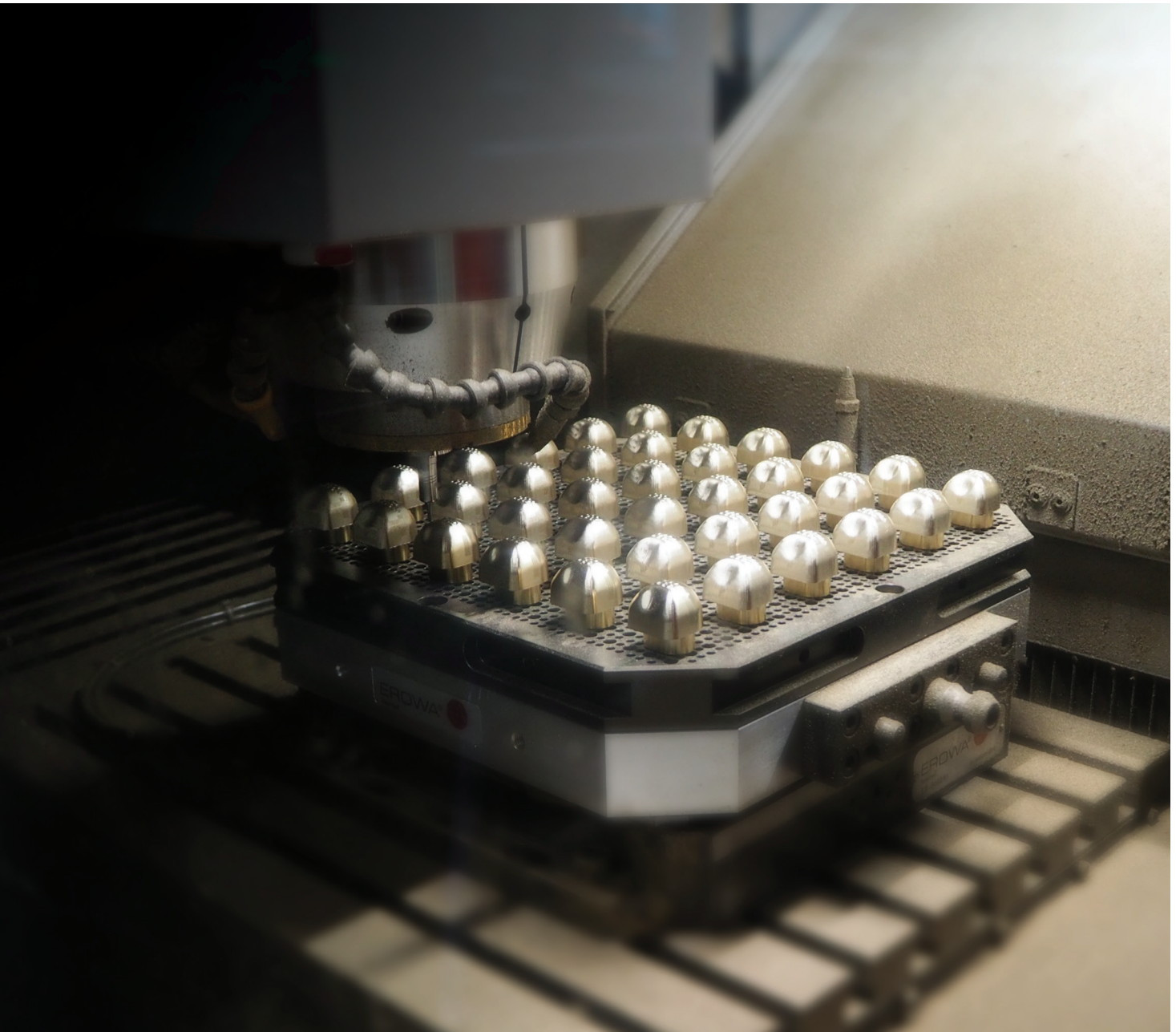


INDUSTRIAL EQUIPMENT CASE STUDY
MAX RINER



Challenge:

To gain an advantage over its competitors, chocolate mold manufacturer Max Riner needed to streamline development and accelerate its response to customers.

Solution:

The company chose Dassault Systèmes' 3DEXPERIENCE® platform, and its Single Source for Speed industry solution experience for design and data management.

Benefits:

Due to an impressive 50% reduction on time spent on engineering activities, Max Riner can complete projects faster and accept more business than before.

SWEET BUSINESS

Many products are designed to appeal to our senses. Chocolate is no exception. Although taste is one of the reasons chocolate is so popular, its visual appeal also is important. Switzerland-based Max Riner AG makes sure chocolate looks appetizing. Its molds are used by all of the world's major industrial chocolate-makers. These molds must satisfy the artistic and business requirements of the chocolate producer as well as the technical specifications of the machine that will mass-produce the chocolate. Max Riner works with both the machine manufacturer and the final customer – the chocolate producer – to design the right mold for the job.

