

# Cloud-native manufacturing for faster medicine delivery

Novo Nordisk successfully implements NextGen PAS-X MES from Körber.



**Driven to deliver medicines to patients faster with more agility, Novo Nordisk is leading the pharma industry's technology advancement by bringing MES to the cloud through their strategic partnership with Körber.**

Novo Nordisk, a leading global healthcare company, is on a journey to adopt PAS-X MES 3.3, the market-leading NextGen MES for pharma, biotech and cell & gene from Körber, in all its production facilities worldwide. Since the first PAS-X MES implementation in Hillerød, Denmark in 2008, the system has evolved into the company's standard MES system.

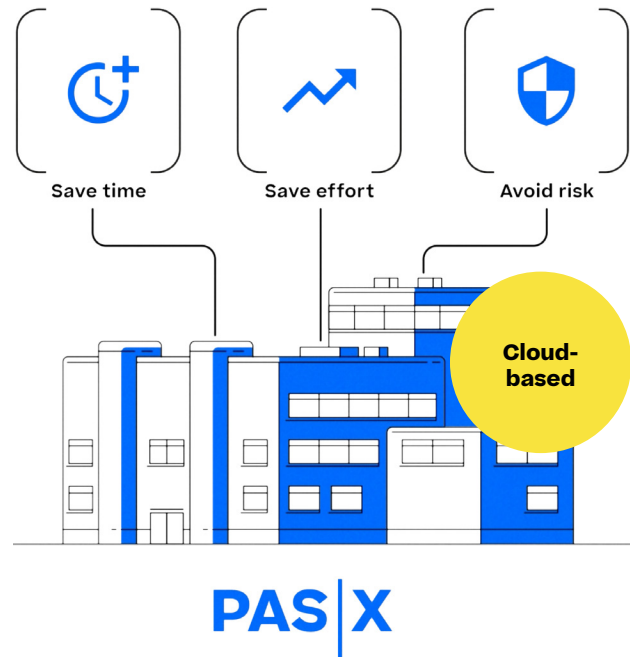


## Global MES core partner




Novo Nordisk follows a core approach, globally managed by their MES Programme Centre of Excellence (CoE): the template is based on the current PAS-X MES version, serves as the standard solution for all plants worldwide and is centrally maintained, validated, and rolled out. Today PAS-X MES is used in the manufacturing of all Novo Nordisk products, from insulin and growth hormone pens to obesity and hemophilia medications.

Now, to take advantage of the latest technologies available, Novo Nordisk is replacing their core system based on PAS-X MES 3.1.8 with PAS-X MES 3.3 out-of-the-box. In contrast to the previous strategy, the new MES version was no longer to be rolled out on-premise, but made available in the cloud. In doing so, Novo Nordisk is pursuing the following ambitions:

- Upgrade PAS-X MES at the sites with minimal downtime.
- Significantly reduce the time and effort required for upgrades
- Leverage Körber's CES support model (Continuous Evolution Stream) to continuously bring new functionality into production.



## At a glance

 <b>Challenges</b>	 <b>Solution</b>	 <b>Customer benefits</b>
<ul style="list-style-type: none"> <li>• Significantly reduce the time and effort required for upgrades</li> <li>• Leverage the CES support model (Continuous Evolution Stream)</li> <li>• Continuously bring new functionality into production</li> <li>• Upgrade PAS-X MES at the sites with minimal downtime</li> </ul>	<ul style="list-style-type: none"> <li>• Werum PAS-X MES 3.3 from Körber in Azure cloud</li> <li>• Option: fully managed Software as a Service (SaaS) offering</li> </ul>	<ul style="list-style-type: none"> <li>• Proof-of-concept cloud-deployment in two hours</li> <li>• Reduced time and energy for installation and verification</li> <li>• Reduced IT infrastructure costs</li> <li>• Reduced Total Cost of Ownership (TCO)</li> <li>• In the future: reduced site downtimes when upgrading, high speed to value</li> </ul>



## Cloud-deployment in two hours

In a proof of concept, Körber supported Novo Nordisk with installing and verifying PAS-X MES 3.3 out-of-the-box in their Azure cloud environment: “This initial upgrade project was an excellent achievement,” says Charles Grab, Strategic Account Manager for Novo Nordisk, Körber Business Area Pharma. “Surpassing expectations by spending less time and energy to install PAS-X MES 3.3 allowed Novo Nordisk to move three weeks ahead of schedule.”



