IoT with Azure
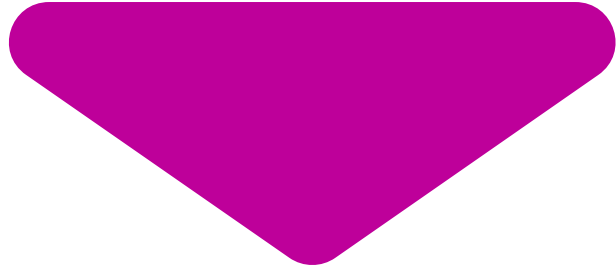
itransition

Why Azure?

Microsoft Azure provides a robust set of IoT services that cover the entire IoT lifecycle, from device connectivity and management to data analysis and visualization. Azure IoT Hub allows businesses to securely connect, monitor, and manage billions of IoT devices. This service ensures reliable and scalable communication between devices and the cloud, enabling real-time data collection and processing.

The Azure IoT Reference Architecture

Management & business integration

Devices
- Azure IoT SDK
- Azure RTOS
- Azure Sphere
- Azure IoT Edge

Ingestion & provisioning
- Azure IoT Hub
- Device Provisioning Service

Hot path
- Azure Stream Analytics
- HDInsight Spark& Storm

Warm path
- Azure Data Explorer

Cold path
- Azure Machine Learning
- Azure Data Bricks

- Power BI
- Azure Maps
- API Management
- Web apps
- Dynamics 365
- Flow
- Search
- Logic apps
- Mobile apps
- Azure Digital Twins

Microsoft Azure

We offer

IoT consulting

Our consultants transform your vision into a viable IoT implementation strategy and develop a project roadmap tailored to your IoT use case and business goals, minimizing time-to-market and ensuring the solution fits your budget.

IoT implementation

We offer comprehensive IoT-related services that empower businesses with AI/ML capabilities to drive innovation and enhance operational efficiency. We provide customization and configuration of turnkey IoT solutions, as well as bespoke software development.
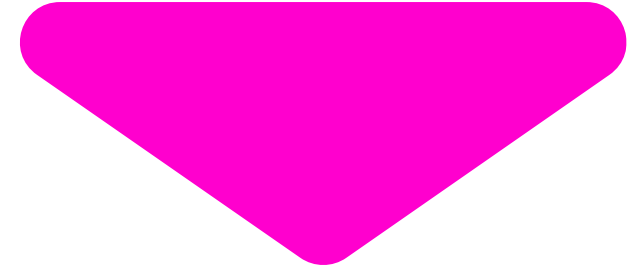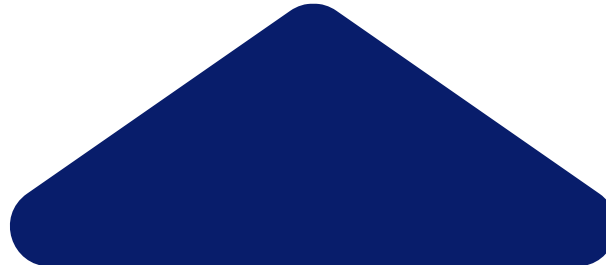
Extension into IoT

We extend existing enterprise and consumer solutions into IoT, turning connected devices and gadgets into valuable assets that enhance customer engagement and manage critical data, while integrating IoT software with your IT systems, including ERP, MES, SCADA, CMMS, PLM, and BI tools.

Solutions we deliver

Asset performance management

We develop asset performance management (APM) systems designed to monitor and analyze data from various sources, including sensors, historical records, and operational logs.

Predictive maintenance

We implement predictive maintenance strategies by monitoring equipment in real-time with smart sensors to detect potential failures early, minimizing unplanned downtime, reducing repair costs, and extending asset lifespan for smooth operations.

Digital twins

We create digital replicas of physical assets, systems, or processes, allowing you to simulate, analyze, and optimize operations in real-time. This enables performance monitoring, issue prediction, and improvements without disrupting actual operations.

Data analytics

We create analytics systems with AI/ML capabilities, allowing companies to efficiently store and analyze large sets of IoT data, enable big data analysis and accurate predictions, driving smarter decision-making and enhancing operational efficiency.