Founded 70 years ago by Max Riner, the company is now run by second and third generation. "Our major business challenge is to be competitive on a global scale," Urs Truttmann, engineering manager, said. "Many low-cost mold manufacturers are challenging us and because our cost structure in Switzerland is higher than in many other countries, we cannot compete at this level. We are, however, known for the excellent quality of our polycarbonate molds and the fact that we are very flexible and can adapt to any type of demand. Our objective is to develop these assets further and to transform them into a competitive advantage," he said.

TAILOR-MADE MOLDS

When a chocolate producer has an idea for a new chocolate product, they can rely on Max Riner to develop it for them or to help fine-tune the design proposal. "Every mold is tailor-made to customer specifications," Truttmann said. "We are involved from the early stages of chocolate development and bring our mold design experience to the table to create a chocolate mold that will produce an aesthetically appealing chocolate. If the mold is not correctly designed, the demolding process can be very tricky, and may even damage the chocolate."

Developing molds for industrial chocolate production is complex because of the very nature of mass producing chocolates. "For example, a mold can have 20 cavities to produce 20 chocolates and each cavity has small details

such as logos or reliefs that print specific 'engravings' on the chocolate," Truttmann explained.

"At the mass production level, every chocolate has to have exactly the same weight; for legal reasons they cannot be underweight, and for economic reasons they should not be overweight. Our job is to make sure every cavity has the same volume and same dimension. Moreover, molds must be able to resist 'industrial treatment' as they are washed, hammered, vibrated and twisted during the production process. Thus, they need to be flexible and resilient. They must be designed in such a way that makes chocolate easier to demold and does not exert unnecessary strain on the mold. These are all very big challenges for us," he said.

In the past, Max Riner designed its molds and tooling in 2D using a variety of software. But as competition in its sector became fierce, the company needed to streamline its processes, boost creativity and precision, and improve the way it collaborates with customers. "We previously used one 2D tool to create the molds and tooling, another tool to create the surfaces, and then used the resulting 3D data to create the NC program," Truttmann said. "It was not a clean process, and we often found ourselves having to redo our designs, which interrupted the entire chain. Incorporating customer feedback was also a difficult process. We needed more data integration and compatibility."

NEW TEAM, NEW VISION

As part of the company's new strategy, Max Riner's management chose to modernize and unify its software installation. It chose Dassault Systèmes' 3DEXPERIENCE platform and its Single Source for Speed industry solution experience. The company chose Single Source for Speed, which includes CATIA for design and ENOVIA for collaboration and data management, to manage its mold and mold injection tooling development. "Before CATIA, the mold and tooling were not linked," Truttmann said. "This would generate a lot of work if we needed to make minor changes. Now, the integrated approach provided by Single Source for Speed saves us considerable time because everything is automatically updated. For example, if we needed to tighten the tolerances while producing a stamp for a cavity, we would have had to manually add the new tolerance every time we produced a new drawing, if we remembered to do it at all. Now, we can make the change once and every new drawing already has the new tolerance included."



"With Single Source for Speed, tasks that would normally take half a day, now only take half an hour."

– Urs Truttmann
engineering manager, Max Riner

Helbling, a Dassault Systèmes partner, was responsible for implementing Single Source for Speed and provided Max Riner employees with training and advice on how to get started. They also provided best practices for Max Riner's particular line of work, explaining how to take full advantage of the software to make the design process more productive. "Their expertise was very valuable to us, especially since we wanted to make the transition to the new software solutions rather quickly," Truttmann said. "They helped speed things along and, thanks to Helbling, we were operational in a matter of days."

With Single Source for Speed, Max Riner uses ENOVIA to manage all CAD data and to keep track of design versions. "ENOVIA helps ensure we are always working with the right version of a model," Truttmann said. "We soon plan to manage our production BOM (bill of materials) with ENOVIA and to use it to connect all CAD data with our ERP system."

50%

Max Riner reduced engineering time by 50%
using Single Source for Speed.

