

2009 Winner

**CIP4 International Print Production Innovation Award
for
Small Business Process Automation Implementation
of the Year**

5Sept Etiquette

Application Outline

Executive Summary

5Sept Etiquette
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France
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Based in Courthézon near Avignon in the south of France, 5/7 Etiquette produces labels for the food, wine and cosmetics industries.

The company has an annual turnover of €6.5m and employs 50 people.

Its production equipment includes two 370mm-wide Gidue flexo presses, two 340mm and 420mm-wide Codimag offset presses and 2 rotary silkscreen Galaxi presses.

The prepress room is equipped with a BackStage workflow server with PackEdge workstations and a FlexRip driving an EskoArtwork CDI platesetter. The company also uses CERM as its MIS system. The integration was setup between Backstage workflow server and CERM MIS.

Prior to the integration, the data transfer between the departments of customer service and the prepress department was entirely manual, resulting in double data entry and a high risk of errors. The integration has led to a bidirectional (JDF/JMF) connection both on “product”-level (administrative data, colors, barcode, timetracking, approvalstatus) and on “production-job” level (Step & Repeat, status on plates and S&R). All data is now centralized on one general scheduling board.

The “product”-concept is clearly an added value to all labelprinting companies.

The benefits are the increase in overall quality in the preparation of the job-tickets which has led to a significant drop in the number of job tickets that cause errors at the presses or rewinders. This quality is experience by the end-customer and as a consequence has led to a higher fidelity, less pressure on price and an better “in-class” classification for 5Sept Etiquette during customer QA Audit.

This document is the proof that JDF-projects can be highly profitable even for small to medium sized family owned companies (payback in 4 months) and that JDF can be the basis for proven installed solution for the packaging industry as well.

Section I. Background — 5Sept Etiquette is a French label printer. When Mr. Patrick Wack took over the company some 12 years ago, he instantly made workflow optimization his top priority.

Important to know is Mr. Wack’s company vision . With regard to the company’s cost structure , he has divided his staff into 2 categories :

1. the employees that handle (transform, print, pack etc) raw materials (mostly adhesive substrates)

2. the employees that handle ‘information’.

Moreover, Mr. Wack’s principal reasons for launching his automation projects are:

1. the salaries of the employees who fall within the scope of the second category (handling information) are higher than those of the ‘real-production’ employees. In fact, they account for over half of the company’s total salary cost.

2. In general, the investment efforts made by many companies in this niche market, compared to investments in productions, are very small, if not negligible.

3. Nearly all quality-related problems 5Sept Etiquette encounters can be attributed to the incorrect use of information (errors made while entering jobs, information that is missed out in files, poor references that have been entered and so on). These quality issues make all the difference between a company that can negotiate its prices with the customer and those getting their sales price imposed by their customers.

That is why 5Sept Etiquette has a long tradition of differentiating its investment plans with a view to raising the quality of its information system.

5Sept Etiquette has always been looking to optimize production material by using state-of-the-art integrated prepress software (software of EskoArtwork, specific screening (Sambaflex screening for flexo), CTP for flexo and offset, standard color profiles for each press, ...). Furthermore, 5Sept Etiquette has been in search of a niche tool to manage as effectively as possible every different stage in the company (estimating, customer orders, purchase orders, stock of raw material and finished goods, planning, reports, ...) and has tried to avoid redundant operations. That is why, mid-2006, the company decided to invest in CERM, a Management Information System dedicated to the niche market of narrow web label printers.

With the investment in a JDF-compliant MIS (CERM) and prepress workflow server (BackStage from EskoArtwork), the administrative and prepress workflow had to be revised. The basic modules of CERM were implemented in late 2006. These modules included estimating, jobs, deliveries and invoicing.

End of Year 2006 – Business process & Manufacturing Environment – after implementation of basic modules of CERM

- Solid and stable company with focus on high quality printed labels.
- A Management Information System which is JDF-compliant, but those features are not used, resulting in many manual tasks.
- No cost & time transparency in the production processes in the pre-press department.
- No integration related to administrative or manufacturing processes.
- The existing prepress workflow was very reliable but could be improved.
- New standards had to be set for storing data in the prepress department.
- There was no online facility for customer interaction, except from FTP upload.
- Problems in meeting customer delivery expectations, due to difficult follow-up of proofing cycle.
- No feedback on printing inks & finishing steps from prepress to customer service.
- No idea as to the prepress work performed on labels that are never ordered/produced.
- Die-cut and hot stamps are ordered by prepress department, with manual feedback to customer service.
- Customer service involved in creation of lots of technical reports (specification sheets) (manual, so risk of errors and poor tracking).
- Customer service involved in huge amount of re-keying of information from end customer, same for pre-press department: often dangerous : e.g. barcode errors for a range of labels.
- In prepress, no automatic way of doing quality control, due to paper-based order processing.

Year 2007 – Equipment used

- CERM v6.1.56 running on Microsoft Terminal Server
- Esko BackStage (server on Windows server, clients on Windows & Mac). No use of Job-orders database yet.
- Plato, PackEdge, ColorTone, Kaleidoscope, FlexRip/FlexProof, Esko Screening, CDI.

