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from editorial to market



PRODUCTION IN PUBLISHING

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Berlin Production Workshop Discussion on Production Processes

**How much individuality
can publishers sustain
in production processes?**



"What do we mean by standard?" - the Berlin Production Workshop came together for the first time at the end of January to discuss this central issue. Thirty-five production management representatives from German publishing houses, universities, consulting and service companies participated in the workshop, which was initiated by the software provider Klopotek & Partner GmbH.

Standardization of publishing products (types of paper, book formats, such as hardcover or paperback) and of publishing workflow was discussed with a view to increasing efficiency and cutting cost. At the same time, the need of publishers to maintain an individual profile and a market oriented design was accentuated. The discussion focused on a software that's capable of supporting standardized routine processes, while affording publishers enough scope to make an individual presentation of each of their publications possible. The question of how much individuality

'From editorial to market' - was chosen by the software house Klopotek & Partner and international IT service provider arvato systems, Bertelsmann, 2004 as the opening theme for a publishing dialog about the automation and integration of business processes in production for publishers and efficient software systems. The first "Production for Publishers" forum was held in Berlin and attended by more than 100 publishing and IT experts. At the beginning of this year a Berlin Production Workshop team was set up to study the standardization of production processes and the IT support thereof.

Helmut von Berg, Director of Klopotek & Partner GmbH, organized a meeting of thirty-five production management experts from publishing houses, universities and consulting and service companies. In panel discussions and workshops the question of 'How much individuality publishers can sustain in production processes?' was pursued. A series of workshops is planned for the Berlin Production Workshop team.



lity in production processes is or should be sustainable for publishers, or whether production processes themselves should be reviewed, will no doubt remain a source of lively discussion at future meetings.

Until now software developers have not made this kind of sophisticated, standardized production software available. Most publishers cope with bespoke solutions based on several different tools found on the market. The current Klopotek initiative, to bring together the relevant publishers, academics and service providers was appreciated by those attending the production workshop and the vast majority confirmed that they will continue to participate in further meetings and workshops.

The next Berlin Production Workshop, scheduled for the beginning of June, will be taking a look at the organization of production departments. In the meantime the members of 'Berlin Production Workshop' can stay in touch via the website www.berliner-werkstatt-herstellung.de and pool the results of their activities in the information forum.

Contact: H.von_Berg@klopotek.de
www.berliner-werkstatt-herstellung.de

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Production Requirements in a Changed Landscape



Joachim Brunold,
Brunold + Partner Unternehmens-
beratung GmbH, Berlin

Production requirements today are the same as they always have been: short production times, low costs, high quality and flexible implementation. The landscape, however, that production has to implement these requirements in has changed dramatically over the last few years.

Technical advancement (catch word digitization) has had a significant impact on the publication activities of publishing houses, particularly on their production departments. Now that it is possible to electronically enter, process, save and output text, images, graphics, etc. in various formats (with print being only one possibility), production managers are faced with the new challenge of making **new methods of production available to publishers.**

And, this comes at a time when **shorter product lifecycles** have already placed production under pressure. Publishing products have to be produced at an ever-faster rate and production managers have to implement all of the requirements of the editorial department and sales force with a high degree of flexibility.

Providing 'just-in-time' content heavily influences production processes. Whether an internet portal is being supplied with data by a special content management system or there is a need for 'printing-on-demand', new production processes are constantly being developed for the content delivered by publishing houses.

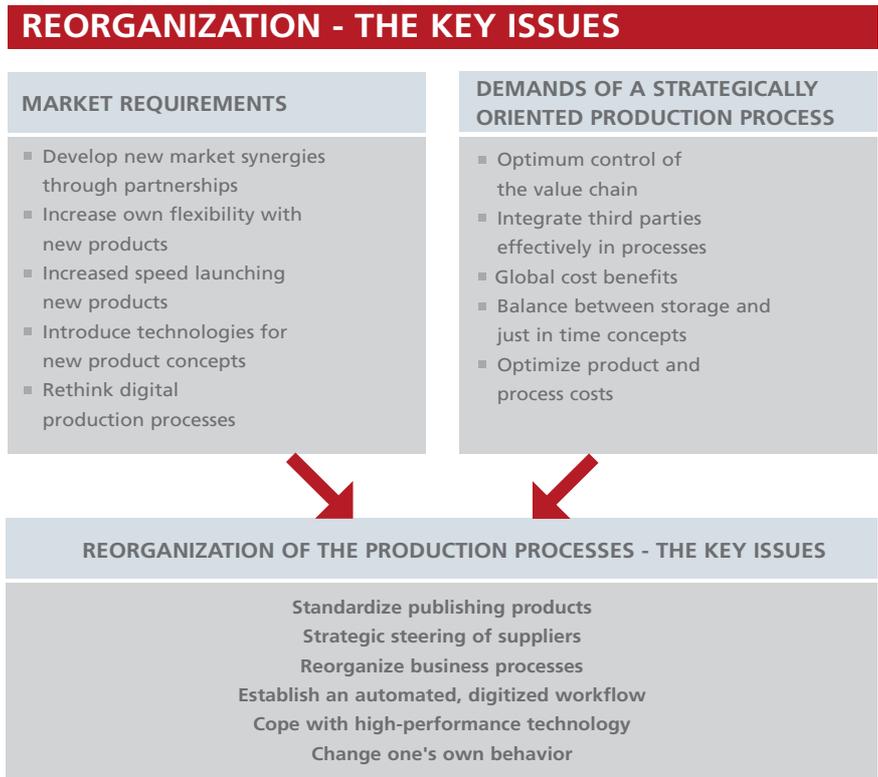
The **trend towards individualized print products** also demands a suitable answer to the question of whether the product can now be completely created using digital print processes or whether the black and white section is incorporated into the color page finished in the offset. As the industry becomes increasingly concentrated, many production departments are finding that they are not only required to work together with colleagues from former competitors, but also to create new merged production divisions.

It is not only in the corporate landscape that internal elements are being merged together for joint market launches. Publishing companies are **increasingly seeking partnerships, even with direct competitors**, as it becomes more difficult to reach target groups, as marketing expenditures rise and as new publication processes become more expensive to finance.

'Combination products' that are the result of these mergers are to be steered by production beyond the boundaries of the publishers involved. For production to achieve this, it must possess exceptional coordination capabilities and have professional project management skills. Only then can dozens of products be launched successfully at the exact same time.



Rethinking production and the processes involved



Strategic answer:

Product standardization

Even if it sounds paradoxical, the answer to the demand for increased flexibility, speed or individualized products is: standardization.

Standardization makes economies of scale possible

It is standardized formats, uniform layouts, a fixed color scale or a defined font palette, that allow different products to be flexibly singled out on the one hand, and, at the same time make it possible to achieve economies of scale in the joint production of books and journals. Without hindering product quality that meets both the needs of the market as

well as of the target group, a cooperative production can reduce production costs by up to 25% in the production of books or journals.

Defining product standards

The first step in standardizing products is to define standards. Once defined in writing, the publishing house must communicate these standards to all those involved in the process, both externally and internally, in a way that is easy to understand and these standards must be made binding. These kinds of activities still represent new ground for publishers while compa-

nies in the automotive industry are old hands at this game. 40% of the parts used in the Chrysler 'Crossfire' model, for example, were the same as those in a previous model. The distinction is made in the exterior of the car, i.e. in how it is perceived, which is the same role that production plays in publishing. Acceptable, customer-specific models must be created with which the same internal engine always produces the corresponding cost advantage.

Strategic answer:

Partnership with suppliers

Publishers, who have a notoriously weak position in the procurement market, improve their position by concentrating their low procurement volume on a small number of suppliers.

