be enormous. A key element of MPS Production is the Product Structure Librarian, which generates libraries of all product structures that can be produced on the press. Any product

Immediate confirmation that the specified product can be produced, which prevents planning errors and the resulting costs

specification requested by any page planning system can then be compared automatically with the product structure library, resulting in an immediate confirmation that the specified product can be produced, which prevents planning errors and the resulting costs.



Use of Product Structure Librarian and production variants



Graphical representation of an example product structure (● = panorama possibilities)

The Product Structure Librarian works as follows. The main component is the imposition generator that starts with a virtual model of the press and all press elements and generates all possible production variants.

The Librarian then generates a library of all product structures that can be printed with this selection of production variants. If the production manager so wishes, restricted selections of production variants can be placed in a catalog and the Product Structure Librarian then generates one or more additional libraries on this basis. This is ideal if, for example, only a restricted range of possibilities should be offered to third party publishers.

The use of a restricted catalog of production variants avoids problematic impositions resulting in reduced make-ready time, less start-up waste and lower costs.

When a production has been scheduled the printer knows from MPS Production that the product can be produced, and the system offers him the range of possible production variants to choose from. Simple and foolproof!

Suitable for all sizes of printing plants, with or without integration

Product and production planning

Product and production plans can be imported from an overall planning system like MPS Cockpit. However MPS Production also has full product and production planning functions and can therefore operate completely independently of MPS Cockpit.

…and your benefits

MPS Production is therefore suitable for all sizes of printing plants, with or without integration.

There are two ways the user can plan the product. Either the structure is selected first and the color content and interdependencies between the pages of the various editions are defined later, or the user can start with a page list, define the color content and interdependencies first, and then select the structure later.

Pages can be linked simply by drag & drop. Panorama pages can be defined as long as the selected product structure allows this.

Once a product has been defined its production can be planned. Relevant production parameters are set in the attribute part of the user interface. This includes selection of the production variant to be used for the production.

If the user wishes, the system will select the production variants for a production sequence automatically to ensure that as many web leads as possible are reused. This reduces the make-ready time between productions.

The productions are shown automatically in the schedule part of the user interface. Production times and the allocated press can be changed by a simple drag & drop of the relevant bar.

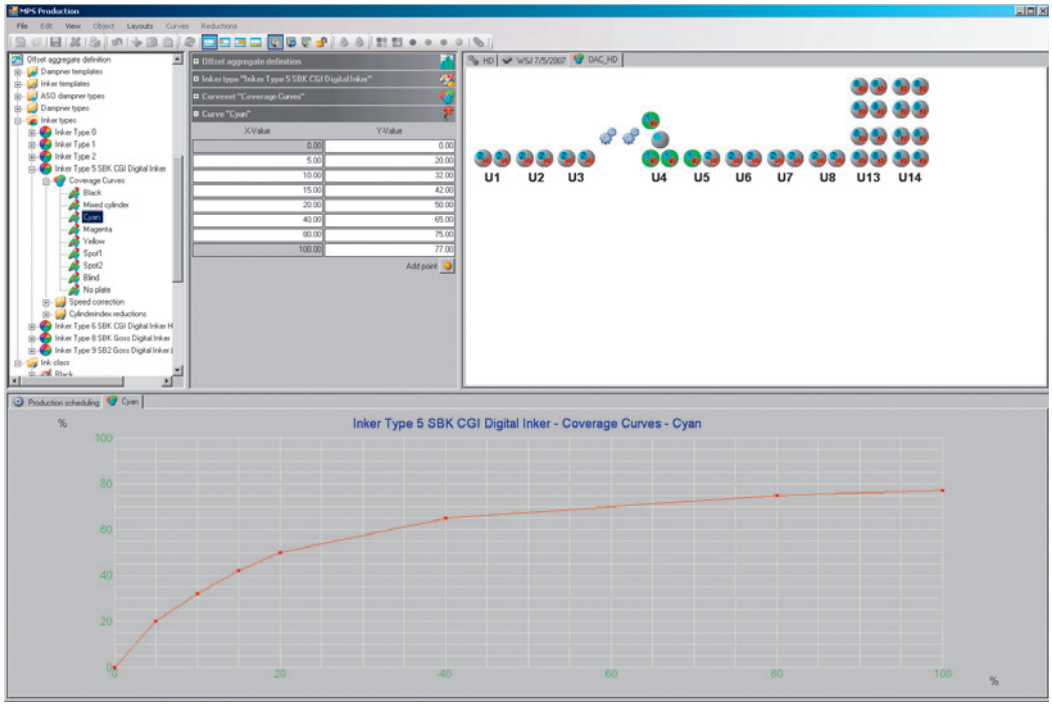
Ink, water and paper management

This is where MPS Production has a profound effect on the print quality. The system caters for all available inking and dampening systems. With 16 classes of ink for each of up to 10 different inker types, the system offers unrivalled flexibility and precision for ink presetting.

Profound effect on the print quality

Functions are provided for defining the various sorts of paper used and the associated correction factors for ink and water supply.

