Estudios Gráficos Europeos S.A.

Managing Directors and Sales Directors of EGESA

Standing from left to right: Manuel Balbací (Sales Manager), Pablo Mayoral (Financial Director), Loreto Nieto (Sales Manager), Julio Pacheco (Director of Production). Seated from left to right: Asunción Fajardo (President) and Ignacio Fajardo (CEO).
**Background**

**Introduction**

Estudios Graficos Europeos S.A. (EGESA) was founded in June 1994 in Madrid, Spain.

![Fig. 1.1: EGESA’s Press Room.](image)

EGESA is a modern sheet-fed offset operation with a workforce of around 70 people. The portfolio of products offered includes offset printing activities (pamphlets, books, magazines, signs, etc.), prepress and postpress.

The prepress at EGESA is equipped with True Flow Workflow and Screen CTP. The Ink profiles are made by the help of Komori PCC program. The postpress is equipped with Horizon.

The pressroom (Fig. 1.1) features a Komori Lithrone 640 (six colours 40 inch) and a Komori Lithrone LS440P (4 colours 40 inch and perfecting 2/2). The machine console systems are equipped with KMS supervised by Komori K-Station.

EGESA’s client list includes some of the top companies in Spain and Europe: Vodafone, El Corte Ingles and Hola SA to name a few.

For the task of upgrading its print operations, EGESA received technical support from Centro Tecnológico de Artes Gráficas Madrid (CITAGM). Together with CITAGM, EGESA received financial support from Centro para el Desarrollo Tecnológico Industrial
(CDTI) in order to implement the project I+D “Development and Application of the JDF standard in an offset printing process”. This project was started in 1 September 2006 and will be completed on 30 June 2008. The project will be audited by CDTI.

Workflow prior to JDF implementation

The core of the original workflow at EGESA was an Excel spreadsheet (as shown in Fig. 1.2). This spreadsheet contained the following information:

- Title of the Quote (name of customer and type of product)
- Type of order
- Quantity
- Characteristics of the paper
- Resources to be employed (prepress, press and postpress)
- Price

This workflow, used by EGESA prior to implementing JDF, was characterized by a lack of automation and centralization necessary for production, as well as the inability to track costs over time (as shown in Fig. 1.3). This prevented EGESA from achieving and maintaining a competitive advantage in the marketplace.
Fig. 1.2: Workflow in EGESA prior to JDF implementation – Excel spreadsheet before JDF implementation.
WORKFLOW PRIOR TO JDF IMPLEMENTATION

The Client calls EGESA to ask for a quote for a print job

EGESA produces an Excel Spreadsheet

EGESA and Client agree on the print job

EGESA cannot track the job status in real time

EGESA enters a print job manually into the Optimus System

EGESA is unable to determine the cost analysis

The job is completed and shipped

Fig. 1.3: Workflow in EGESA prior to JDF implementation – Workflow procedure.
The original workflow resulted in:

a) **Inconsistent data**: Identical administrative and production data was entered manually into disparate systems. This led to inconsistent data (typographical errors, etc.) and costly mistakes.

b) **Manual interface with clients**: Optimally the client will have the ability to interact with the company and to track the status of his order in an automated fashion. Prior to the JDF implementation, the client needed to contact EGESA’s office for manual updates regarding his print order. It was necessary for EGESA’s staff to provide updates to the client based on the Excel Workflow which was frequently inaccurate and delayed in time.

c) **No feedback (no real information about the resources)**: Due to the inflexible nature of the Excel workflow, EGESA did not have a clear insight into the exact amount the print process cost to complete for its clients.

d) **No maintenance plan for the presses**: In order to make the maintenance plan of the press, EGESA was dependent on the operators. This was inefficient and expensive due to the down time experienced by the presses.

e) **No optimal use of the presses**: When an order was processed under the Excel Workflow, it was difficult to determine the pagination and the type of press to be used at the time the order was placed. This caused the presses to be employed in a manner that was not optimal for efficiency or cost effectiveness.
Objectives

EGESA’s goal in implementing JDF technology was to gain a greater knowledge of and greater control over the cost of each print job in order to achieve and maintain the best and most competitive share of the marketplace. Additionally, it was very important for EGESA to achieve better production management and better management of the company processes in general. The goal was to automate all components of the print jobs, from the creation of CTP plates to the preparation of the press. Checking stock and creating quotes in an automated fashion was also desired. EGESA sought a solution to reduce mistakes, provide real-time production information, better automation of production processes and to improve the speed of the production cycle.