This strategy not only leads to advantageous prices, the higher volume associated with it also secures the working relationship and more easily controlled product quality.

Increasing influence

This type of strategy, particularly from the point of view of quality assurance, is target-oriented. The reason is that publishers increase their influence on suppliers with

the growth in volume. Influence means that the publisher can negotiate production deadlines and work together with suppliers to develop products. And, this can be cemented in agreements with suppliers.

Influence therefore is the basis not only of better prices, but also and more importantly of quality control. Quality assurance, in turn, is becoming increasingly important as digitalized workflows become more common because they eliminate physical transport and make it less possible to physically intervene to make adjustments.

There are also practical reasons. If data files are to be used throughout the entire process, starting with the publisher all the way through to the printing machine, this can only be accomplished through working closely together with suppliers. Reaching a consensus with ten or twelve partners is certainly more difficult than in a more concentrated form with fewer strategic partners.

Active supplier management

It is extremely important to actively shape the relationship with suppliers if the optimum balance is to be found among the publishing production factors of time, cost and quality.

It is necessary to set up a continuous workflow, starting with the order placed, through to incoming goods and stock taking, all the way to invoice receipt and final calculation. It goes without saying that a powerful and efficient software application will achieve this more successfully.

Direct access to supplier data

The foundation for success in procurement and production processes is having readily available core data that can be accessed by all production managers. This data includes the core supplier data, with addresses, contract details and price lists, as well as core product and project data for the management of materials, particularly of paper.

Efficient order management

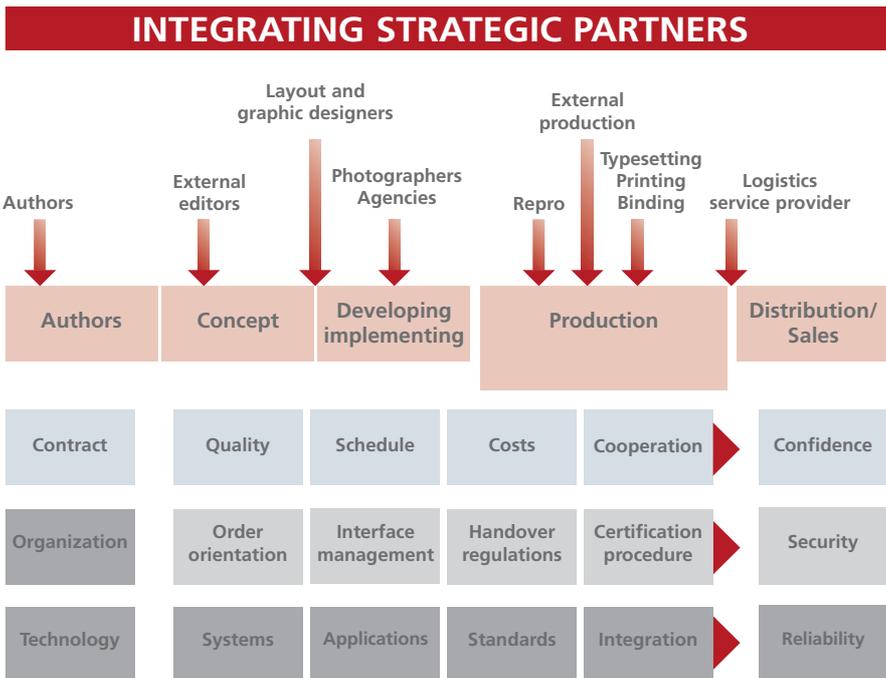
An efficient supplier order management system allows orders to be generated quickly and automatically passed on (by fax, e-mail or JDF). Once generated, orders can be tracked by means of an **order control station**. The whole production process can be managed effectively not just by means of internal order overviews but also by using information from suppliers regarding the status of planned, current and completed orders.

Automated invoice receipt

The primary hand-offs of supplier services are the delivery of goods and the receipt of the invoice. More and more frequently automated receipt processes are used here. Digitized delivery notes and invoices are collected and assigned directly to supplier orders. Invoices are then automatically sent to accounts for payment and assigned a cost center and cost unit, which makes the invoice amount available for the final calculation.

Efficient stock management

It is still necessary to manage stocks. First, stocks of finished products, the continuous availability of which, is the responsibility of production that then triggers a follow-up edition when necessary. And, second, the administration of inventory for paper and materials (binders, slipcases, indexes, envelopes, etc.). For both of these activities, an efficient software application is essential because this is the only way it is possible to accurately control stock levels in fast, automated workflows. It is particularly important to maintain stock at printing houses and book binders and to reserve paper and materials as part of the production order, as well as triggering a warning message when a minimum stock level has been reached.



Partnerships demand coordination and project management from production

Strategic answer:

Consistent process organization

In the past, the focus of publishers and production was largely aimed at reducing production costs. The technical revolution in pre-production and printing together with new types of production can lead to double-figure savings, if used consistently.

Streamlined processes - lower costs

By contrast, there is still a lot of catching up to do in the areas of reducing product throughput times from the original idea to availability on the market, flexibility in production as well as lower process costs. One resource that has the potential to

cut costs quite dramatically also exists in the consistent reorganization of processes.

Ultimate production control

Rapid market launches in the print sector, simultaneous publication of books and CDs or supplying web portals makes it necessary to have a driving force in the background that coordinates these methods of publication and manages the way that they are supplied with content: this force is production. Because deadlines tend to slip early on in workflows (late receipt of the manuscript) and because mistakes in the process lead to higher

costs the later they are discovered, publishers are right to implement an active control system for the entire production workflow and to put this in the hands of the production department. This not only gives production the wherewithal to actively influence the chain of processes that they are at the end of, the entire publishing house must also benefit from having the workflow managed from the end, working backwards: this way deadlines are more likely to be met and process costs kept to a minimum.

Strategic answer:

Controlling allocation processes

The sales planning phase is used to establish what quantities of a publisher's new products and follow-up editions the market will accept. Although this planning stage is always rife with uncertainty, it can be considerably improved upon with the support of an efficient software system. Past sales figures, the sales performance of comparable titles, typical seasonal factors affecting a market or the lifecycle of a product group serve as a solid background upon which those in charge can base their decisions.

Allocation relies on sales planning

On the basis of the fixed sales figures, the production manager can carry out production allocation. Determining production and procurement orders, reserving re-

sources from suppliers, utilizing internal staff to their fullest capacity: everything is dependent on the products and quantities approved by planning committees.

Quick planning with product parts list

For all types of products, whether books, journals or CDs, allocation can be considerably simplified and accelerated when the publishing products that are subject to a product standard are provided in a product parts list with a defined structure. A simple structure for books could consist of content, binding and jacket. A more complex structure across several levels would be a book with several inserts

and a CD, as well as the link to the individual book and CD.

Allocation triggers orders

On the basis of this type of structure, the various allocation processes could be generated such as typesetting, CD mastering, printing or binding. These are all processes, which could, in addition to being assigned to stored suppliers, also trigger the reservation of paper and materials. The order management system, in turn, accesses this information, supplies the allocation data to the orders to be initiated and transfers the orders electronically to the suppliers. This is not a pipe dream but a technical feasibility that holds even more potential once product standardization becomes more advanced.

Strategic answer:

Automated publishing production

Automation makes it possible to carry out technical processes automatically in accordance with a clearly defined schedule or in relation to predefined conditions. With respect to publishing-related production processes, "automatically" means that

many processes still performed manually today, such as manuscript receipt or data transfer to the typesetting company, will be possible in the future without human intervention and will instead be carried out by computer-based systems.

Automated data collection

Starting from where content enters the publishing house and the paper workflow: a manuscript arrives at the publishing house, is taken out of its envelope, quickly checked and then placed in a filing tray.