Novo Nordisk’s MES CoE PAS-X infrastructure team: Khajorn Saelao, Jimmi Sivan and Daniel Paulsson (from left)

**“The installation, verification, and setup of the shop floor integration functionality took just two hours. Key to this success was the tight, collaborative partnership between Körber and Novo Nordisk along with their involved cloud, IT and MES experts.”**

### Daniel Paulsson

Project Manager, Novo Nordisk

By establishing PAS-X MES in the Azure cloud, Novo Nordisk reduced the effort required to install and verify the MES system, reducing IT infrastructure costs and Total Cost of Ownership (TCO) through saved labor hours, and in the future through reduced site downtimes. By installing MES as rapidly as Novo Nordisk was able to, the system can be brought into project environments faster to drive progress and deliver faster speed to value.

“In fact, the project wasn’t a significant challenge. It demonstrates that we thoroughly addressed all the necessary components in the pre-installation checks, such as the cloud infrastructure and the deployment code,” concludes Daniel Paulsson, Project Manager, Novo Nordisk.

## PAS-X MES in the cloud

Körber offers a flexible approach to PAS-X MES cloud deployments designed to meet customers’ needs wherever they are on their journey to cloud. The technology group has partnered with two leading cloud service providers, Amazon Web Services (AWS) and Microsoft Azure, to deliver solutions that ensure security, reliability, and high availability. Whatever the cloud hosting preference – whether private cloud or fully managed as Software as a Service (SaaS) – Körber has a proven track record of delivering a mature, GMP-compliant MES solution in the cloud.



## Foundation for PAS-X MES migration

After the successful proof of concept, Novo Nordisk set up test environments for their ongoing PAS-X MES 3.3 projects worldwide. This will serve as the foundation for upgrading all 3.1 systems to PAS-X MES 3.3. In total, more than 25 PAS-X MES productive instances will be migrated worldwide in the coming years.

With cloud-based PAS-X MES 3.3 at the center of Novo Nordisk’s Pharma 4.0 digital ecosystem, the company will be able to bring best-of-breed applications with out-of-the-box capabilities tailored to GMP production to their production sites across the world – globally empowering workforces and increasing manufacturing productivity. PAS-X MES 3.3 also enables Novo Nordisk to benefit from the CES support model (Continuous Evolution Stream), which brings new functionality into production faster. By leveraging the integrated intelligence and analytics products, Novo Nordisk will get the most out of their manufacturing data to further drive efficiencies.



## About Novo Nordisk

Novo Nordisk is a leading global healthcare company, founded in 1923 and headquartered in Denmark. The company's purpose is to drive change to defeat serious chronic diseases, built upon its heritage in diabetes. It does so by pioneering scientific breakthroughs, expanding access to its medicines, and working to prevent and ultimately cure disease. Novo Nordisk employs about 59,000 people in 80 countries and markets its products in around 170 countries.

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

## About Körber

We are Körber – an international technology group with more than 12,000 employees at over 100 locations worldwide and a common goal: We turn entrepreneurial thinking into customer success and shape the technological change. In the Business Areas Digital, Pharma, Supply Chain, and Technologies, we offer products, solutions and services that inspire.

We act fast to customer needs, we execute ideas seamlessly, and with our innovations we create added value for our customers. In doing so, we are increasingly building on ecosystems that solve the challenges of today and tomorrow. Körber AG is the holding company of the Körber Group.

## Delivering the difference in pharma

At Business Area Pharma, we deliver the difference along the entire pharmaceutical value chain by offering a unique portfolio of integrated solutions. With our software solutions we help drug manufacturers to digitize their pharmaceutical, biotech and cell & gene therapy production. The Werum PAS-X MES Suite is recognized as the world's leading Manufacturing Execution System for pharma, biotech and cell & gene. Our Werum PAS-X Savvy Suite accelerates product commercialization with data analytics and AI solutions and uncovers hidden business value.

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