The best solution would be a system that allowed the company to react more quickly to any production problems, to create more quotes (MIS – Optimus) and to reduce administrative overhead and time spent on duplicate data entry. In short, EGESA sought to increase production control, to achieve fewer production delays, and to achieve a greater ease of integration of systems.

Because automation technology should reliably streamline information exchange between the different systems and departments, EGESA opted for the vendor-independent JDF-format and the Optimus Management Information System (MIS). The MIS enables the integration of the administrative and technical workflow, whereas JDF/JMF ensures the maximum possible connectivity between the different platforms. EGESA has worked with Optimus since 2002 and in 2006 EGESA upgraded the Optimus system with an increase in the number of users and the installation of the JDF/JMF package.

EGESA uses Screen CTP for the prepress and Komori K-Station for the management of the presses. It is under the supervision and requirements of EGESA and by the JDF common language that Komori and Optimus are able to work seamlessly together.

All of the above targets and goals were set in 2006 when EGESA applied for the financial support of the CDTI in order to implement the JDF workflow.

The objectives for implementation are:

- Reduction in the number of errors for each print job
- Real time production information
- Better automation of the production processes
- Faster completion of tasks
- Ability to react quickly to prevent production problems
- Ability to produce more print jobs from the management system (MIS)
- Reduction of administrative work due to the reduction of duplicate data entry into administrative and production computer systems
- Fewer delays, thanks to better control of the production environment
- Greater ease of integrating disparate systems (especially for smaller companies)
Methodology
The selection of the JDF solution was heavily determined by EGESA’s prior experience with Optimus.

History:

Between January and April 2003, EGESA scrutinized several MIS Systems, but concluded that none of them would provide significant additional benefits when compared to the system (Optimus) that was implemented at that time. Due to Optimus’ expertise in JDF workflow process, as well as EGESA’s established relationship with this MIS, Optimus was selected as the MIS of choice.

The project to upgrade the printing machinery and migrate to the JDF platform was decided in 2003 when it became necessary for EGESA to upgrade its presses. EGESA purchased Horizon, Screen and Komori for their new machines. JDF is the common language between these three vendors.

The prepress, press and post-press hardware were completely refreshed. EGESA’s idea was to integrate latest generation machinery with the most modern automation technology. The common requirement for the prepress, press and post-press environment is the JDF connectivity. The most modern machinery is a good and worthwhile investment if and only if the automation (JDF connectivity) can be implemented to take advantage of the latest improvements in the hardware and its advanced technology. The idea of the automation is to make all the different vendors speak a common language – JDF – and to adapt the JDF solution to the specific needs and the culture of EGESA.

In the process of selecting a solution, EGESA wanted to have modern hardware controlled by software that allowed seamless communications between the disparate systems.

The selection of the JDF solution was heavily determined by EGESA’s prior experience with Optimus. The choices for the press and post-press environment were strongly influenced by the hardware vendor OMC and by the ongoing relationship between EGESA and OMC.

The choice for the prepress environment was SCREEN because of the quality, the interconnectivity and the proven compatibility with KOMORI. Komori was chosen for the press environment because of the flexibility of Komori presses as well as their easy maintenance and their JDF/JMF connectivity. The JDF/JMF connectivity of the Komori presses is done by the software PCC (Ink Profiles), KMS (Press manager) and K-station (Press factory manager). Horizon was chosen as post-press because of its quality and because of the support offered by OMC.
Implementation Story
The implementation of the project I+D was started in 2006, and it was organized in two main periods:

- 1 September 2006 → 31 August 2007: Automation of the production system. The press environment will be connected to the JDF workflow. KMS and K-Station will be installed. The link between prepress and press will be made by PCC.

- 31 August 2007 → 30 June 2008: Automation of the administration and the company management.

The total investment for the automation is €533,000, 60% of which is covered by CDTI. The active participants in this project are OMC, Optimus and Komori, technically supervised CITAGM and audited by CDTI and EGESA.

The project began with the purchase of modern machinery for the pre-press, press and post-press environments.