Success lies in the way that processes start, in automated environments.

Automated data collection means that, for example a picture is immediately converted to an appropriate format for production, so that it can be used in the publisher's publications.

Ongoing content maintenance

If a publishing house that is in line with its market and its target audience, wants to access its content at any time and to be able to place this content at any time in any publication format, the publisher must be able to keep this content up-to-date and continuously ensure that the value of the content increases by adding to it, creating links, etc. In encyclopedia production, for example, some publishers maintain the content of the encyclopedia in a central database, which has its own complete editorial staff, assigned to it, responsible exclusively for updates. A special editorial department accesses this up-to-date content and puts together a special product for a specific purpose.

Automated publication platforms

Automated workflows end in publication platforms, i.e. in areas used to supply a specific publication channel, to supply data to a digital printing machine, to produce a CD or to supply data to a web portal.

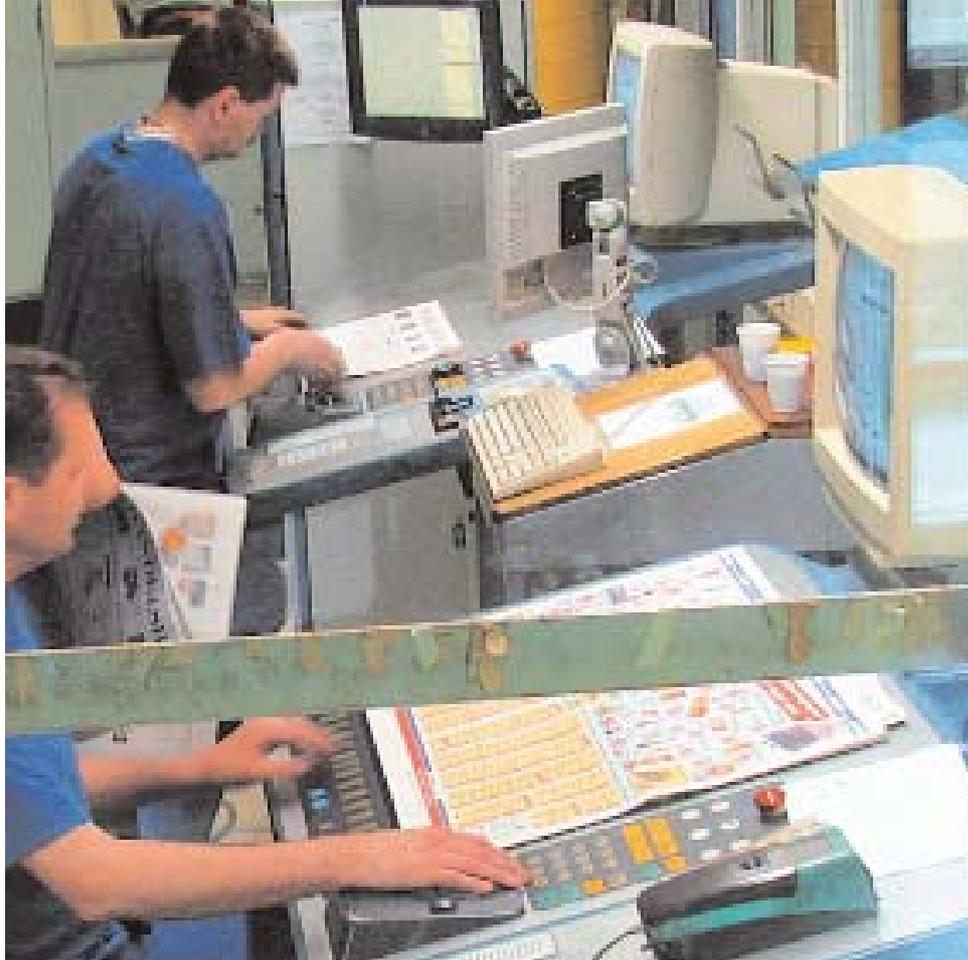
Defining content standards

Only those who comply with the respective standards, i.e. using XML based on a "Document Type Definition/DTD" for texts and color management for images etc. can publish using automated methods

Prerequisites for automated publishing production

Trust and communication

Flexibility, automation and speed can only be achieved in production processes if the relationship between production and its suppliers is based on a high level of mutual trust and supported by framework agreements. Those who maintain close contact with their suppliers and communicate proactively, experience increased security and reliability in processes and the results.



Consistent color reproduction with color management

Today, if you print an advertisement on an offset printing press and view the same advertisement on your own monitor, the colors look different from each output medium.

This inconsistency in the way colors appear does not just prevent workflow automation, it also makes signing off the color quality an extremely intricate business.

To make consistent, vendor-neutral color output possible, a color matching module (CMM) that translates colors between different devices must be installed on the operating systems of various output systems (offset printing presses, proof systems, inkjet printers, monitors, etc.). An ICC profile (ICC = International Color Consortium) used to define which color space the device can display

is assigned to this CMM. It is advantageous when a CMM works in the Lab color space.

This color space is not only able to display all colors visible to the human eye, it is also adjusted to the color sensitivity of the human eye.

Unlike the RGB color space (for scanners and monitors) or the CMYK color space (for example for printers), it is not dependent on input and output devices. This is why the Lab color space can be used as an exchange format between the devices in the workflow.

The fact that it is possible to measure all Lab colors exactly with a spectral photometer also makes it interesting for production companies.

Increased productivity and automated workflows

The main topics discussed at the Drupa 2004 print media fair in Düsseldorf, were further improving productivity using more powerful technology, and 'increased performance in the workflow'. The costs associated with order processing that today stem from administration, errors and waste paper can be cut by 50% per order by setting up automated workflow and capitalizing more on internet use.

New technologies

In addition to faster RIPs for plate setting, pre-production introduces the digital, color-proof on-screen. The print industry is currently investing in more efficient printing machines, the focus of which, in addition to creating illustrations in the printer, is fast paper feed, increased printing speed, a reduction in the volume of waste paper and easier operation of the machines.

Automated processes

'JDF' was the topic that received the most attention from participants. The goal is not just for printing machines to exchange their data on this basis, the systems of other service providers are also to be incorporated. Consequently, the trend is moving in the direction of machine and device development. Making them JDF-compatible, thus making it possible to set up entire print and binding processes.

Internet as a collaboration platform

Since this last Drupa, the internet has helped to extend business processes to the customer. Customers can place their orders via order portals, modifications can be made on-screen in real time and ongoing production can be monitored.

Job Definition Format (JDF) Exchange Format of the Future

The XML-based Job Definition Format (JDF) is intended to become a universal integration standard. It connects the production and ordering systems throughout prepress, press and postpress as well as integrating data from the systems of customers, such as publishers.

CIP4 (International Cooperation for the Integration of Processes in Prepress, Press and Postpress / CIP4.org) is in charge of defining and documenting the necessary processes, data formats, transfer rules, etc. All specifications are published and made available for shared use in an open source library by a software module developed by one of the members.

At the beginning of 2004, 40 manufacturers got together to form CIP4 including Adobe, AGFA, Heidelberger, MAN-Roland, Müller-Martini, etc. They did not just commit themselves to following the JDF standard, they also guaranteed that each machine, device and software application that they bring to the market in the future, will be based on the JDF specifications with no adjustments to other manufacturers' specifications necessary. It is this guarantee in particular that inspires confidence that JDF will become a sustainable industry standard.

JDF proved its advanced applicability as early as version 1.2 during the Drupa 2004. The machines and software from a wide range of manufacturers were integrated into the automated processes set up in the 'PrintCity', for example, for printing newspapers or catalog production, and they all worked together smoothly.

