

drupa 2008 – Michael Mittelhaus

Job Definition Format workflow at drupa 2008

Four years ago, drupa 2004 was already regarded as a JDF show and it was often referred to as such. Now, in 2008, I strongly believe that drupa will not only be a JDF show but also a “JDF workflow show”, confirms Michael Mittelhaus.

What are the reasons behind this conclusion and what will the (ideal) 2008 JDF workflow look like?



Automation is the trend

In comparison to 2004, internal workflows in the graphic arts industry today have evolved considerably. A very large number of printshops around the world have benefitted from more efficient and optimized JDF-based workflows, that have been successfully set up between MIS, pre-press and press resulting in savings of hundreds of thousands of euros a year.

With the introduction and testing of all the relevant cross-departmental (partial) automation of print media production via JDF, the print media industry is in a trial phase. The standardized job description achieved with JDF has enabled automatic job transfer between the MIS and the production departments. As a result, all systems, programs and control computers now speak the same language: JDF!

Simultaneously, the computer systems have created a “just-in-time” information chain free from laborious searches, progress reports and enquiries and this step has improved production significantly. As with all tests, faults occur but these are not considered as setbacks, more the basis for further development and optimization. However, the argument that JDF-based workflows are too complex, untested and require costly investments (particularly in post-press) remains a fact. This is simply untrue as the savings have not been weighed against the investments. Besides, as with all initially expensive technological innovations and automatisms, the prices do gradually fall until the technology becomes accessible to everybody. For instance, with platesetters, this process took the best part of ten years but it is now widely established. Why should it be any different with the JDF workflow in the print industry?

Automation begins with the customer

The 2008 workflow, which will start at the online portals of MIS providers (e.g. Hiflex E-Business) and pre-press workflows (e.g. Kodak Insite) will also integrate customers from the print industry. Other types of customer integration include web-to-print solutions and e-procurement software as well as ERP and SAP interfaces. In future, this workflow will directly provide the customers with the automation established by the standardized JDF descriptions of the print media manufacturers. It will also bring the automation into the interfaces between the printshop systems and the customer systems. This can, to a certain extent, be based on the JDF job description put forward by Adobe Acrobat (from Version 7) and PDF.

However, the integration of printshop customers in the 2008 automated workflow requires the customer creation and management systems to also adopt the metadata standards of the print industry. This is still problematic because to date, the customer markets do not use uniform standards. These are temporary hitches and whatever the standard chosen by the print industry customers for the job and process description, it will always be XML-based. As a consequence, creating metadata interfaces for the customers will be an easy task for the print industry and its chief standard-setting body, the CIP4 group. In the medium and long term, JDF will be the norm, even if it does not appear to be case to date.

As a conclusion, the modern workflow aims not only to automate the print production process but also to integrate all partial production steps and project participants. This is a necessary objective as the media workflow does not start at the point of physical production, but long before that. For instance, in the packaging sector, brand managers, art designers and product managers are involved in the decision-making and information chain long before the actual production starts. Their full integration can only be done with the help of a standardized, metadata-based digital information flow.

The JDF status

To understand the position of the JDF workflow today and the reason why more than one drupa cycle is necessary to integrate JDF in printshops on a daily basis, it is useful to review the standardization process that took place in pre-press via PDF:

- Between 1996 and 2000, PDF became widely established as the standard content and workflow data format.
- The process only takes place in the prepress department of the printshop.
- Adobe is the only PDF developer and provider.
- Adobe Acrobat is the only purchased product..
- The conversion to PDF is for the most part a purely *technical* process.

Bluntly said, the PDF conversion used to be a form of standardization ultimately enforced by the pre-press monopolist Adobe.

In comparison, what is the situation regarding standardization of the entire workflow via JDF, a process that has only just started?