IoT data analytics with Azure

Unlock actionable insights with Itransition's IoT data analytics, powered by Azure IoT services. Leveraging Azure IoT Hub, Stream Analytics, and Azure Machine Learning, we process and analyze data from connected devices in real time. Our solutions optimize operations, predict trends, and drive innovation, ensuring scalable, secure analytics tailored to your business goals.
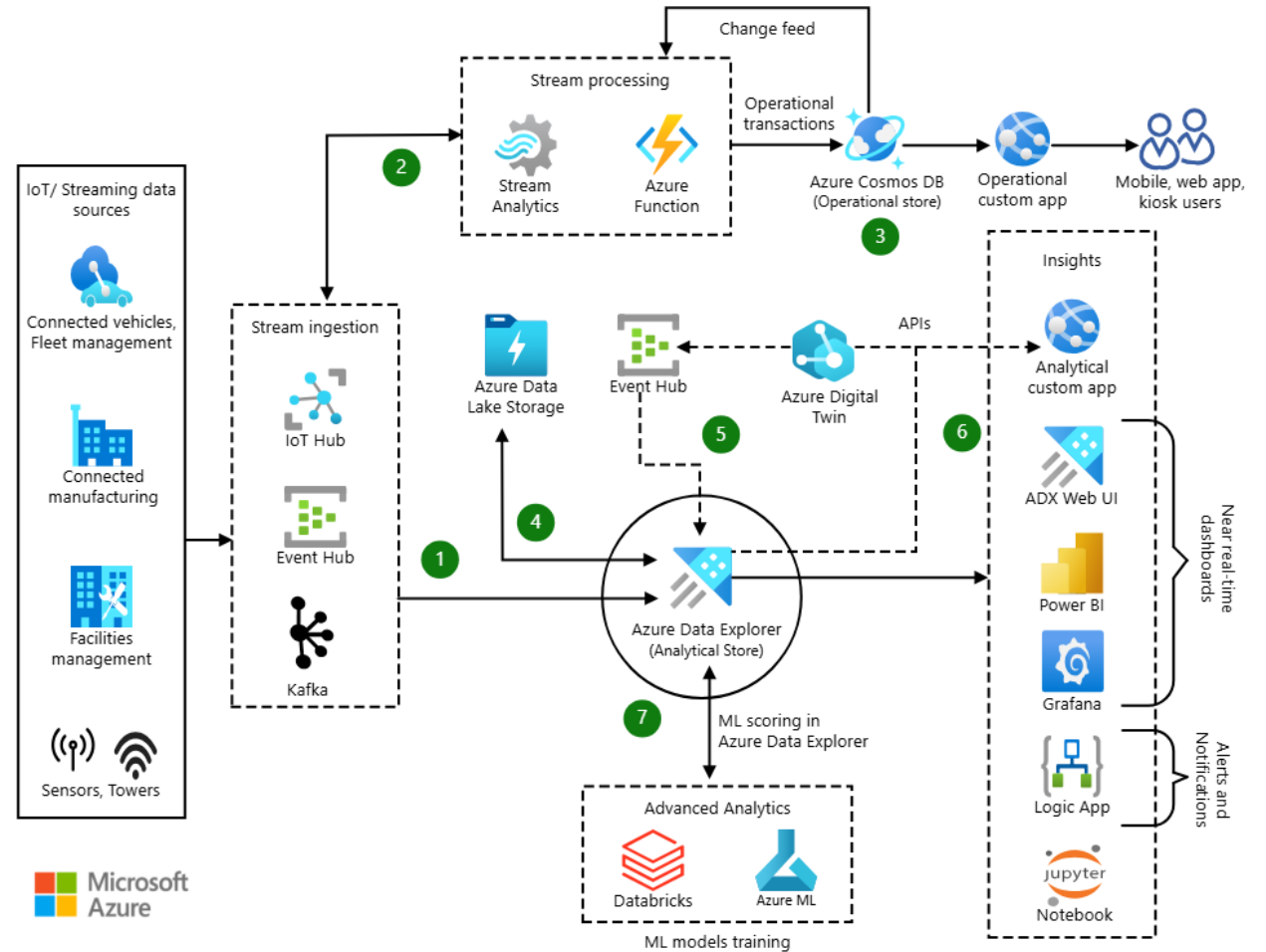
IoT for healthcare

Itransition delivers turnkey IoT telemedicine solutions uniting medical devices and wearables into a single network. We develop systems that enable real-time health checks, timely diagnostics, and remote disease monitoring, ensuring faster, more accurate diagnoses and care.