The phases of the implementation are as follows:

- Phase I
  - Study of the JDF and determination of the best application method with EGESA
  - Optimus and JDF: extending the features of Optimus with the JDF package
  - Technically supervised by CITAGM

- Phase II
  - JDF and the administration of the company
  - Technical supervision of CITAGM of the whole automated process: production (press environment) and administration (quotation, orders and accounting).

All the phases of the project are audited by CDTI once the project I+D is finished.

EGESA supervises the entire process. It maintains the previous workflow while the automation is being introduced and the key people are trained.

One of biggest obstacles in the implementation was the resistance to change – both from an administrative perspective and the operators’ perspective. This was overcome by EGESA with a clear communication of the objectives and with a double effort from the management side and the operators’ side. The automation was seen as an improvement of the conditions for the company and a way of achieving results more efficiently.
Fig. 4.1: Example of quotation made by Optimus
### Fig. 4.2: List of orders to be sent to the K-Station (Komori press) made by Optimus.

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75 pedidos actualizados el 10.03.2008
Fig. 4.3 – Screen of the K-Station used as planning, monitoring and maintenance of the Komori presses.

The K-station (Fig.4.3) receives the orders from the MIS. K-Station is the interface between the JDF world and the press environment. The orders from the K-Station are transferred to the presses and visualized in the KMS. In the KMS console the operator is matching the job with the ink profiles created by the PCC as shown in Fig.4.4.
**Future plans**

At the end of the project, the administration and the press environment will be fully automated. The future plan is to integrate the pre-press and eventually the post-press in the automated workflow.
Resulting Workflow/Processes

The workflow resulting from the hardware upgrade and the implementation of the JDF standard at EGESA provided revolutionary results for both EGESA’s administrative staff and for the management team. For the first time ever, EGESA had the ability to track and maintain control over the entire print process. This allowed for reduction in the number of errors for each print job, the introduction of real time production information as well as a drastic reduction in the amount of manual and administrative work for each print job (as shown in Fig 5.1). Additionally, and most importantly for EGESA, the introduction of the JDF standard allowed for greater facility in system integration – a very important factor for a company like EGESA.

Now that the systems were integrated and there was a greater control over each print job, EGESA could maintain control over costs which would give the company a competitive advantage by allowing them to pass on the savings for each print job to its customers.
WORKFLOW AFTER JDF IMPLEMENTATION

The Client calls EGESA to ask for a quote for a print job

EGESA is able to provide an accurate quote based on all the latest information between its prepress, press and postpress systems

EGESA and Client agree on the print job, and the Quote becomes an Order.

EGESA is able to maintain a strict control of costs at all points in the print cycle, thanks to the JMF signals sent back from the press to the MIS system.

EGESA can provide first-class customer service. The status of every job is available in real-time.

The job is completed and shipped

Fig.5.1: Workflow in EGESA after JDF implementation.
Innovation

The high level of specialization and competition in the industry in general – and in the sector of Graphic Arts, in particular – make drastic changes necessary for companies’ survival.

The first change necessary was to upgrade EGESA’s machinery. The latest equipment is required to maintain the production standard and to keep up with EGESA’s competitors. Nonetheless, the most modern machines are not capable of improving operations if the machinery and the print processes are not automated. This creates the necessity of developing new systems for the production and the administration. These systems need to be automated, centralized and flexible. This development allows EGESA to compete with the other printing companies on the national level as well as the European level.

The main activity of EGESA is the printing of pamphlets, books and magazines. In this activity, where the competition is very strong, the automation in the factory is a clear advantage.

Due to the high levels of competitiveness in the marketplace, it has been necessary for EGESA to develop projects that use a highly competitive and technological edge. In this way the position of EGESA in the market will be strengthened.

The advantages resulting from the development of this project are manifold:

- Ability for clients to know the status of a job at any stage in its completion
- Answer to the market needs for better management and attention of 40%
- Saving in materials like paper, ink and plates up to 15% savings
- Reduction in the process times up to 30%
- Cost information more precise, which allows a better decision making on different levels: technical, administration, future investment, commercial etc.
- Better respect of the deadlines and better real time information, which turns into a better customer satisfaction and better sales.
- Better maintenance plan of the machinery, which turns into a higher quality of products and less down-time of the printing factory.