Year 2007 – Brief workflow description

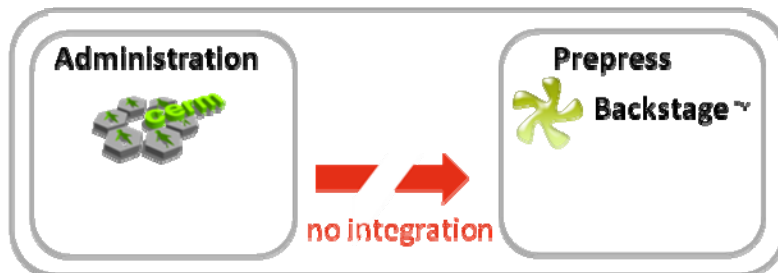


Figure 1. Year 2007 – Workflow presented prior to the start of the Integration Project

The lack of integration of the existing Management Information System in the prepress workflow resulted in many tasks being performed manually by the personnel of customer service and the prepress department.

The manual tasks performed by the sales assistants included:

- searching for designs to make sure they are discussing the right product reference
- asking the prepress department about the status of the label (files arrived, proofed, proof ok ...)
- entering details of colors and barcodes into the product-reference by hand
- transferring data towards the prepress department by hand, writing down existing data
- asking the prepress department to resend an existing proof when an order for reprint comes in, so that the customer is certain he/she is ordering the right product
- sending the proof to the customer and putting it in their proper ‘todo’ list for following up
- entering the data on a manual Excel scheduling board, updating this board whenever a proof-status of a label changes
- all tasks related to purchasing paper, putting the job on the scheduling board, follow-up of multiple status and so on

The manual tasks performed by the prepress department included:

- manual naming of files and folders
- manual search of prepress data (on disk level and archive)
- re-entering data into the production PDF (barcode, inks...), and job processing specifications (selected press, color profile, dot gain compensation curves)
- re-entering administrative data on the proof or PDF-report: e.g. customer ID, product ID, customer name, contacts, address, substrate, label orientation, etc...
- Manually re-entering the Step & Repeat specifications in the interactive S&R application
- Manually ordering the die-cut

- Rewriting technical information, time consumption and status info into quality control sheet to send back to customer service
- Paper-based planning of jobs and presses .

Section II. Objectives — The overall objective of the integration project was very clear and consisted of the following key components:

- reducing administrative processing costs by consolidation of fragmented information
 - o eliminating double entry of data
 - o rendering information accessible throughout the organization
 - o collecting and centralizing the up-to-date product description in MIS
- reducing errors through standardization
 - o in the customer service department
 - o in the prepress department, incl. plate-making
 - o on the press
- automating tasks:
 - o the proofing cycle
 - o prepress and production status feedback (job milestones)
- gaining a quantitative insight into the operations of the prepress department
 - o quantifying time spent on getting an approved one-up production file.
 - o getting the information on printing inks and finishing automatically send to MIS after approval cycle

In order to quantify the objective, 5Sept Etiquette collated some figures.

5Sept Etiquette creates between 4,500 and 4,800 new label references a year, which means at least the same amount of proofs.

In total, 5Sept Etiquette has about 4,500 production jobs a year to produce nearly 9,500 different label references. So approximately 50 % of the jobs are reprints of existing labels, with the rest being new labels.

With an approximately 50-50% balance between new labels and reprint of existing labels, this means that in the integration project the same efforts should be made in both areas.

Where new labels are concerned, we should be able to save time primarily by reducing the input of data in the CERM product catalogue by retrieving as much data as possible from the prepress environment (and vice-versa). Also an automatic link between EskoArtwork and CERM on the status of the proof should be established.

Secondly on job-level, we should be able to save time by sending data from CERM to EskoArtwork concerning step & repeat and concerning the status of the job (S&R made, plates/clichés made) in the other direction.

With a view to reducing ordered quantities in general, as well as lead times, the proofing cycle should be more automated by means of customer interaction via the Internet and by an automatic e-mailing system, alerting the customer that proofs are still expected for jobs scheduled on the press.

A quantitative approach in the prepress department is necessary to gain insight into the operations that are performed on the images which are not included in the initial quote and which lead to supplementary costs.

Information on status should easily be accessible throughout the organization, preferably on a central scheduling board. Scheduled information should be provided in real-time and in a digital way on the shop floor. Shop floor information (clocking and consumption) should feed the post-calculation of the jobs and

individual products. As consumption is triggered, the inventory has to become 100% reliable and, in general, consumption should go down.

Objective in HARD BENEFITS

Best-Case Scenario

| Customer Service / Prepress | Item | Gain / item (minutes) | Number of Items per year | Gain / year (hours) |
|-----------------------------|-------------------------------|-----------------------|--------------------------|----------------------------------|
| CS | Product ID-creation (MIS) | 2 minutes | 4,800 | 160 |
| PP | Approval cycle | 2 minutes | 4,800 | 160 |
| CS | Approval cycle | 3 minutes | 4,800 | 240 |
| CS | Repeat jobs | 4 minutes | 2,250 | 150 |
| CS | New jobs | 2 minutes | 2,250 | 75 |
| PP | Automated S&R new jobs | 6 minutes | 2,250 | 225 |
| CS | Follow up of proofing cycle | 5 minutes | 2,000 | 150 |
| PP | Product Report via CERM | 2 minutes | 4,800 | 160 |
| PP | Automatic Barcode integration | 2 minutes | 2,250 | 75 |
| TOTAL | | | | 1,160 hours / year = 0.87 FTE |