Transferring responsibility to production
Production, because of its strategic significance for the success of the company, must be given a considerable amount of responsibility. Production should participate in the publishing house decision-making process and be informed at an early stage about adjustments to the program. Only by being taken seriously can production release its creative power. This can be used to organize sound processes and achieve reliable product quality.

Creating new areas of expertise

In order to be in a position to continue to satisfy demands in the future, the workforce must continuously be trained in the following areas:

- **data management**, including format determination of meta data and content data and linking
- **content management**, i.e. structuring on the basis of DTDs, development of style sheets and archiving
- **project management**, steering processes, cost control, interface management and supplier control
- **workflow management**, setting up workflows, testing automated workflows or technical interfaces
- **quality management**, with assurance of data consistency, production suitability of content
- **skills using technical systems** including order and resource planning, author tracking, content management and media assets systems, etc.

Strategic answer:

Efficient computer-based systems

Powerful and integrated information and communication systems serve as the technical basis for automated workflows in publishing houses.

The administrative computer-based systems of production

These include, on the one hand, the control and administration systems, which, for production, are the order, and procurement systems used to place supplier orders and monitor suppliers. These systems also make it possible to access warehouse stocks and thus, information about minimum stock levels or projected availability. They support the allocation and production planning and increasingly also access to internet portals.

The manufacturing systems of production

It is not enough to use order-processing systems to personally administer and control content. In addition to the content and media asset management systems, it is also necessary to provide special platforms for data collection and publication of content and other information. For example, internet-based author tracking tools, which can be used to integrate authors into publishing house workflows. For science, the entire certification process with publishers, certifiers, authors,

editors, etc. can be represented in these types of platforms up to the point at which the certified and approved contribution with all of its assets is automatically transferred to a pre-production partner of the publisher who then supplies the publisher with production-ready material on the basis of a framework agreement and controlled and tested processes.

Integration of computer-based systems in publishing houses

These types of systems have not yet been universally cultivated in many publishing houses. This means that even though there are often administration systems available, and even some high-performance solutions for content management, **it is not very common for the administration system and the content management system to be connected to one another. If, however, automated workflows are to be set up, this is the key prerequisite.**

Because only then can the order be connected to that which ultimately controls the order, i.e. the content that is, for example, to be published as a book.

<http://www.brunold.com>



Wolf-Michael Mehl,
Director Klopotek & Partner GmbH

PPM Production - The Market Standard for Core Production Processes

The production component in Klopotek's Production Planning and Management system (PPM), gives publishers a highly advanced module that integrates the core production processes into a comprehensive IT system for publishers.

Regardless of whether the publisher's production business model centralizes production services into a single department or whether production is a decentralized service within departments, groups or teams: working efficiently within set budgets requires IT support that incorporates knowledge of standardized processes and, at the same time, offers publishers the freedom to configure the system to their own requirements.

Klopotek & Partner offers this type of support and, the production component in Klopotek's Production Planning and Management system (PPM), gives publishers a highly advanced module that integrates the core production processes of the publishing industry into a comprehensive IT system.

But how do publishers define the way they perceive production?

Where do the parameters come from that a production department not only uses to project costs and determine key figures but that also shape its core processes?

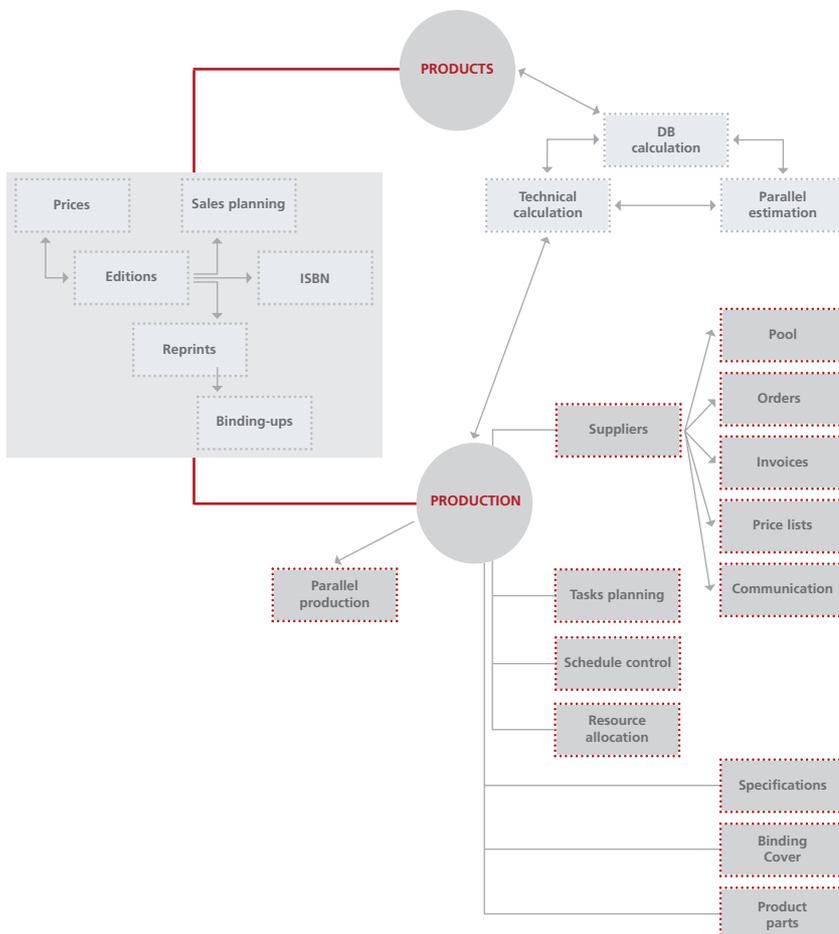
In every case, the starting point is each individual publisher's model which describes how the publishing house organizes and defines itself. Requirements for the production business processes are defined as a result of this. Whether or not a publishing house is successful in economic terms is measured in terms of a break-even analysis of completed projects.

The break-even analysis is one of the key elements in the publisher's profit and loss statement. It ultimately determines how the measurement and control variables are structured, these in turn act as a basis for calculating the success of the entire model.

And, of course, planning decisions within the publishing house are strongly affected by the anticipated costs calculated for a project. In this respect, the publishing model determines the production business processes.

Production means managing complex business processes with a high level of internal and external communication

The keywords of production are incoming electronic information from suppliers, authors or editors (on CD, via e-mail or using web-based peer-review systems), content management systems, media-neutral data storage, digital production, allocation, order, invoice and supplier management. The goals of production are to reduce administrative work, shorten production cycles, coordinate with service providers at short notice, make key figures available and create flexibility for orientation around strategic issues. This task requires a highly-integrated business process structure. Breaks in the system between divisions must be avoided. Standards should be used.



What can the new version of PPM Production do?