- This process always involves at least two *different* printshop departments.
- It always requires the cooperation with *at least two* software manufacturers.
- In the case of JDF, the purchase of more than one product is required, making it difficult to finance the venture.
- The main difference, however, is that converting to JDF requires organizational and managerial change and that is what makes switching to an automated, end-to-end digital workflow such a complex and lengthy process.

After all, JDF is an initiative that has to reconcile over 60 MIS systems, more than 40 different pre-press suppliers, over a dozen printing machine manufacturers and more than a hundred post-press system providers. JDF addresses a wide range of processes in label printing, packaging manufacture as well as in book and newspaper production. Hence, the situation, eight years after the announcement of JDF and four years after the introduction of the first specification, rich in practical implementation, is fully understandable:

- JDF specification covers today more than 2/3 of all process workflows in print media production.
- JDF is supported by more than a hundred companies and manufacturers in the graphic arts industry.
- JDF interfaces have already become the standard in MIS, pre-press and sheet-fed printing machines and other branches will soon follow suit.

- The number of JDF applications in the graphic arts industry has risen year on year since 2002.
- It is estimated that, at present, more than 400 companies use a JDF workflow.
- Establishing a JDF workflow enables the company to save several hundreds of thousands of euros a year by enhancing the efficiency of internal workflows.

When establishing a modern workflow, it is difficult to estimate the cost of using a JDF, as who can say:

- How much time per day has been lost due to planning modifications?
- How many working hours have been lost in production meetings?
- How many production errors have occurred due to a lack of information?
- What expenditure has been incurred by the multiple recording of data?

These issues limit the further distribution of this workflow, although the detailed case studies of the CIPPI Awards of the CIP4 group reveal an ROI that consistently reaches the six-figure and sometimes even the seven-figure euro range. The ROI lies in the lower expenditure on information creation, shorter makeready times, higher usage rates, optimized planning and the reduction of personnel expenditure as well as in the simplified, more accurate final costing.

(http://www.cip4.org/documents/case_studies/2006_CIPPI_case_studies_REV2a.pdf).

The JDF workflow and standardization through metadata

One of the most important criteria for an automated workflow is standardization of the process description, i.e. having all job information available in digital form. These are the metadata solutions, of which JDF is an example. Critics claim that some sections of the print media workflow are not accessible via JDF and that individual substandards have developed because the JDF specification is too complex.

Such substandards include:

- AdSML for advertising workflow.
- XMP as a metadata standard in the field of image and content data.
- EXIF and IPTC for digital photography.
- EbXML for the standardization of business processes.

Other specific industry sectors have their own partial standardizations: the Medibelplus initiative in Belgium, for instance, has developed an AdSML-compatible, minimized ad ticket that uses XMP to attach information to a PDF file. This solution has already been adopted by the Ghent PDF Workgroup.

Do the substandards represent an argument against JDF or against JDF workflows? Quite the opposite, they confirm the fact that the standardization of metadata has become the main requirement for 2008 and that the era of such standardization has already started. These substandards and additional standards are either connected to JDF via interfaces or simply incorporated in JDF, so it will not be long before they are fully integrated.

Each version of JDF brings along key developments and the JDF Version 1.4 at drupa this year will do just that, by handling mixed printing forms that describe content creation together with PDF generation and version management. It will also handle Asian paper formats, modernize job transfer via PrintTalk 1.3 and focus on the field of packaging/flexography. This short list enables the customer to see how JDF is progressively fulfilling its claim as being the perfect description for all print media industry processes.

Furthermore, there is now a test seal for JDF compatibility: the PIA/GATF's "JDF-compliant" label, which was recently awarded to the Agfa pre-press workflow solution, ApogeeX V4.

The role of MIS systems in the 2008 workflow

Commercial programs, formerly referred to as cost accounting software, have now developed into management information systems. In other words, the programs have been extended to include logistics, digital planning boards and clients, enabling electronic acquisition of production data. In the 2008 workflow, the paper job ticket will be replaced by a digital equivalent which will require some getting used to by the employees. Many features of the new components will need to be further enhanced, including the new planning systems that continuously track production via automated JMF feedback from JDF-compatible machines, supplemented by information entered by employees at the PDA (production data acquisition) terminals.