- Patient wearables

- Inhalers

- Defibrillators

- Smart carts

- Blood collection devices

- Barcode scanners, biometric and RFID readers

- Temperature, humidity, and cardiac boards sensors

- Smart pens, scales, tubing welders

IoT for supply chain

We enhance supply chain management by leveraging IoT to increase real-time visibility, improve operational efficiency, and enable process automation. Our IoT solutions ensure smarter, more resilient, and cost-effective supply chain operations, helping you reduce delays, optimize logistics and respond proactively to disruptions.

- Warehouse & inventory management

- Predictive maintenance of equipment

- Fleet management

- Real-time tracking & monitoring of goods

- Monitoring of environmental conditions (temperature, humidity, etc.)

- Quality control

- Automation & robotics

- Risk management

IoT for retail

Connected retail experiences

Itransition develops ecosystems that connect physical and digital sales, allowing bidirectional, real-time interaction with consumers both inside and outside the store. Our solutions deliver personalized content, enhancing user experiences through context-based interaction and NFC-enabled payments.

Shared commerce solutions

Our shared commerce solutions remove tasks of consolidating data between offline and online sales. We bridge the gap by synchronizing and streamlining financial and product information across all sales channels, whilst providing quick and easy access to real-time customer insights.

Smart stores   Drone delivery   Digital signage   Kiosks   Vending   POS

IoT for security

Itransition provides software solutions for the security industry, utilizing monitoring, tracking, and identification hardware. We create complex enterprise and consumer systems for hazard prevention, security management, surveillance, etc.

- Video surveillance

- Access control management

- Facial identification

- Movement tracking

- Audio recognition

Industry recognition

Zinnov Zones is an annual ranking that has become the industry standard for benchmarking providers. In 2021, Zinnov Zones featured Itransition in the Established Zone within the IoT Technology Services category, recognizing our expertise in creating IoT systems that cater to   a wide variety of industries.
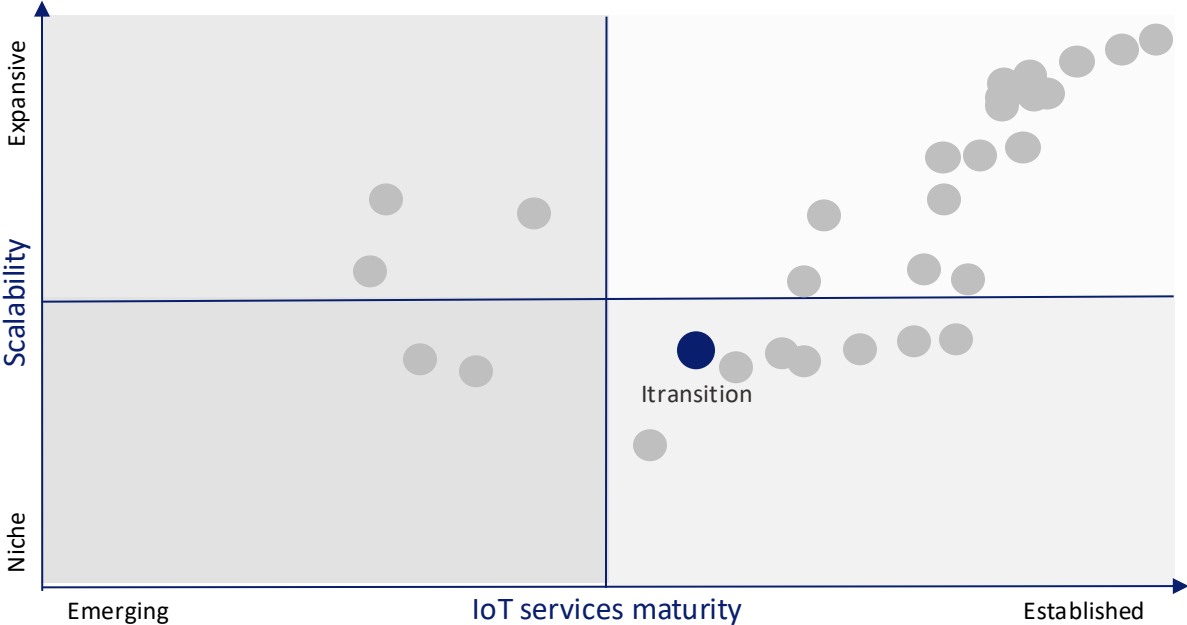
Case studies

