

# ECONOMIC ENGINEERING

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*Intelligent methods,  
processes and technologies*



**OpenDXM<sup>®</sup>**  
Manages  
**Data Exchange**  
at **MIELE**

**PROSTEP**

integrate the future



## OPENDXM<sup>®</sup> MANAGES DATA EXCHANGE AT MIELE

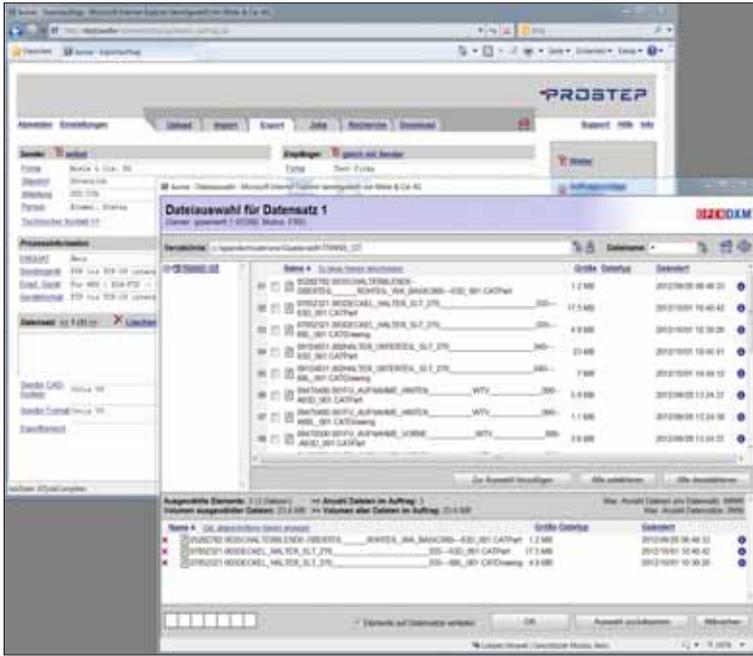
The automation of data transfer accelerates collaboration not only in the automotive industry but in other industries too. Renowned manufacturers of white goods like Miele have been using OpenDXM software from Prostep for almost 15 years to provide suppliers all over the world with CAD data in the right formats faster and log these exchange processes. With the switch to the Windows-based client-server solution, performance has improved further.

**M**iele is the world's leading premium manufacturer of washing machines, dishwashers, tumble dryers, refrigerators and other domestic appliances as well as professional machines for laundry care, dishwashing, cleaning and disinfection as well as for sterilization (1). Forever better than the competition, that is the credo of the Gütersloh-based company, which attaches great value to

the quality and sustainability of its products. It is well known that this is reflected in the price of their products, but it pays off if you offset the purchase and running costs against the product lifetime. On average, washing machines from Miele last much longer than other brands, as tests conducted by independent institutes confirm. "We design our washing machines for 10,000 hours of use. That

adds up to around 20 years in an ordinary household," says Stefan Blömer, who works in IT Applications and Processes at Miele. And the company has to keep the product data of the machines for just as long.

A long lifetime should not be confused with long lifecycles on the market: both the number of product lines as well as the frequency



OpenDXM in action at Miele



Stefan Blömer

Pictures (4): Miele

with which complete product series are replaced with new generations of machines has increased at Miele in recent years. The number of parallel development projects that must be successfully concluded by a certain market launch date is also growing accordingly. This cannot be done without outside help. Although Miele has a high development and manufacturing depth, it has worked closely with external development partners and suppliers for many years for capacity reasons. They develop and manufacture certain module components, e.g. the outer tubs in washing machines, which today are not always made of metal but of fiber-reinforced plastic, and undertake special tasks such as rapid prototyping and fairing.

### Uniform CAD/PDM environment

Miele develops domestic appliances at nine sites in Germany and Austria, some of which specialize in certain product groups (like automatic washing machines for commercial applications) and some in components like the motors, which are then fitted into the machines at other sites. This means that the company's designers not only have to work with external partners but also across different sites. Common ground is provided by the CAD software Catia V5 from Dassault Systèmes, with Enovia VPM V4 for product data management, which is installed on 360 workstations. This is to be replaced in the foreseeable future by the Enovia V6 product platform. Blömer not only expects this to provide better management of the complex wire harness structures, which are not completely