Worst-Case Scenario

| Customer service / Prepress | Item | Gain / item (minutes) | Number of Items per year | Gain / year (hours) |
|-----------------------------|-------------------------------|-----------------------|--------------------------|--------------------------------|
| CS | Product ID-creation (MIS) | 1 minute | 4,800 | 80 |
| PP | Approval cycle | 1 minute | 4,800 | 80 |
| CS | Approval cycle | 1,5 minutes | 4,800 | 120 |
| CS | Repeat jobs | 1,5 minute | 2,250 | 56 |
| CS | New jobs | 1 minutes | 2,250 | 38 |
| PP | Automated S&R new jobs | 2 minutes | 2,250 | 75 |
| CS | Follow up of proofing cycle | 3 minutes | 2,000 | 100 |
| PP | Product Report via CERM | 1 minutes | 4,800 | 80 |
| PP | Automatic Barcode Integration | 1 minutes | 2,250 | 36 |
| TOTAL | | | | 550 hours / year = 0.42 FTE |

SOFT BENEFITS

Apart from a quantitative approach, 5Sept Etiquette expected an overall improvement in the productivity of the Customer Service Department by eliminating a certain number of redundant tasks. Therefore, the goal was to be able to handle more jobs (in the customer service department as well as in the prepress department), without hiring more people.

Section III. Methodology — Having two highly competent partners (both Belgian by the way) on board, it was quite obvious that these two should put their heads together with 5Sept Etiquette, and come up with an adequate solution.

In order to find an appropriate solution, the existing workflow and systems were examined. Hence, automating a non-efficient workflow was not the desired end result. Françoise Coudert, a Business Improvement Consultant of EskoArtwork and Peter Dhondt, Senior Consultant at CERM carried out an audit simultaneously, and were supported by 5Sept Etiquette internal team members (Cédric Caboche & Mme Wack) who helped where they could at both simultaneous audit-sessions, because it was important for both consultants to gain an insight into the potential of all applications.

During the audit, Peter and Françoise, together with Cédric Caboche & Mme Wack, took into consideration existing JDF/JMF-links, possible new features to be added to those links, possible new modules to be implemented to optimize the results of the JDF/JMF link and to address the objectives, indicated by Mr. Wack. (Section II)

The two auditors came up with an action plan, divided into two major steps.

Phase 1 Action points – deadline September 2007

- Cerm has to initialize prepress. A Step and Repeat description is not necessary at this moment in time, it only concerns the proofing cycle of the single label.
- EskoArtwork needs to return real printing inks information of the production PDF back to Cerm
- A Cerm production job can contain multiple products
 - o The BackStage server of EskoArtwork currently has no database (yet) on 'Product' level.
- Cerm will interpret feedback from EskoArtwork server BackStage ('milestones')
 - o 2 milestones for products triggered by a job JMF (proofed, proof OK)
 - o 2 milestones for production jobs triggered by a job JMF (imposition OK, plates OK)
- Cerm will have to introduce product statuses for managing product milestones
 - o These statuses are read from BackStage's job 'milestones'
- Cerm will post the product status on the scheduling board
- Cerm will send a 'Job Finished' when a job is 'closed'
- Cerm will provide the status 'new / repeat / repeat with changes' in the JDF on a job basis to launch the corresponding prepress workflow
- Cerm will read the EskoArtwork XMP file containing details of colors and barcode. This is to avoid these data from being entered by hand in the product-catalogue.
- Making EskoArtwork images visible in the MIS system.
- Consolidating information on the CERM-schedulingboard.

Fase 2 actionpoints – deadline September 2008

- EskoArtwork will, in BackStage, develop the "Product tool". This is an extra database to store "Products" (one-up production graphics). Up until then, there was only a database on job orders. These will allow reading JDF with multiple products in one job order. Cerm will introduce a product level of JDF/JMF
 - o Multiple milestones for products triggered by a product JDF (files arrived, proofed, proof OK, proof rejected etc..)

- A new product in Cerm will launch a product creation job in BackStage (prepress is told to do this, to create such a new product)
- A new product in Cerm will create an entry in the BackStage 'Products' tool. (prepress is given following database entry for this new 'product' (name, place, specifications)
- Cerm will store all changes related to the status of this product.
- EskoArtwork will come up with the possibility to automatically store prepress data in a structured way. The path for storing these files can be personalized through so called 'SmartNames', for instance `\\server\<customername>-\<customerid>\<productid>`. This path will be called the 'Product Data Zone' (PDZ). Cerm is already able to do this. Aligning this knowledge about where the data are between EskoArtwork and Cerm opens up scope for further automation in BackStage.
- EskoArtwork WebCenter main serves as an online approval tool: BackStage and WebCenter communicate amongst each other about the requests and statuses also via JDF/JMF.
- Cerm will create an "auto reminder"-system to remind customers via email about delayed approvals of products which are scheduled on press within, for example, 24 hours.

Section IV. Implementation Story —

Milestone 1 : June 2007 - audit of existing workflow in administration and prepress

Out of this audit came a number of action points (see Section III). These action points consisted of a number of developments and a number of actions to undertake in the existing organization of 5Sept Etiquette.