Current PPM version (7.8)

Planned PPM version

FUNCTIONALITY FOR WORKFLOW OPTIMIZATION

- Definition of task templates for standard workflows
- Calculation of production cycles depending on the project start or the delivery dates
- Dependent dates, milestones, fixed dates, parallel processing lines
- Assignment of internal (staff members, departments) and external (vendors) service providers resources for tasks
- Schedule tracking, critical projects, task lists for each staff member
- Automatic notification
- Integrated reminder function
- Freely definable processes for production projects

- Synchronous linkage of editorial department and content management systems
- Automatic data exchange with service providers via XML / JDF for planning queries , orders, processing status, shipment information, invoices
- Scheduling and monitoring of parallel projects (dependencies, bundling, milestones, sub-projects...)
- Interaction between PPM schedule calendar and PPM transaction management
- Company calendar, automatic reminders

FUNCTIONALITY FROM ORDER MANAGEMENT TO SUPPLIER MANAGEMENT

- Order creation on the basis of calculated costs (supplier price lists)
- Input of supplier invoices, assignment to edition/reprint, calculation of PC/unit, finished/semi-finished products, stock evaluation
- Transfer of invoice data to financial accounts / import of invoice data from financial accounts
- Letter / e-mail communication with suppliers
- Supplier master data including individual classification
- Reporting
- Material management

Supplier control station

- Supplier order cycle:
Suppliers determined by allocation ▶ calculation ▶ scheduling ▶ order confirmation (Word, fax, e-mail, XML, JDF) ▶ info to financial accounts; supplier sends status information back ▶ partial or complete shipment ▶ partial or complete final invoice ▶ accounting of invoice ▶ final calculation ▶ invoice to financial accounts
- Transparent supplier: automatic calculation of key figures to stay on schedule, stay within budget, quality, order volume planned - in progress - completed; supplier contracts
- Material allocation, production parts lists

FUNCTIONALITY FOR PLANNING AND CONTROLLING

- Technical calculation / database calculation for individual and parallel products
- Final calculation (comparison of all calculation stages with actual costs)
- Reporting for evaluation of planned turnover / planned costs compared to actual turnover / actual costs
- Analysis of schedule / task status per staff member or supplier

- Calculation:
Standardized, adjustable model for technical and database calculation according to database levels for different product types
- Automatic controlling at the click of a button in adjustable cycles:
Evaluation of suppliers, products, projects, staff members, processes
Analysis of schedules, costs, database levels, quality, stock levels
Comparison planned - target - actual; projection flexible selections and groupings (the project, department, supplier, staff member, profit center, publisher, product type, freely definable classification)
- Production controlling as part of the publishing house's break-even analysis
- Integration of journal production

Production business processes

The core production processes become readily apparent when we take a look at how a new product ideally comes into being: when a concept is first being drafted for a new product, there needs to be an easy way to create an initial calculation so that the planning phase is based on objective criteria. If the project is pursued further, one or two more detailed calculations, such as a planning or allocation calculation, are required so that the editorial department is able to reach a final decision about production.

A sophisticated supplier management system supplies the calculations with the most recent prices and gives instant access to the latest key figures. These figures can be used to prepare for upcoming negotiations with service pro-

viders and define the ideal negotiation strategies.

If the decision has been made to put a new product into production or to continue printing a successful title, it is up to allocation to determine the right edition size for the respective time period and it is up to production to make sure that the right amount of paper is available at the right place.

The entire workflow must be monitored, starting with requesting quotations to awarding the contract all the way through to monitoring the schedule for the current production processes. It is not uncommon for a single project to have more than 80 individual deadlines that need coordinating.

The supplier invoices are collected and reviewed and the costs allocated to projects. This serves as the basis for production controlling as well as being an essential element in publishing controlling.

As we can see, production is not an isolated process in a publishing house. Production is involved in the early planning stages and is a key communication partner both internally and externally.

Production organizes and calculates, acts as a partner for controlling, marketing and sales, assigns and manages both internal and external suppliers - agencies, authors, pre-press facilities, printers, bookbinders:

The production manager is in charge of the entire workflow.

The standard software for production

Version 7.8 of the Product Planning and Management system (PPM) is a fully integrated production component that provides the support needed for modern production processes within a single system. The PPM production component incorporates the core processes of the production department, offering the right kind of help at each phase of the project.

Calculation

Initially, the calculation is a rough estimate of specification details and production costs for a title. As the project progresses, different types of calculations with a greater level of detail become necessary so that alternatives can be assessed based on well-founded information.

In the PPM production component, once a calculation template is defined, it can be reused, significantly reducing the amount of work. Different versions of calculations can be kept or frozen at different stages. Which decisions have been made and which have been revised is completely transparent at all times. After the calculation is complete, it is time to analyze the anticipated break-even. It is here that the advantages the Klopotek integrated publishing application offers come to light. While the production manager is putting together the initial calculation, the planner has already forecast the sales figures for the upcoming sales periods broken down by different sales channels. Calculated production costs, estimated number of working hours and projected

revenues are transferred to an Excel spreadsheet which is where the publisher-specific break-even analysis will stay.

The unique feature of this software is that several projects can be analyzed and assessed together.

The PPM parallel estimation makes it possible to analyze hardcover and paperback for a title, multi-volume works and encyclopedias bound in leather, student editions and the CD-ROM version. Or, you can calculate the materials for a school book, answer key, workbook and parent edition together and determine the expected break-even.

Outlook:

Klopotek will integrate rights and marketing information into the calculation. This allows anticipated rights costs and planned rights revenues to be included in the break-even calculation along with planned marketing activities and those with calculated costs to be included by the Klopotek CCM component.

Supplier management

The way supplier relationships are managed is structured in a way that is clear and easy to use. Up-to-date supplier pricing information serves as the basis for an accurate calculation. With PPM administration tools, the price elements and costs types to be used can be flexibly defined. Standardized batch procedures import the price lists. This, in turn, reduces the amount of work and ensures that the price information is always kept current.

The optimal supplier can be easily determined using the supplier classification. Some activities can be already be assigned to preferred suppliers beforehand. The powerful PPM reporting tool offers you various customizable options for analyzing the business you do with suppliers at the click of a button.

Outlook:

Klopotek will establish the Job Definition Format (JDF) as the new standard of communication between publishers and service providers in PPM. JDF links all of the administrative processes related to sales quotes, calculation and invoicing to production management.

Material allocation

The decision has been made to produce a title or to reprint a current bestseller and orders to suppliers are initiated. At the same time a new print order is created in the PPM production component, the paper required for printing, for example, is reserved in the paper warehouse. If more paper is planned than available at the required time, paper can be ordered

or stock transferred from a different site. If the print job is activated, the pre-reserved paper quantity is marked as allocated and cannot be planned in for other projects.

Outlook:

Klopotek will add a separate material allocation module to PPM. The role of material allocation is to determine the amount of materials required for all future projects and to compare this with - the current stock levels distributed across the participating suppliers and the supply warehouse, taking into consideration the times these materials are scheduled for the projects. The material allocation component brings together the material stocks, the material orders and the supplier orders so that they can be viewed at the same time, thus supplying complete and to-the-minute information about materials.

Project management

In an ideal project, project management informs service providers about planned projects at an early stage.

The XML-based supplier interface in PPM makes information about current plans for each supplier available.

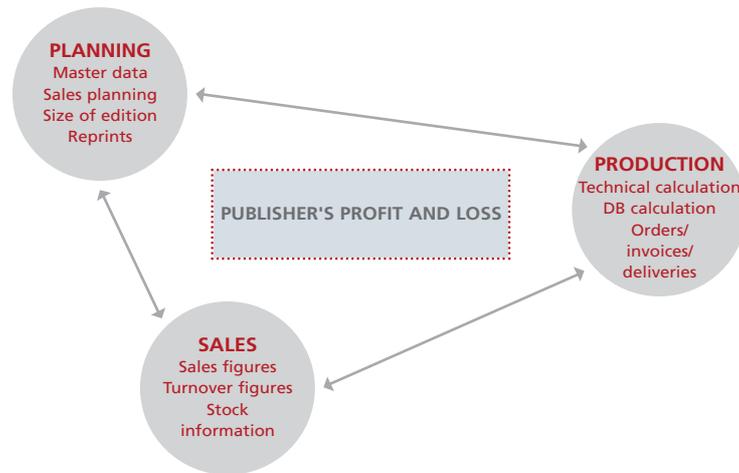
If a project has started, the goal is to coordinate and monitor complex tasks. Klopotek's integrated scheduling and resource planning provides support. It makes it possible to run through various scenarios from start to finish. Potential slips in the schedule are shown in the schedule in a way that is impossible to miss. Activity plans for specific individuals can be created from project plans and the reporting tool makes it easy to show when individuals or departments are working at full capacity.

