



# SaaS Delivery Model for IOT

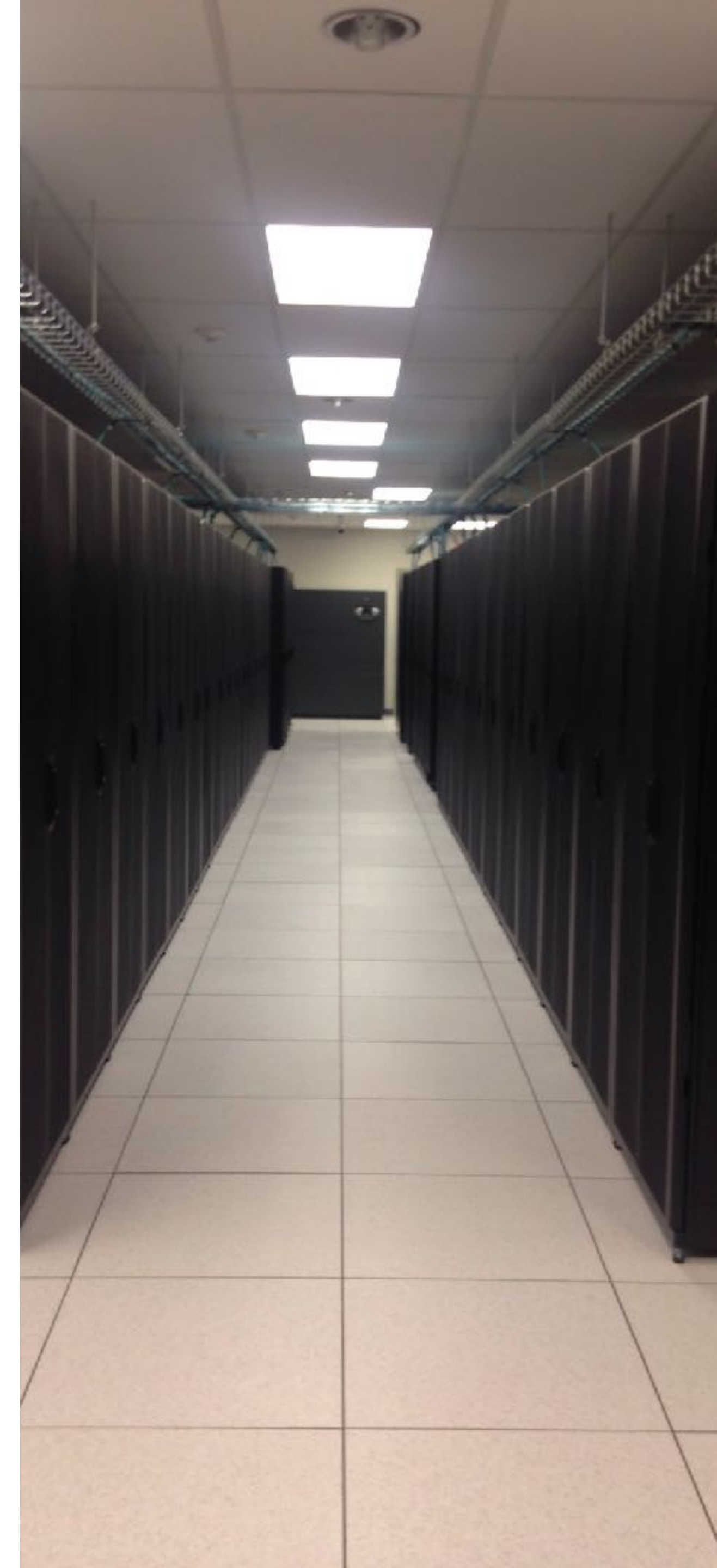
---



## OVERVIEW

VEM Sistemi is an Italian System Integrator providing ICT solutions.

The company chose beSharp as a technological partner to create ***Factorii Easy Production Improvement***, a Software-as-a-Service (SaaS) platform designed for managing all the digital factory functions (Industry 4.0) – performance, real-time monitoring and planned and predictive maintenance of industrial machinery in particular –, in order to improve production processes.