supported by Enovia VPM V4, but also easier exchange of assemblies with the suppliers. Precondition for the switch to V6 is the implementation of an end-to-end Windows-based client-server infrastructure, which is currently being set up. Some legacy-related problems have to be resolved first. Specifically, the Unix clients have to be replaced. Any data required for product support or further development will be converted and made available in the new environment. The replacement of Catia V4 and the associated hardware changeover to the cheaper and much more powerful Windows platform was the reason behind the decision to use the OpenDXM solution from Darmstadt-headquartered PROSTEP AG with corresponding integration under the Windows operating system. This new platform in combination with a high-performance Oracle database gave users a much higher level of performance with regard to both, operation and the processing of CAD data with OpenDXM. Miele has been using OpenDXM to automate data exchange with suppliers for almost 15 years. The solution was introduced with the aim of managing the growing volume of data being exchanged and the growing number of exchange operations better; these were previously organized manually, which was not only time-consuming but also relatively error-prone. Users sent their CAD data to a central site in Gütersloh, which converted them into the required formats and forwarded them to the appropriate suppliers. "We wanted to process all transfer operations, as far as possible, in a single, uniform system environment that could be used by the users themselves," ex-

plains Blömer, who was in charge of rolling out the data exchange manager. "We opted for OpenDXM because it was at that time the only solution that could handle the Catia V4 structures and names properly." Miele has not yet recognized the need for full integration of the data transfer manager in the PDM solution, even though Prostep provides a standard integration solution for this purpose. The process is therefore such that users check their files out of Enovia VPM V4 and save them to a certain area of the file server that they access with the web-based OpenDXM client in order to start the then fully automatic data exchange process. All they have to do is select the data to be transferred and the desired recipients, whose profiles have been stored. The job is then processed in the background on a central server in Gütersloh, which automatically converts the CAD files into the format required by the recipient and makes them available for download. Automatic quality checks are not integrated in the data transfer pipeline as they are included as part of the standard approval process at Miele. As many suppliers do not have an OFTP connection, Miele set up a collaboration platform based on Microsoft SharePoint years ago. Today, it is used to make not only CAD data but also other project-related information (e.g. schedules) available to partners. The CAD data is automatically placed on the platform by OpenDXM. Suppliers with appropriate authorization access the SharePoint service via a secured HTTPS connection where they find only the projects and data that are relevant for them on the preconfigured

partner pages. “We haven’t been able to send data unencrypted by e-mail for a long time now and therefore needed a solution that would meet our high security requirements and could be implemented at our partners without needing too much time or incurring costs,” explains Blömer. “In those days OpenDXM GlobalX was not yet available, which is why we opted for Share-Point. Thanks to OpenDXM’s flexible capabilities and openness, we were able to integrate it in SharePoint. “

### Large network with different partners

Most of the suppliers today use the Share-Point service. Data exchange is not a one-way street even if the original equipment manufacturer (OEM) sends a lot more data than it receives. Incoming CAD files, however, are not automatically checked back into Enovia VPM V4 – firstly, because the engineers first have to check the quality and secondly, because importing the data into the current data management facility would require too much manual reworking. Moreover, to do this, OpenDXM would have to be completely integrated into the CAD/PDM environment. “As far as process reliability is concerned, this type of integration would certainly be desirable as it would reduce the risk of errors resulting from manual intervention,” says Blömer. “However, that would only be practicable if data import were also automated to a greater extent. And to make that decision, a cost-benefit analysis will first of all have to be drawn up.”

Miele has quite a large network of partners, and the combination of partners can change from project to project. OpenDXM is currently processing around 1,000 data exchange jobs every month with 800 to 900 partners all over the world. Thanks to appropriate templates, which Blömer developed, the creation of new partner profiles takes just a few minutes. The formats in which the partners receive the data – e.g. as native Catia, STEP, IGES, PDF or STL files – depend on their IT infrastructure and the tasks they have to complete. Unlike car manufacturers, Miele does not stipulate that its suppliers use a certain CAD system. But when selecting partners for close collaboration in development projects, it puts great stock in a system landscape that is as homogenous as possible.

### Stable Windows server solution

Owing to the large number of parallel projects and ever-shorter development cycles, the number of data exchange jobs has increased significantly over the last five years. Furthermore, the frequency can oscillate from month to month, rising sharply shortly before the in-



roduction of a new product generation in particular. “Without OpenDXM, we would no longer be able to handle this flood of data,” remarks Blömer. Key advantage of the new Windows solution is that the data exchange processes can be completed even faster thanks to improved performance, which reduces the network load. The users at Miele, however, do not really notice because the data exchange processes run in the background. Once they have dispatched a job, they can return to their work and do not need to wait until the job has been executed. The software automatically reports when a job has been completed.