Automated order management with PPM

Automatic order management will be possible:
Editorial department plans projects and schedules ▶ Production supplies calculation and specifications ▶ Production requests quotation ▶ Service provider creates quotation for production ▶ Production reviews the calculation ▶ Production awards project to service provider ▶ Service provider sends contract and schedule confirmation to production ▶ Service provider sends proof copy to production ▶ Production and editor review and send change order or sign-off to service provider ▶ Service provider begins production ▶ Information on processing status is visible to the publisher via PPM Web Services ▶ Service provider sends shipment information and invoice to publisher ▶ Production performs adjustment and activates financial accounting.

PPM gives you a way to integrate the publisher's profit and loss statement.

Planning creates sales forecasts for the lifecycle of a title; production first offers calculated production costs and then later, actual ones, the sales force drives sales and turnover figures. PPM shows the break-even analysis across all titles.



Outlook:

Klopotek will continue to enhance workflow management for PPM scheduling.

Dates that affect all projects or sub-projects within projects will be more efficiently coordinated. Different kinds of automatic alarms will be integrated. The inter-relationship between calculated costs (which also always represent process steps), sales quote and order management and scheduling will continue to be improved. This will allow workflow controlling to maintain its central position in the PPM production component.

Production controlling

Supplier invoices are entered into the accounting system and then checked and accounted for in production. Or, the invoices are first checked and accounted for in production and then handed over to accounting.

PPM offers you both options: you can enter invoice data in PPM first and then transfer it to financial accounts or an interface transfers the data from the financial accounts to PPM.

Either way, the production manager in charge sees the order, the invoice and the current stock levels at a single glance. This lets orders be adjusted and invoices approved.

The production manager always has control over open orders and received invoices and over the evaluation of material and finished and semi-finished products. Ideal support is provided for cost control and project analysis.

The control station

In the future, PPM will be accessed via the new production control station. The production control station makes key information visible and easy to select in the production area.

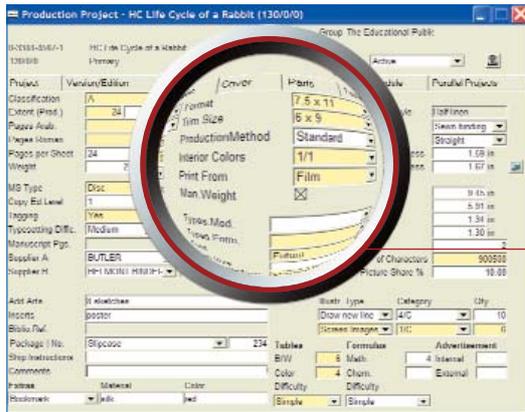
Using the status information, the production manager can see right away which project, which process or which date requires immediate action. You have the information you need at your fingertips without having to search.

The production control station will bring together information about projects, orders, suppliers, responsible staff members and scheduled dates. The structure of the control center will be customizable per publisher.

User interface

General improvements to the production component also include improvements to the user interface. In the future, it will be customizable and provide different display options that reflect the complexity of the process.

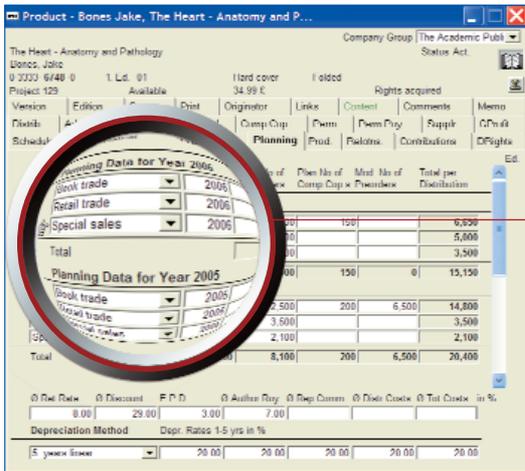
PRODUCT SPECIFICATION



New Features

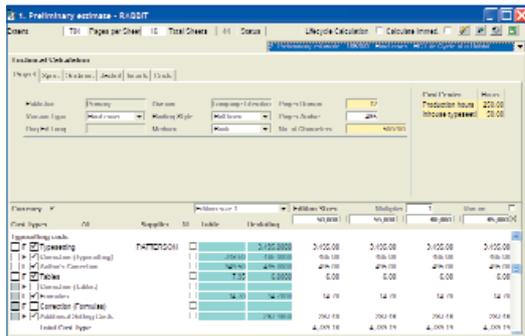
The benefits of **product specification** are two-fold: not only does it supply parameters for the production process, it also serves as a basis for the calculation.

PLANNING DATA



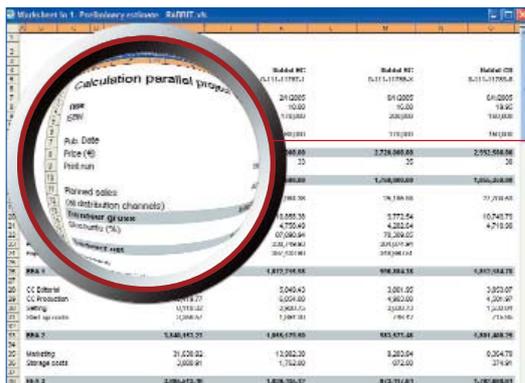
Planning data can be entered per sales channel over a period of several years and then viewed broken down by month.

PARALLEL ESTIMATION



With the **parallel estimation**, you can view several production projects with the same specifications or different tasks for the same title at the same time. This makes it possible, for example, to share out translation costs or lower paper costs.

EXTENDED CALCULATION

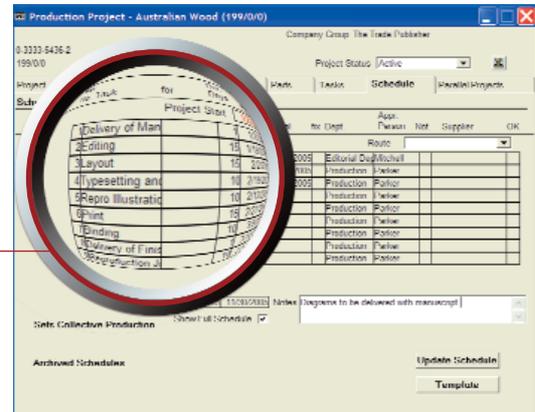


Extended calculation in Excel: A button click transfers the calculation data for several product versions from PPM to a customizable Excel spreadsheet for break-even analysis.

in PPM Production

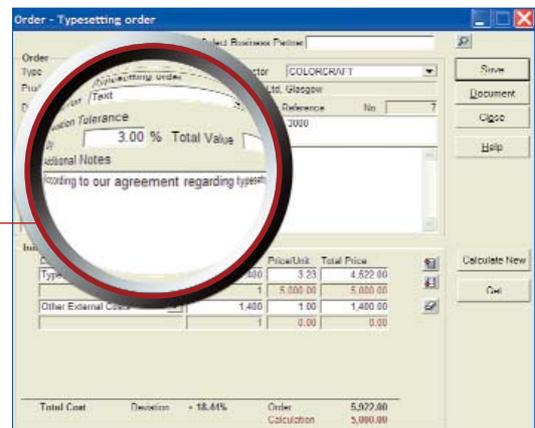
SCHEDULES

Schedules are created on the basis of standard templates. Tasks and dependencies are displayed along with responsible staff members and suppliers. Timeframes are calculated for each task and overruns are displayed in red.