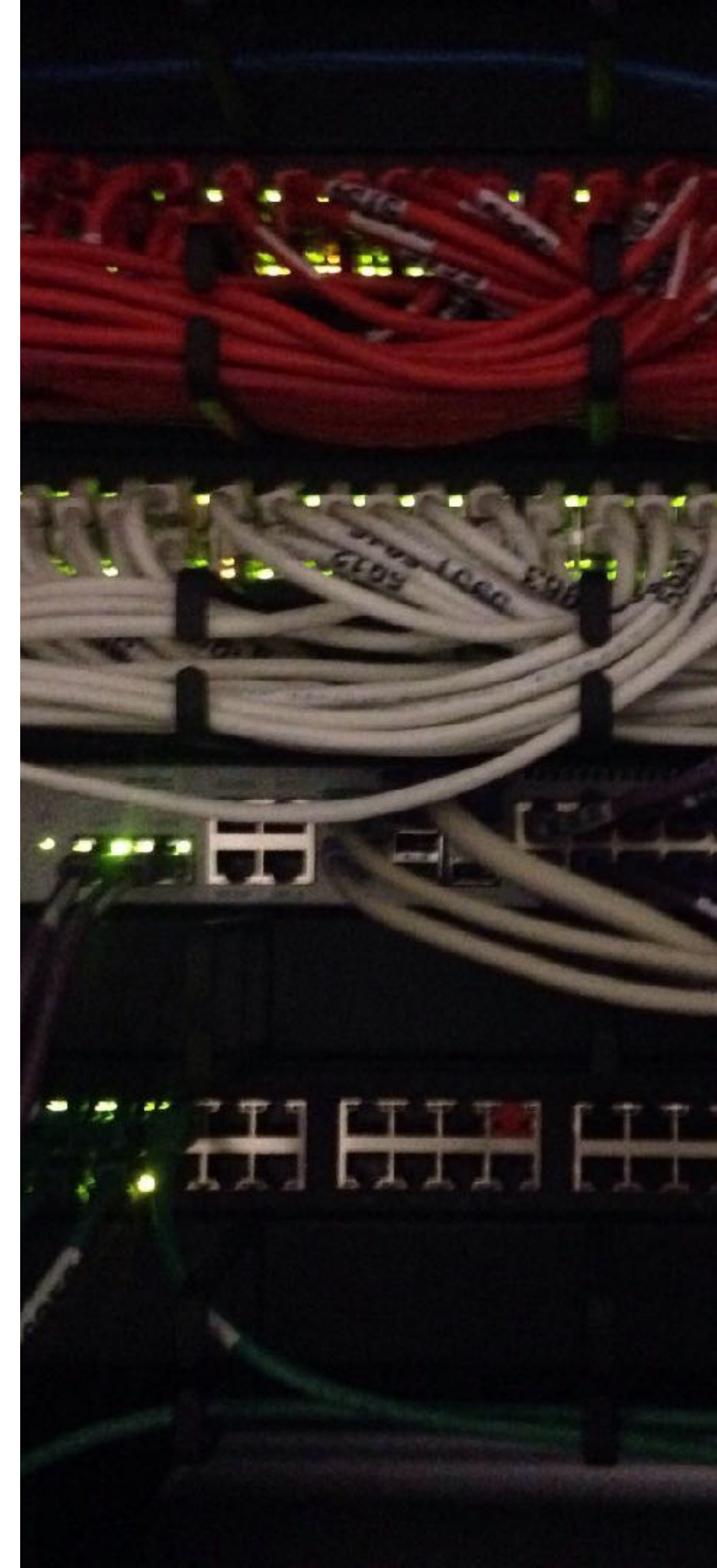
## THE CHALLENGE

- Obtaining a **flexible, scalable and cost-effective solution for the ingestion** of all the data coming from customers' Industrial equipment (IoT) taking advantage of the SaaS delivery model.
- Implementing a multi-tenant, highly available solution, able to **adapt to any type of workload**, growing along with their business by responding with adaptive scaling.
- Automating the deployment phases, simplifying control and management of the infrastructure and implementing **standard processes of testing and validation** of each release.



## THE SOLUTION

- Creation of an Industry 4.0 platform based on **AWS IoT Core** as a centralized MQTT broker used by all IoT machines to send events, alarms, and metrics and **AWS IoT Greengrass** to automate massive deployments thanks to deployment groups. **Serverless** services and features like **AWS Lambda Functions** and **Amazon API Gateway** as well as a more granular **microservices-based** architecture have been implemented.
- Implementation of the SaaS delivery model for the distribution of the new product designed and built according to the [AWS Well-Architected Framework](#) and to the **AWS SaaS best practices**.
- Implementation of **CI/CD pipelines** through the use of **AWS CodePipeline**, **AWS CodeCommit**, **AWS CodeBuild**, and **Amazon CodeDeploy**, and a strict division into different development environments: **dev** to keep control of all the changes affecting the application core, **staging** used to test application's changes in a production-like infrastructure (also validated by demo users), and **production**.







## THE BENEFITS

- **Optimization**

Thanks to a microservices-based architecture, VEM Sistemi was able to optimize resource **consumption, costs, and performances** while keeping granular control over every single resource.

- **Global reach**

Through the **SaaS delivery model**, VEM Sistemi has revolutionized the product distribution process and achieved a global reach. Maintainability and troubleshooting have been exponentially improved, too.

- **Automation**

Thanks to the automation of the deployment phases, VEM Sistemi has **speeded up both the development and the production processes** and obtained tools for early bug detection and malfunctions prediction.





“We were almost new to the SaaS delivery model and the expertise of beSharp’s team immediately ensured us the confidence we were looking for. beSharp’s cloud experts supported us at every stage of the project with unmatched consulting expertise. We developed a solution which perfectly fits our needs and allows us to grow faster than we thought.”

*Alessandro Boschetti*

Innovation team Leader @VEM Sistemi

## ABOUT BESHARP and AWS

beSharp and VEM Sistemi worked together to create an Industry 4.0 solution based on a microservices architecture leveraging the Software-as-a-Services delivery model.

As part of the AWS APN Partner Network, beSharp has achieved acknowledgments and competencies such as DevOps Competency and Well-Architected Framework partnership, both applied in every phase of the design and implementation of the solution.

Through an on-the-job training approach, beSharp has also provided VEM Sistemi developers with the tools they need to understand and master SaaS concepts and tools enabling them to take full advantage of the new model.