Air quality control and management

Context

Our client, an owner of office spaces for rent, was looking for a reliable and experienced vendor to develop an IoT system that would centrally monitor and manage the electrical and HVAC systems in their properties. The primary requirement was to enhance the existing systems by integrating IoT, ensuring minimal disruption to ongoing operations.

Solution

We built the monitoring and control network using Zigbee devices. To send control signals to the existing electrical and HVAC systems, we used modules based on the ESP32 microcontroller. To optimize operational and maintenance costs, we integrated AI/ML functionality into the delivered asset performance management (APM) system, enabling predictive maintenance and anomaly detection. The developed APM system provided centralized control and intelligent management of the client's existing infrastructure.

12%
Reduced operational & maintenance costs

20%
Increased tenant satisfaction

Emergency care IoT

nuvara®

Customer

A brand of Talon, a 70-year-old worldwide leader in medication equipment, Nuvara addresses the challenges of emergency care in hospitals.

Challenge

To stay competitive, Nuvara wanted to innovate their crash carts with software, providing a complete hardware-software solution to support the entire Code Blue events cycle.

Solution

Itransition designed and implemented an industry-compliant IoT solution improving the resuscitation process with real-time guidance and logging, and enabling inventory management in smart carts.

The solution can be integrated with hospital EHR/EMR systems and uses a shared database for all clients while keeping their data and infrastructure separate. This approach provides for optimized resource utilization, reduced operational costs, and ensures secure isolation between tenants.

HIPAA   FDA   IEC 62304
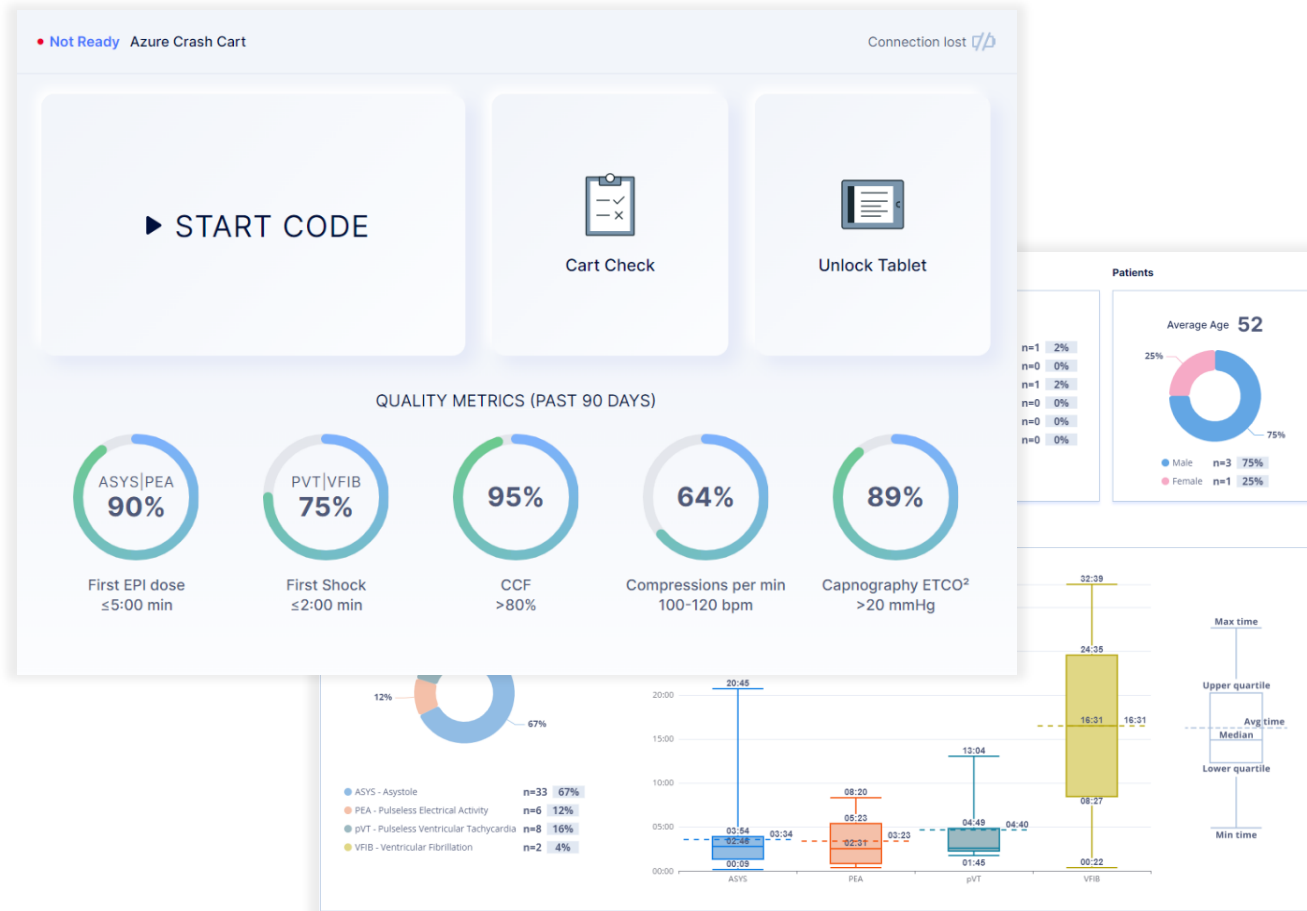
Emergency care IoT