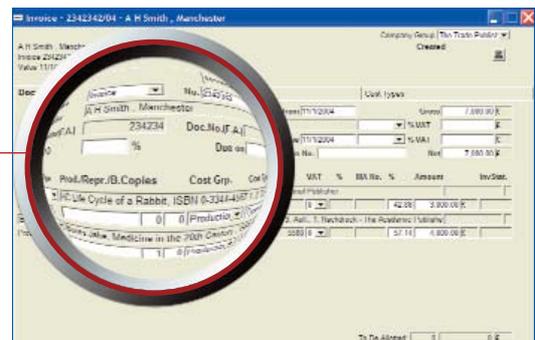
ORDERS

Orders for all types of service providers can be generated directly from the production project, individual items can be pre-assigned to calculated costs in the accounting system. Existing data in PPM is transferred to Word templates.



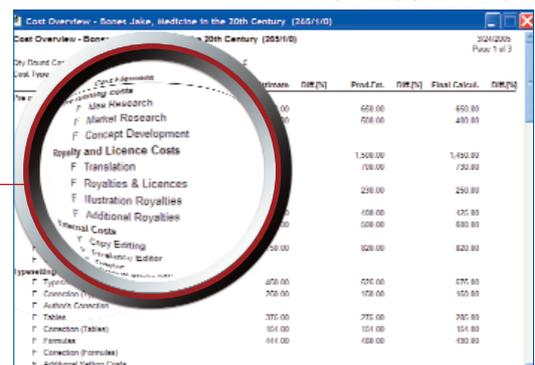
SUPPLIER INVOICES

Supplier invoices can be entered and assigned directly to one or more titles. These invoices form the basis for calculating the production costs in the final calculation.



FINAL CALCULATION

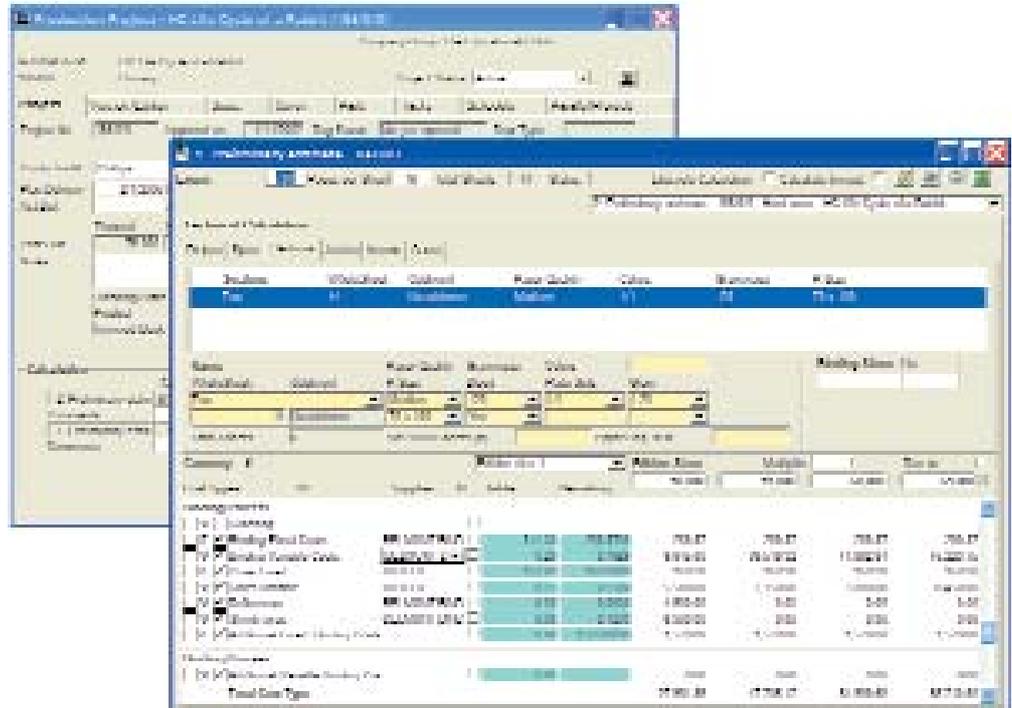
The final calculation sets calculated costs against actual costs and displays the difference as a percentage.



Calculation and Break-Even Analysis with PPM

Calculation with PPM

Once the first parameters of a new title are fixed PPM runs the automatic cost price calculation based on supplier-specific price information. During the planning process, parameters will be modified. PPM's versioning functionality logs the history and displays the current cost estimation.



PPM supports the break-even analysis

Cost prices are calculated for the hardcover and paperback edition and for the audio book. Benefits resulting from the parallel production of different versions are already taken into account in PPM. Now the extended calculation in Excel can combine the production costs with the planned sales figures, the apportionment of indirect costs and calculated break-even levels. No further data input and no further manual calculation is necessary.



Integrating Applications

A Critical Part of Digital Workflow Implementation

The interactive metadata exchange requires new technologies based on XML and web service technologies

You, as the reader, may feel: Technology for production software? Can't I just stop reading here? It doesn't matter how a software application is made, what's important is that it works. Well that's not actually wrong: if something works, why should we be interested in how it was made? But there are also compelling reasons to continue reading. Because a software application like PPM Production should be comprised of more than just the 'functionalities' that production managers use for their work.

Consequently, I would like to set aside the discussion about technology in general and take a look at the technical specifications required by a PPM production software. In doing so, I will not address software architecture and internal structure because they are only useful to the production manager in as much as they contribute to a smooth operation. We all see software applications today as self-contained. We think, that's just the way it is and the way it has to be, especially if different manufacturers are involved. We take it for granted that we are able to operate several applications and accept their insularity, we're even happy when

we can get data out of one application and into another.

Each of you will have left your address in an online shop at one time or another. We consider it normal for this online shop to store our address in 'its' database. A different software application (an ERP system) will later on deliver the product you bought and write an invoice. We think it is equally normal for the ERP software to store our address in 'its' database. We expect there to be 'interfaces' between the two applications. The address and any changes to it are supposed to be transferred from the online shop to the ERP software. Changes to the address in the ERP system should also be routed back to the online shop.

This fairly simple example of a single address illustrates how quickly keeping identical data in several different systems and synchronizing it via interfaces can become less than ideal. It is complicated, time-consuming and error-prone. And, it requires exact coordination between the two interfaces.

Moreover, the interface can only be used at exactly this point. Overall, this process is inflexible and expensive.

Before taking a look at this problem and how to solve it with respect to production, we should take a look at the special environment that a PPM software application is used in for production; when we talk about technology in a production context, we are talking about how to make interfaces smarter because no matter how good PPM product planning software is, in a production department it cannot suffice alone.

So what is the 'environment'?
(See Fig. 1)

Already being used in-house is:

- 1) a content management system to structure, edit, store and combine the text-based content
- 2) a media asset management system, an image database, a streaming server, etc. to manage the unstructured media assets ranging from covers with different resolutions to multimedia assets (sound, film, slides)

We already have an obvious correlation:

The 'content' in the content management system is precisely one of the relevant things that is incorporated into planning in the PPM production system.



Gregor Wolf,
CTO Klopotek AG

This also applies to the high-resolution cover in the media asset management system that still has to be merged together with the text-based content from the content management system for the prepress phase.

Almost right away, we can see that production is dependent on using more than one specialized and functional IT system within the publishing house and that data and information about data (metadata) is exchanged and synchronized with the outside world.

Here is another example:

Wouldn't it make sense for the content management system, which 'knows' the status of the content for a product ranging from 'not started' to 'completed', to communicate this information to the PPM planning system?

