HEADING TOWARDS INDUSTRY 4.0 WITH IGRAFX

Optics Balzers, the high-quality optical component specialist, takes a big step towards Industry 4.0 by making its processes transparent with iGrafx

Introduction

Light is life. Light is energy. Light is a tool. Light transports information. Hardly any other phenomenon in our world matches the versatility of light. Countless applications in modern life are based on the targeted use of light – from lighting in clubs and concert halls to microsurgery, modern driver assistance systems, and high-precision materials processing.

Masters of light

The developers and engineers at Optics Balzers are masters of working with light in all of its many forms. For more than 70 years, their company has specialized in the development and manufacture of high-quality optical components, and it is currently among the leading suppliers in the photonics industry worldwide. Systems and products by Optics Balzers are used in areas such as the automotive industry, biophotonics, lighting and projection systems, and sensor technology. The precision of advanced optical technology by Optics Balzers also shines in laser and image processing systems, aerospace and in many industrial applications.

In-depth expertise in optical thin-film processes makes Optics Balzers a leader in its field. The company also demonstrates excellence in the field of surface structuring and other processing capabilities required for the production of optical thin-film components and assemblies.

Optics Balzers was founded in 1946 in Balzers, Liechtenstein. In 2010, the company acquired mso jena Mikroschichtoptik GmbH, a Jena-based company founded in 1998 as a spin-off of the Fraunhofer Institute for Applied Optics, Jena. Today, Optics Balzers has three production sites in Balzers, Jena, and Penang (Malaysia) and employs around 500 people.

New paths for further growth

Carsten Rybka, Head of Process and Quality Management, is responsible for streamlined process structures throughout the company and for ensuring a consistently high product quality. When he joined Optics Balzers in November 2014, the company's strong growth had already started to have a significant effect on its organizational and communication structures.

> "At the time we did our process documentation in Word, which was not particularly popular with the users. Approval processes weren't mappable, and we had no way to represent the links between processes, risks, maturity levels, and KPIs. In short, the processes and their performance were neither transparent nor mappable in context."
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> Carsten Rybka
> Head of Process and Quality Management
> at Optics Balzers

Among other things, this had a significant effect on supply management. "It was difficult to get a clear overview of the number of submitted offers, the status of orders, lead times, and conversion rates." In order to change this, Optics Balzers was in the process of introducing a workflow management system.

Shooting for maximum transparency

The company's requirements went far beyond pure workflow management, however. As Carsten Rybka explains, "Our offers are very complex. Engineering is just as much a part of the offers as development, sales, production planning, or logistics". So the task was to install a tool that could transparently display every process for everyone involved, including connections and dependencies.

In the first step, Carsten Rybka took stock of the current situation and got an idea of where each of the business units stood and what their objectives were. He also started working with the new workflow management tool, which was later rolled out at the Balzers and Jena locations.

"Even while the rollout was still underway, it was already clear that we couldn't make our processes and key figures transparent to an extent that would make sense for the further development of our company."

A process-oriented tool

The plan of installing a process management software started taking shape. The goal was to make all processes fully transparent in order to ensure a clear overview at all times and establish a strong foundation for ongoing improvement. For these reasons, the new software had to go beyond providing graphic elements for visualizing individual processes – "We wanted a tool that is process-oriented."

The most important points in the requirements catalog were that the software should support web-based publishing, offer an intuitive user interface, and provide a role-based user concept. Other key requirements included an integrated approval workflow in order to ensure compliance capability.

"We wanted to be in a position where we could set up a defined approval workflow that includes documentation for every object – with a validity date for each object and a new approval process that gets automatically triggered. This allows us to ensure that every document is subject to review in a predefined cycle and then is actively approved again – at least every 24 months, depending on the object. That way there are never any obsolete documents."

iGrafx: One system for every requirement

From this starting point, Carsten Rybka searched the market for tools that would enable Optics Balzers to implement its required measures. Early on, it became clear to him that iGrafx was one of the most promising candidates. "I had come into contact with the iGrafx platform before and knew that its features could be a good fit. But of course I looked at alternatives as well."

He also had some things in mind that seemed not totally essential, but nice to have. These included the ability to define business objectives and requirements in accordance with ISO 9001 certification. Another hope was that a next step could integrate risk management into the new tool.

After a thorough review of the available process management tools, they decided for iGrafx. "The big advantage was that we had a system that allowed us to map all of our requirements, including the process connections and interactions."

In September 2015, Carsten Rybka and his colleagues began introducing iGrafx at Optics Balzers. "The support that iGrafx gave was very helpful in this process. The hotline staff provides very competent assistance, and the consulting and training services are extremely flexible and tailored to specific applications."

Other advantages included the well thought-out and highly intuitive user interface. "Adopting our existing process diagrams was a relatively intensive process, but overall, working with iGrafx was quite easy from the start."

All existing processes were revised and updated to BPMN 2.0 during their transfer to the iGrafx platform. New processes have since been successfully created in iGrafx as required.

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Gradually tapping new potentials

The tool's real potential, however, became apparent more gradually. "Our process objects have many individual elements: KPIs, risk points, process diagrams, and more. In order to really create optimal transparency, these individual elements have to be assigned to their respective objects. We didn't see that at all in the beginning," admits Rybka. "In the meantime, the true purpose behind it has become fully clear to us. Because we work with it on a daily basis, and we get clear benefits."

Today, iGrafx process management and dashboards are fully integrated into the process landscape at the Optics Balzers locations in Balzers and Jena. "Our transparency is completely different; handling and quality management are running perfectly. And we can meet the increasing demands of the market and our customers without any problems. This would't be possible if we didn't have this tool."

In addition, iGrafx has also made training new or transferred employees much easier and more efficient. As Carsten Rybka explains, the up-to-dateness and clarity of the process visualization and the guided documentation ensure greater acceptance and a better understanding of the processes among employees and managers. "All in all, this creates a comprehensive understanding of process performance, risks and opportunities, which makes it a good basis for our further development."

Integrating risk management

In mid-2019, Carsten Rybka and his colleagues took the next step. Originally they had a separate risk management tool, but now they began integrating it into iGrafx. Among other things, they integrated the requirements and risks with regard to the company's certifications. KPIs and dashboards run integratively, and most of the associated processes are automated. "The full power of the tool has really become apparent at this stage. Every six months, we take a closer look at the higher-rated risks; we review the lower-rated ones every 12 months.

The risk-based approach also simplifies the auditing process for ISO 9001 and IATF (International Automotive Task Force) 16949 certification. As Rybka says, "In the past, the audits included the entire process landscape; today, the focus is essentially on the higher-rated risks. And for our management, having transparency in terms of the interaction between risks, requirements, strategies, and third parties is a real added value."

The experts at Optics Balzers are currently in the process of inputing key figures from the existing ERP system and other data sources into the system via data integration. This will make the processes even more dynamic and further increase the tool's usefulness in terms of increased efficiency, up-to-dateness, compliance, and handling of customer and certification audits.

For Carsten Rybka, the central benefit of iGrafx is "that it's a platform for a wide range of process, compliance, and quality issues – from process management, process performance measurement, and risk management to compliance and quality assurance – and they are all networked. We've not only achieved our objectives; we've exceeded them." However, he admits, "With what we know now, we would invest much more time in structural preparation before introducing the new system – in addressing the question of how to map our company in iGrafx."

According to Carsten Rybka, Optics Balzers has now made a clear decision to further expand the tool as a central corporate management instrument. "For me, this is one of the key elements in our development towards Industry 4.0."

iGrafx

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