Milestone 2 : June 2007 – September 2007 – executing action points concerning changing the existing organization

Milestone 3 : September 2007 –

- upgrade to Cerm V6.1.57 – start of JDF implementation
- Esko WebCenter v7 - installation/integration (on-line approval workflows)
- 5Sept Etiquette manages all IT parts of this project: new servers, network, back-up

Milestone 4 : April 2008 – closing Phase 1 – redefining Phase 2

Milestone 5 : October 2008

- Upgrade to Esko Software Suite v7r4 – to enable these new features:
 - BackStage Products tool (in Beta)
 - Manage multiple products in one JDF job
 - "Remove job" command Cerm to BackStage's job database (e.g. when jobs are invoiced)
- Upgrade to Cerm v6.1.60 – to enable these new features
 - 'Products' level JDF
 - 'Products' level JMF for multiple milestones on product level
 - 'Products' level JMF to track time spent in Prepress

Milestone 6 : April 2009 - Upgrade to Esko Software Suite v7r5:

- BackStage Products tool operational (customer released feature)
- Phase 2 can thus be finalized

Section V. Resulting Workflow/Processes —

Task description administrative department (customer service)

| In workflow prior to integration | In workflow after integration |
|---|---|
| <p>Product creation</p> <ul style="list-style-type: none"> - Create Product ID in CERM - Add customer references - Add detail of colors - Add barcode - Store the graphics-file <i>somewhere</i> | <p>Product creation</p> <ul style="list-style-type: none"> - Create Product ID in CERM - Add customer references - Drop graphics-file in PDZ of the product |
| <p>Approval cycle</p> <ul style="list-style-type: none"> - Create a printed document with instructions for the prepress department for proofing of the product - Follow manually the proofing status of the product in the prepress department - Get softproof (PDF) back from the prepress - Follow manually the approval status of the product at the customers' stage | <p>Approval cycle</p> <ul style="list-style-type: none"> - Send the “<u>Product JDF</u>” towards EskoArtwork - Read the status on screen in the products - Softproof is sent by EskoArtwork (email PDF or online via WebCenter) - Customer automatically receives a reminder for non-approved proofs |
| <p>Jobcreation</p> <ul style="list-style-type: none"> - Combine products in one run - Create production instructions (imposition, material, quantities and so on) - Create a printed document with instructions for the prepress department for imposition, plates and for the production on the presses - Put the job on the scheduling board | <p>Jobcreation</p> <ul style="list-style-type: none"> - Combine product in one run - Job-order JDF is auto-sent to EskoArtwork (incl. production instructions (imposition, material, press, quantities etc..)) - Create a printed document with instructions for production on the presses - Put the job on the scheduling board |
| <p>Following status of production job</p> <ul style="list-style-type: none"> - Follow manually the proofing status of all products to be produced - Follow manually the status of the imposition and plates of the jobs - Update by hand the manual scheduling board - | <p>Following status of production job</p> <ul style="list-style-type: none"> - Scheduling board is updated automatically through JMF and SFDC - |
| <p>Analyzing and invoicing suppl. costs</p> <ul style="list-style-type: none"> - Suppl. work is noted down and invoiced manually | <p>Analyzing and invoicing suppl. costs</p> <ul style="list-style-type: none"> - All customer modification and operations are tracked in prepress department, returned to Cerm through JMF and invoiced with first delivery of the product. |