The ink zone values originating from a scanner or RIP, adjusted according to the defined curves, ensure that optimum preset values are used for press start-up. The speed correction curves ensure that print quality is maintained during production and operator interventions are minimized.



Screenshot showing an ink coverage curve, with:
top left: selection of inker type and ink class,
middle: coordinates of curve,
right: press overview showing inker and dampener types,
bottom: the coverage curve itself

Presetting

Short set-up times and minimized start-up waste are ensured by the wide selection of preset functions for all circumstances:

- Preset next production: the normal case covering all relevant registers/compensators, web tension, ink and water settings.
- Continued production preset: when consecutive editions with similar impositions are printed: only the changed elements need to be preset.
- Update preset: when one or more plates have been changed and the ink and water values for these new plates need to be preset.

Preset functions for all circumstances

- Interrupted production preset: for a production that was interrupted and restarted later.
- Ink/water preset: for updating when the press has been made ready before the last ink/water data were available.
- Imposition preset: as a backup in the event of a failure on the press.

The preset uses compensator and web tension values from previous productions using either the same production variant, imposition, web-ribbon-bundle combination or individual webs, ribbons and bundles, depending on what is available. Good values can be read back at any time and stored in the same hierarchy for future use.

Equalizer

MPS Production provides sites with multiple printing presses with an equalizer function. This means that productions running in parallel on several presses are balanced such that all productions finish simultaneously on reaching the required total print run. If one press is stopped, either manually or by a disturbance, then the remaining print run for this press is redistributed amongst the remaining presses. ABB's post-press interface means that this can also be steered from the mailroom, resulting in better coordination and quicker completion of the print runs.

Plate management

MPS Production knows exactly how many plates are required and where on the press they belong. This data is shared with plate management systems, e.g. MPS PlateWorkflow, thereby allowing a complete automation of the platemaking. In addition, the relevant data can be supplied to optional plate displays mounted on the press itself.

The functions at a glance	Your benefits
Validation of product design against capacity of the press.	Avoidance of planning errors and the resulting costs.
Product structure libraries based on restricted catalog of production variants.	Reduced make-ready time, less start-up waste, lower costs.
Full product and production planning functions, or import from overall planning system.	Suitable for all sizes of plant, with or without integration.
Possibility for automatic selection of production variants in production sequences to reuse web leads.	Reduced make-ready time between productions making a later start time possible.
Extensive ink and water management functions and calibration curves.	Improved print quality, less start-up waste, lower costs.
Preset functions for all circumstances.	Reduced make-ready time, less start-up waste, lower costs.
Print run equalization function for balancing productions on multiple presses.	Time saved through better coordination (also with mailroom), quicker completion of print run.

Flexibility for today and tomorrow

Available hardware configurations

MPS Production is PC-based and runs under Windows. It is available in various hardware configurations that meet the needs of each individual customer. These configurations are as follows.

MPS Production GeoCluster

This client-server system offers the customer the highest possible availability, performance and data security. This configuration is particularly suited to large plants with many users, and the redundancy means that a hardware failure results in neither an interruption to operation nor the loss of data. This is a hot stand-by system with failover and fail back functionality.

The GeoCluster ensures complete redundancy by using multiple servers and storing the data on multiple disks. Where disaster recovery has a particularly high priority it is possible to configure the system to allow a geographical separation of the servers.

MPS Production Twin

This consists of a pair of MPS Production workstations that share access to each other's hard disk. Both workstations can be used as work places as well as acting as servers to the connected clients.

This configuration provides a level of availability and data-security between that of the MPS Production Cluster and the MPS Workstation. It is a warm stand-by system — in the event of a hardware failure the application would have to be restarted.

MPS Production Workstation

This is the simplest (and cheapest!) configuration and consists of a single stand-alone workstation.

The evolution of MPS Production

ABB has a policy of ensuring upwards compatibility of its products, and MPS Production is a classic example of this. The first predecessor of MPS Production was introduced as far back as 1977, when it was the world's first computer system for newspaper production planning and press presetting. The system has subsequently gone through many phases of evolution, keeping up with the development of new hardware, operating systems and programming languages.

A continuous upgrade path lasting 30 years

Several hundred systems have been supplied in this long history. Upgrades, either software alone or both hardware and software, were always made available so that customers could move up to new generations while protecting their existing investments and retaining their valuable data — a continuous upgrade path lasting 30 years.

The functionality has also evolved, taking account of the changing needs of an industry at the cutting edge of technology. Inputs and experiences won through ABB's long term contact with its customers in this industry, for example at the biennial MPS UserClub, but also through countless smaller discussions, have driven this evolution.

Recent trends in the industry include virtual printing plants, where one plant prints for several publishers, and the demand for more integration between the various subsystem in the printing process and their overall optimization. ABB has taken account of these trends with the introduction of SPINE, by redistributing some of the planning functions to separate scheduling and product planning systems (MPS Cockpit, MPS PageManager, to give two examples) and introducing additional modules like the MPS PageManager Planner for the remote definition of products. ABB and MPS Production are therefore continuing their pioneering role in the industry.

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3BHT 490 023 R0001 Rev. f

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