nuvara®

> ❝ *We are more than happy with the outcomes of our collaboration with Itransition. We really appreciate their valuable input and give credit to a high level of professionalism and the overall commitment to the project they have demonstrated. We were able to rely on Itransition's expertise, granting them a high level of freedom in decision-making and being open to their ideas.*

Brian Schoenfeld, Chief
Executive Officer

Emergency care IoT

The EMMIT® Emergency Care System

Medical equipment system

Customer

Terumo BCT is a global leader in blood and cell technologies delivering products and services to clients in 130+ countries. The customer wanted to help blood centers integrate medical devices and manage data in real time.

Challenge

It was critical to ensure compliance with the regulations of different countries, as well as interoperability for easy integration with devices provided by different manufacturers.

Solution

Over 10+ years, Itransition developed 7 versions of a medical equipment system collecting and processing data from blood transfusion devices. The solution is compliant with the IEC 62304, HIPAA, FDA standards, supports hundreds of devices, and is available in 22 languages, helping blood centers worldwide automate operations and increase productivity.

400+

blood centers globally

30%

blood center productivity increase

# Face ID for entrance validation

itransition

Context

Wishing to expand our expertise in the IoT security domain, we wanted to experiment with the latest technology in the industry and encompass our wide experience in delivering IoT systems. We opted for an R&D project, aimed at developing a real-time face recognition solution for employee validation.

Solution

Itransition developed a face recognition PoC for building access management with a pluggable architecture that allows for switching its building blocks (detectors, encoders, and verifiers). The recognition algorithm is integrated with video surveillance cameras, feedback tablets, and electronic locks at the office entrance.