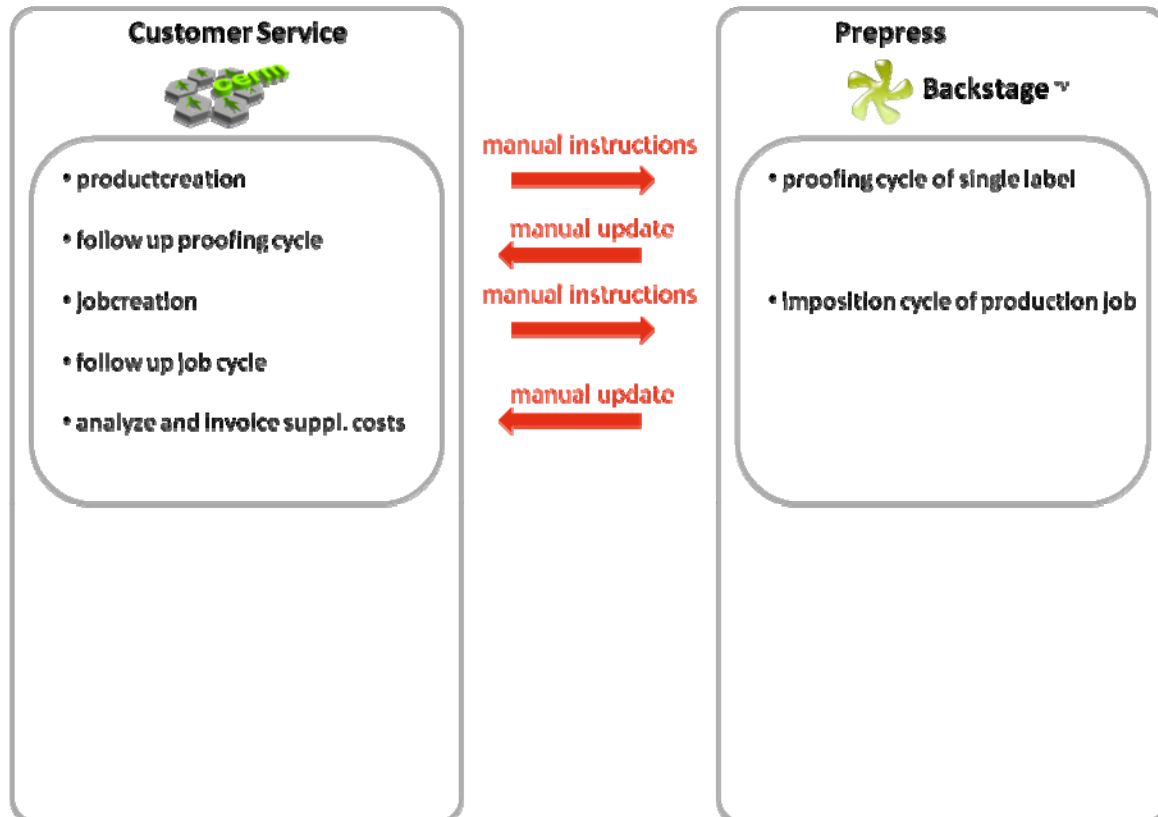
Task description prepress department

| In workflow prior to integration | In workflow after integration |
|--|---|
| <p>Approval cycle of single label</p> <ul style="list-style-type: none"> - (No Product concept in BackStage, only JobFolder concept) - Manual barcode retyping - Perform proofing or PDF tasks - Edit manually a proofing report or create it automatically using BackStage-ReportMaker task (which SQL-queries the Cerm DB for any (administrative) data) - Send the proof/PDF report to Customer Service - Obtain proof/Approval OK from Customer Service | <p>Product creation</p> <ul style="list-style-type: none"> - Product-ID is created within BackStage by JDF (no user intervention) - Graphic-file is immediately visible in PDZ - Entry is created in BackStage (no user intervention) - Barcodes are automatically communicated and updated in Esko BackStage or Pack-Edge. - As press info is given via JDF, color profiles and dot gain compensation curves are automatically used in the workflow when proofing or ripping - Perform approval cycle tasks - The proof file/report no longer needs to query the Cerm DB to add extra data but now finds all this meta-data in the BackStage Job list (populated via JDF) - Proof is sent to the customer by e-mail or published towards WebCenter for online approval - Product status is automatically updated in BackStage and sent by JMF to Cerm (no user intervention) |
| <p>Imposition cycle of production job</p> <ul style="list-style-type: none"> - Create manually an entry in BackStage's client interface - Retrieve the graphic design - Perform step & repeat tasks - Create imposition manually in Esko S&R editor based on printed document coming from Customer Service - Manual preparing of Die-cut and hot stamp to order tools from suppliers. Specifications are sent to customer service. - Inform customer service about plate-ready status via manual report | <p>Imposition cycle of production job</p> <ul style="list-style-type: none"> - Entry is created in BackStage Job-orders database by JDF (no user intervention) - Product detail is known so product files are known (no search necessary) - Create automatic imposition on BackStage server, fully based on JDF -specs (no user intervention needed) - Die cut and hot stamp are now automatically derived from the digital Step&repeat PDF - Plates status automatically returned to Cerm |
| | |

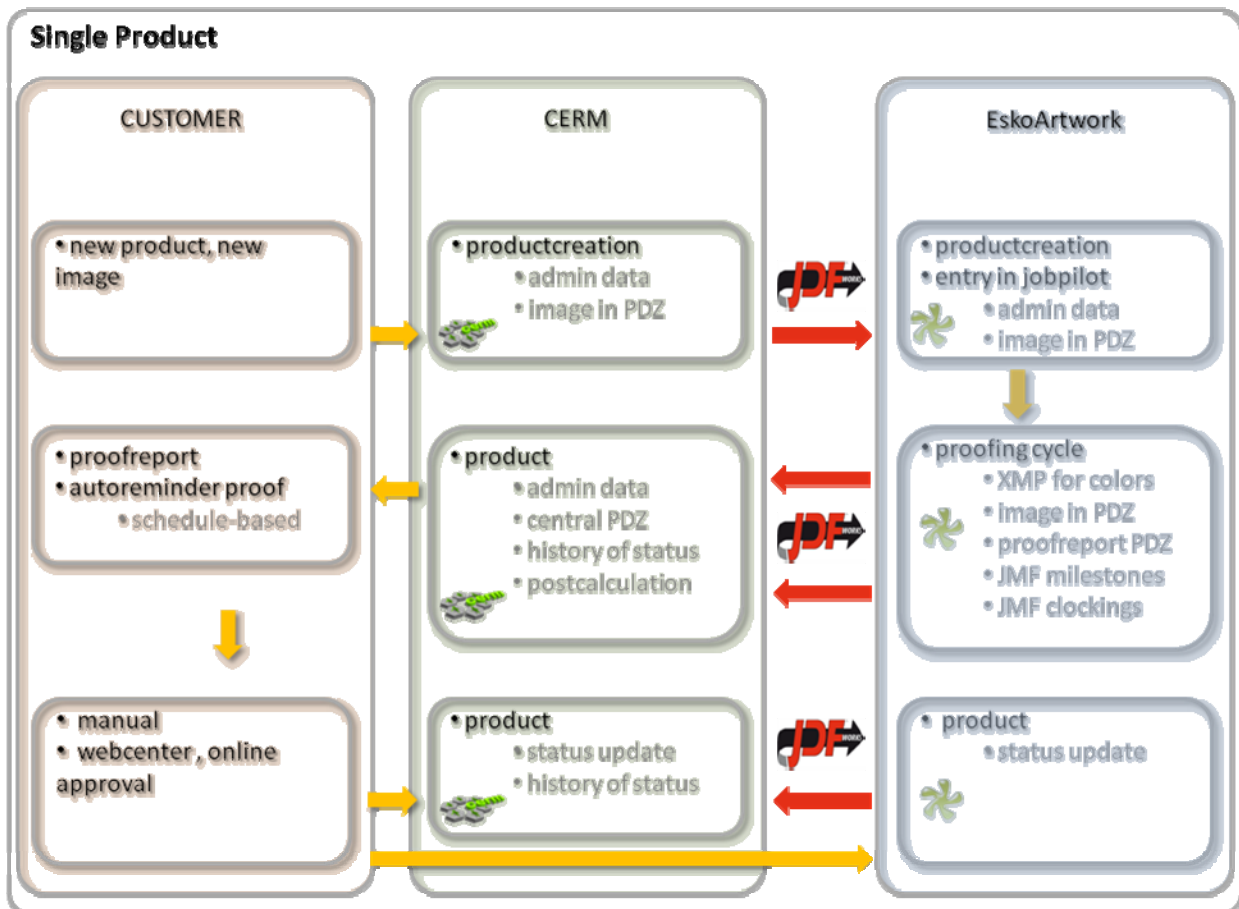
Task description planning and production department

