

# The Enterprise MQTT Platform for Pharma 4.0

HiveMQ is the enterprise MQTT platform that lays a powerful foundation for Pharma 4.0. It solves data connectivity and interoperability challenges by providing a secure, reliable, and scalable data abstraction layer between OT and IT systems. HiveMQ helps Pharma manufacturers achieve digital maturity by integrating data from factory machines, systems and applications to enterprise and cloud platforms, enabling advanced data processing and analytics use cases.

## Digital Transformation and Pharma 4.0

Pharmaceutical manufacturing faces several pressures such as supply chain disruptions, quality control issues, and increased regulatory control that are impacting the ability to bring safe and effective medicines from R&D to market faster. Pharma Manufacturing is increasingly turning to the integration of digital technologies and automation, or Pharma 4.0, to solve these problems.

### Pharma manufacturing can derive these benefits from digital transformation:

**Improve efficiency:**

Automate processes and use data analytics to improve efficiency across manufacturing lines and locations.

**Innovate faster:**

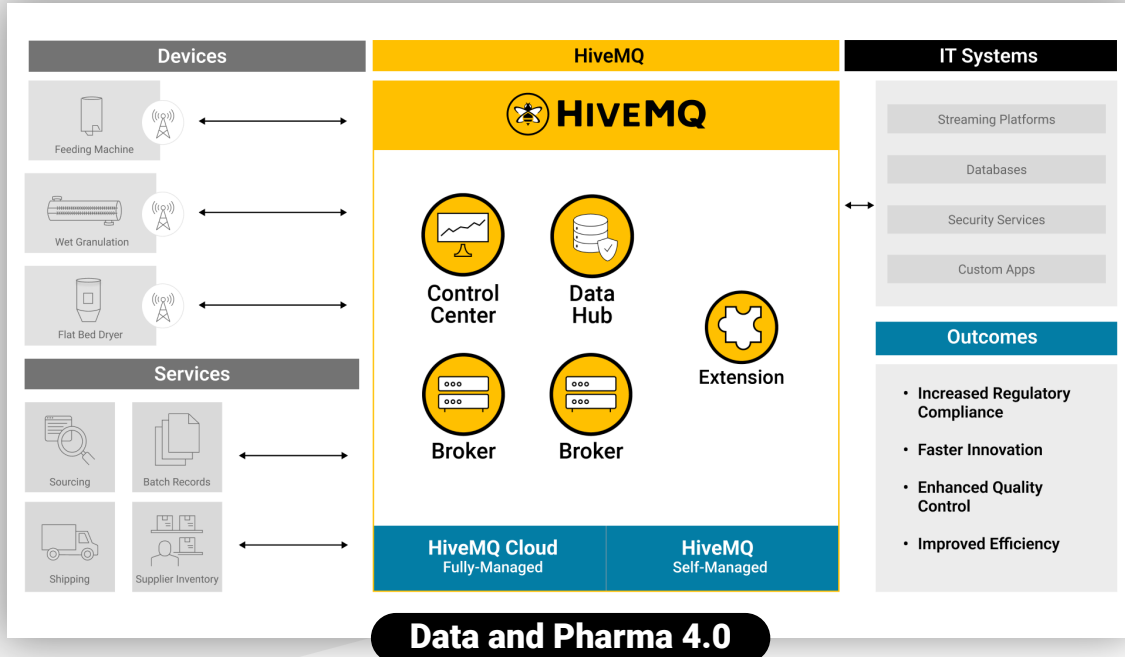
Use digital technologies to be more agile and quickly identify and recover from costly mistakes or unsuccessful endeavors.

**Enhance quality control:**

Apply real-time monitoring and analytics to quickly identify and fix issues before they negatively affect quality.

**Increase regulatory compliance:**

Automate regulatory reporting and quality control, and ensure the traceability of data to support regulatory compliance.



**Data and Pharma 4.0**

The first and most significant frontier to achieve digital transformation and Pharma 4.0 is data collection and movement. Data from Pharma manufacturing machines, processes, and applications is captured and stored via key ingestion technologies and needs to be moved from the OT side to the IT side, where it is stored in a data center or enterprise cloud. This data-rich environment enables advanced initiatives such as machine learning, AI, adaptive control, and digital twins.

**HiveMQ Platform For Pharma 4.0**

HiveMQ solves the challenges of data collection and movement in Pharma manufacturing by adding a reliable, scalable and secure data abstraction layer between OT and IT systems that enables heterogeneous machines and processes to work together seamlessly even in constrained environments.

**The key benefits of the HiveMQ MQTT platform that is trusted by over 130 customers are:**

**Business Critical Reliability:**  
Operate mission-critical systems reliably 24/7 with zero message loss and redundant clustering technology.

**End-to-End Security:**  
Ensure applications and data meet the highest security standards with end-to-end encryption and configurable security controls.

**Scalability to Support Growth:**  
Add any number of sites and scale to millions of connected devices seamlessly with a linear design for scalability.

**Observable Insights:**  
Troubleshoot and keep all factory systems running as planned with tools and metrics for transparency and observability.

**Flexible Integration:**  
Focus on your core business instead of using developer resources with OT-IT data integration into enterprise applications and infrastructure like Apache Kafka.

**Simple-to-Deploy:**  
Achieve rapid time-to-value with a platform that is flexible enough to deploy on-premise, in any cloud, or via the fully-managed and feature-rich HiveMQ Cloud offering.

**Scan the QR code to learn more about the HiveMQ Pharma Manufacturing Solution**