Let's take a look now at the relations between the production departments and the suppliers (see Fig. 2):

- 1) More and more, groupware, i.e. software that allows people who are not in the same place to edit the same documents, is being used to exchange data with authors, printing houses and service providers.
- 2) An incredibly important exchange of data takes place with the printing house and related service providers (and vice-versa).
- 3) e-procurement platforms will also become more important for the tendering procedure and the integration of strategic suppliers. It will become increasingly necessary to store data only once, to exchange data and metadata and to provide status information in both directions.

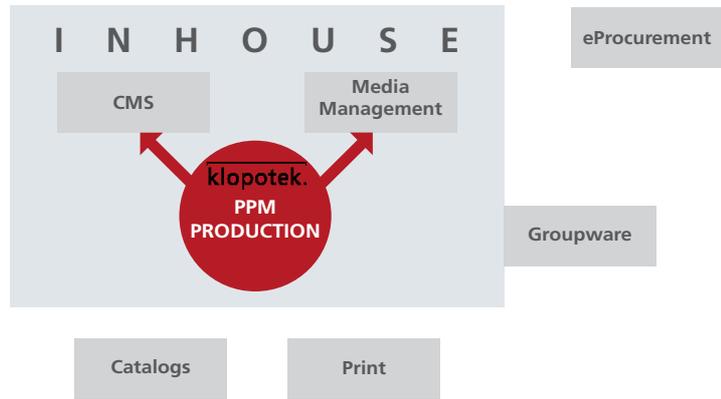
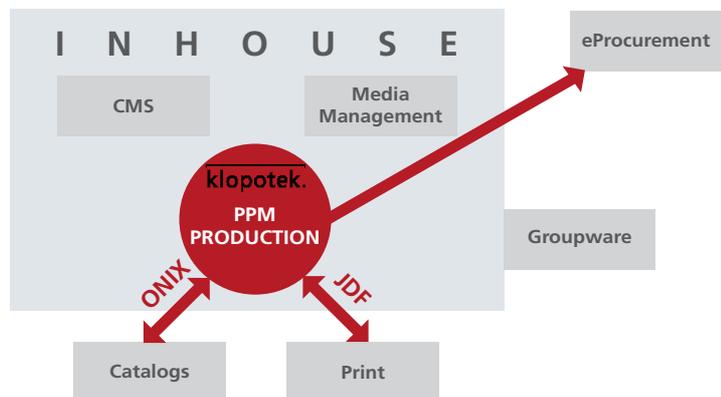


Fig. 1
'Technology' in the context of 'production' means making interfaces smarter.

No matter how good the PPM Product Planning software is, it cannot solve everything. In-house, the text-based content is structured by a content management system and the unstructured media assets are managed. New technologies are needed that can facilitate intelligent data exchange between these two systems.

Fig. 2
Outside of the publishing house, there are systems that will exchange data with PPM.

More and more, groupware is being used to exchange data with authors, printing houses and service providers. Systems that integrate printing houses and related service providers are being networked. e-procurement platforms will also become more important for the tendering procedure and the integration of strategic suppliers.



For the strategic development of PPM, this means:

- 1) We are positioning the PPM production component to be the only core planning software system for the publishing industry.
- 2) All metadata will be managed and processed in PPM. This requires complex and extremely effective functionality, e.g. in the calculation and planning.
- 3) Content shall not be managed in PPM. But because content editing and processing generates metadata (statuses, for example), a new, more innovative synchronization mechanism must be created between PPM and the content management system, that updates PPM with the metadata of the content, which has originated, for example, from the printing house.

I think that this integrated approach is the only promising one.

Without complete and consolidated metadata, we don't have to even bother thinking about self-contained and effective planning and control processes.

Without this complete and integrated metadata, we can virtually write off the idea of using data strategically: How often has it been impossible to create a profit and loss statement right from the start because the necessary data is scattered throughout 20 systems with different structures (this is how data warehouse manufacturers make their living).

If we want to make the 'innovative synchronization mechanism' for data in PPM and for data outside of PPM available in future versions, it must be able to do more than the familiar old interface. We don't just want to exchange data. Instead, we want to reveal options for processing data. To make this clear from a terminological standpoint, I will introduce the term 'web services' and define this as:

- 1) We want to update data synchronously between PPM and third-party software, i.e. in real-time. This doesn't just speed up processing cycles, it reduces the need to replicate data in different locations. It also minimizes the problem of data becoming lost, getting stuck or being incorrectly converted when transported.
- 2) We don't just want data from PPM, we also want the functionality. If, for example, a content management system updates a status in PPM, it should also be able to tell PPM to recalculate the schedule.
- 3) We want to base the web services on the latest technical standards that have emerged with internet technology and that are so neutral and well-established that they function in many system environments. The idea is that every (!) printing house should be able to communicate the status of an order back to PPM without any adjustments on the PPM side, without any special converters and without any special interface programs.

Core concepts and technologies

It would be a little too much just here to describe the software architecture with which we want to achieve this. If you're interested, please have a look at our more in-depth software documents. I would therefore like to limit myself to an overview of the core concepts and list the key technologies associated with them:

- 1) Future PPM production versions will be equipped with web services in addition to import and export interfaces so that third-party systems can be integrated more efficiently.
- 2) Web services will be XML-based for data.
- 3) Industry standards based on XML will be implemented, in particular

ONIX and JDF (even though people are justifiably skeptical about when and if JDF will make the leap from being a well established exchange format for technical processes on the 'shop floor' to a format for overarching processes between publisher and printing house.

- 4) Data and functionality will be merged and exposed in web services and third-party systems will have access to PPM core functionality.
- 5) SOAP will be supported as a non platform-specific technology. It will be possible to transport data and call up web services in the LAN, WAN and on the internet independent of hardware manufacturers and operating systems.
- 6) The Klopotek technologies for this functionality will be technically merged and developed under the name 'Klopotek Web Application Server'.

Are we returning to 'best of breed'?

If we take this in a positive sense to mean that PPM will be the core planning system but will not carry out all software tasks in production and in its environment, then the answer is yes.

If, however, we take this in a negative sense to mean that only the most suitable software tool is to be used for each task without integrating other software and the overall strategy for the publisher's technology environment becomes invalid, then the answer is no.

More information is available on the Klopotek website at <http://www.klopotek.de/puptecnet/was/en/index.htm>

Contacts:

BENELUX

Klopotek BV

Oostenburgervoorstraat 120 -124
1018 MR Amsterdam
Netherlands
Tel. +31.20.5210.070
Fax +31.20.5210.098
www.klopotek.nl
www.klopotek.be

Contact: Ernst Lopes Cardozo
e.lopescardozo@klopotek.nl
Inge Wilmes
i.wilmes@klopotek.nl

GERMANY

Klopotek & Partner GmbH

Schlueterstrasse 39
10629 Berlin
Germany
Tel. +49.30.884 53.0
Fax +49.30.884 53.222
www.klopotek.de

Contact: Stefan Jacob
s.jacob@klopotek.de

UK

Klopotek UK Ltd

90 Long Acre
Covent Garden
London WC2E 9RZ
United Kingdom
Tel. +44.20.7716 5500
Fax +44.20.7716 5595
www.klopotek.co.uk

Contact: Alec Price
a.price@klopotek.co.uk

USA

Klopotek International

North America Inc.

1540 Broadway, 10th Floor
New York, NY 10036-4039
U.S.A.
Tel. +1.800.239.9254
Tel. +1.212.782.1182 (from outside US/Canada)
Fax +1.212.782.0358
www.klopotek.com

Contact: Carl-Hubertus Mann
carl.mann@klopotek.com
Edward Bonaski
e.bonaski@klopotek.com

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