Results

The solution can recognize faces, compare them to those added to whitelists/blacklists, and notify the security service in case of an unauthorized access attempt.
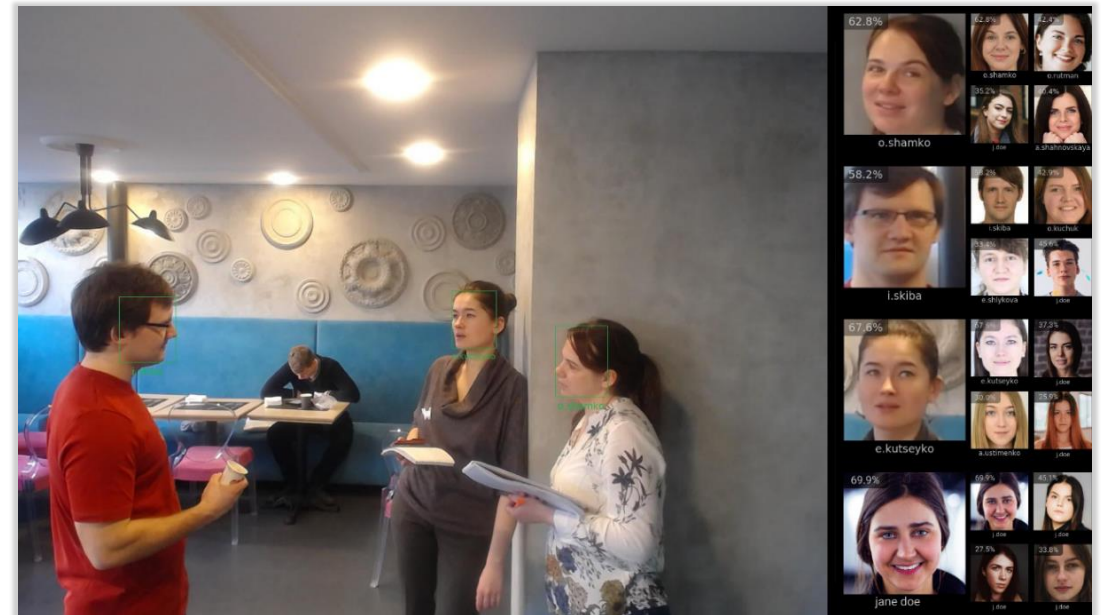
# Livestock monitoring ecosystem

Context

The customer is an agricultural startup based in Israel. Given the rather poor market presence and costliness of specialized sensors, such as smart tags, providing for monitoring animal welfare, as well as the systems gathering information from those sensors, they decided to develop a livestock monitoring ecosystem.

Solution

The delivered solution enables working with different livestock species, for example pigs, by identifying them and determining their physical size using an HD camera attached to a Raspberry Pi single-board computer. The solution monitors pigs' weight increase/decrease using machine learning algorithms and visualizes the received data via an implemented PWA.

Results

The delivered solution enables 24/7 livestock identification and monitoring in automatic mode.
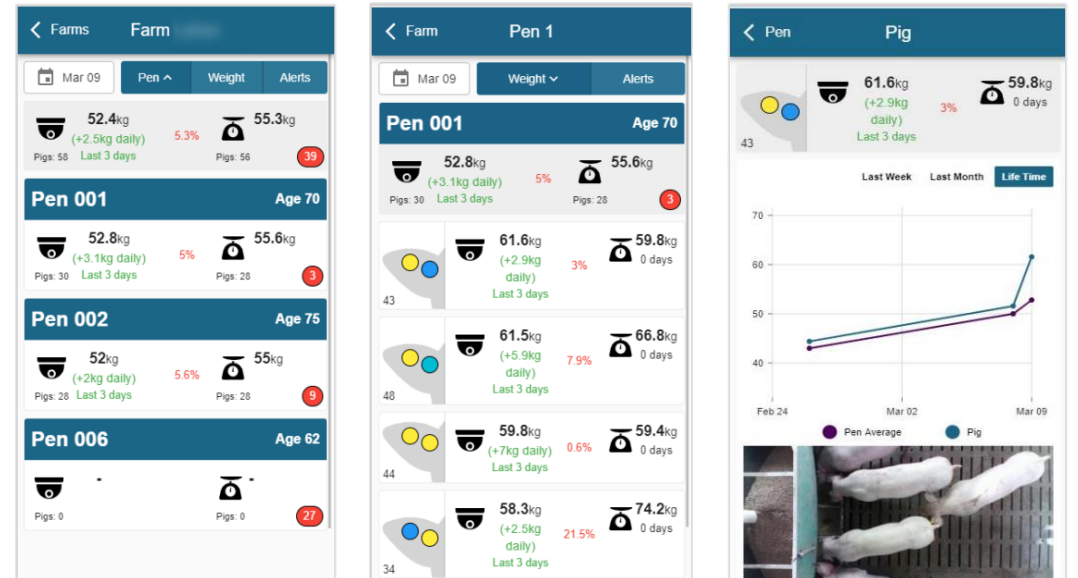
Let's keep in touch

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