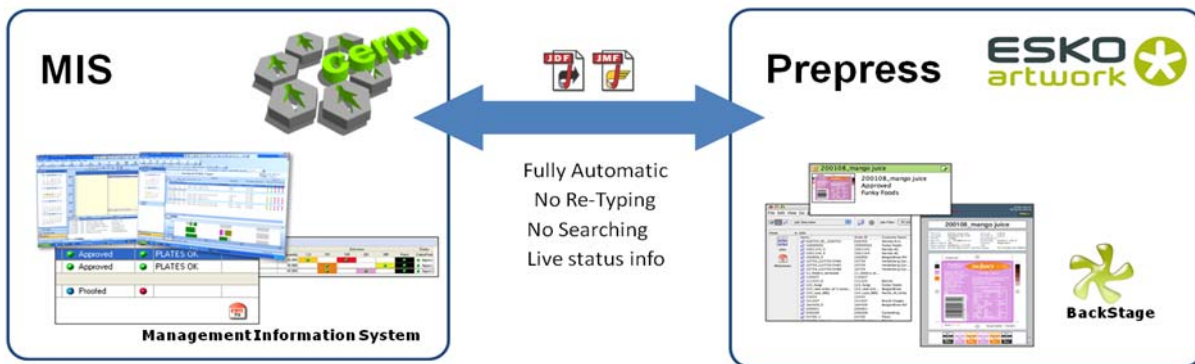
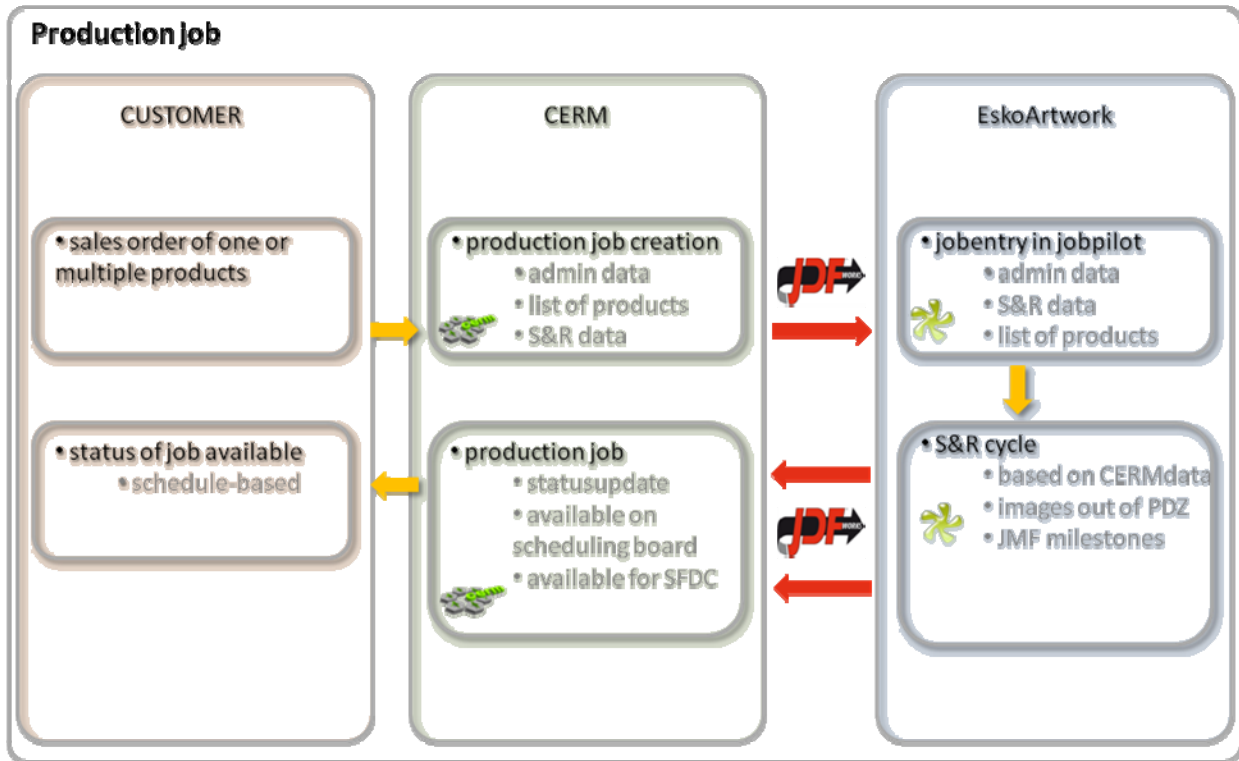
| In workflow prior to integration | In workflow after integration |
|---|--|
| <p>Managing the scheduling board</p> <ul style="list-style-type: none"> - Managing and updating the scheduling board by hand in Excel - Interrogating several times a day every department on the status of the product and jobs - After every change, the scheduling board is printed and distributed to the production department | <p>Managing the scheduling board</p> <ul style="list-style-type: none"> - Managing the scheduling board - Product and job status is visible on scheduling board in real time through JMF and SFDC, also in the production department - Consuming on presses is tracked by press-counters (visible on the scheduling board) |
| <p>Quality Control</p> <ul style="list-style-type: none"> - Managing and updating the Quality Control check list on paper, by prepress and production. - Customer service spends time updating job and product descriptions depending on any remarks from these Quality Control steps | <p>Quality Control</p> <ul style="list-style-type: none"> - Automatic Quality Control is now available on the BackStage server (inks, barcode, color profile, DGC curves) and so digitally secure the workflow. - |