Blömer’s final verdict is that, from the user’s point of view, the easy operation of the web client, which always only offers the options for the desired partner, and the efficient logging of the transfers are the main strengths of the data transfer solution. As system admini-

strator, he himself profits in particular from the fact that the Windows-based solution is much easier to maintain. Among other things, this is because the replacement of Catia V4 means that far fewer exchange methods are needed, and these could for the most part be realized with the customizing functions in the software. This reduces the maintenance overhead for updates. Blömer’s experience so far indicates that the new server solution is as stable under Windows as it was under Unix.

MICHAEL WENDENBURG

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#### INFOCORNER

(1) [www.miele.de](http://www.miele.de)

Find more information about data exchange with OpenDXM on the website

[www.prostep.com](http://www.prostep.com)

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# “EVEN MORE INTENSIVE COOPERATION IN FUTURE”

Udo Hering, head of Product Management at Prostep, on data transfer in the future and the question of what role mobile applications will play.

**Mr. Hering, your company provides the data transfer platforms OpenDXM and OpenDXM GlobalX. What makes these solutions so unique compared with other PLM solutions that are also intended to provide support for collaboration scenarios?**

There are certainly many data transfer platforms on the market and good ones, each of which offers good operating options that cover certain application scenarios. For one or the other customer, these solutions are naturally completely satisfactory. That is why we also offer this type of low-cost, entry-level solution, which, as we have already established in several benchmarks, offer more functions at the same price.

**But what is the difference?**

Well, our solutions do not only cover just one application scenario, but rather are extremely flexible and enable the different disciplines within a company, like purchasing, engineering, manufacturing, after-sales or management, to use a central platform to integrate all the different systems and processes, and therefore automate and document the process flows. And in the field of PLM in particular, we offer standard, preconfigured solution components that enable fast implementation for all the leading systems on the market.

**System support for data exchange between engineering contractual parties seems to be in greater and greater demand. What is your impression?**

Data transfer between engineering partners is no longer just an option but rather a necessity. How and in what form the partner has to deliver his data is usually defined as early as in the tendering phase, i.e. when the manufacturer of a product distributes a call for tenders to potential suppliers or engineering partners. Without suitable solutions, which on the one hand generate consistent and auditable documentation, automatically where possible, and on the other hand provide the required data security, transfer logs and formats during transfer, the engineering partner doesn't usually have a chance of getting the order even if the price and performance are right.

**This means that in the future there will be even closer collaboration than has been the case so far, especially across country borders. How does Prostep see, let's say "Integration 2020"?**

We expect the complexity of the data transfer processes to continue to increase due to the increasing number of participating systems and disciplines within a company as well as data volume and the number of transactions. Markets like Asia and South America in particular remain a big challenge in this respect. Transferring large volumes of data simply and securely around the globe and having it available "just in time" is one of the tasks for the next few years. These requirements can only be met with flexible, robust solutions that can be automated. For this reason, our philosophy and future strategy for "Integration 2020" is: "Make it possible for users to use the system that they use daily and can operate best and ensure the highest possible, economically expedient degree of automation between the systems." We are of course already taking this approach as indicated by our integration in the PLM systems



Picture: Prostep

Udo Hering

commonly available on the market. And the latest development, a Microsoft Outlook integration with which the user sends an ordinary e-mail with an attachment which then, due to enterprise-specific rules, is not sent as an e-mail but delivered securely in an auditable transfer via the OpenDXM GlobalX platform is another step in this direction – but not by any means the last.

**What role will mobile applications play and how will this be supported by your solution approach?**

Mobile applications will play a bigger and bigger role in the next few years. Where data exchange using mobile devices via the Internet is concerned, the issue of "data security" is a core problem that still has to be resolved. If I want to distribute sensitive data, care must be taken to ensure that this data can really only be accessed by the people meant to access it. There are certainly some solutions for this available on the market, which are often cloud-based, but these definitely don't meet the enterprises' security requirements. More and more tablet PCs will be used for engineering which definitely require other operation options than a keyboard and mouse. To meet these requirements, we have already developed the first apps for iPhones and iPads which enable secure access to data that is stored in the company network on an OpenDXM GlobalX server. We will develop these options for other mobile devices to an increasing extent over the next few years.

**What sort of customizing overhead can the customers expect and what consulting services do you offer to provide them with support?**

Our solutions provide from the start a large number of pre-configured integration modules and processing methods, which, however, still have to sometimes be adapted to customer requirements. We, of course, provide easy-to-use graphic administration interfaces for this purpose. If the customers have suitably qualified staff in their companies, they can install our solutions themselves, and an installation manager will

provide them with support while they do this. We often provide customers with support from the beginning with process consulting, installation, customizing, tests, acceptance and start of production. This ultimately determines how high the total effort is in terms of time and money.

**Thank you for talking to us.**

Interview: BERNHARD D. VALNION

**PROSTEP**  
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