

Case study



Company:

Andrychowska Fabryka Maszyn Defum SA,
Stefana Batorego 35, 34-120 Andrychów

Project:

Implementation of the innovative IPOsystem production management system.

Date:

The implementation took place between April 2012 and March 2013.

Situation before implementation:

AFM SA produces specially equipped machine tools and other machines in their catalogue, intended to meet the specific needs of every client. There are several divisions managing the production process: Sales Department, Construction Department, Technological Department, Supply Department, Pre-production Department, Warehouse, Mechanical Engineering Department and Assembly Department.

IPOsystem was implemented together with the Comarch CDN XL system, designed to organise the production processes in the warehouse and manage accounting and personnel. Before IPOsystem implementation, production planning was based on a sales plan prepared by the Sales Department. Projects and production organisation was discussed during meetings and conferences, where priorities were determined and problems were solved. Divisional Managers handled particular tasks in different departments as well as the current management of employees using the procedures determined for these processes.

Production Managers and masters manage the production areas: they were responsible for meeting deadlines for particular machine production runs while optimising the use of the workforce. One of the main tasks of the Xpertis system was to process information related to materials and component supplies (mostly made on site) as well as supporting management decisions.

Problems encountered:

When the IPOsystem implementation began, we observed problems typical for companies using that type of management system:

- Problems with communication between the construction, technological, planning, supply and production divisions,
- Ineffective employee management in production areas,
- Excessive current production levels,
- Failure to meet order deadlines,

Case study



- Failure to keep accurate accounts.

Implemented solution – IPOsystem

Implementation of the new system for management of industrial production has solved all the problems listed above.

Following the implementation process, IPOsystem makes independent managing decisions and controls the processes, information and supply flow, as well as all the resources (human and machine) engaged in the production process for optimal completion of the tasks. The scope of duties of the employees managing these processes has diametrically changed, as they are now responsible for entering information essential for system operation (orders, technologies, work calendars for people and machines, ordering supplies, services and subassemblies generated by IPOsystem, etc.), assigning priorities to orders, determining their deadlines and supervising system operation.

IPOsystem manages the whole process via a built-in mechanism, which creates and assigns management tasks throughout the whole process. From creating assignments by the Sales Department with descriptions of Client requirements (in the form of digital documents, drawings, pictures etc. attached to each assignment), through the work of the Construction Department (preparation of the technical documentation) and the work of the Technological Department (providing information about the technology required and amount and type of supplies needed – costs for orders being automatically estimated by the system by analysing this information). The order is then returned to the Sales Department, which places the order by fixing the deadline determined by the Client. The whole process is supervised by the system. If deadlines for particular tasks are not met, the system sends the relevant information to the managers of the departments concerned.

After an order is placed, the system automatically analyses the current logistics and production situation (deadlines and the degree of advancement of all tasks defined in the system, supplies available in the warehouse, available human and machine resources) and, depending on the constantly changing situation, it manages every production step in real time. It creates orders to cover shortages through the ERP system, and manages warehouse employees and production-support employees independently through the integrated MES system.

The system automatically responds in real time to any deviation from the fixed deadlines for each technological operation. It introduces corrections to the production plan (the work plan is regularly updated) and, after marking a technological task as completed, the system will assign the next, optimal for that moment task to that employee within approximately 5 seconds.

IPOsystem manages the employees and exercises control over the sequence and punctuality of performed tasks, reacting to each departure from particular operation times in real time by sending a notification to the Production Manager. Moreover, the system will not assign another task to an employee until the current task is logged as completed in the terminal. Thanks to current alerts and automatic employee assessments at the end of each month, we observe a significant increase in the commitment of the employees to their assigned tasks.

Case study



Most important IPOsystem functions at AFM SA:

- Managing production progress (individual decisions on the assignment and sequence of task performance),
- Automatic, real-time assignation of tasks to all employees involved in the production areas,
- Collection of feedback on production progress from production areas (production reports, shortage reports),
- Precise duration calculation (day, hour and minute) for particular orders and enabling duration management over all orders,
- Time estimation for completion of orders,
- Managing employees and exercising control over punctuality and the quality of their work in a continuous manner,
- Managing tasks related to logistics and supply,
- Managing the relationship with subsuppliers and other parties,
- Process management for quality control, maintenance, construction office and technological office – managing information transfer between the divisions (on the basis of the built-in electronic transfer of documents and a communicator with information transfer control functions, and supervision over order realisation),
- Supporting and automating the strategic, operational and process planning processes,
- Support tool to facilitate definition of the technological processes of even the most complicated of machines and devices, which may consist of thousands of components,
- Creating product templates from catalogues (introduction of such a product into production takes several seconds),
- Built-in advanced tools to enable data import and exchange with other systems (ERP, CAD/CAM, etc.),
- Automatic preparation of pre- and post-executive costing.

IPOsystem facilitates the use of many different analyses:

- Timesheet processing of employees along with an assessment of their efficiency,
- Level of use of planned working time of particular employees and machines,
- Resource usage analyses, analyses of “bottlenecks”,
- Efficiency and finance analyses (clients, products, orders and resources).

Case study



Summary – results of the implementation process

IPOsystem implementation at AFM SA has lead already to a number of improvements:

- Current in-production levels have been extensively reduced, with IPOsystem taking optimal decisions on the execution order of necessary tasks for maximum utilisation of production resources available on any given day;
- IPOsystem has improved internal communication and eliminated the problems this was formerly provoking;
- Significant improvements in the meeting of order deadlines;
- AFM SA receives current, direct and very precise data concerning the progress of work on each order, together with information about the allocation of costs of production at any moment for any given process.

IPOsystem facilitates precise analyses of process realization in particular technological operations in terms of their actual realisation time. This helps define more precise norms and implement improvement processes at particular workstations. AFM SA is currently undergoing this process: masters and lower maintenance staff are no longer responsible for planning and managing of the procedures, and instead can now focus on giving technical assistance to production line employees. This all leads to a faster realisation of particular technological operations and improvements in their quality.