Workflow prior to integration



Workflow after to integration



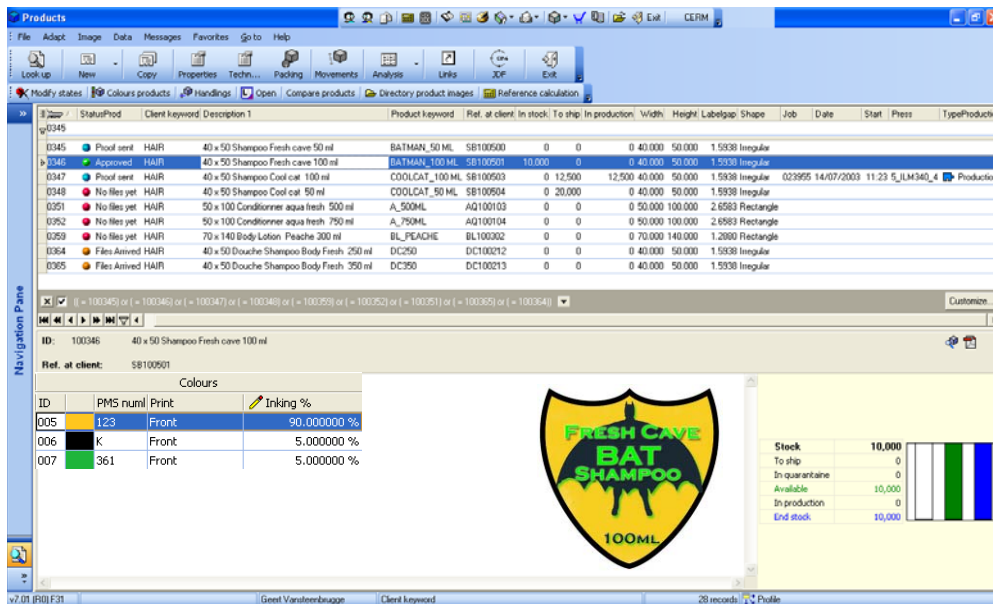


Status

- Job Milestones
 - Incl. (editing) timings
- Product(s) status
 - Approved? ...
- Product files
 - Links to PDFs/JPGs Reports/XHP

Specifications

- Job-order
 - Customer, C&M, Due dates
- Product(s)
 - ID, name, amount
- Plate layout
 - Step & Repeat ; CAD
- Output
 - Proof / RIP



Screenshot Products

Section VI. Optional Detail — Please provide at least one of the following:

- ROI — Please provide a quantitative analysis of the hard and soft ROI factors expected and realized, to include breakeven analysis, IRR or NPV determination of hard factors and testimonial evidence from users or customers as to the realization of soft benefits.
- Improvement in Quality and Customer Service — Please provide quantitative evidence of improvements in product quality, production feedback and analysis, and quality control as well as data and/or testimonials providing evidence of improved customer service, which may include improved delivery times, fewer errors in production or communications, better customer communications and production reporting and so forth.
- Innovation — Please Provide a description of the innovative aspect of the process and an argument for why this is unique and new, with a comparison to traditional alternatives and a description of the primary benefit the innovative aspect of the new process.

After about 2 years of developing this very important aspect within the company, the result is slightly different from the initial objective, but nevertheless extremely positive.

Given that 5Sept Etiquette handles many different and very specific jobs (different customer requirements, various printing techniques (offset, flexo, silkscreen, hot foil), different quantities), we cannot rely 100 % on automated procedures. So, where at the beginning of this project, there were multiple entries of the same data (concerning the die cut, for instance, which is necessary in the quote stage, but the same values are necessary in the pre-press...) with the risk of errors, there are now different stages where the data - being entered at the beginning of the workflow - is validated through automation in the organization, without the need for re-entering the information. (Back to the die cut: the information in the quoting stage is checked when the production job is launched (in the prepress dept.) and again while passing the purchase order for the die cut and launching the Step and Repeat)

The ROI:

The ROI is significant and has an important *secondary* aspect :

- Error & cost reduction: The improvement of the overall quality in the preparation of the job tickets has led to a very significant drop in the number of job tickets that cause errors at the presses or rewinders and that therefore cause needless set-up times
 - No re-do in prepress (human cost)
 - No re-do in plates (plates, material maintenance and human costs)
 - No re-do in production (press, raw material, inks, human costs)
- Success story: To illustrate the major share of turnover, the adhesive substrate has decreased by 3,5 % in 2 years, while there was growth in turnover and rising paper prices!. This is mainly obtained by a better and more detailed product-description, less make ready times coming from correct job information from CS and the prepress-department (and therefore paper consumings) at the presses and the installation of SFDC and presscounters. Which is extraordinary and shows the capabilities of 5Sept Etiquette to reduce the production cost and also its ability to maintain sales prices in a market that is subject to pressure on prices.