MIS today also incorporates JDF interfaces to pre-press, press and post-press. They have to be bidirectional and able to send job information to the various departments or machines and to receive direct feedback regarding job status and final costing as well as assign these to the relevant job – without laborious, late daily ticket analysis!

The issue as to where imposition should be handled in the 2008 workflow has not yet been resolved. Some manufacturers argue in favor of imposition solutions being integrated into the MIS on the grounds that the administrator responsible for accurate cost accounting and job scheduling handles imposition anyway. Others question the administrator's skills to perform this task and favor the transfer, via JDF, of all the necessary parameters from the MIS to what will be a largely automated imposition solution within the pre-press workflow system.

The transfer of job data in JDF format from the cost accounting system or MIS directly into the production systems is a necessary and vital step in order to save lengthy time-consuming and personnel-intensive changes in medium along the print production information chain. It also allows the introduction and set-up of cross-departmental automation for the first time. Besides, only a totally digital information workflow guarantees that all employees at work stations receive continuously updated job status information. Replacing the paper-based information flow (job tickets, faxes, letters, memos) with an end-to-end digital, computer-assisted information system is therefore one of the essential features of the modern 2008 workflow.

It is difficult to imagine at the moment, but in 30 years' time, our grandchildren will know nothing about paper-based job tickets and they will ask us: "Grandfather, what exactly did you have to do with these funny things?"

Overall appearance of a conventional automated workflow in 2008

The customer supplies Acrobat PDF files with a JDF job description over the web portal. The printshop uses this job description to automatically generate pre-flight data and communicates the result to the customer online. The customer then sends the correction data back over the portal, allowing simultaneous viewing by both the job status system in the printshop and by the customer online. The pages, either in PDF format or as a remote proof, are then matched up between the printshop, the agency and the customer. The job status system enables all parties involved to track the approved or corrected

sections of the job. The status is continuously and automatically updated via JDF/JMF from the pre-press department.

The job planner at the printshop receives JMF feedback directly into his electronic planning board, giving him an overview of which pages are ready for printing. This allows the job planner to control the order of further processing.

There is no paper-based job ticket in pre-press as all job data can be retrieved from the MIS client installed in the pre-press department and converted directly from the workflow into a specialized pre-press job ticket via JDF. The printroom also receives continuously updated information about the upcoming print jobs for the day. The press control console is able to automatically assign the ink zone adjustment data to each sheet as the data has been received from the pre-press workflow system along with the JDF job information. Via the MIS PDA terminal, the finishing department accesses once again the latest job status and receives up-to-the-minute information on which pages need trimming, folding or collating. Trimmers and folders are automatically set up using the CIP4 presetting data from the pre-press system. However, in the book binding department, the long investment cycles in print finishing could slow down digital workflow and its related automation by up to ten years.

The job planner receives information on the jobs finished in the book binding department and the workflow system transmits this information to the dispatch department where staff can carry out the relevant work and send out the goods. No feedback is required. The JDF-compatible machines automatically convey the billing data and final job costing, in JMF to the MIS, while the electronic PDA terminals provide the system with data on time consumption and on delay reasons.

This is the scenario for a gradually automated and highly efficient workflow already operating adequately with low personnel expenditure for metadata provision and information flow. To a large extent, this scenario could become true in 2008. Practically all missing criteria so far will be on show at drupa 2008.

What lies ahead?

Michael Mittelhaus quotes: "A while ago, I heard a good metaphor in the United States. It described the printshop of the future. In 2020, a printshop will only need two employees: a man and his dog. Both will have to perform a job: The man has to feed his dog. And what about the dog? The dog is there to bite the man should he go anywhere near a printing machine!

Strange maybe, but it certainly paints an excellent picture of where the workflow train is heading, and in 2008 the workflow train has embarked on a very important journey.

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