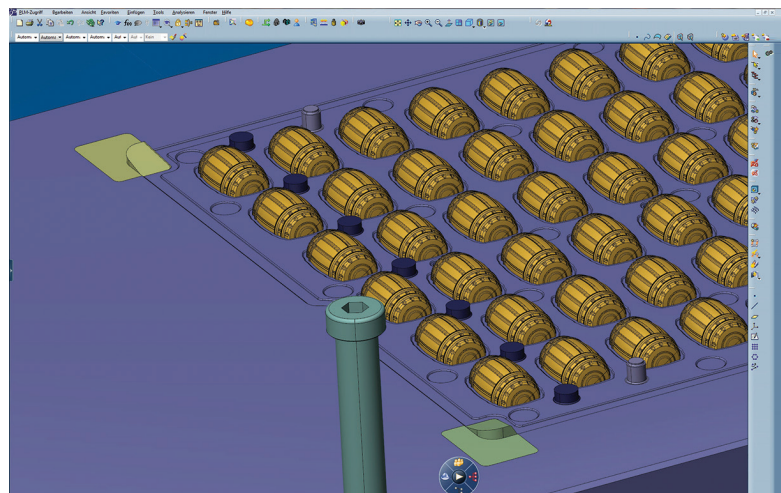
COMPANY-WIDE ACCESS TO DATA

Even though design team members work in the same office and can easily exchange with one another, this is not the case for all Max Riner employees. "With ENOVIA 3DLive, the entire company can access all CAD information at any time and visualize past molds or those under development," Truttmann said. "Our production engineers, in particular, no longer have to ask designers for information; they can simply access it on their own."

50% REDUCTION IN ENGINEERING TIME

Max Riner has experienced significant benefits in terms of cycle time with Single Source for Speed. "In general, tasks that would normally take half a day, now only take half an hour," Truttmann said. "This means we can accept more business because our turnaround time is shorter. Whereas a complete project used to take up to three months, from initial request to product delivery, with half of it devoted to engineering, we are now able to reduce engineering time to approximately three weeks. This leaves more time for other activities and, of course, more time for innovation."

With Single Source for Speed, Max Riner can respond to customers' requests for changes faster. "Instead of waiting a few hours between change requests, we respond almost immediately," Truttmann said. "Customers are consequently more involved in the design process since we can show them their mold and the way it evolves after every change in 3D. CATIA is so fast that we can generate a great number of different design options in a few hours. It adds a new dimension to our relationship with our customers. Moreover, thanks to CATIA, models are more precise and of higher quality, which has drastically reduced the number of molds rejected by production," he said.



Top image: Easter bunny chocolate moulds made of polycarbonate

Bottom image: Virtual injection mold design using the 3DEXPERIENCE platform

Focus on Max Riner

Industrial equipment manufacturer of molds and tooling for the production of chocolate

Products: polycarbonate molds for chocolate, tool manufacturing

Employees: 50

Revenue: 7.5 million CHF in 2014 (US\$7.8 million)

Headquarters: Rapperswil, Switzerland

For more information
www.rinermoulds.ch

Focus on Helbling IT Solutions

Helbling IT Solutions is able to call on the wide-ranging, in-depth knowledge of its staff when providing its consulting, implementation and integration services. In terms of IT, these assignments are fulfilled with the help of product lifecycle management solutions (PDM, CAD, CAE, CAM). Its domains of intervention include business process consultancy, assisting customers in selecting a PDM/PLM solution and its implementation, training and support.

For more information
www.helbling.ch

helbling

The working atmosphere at Max Riner engineering team has changed for the better since the company started using the 3DEXPERIENCE applications in 2014. "In the past, even though employees would spend a lot of time and work very hard, they would still end up making mistakes because the software they were using did not allow them to create the quality products that were expected of them," Truttmann said. "This created a sense of frustration. Today, the mood has changed for the better. Engineers can finish their work sooner and still attain the desired level of quality. Team spirit has greatly improved."

INTELLIGENT MOLDS

Max Riner's management will take advantage of many of the technological advances of the past few years. The 4th Industrial Revolution with the Internet of Things has impacted the production level at Max Riner. Recently, the company equips its molds with radio frequency identification tags (RFID) so its customers can monitor a mold's lifecycle.

"The industry needs a clearer picture of individual mold lifecycles," Truttmann said. "Intelligent molds enable chocolate producers to track each one as it goes through the production process. They can see how often molds are washed, twisted, hammered and vibrated, and have a more precise view of each mold's lifecycle. When you consider that one defective mold can halt production for a whole day, and cost chocolate producers millions, it is clearly an advantage to be able to monitor the lifecycle of every individual mold."

In the future, Max Riner plans to optimize energy consumption of its injection molding process. "We would like to use virtual simulation to increase the energy efficiency of this process," Truttmann said. "An optimized process helps companies use fewer materials, which will save them money. It can also benefit the environment since by optimizing the tool layout, they can reduce cycle times and, consequently, use less energy. It is an area in which the applications of the 3DEXPERIENCE platform can be of great help to us."

Our 3DEXPERIENCE® platform powers our brand applications, serving 12 industries, and provides a rich portfolio of industry solution experiences.

Dassault Systèmes, the 3DEXPERIENCE® Company, provides business and people with virtual universes to imagine sustainable innovations. Its world-leading solutions transform the way products are designed, produced, and supported. Dassault Systèmes' collaborative solutions foster social innovation, expanding possibilities for the virtual world to improve the real world. The group brings value to over 190,000 customers of all sizes in all industries in more than 140 countries. For more information, visit www.3ds.com.