Some figures to illustrate this
CHANGE

| Year | Turnover in € | % Drop of % Paper/ turnover |
|-----------|---------------|--------------------------------|
| 2006/2007 | 6,135 K | |
| 2007/2008 | 6,483 K | -3,7 % |
| 2008/2009 | 6,560 K | -9,7 % |

Fig. VI.1. Turnover, , % Drop % of Paper in Turnover

Figure IV.2. shows amounts of paper with actual % and amounts with the % of the year before, and corresponding benefits.

| Cash flow and ROI statement | | | | |
|--|------|-----------|-----------|-----------|
| BENEFIT DRIVERS | YEAR | | | |
| | | 2007 | 2008 | 2009 |
| | 0 | 1 | 2 | 3 |
| New turnover driven by quality improvement | 0 | | | |
| Improved cycle time benefits: | | | | |
| Reduced energy cost due to less running time | | | | |
| Reduced labor cost due to less running time | | | | |
| Reduced paper consumption | | | | |
| Improved quality benefits: | | | | |
| Better product description, resulting in less running time | | | | |
| Fewer errors, resulting in less make ready times | | | | |
| Fewer errors, resulting in fewer reruns | | | | |
| Total benefits realized | | € 274.000 | € 289.400 | € 120.000 |

Omitted for Publication

| Costs | Year 0 | Year 1 | Year 2 | Year 3 |
|--------------|----------|-----------|----------|----------|
| Total | € 60.427 | € 104.768 | € 84.872 | € 63.395 |

| Benefits | Year 0 | Year 1 | Year 2 | Year 3 |
|-------------------------|-----------|-----------|-----------|----------|
| Annual benefit flow | € -60.427 | € 169.232 | € 204.528 | € 56.605 |
| Cumulative benefit flow | -60.427 | 108.805 | 313.333 | 369.938 |

| Discounted benefit flow | Year 0 | Year 1 | Year 2 | Year 3 |
|--|----------|----------|----------|----------|
| Discounted costs | € 60.427 | € 98.838 | € 75.536 | € 53.228 |
| Discounted benefits | 0 | 258.491 | 257.565 | 100.754 |
| Total discounted benefit flow | -60.427 | 159.653 | 182.029 | 47.527 |
| Total cumulative discounted benefit flow | -60.427 | 99.226 | 281.255 | 328.782 |

| Initial investment | Year 0 | Year 1 | Year 2 | Year 3 |
|--|----------|-----------|----------|----------|
| Initial investment CERM | €41.416 | €0 | €7.500 | €7.500 |
| Initial investment EskoArtwork (On top of existing workflow) | | €15.000 | €2.250 | €2.250 |
| Hardware CERM | 13.011 | 13.617 | 0 | 645 |
| Implementation / training/consulting costs CERM | 0 | 8.723 | 19.175 | 10.000 |
| Ongoing support costs CERM | 0 | 18.166 | 24.947 | 25.000 |
| Hardware ESKO (IT security hardware, backup & in network) | 0 | 30.262 | 0 | 0 |
| Suppl. Licenses EskoArtwork | 0 | 5.000 | 5.000 | 0 |
| Implementation / training/consulting costs EskoArtwork | 0 | 8.000 | 8.000 | 0 |
| Internal project Management | 6.000 | 6.000 | 6.000 | 6.000 |
| Other costs | 0 | 0 | 12.000 | 12.000 |
| Total costs | € 60.427 | € 104.768 | € 84.872 | € 63.395 |

| ROI measures | | | | |
|----------------------|-----------|------|------|------|
| Cost of capital | 6% | | | |
| Net present value | € 328.782 | | | |
| Return on investment | | 162% | 220% | 214% |
| Payback (in years) | 0,36 | | | |
| Payback in months | 4,0 | | | |

Improvement in Quality and Customer Service:

- **Security, timing and tracking:** The improvement applied to the information flow has led to an improvement of the quality as experienced by the end-customer (respecting delivery times, respecting customer requirements, better administrative workflow ...) and as a consequence led to:
 - a higher fidelity (customer confidence)
 - less pressure on prices.
 - Better “in-class” qualification (notes) for 5Sept Etiquette during customer QA audit
- **Pro-activity is better than reactivity!**
JDF/JMF implementation is always a good opportunity to review global organization & working methods (from paper to digital). Any change in these processes is initially an extra burden on the staff, but also here it eventually led to a smoother digital workflow.

The innovative aspect of this use case can be summarized as follows:

- State-of-the-art JDF integration at a label printer
- JDF used to order (several) Products in a Packaging Job order
- Level of JDF based automation at this size of company
- How a customer with a vision enabled 2 vendors to work on this great example use case.

Comment from Mr. Patrick Wack

In the current financial year (June 2008 – May 2009), 9 of the 12 months of which have been greatly affected by the current financial crisis, our company turnover has increased. This is not attributable to an increase in our existing customer base, but by our capability to develop new markets thanks to our recognized quality of service.

We have now reached a point where nearly all of the information in our MIS system is verified systematically, is reliable and whose quality is enhanced automatically. This integrated information allows us to develop new applications which may be simple at first sight, but very quickly add value to our company and our customers.

The simple but very effective tool that our customers experience as an important aid is the automatic e-mail that contains a reminder of a proof, mentioning that a delay in the approval cycle could result in a delay in the delivery time of their goods. The customers’ deadline for returning the proof (date and time) is taken from the scheduling module in CERM and is mentioned in this reminder e-mail and on the proofing-report issued by EskoArtwork.

We are convinced that we are about to enter a phase in which the integration efforts will be even more profitable.