

## SUCCESSFUL BUSINESS CASE - MICROSOFT AZURE

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*Danfoss*

# Reduce food loss, improve food quality

## SUCCESSFUL BUSINESS CASE - MICROSOFT AZURE

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SUCCESSFUL BUSINESS CASE - MICROSOFT AZURE

# Danfoss

## ✦ Introduction

Danfoss manufactures products for heating and cooling appliances such as radiators and freezers. The company wanted to expand its offerings to software as a service (SaaS) solutions and use its decades of domain expertise to help its food retail customers become more efficient





30%

of global food  
production is lost  
or wasted



Amounting to 1.3 billion tons annually.

# Objectives

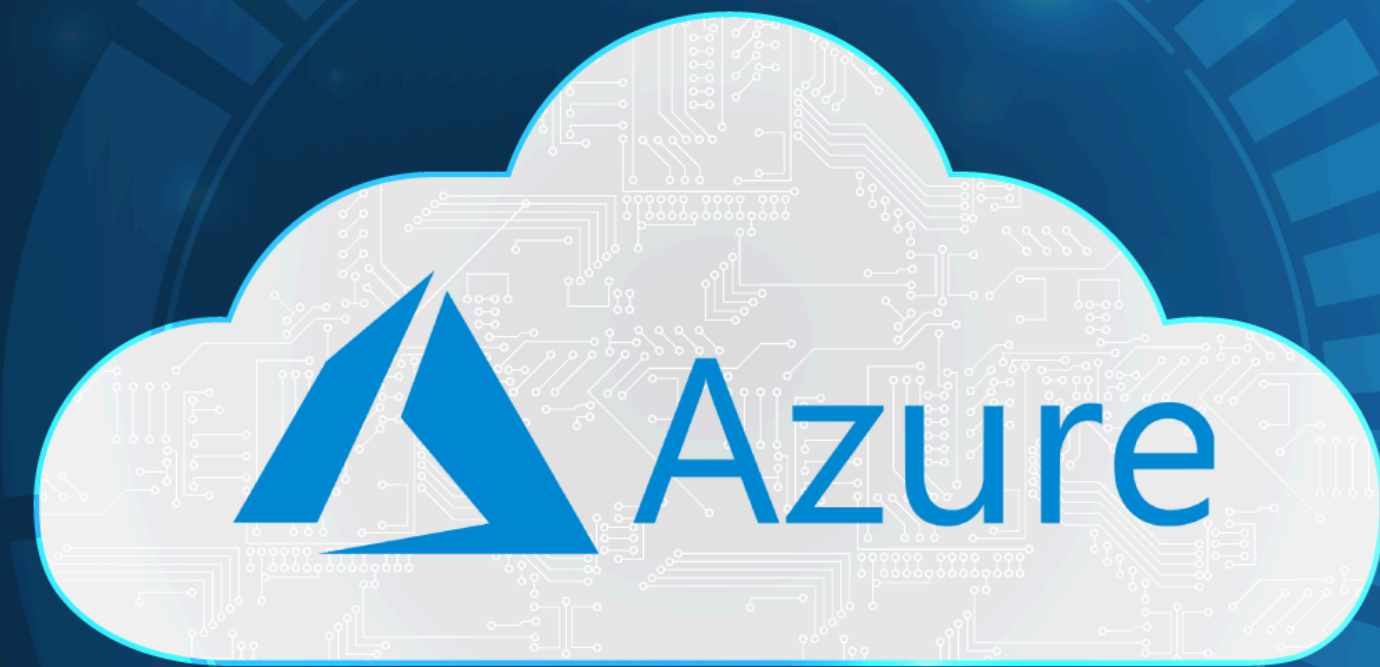
## ✦ **Reduce food waste**

Reduce food waste by enabling continuous and precise temperature monitoring.

## ✦ **Efficiency energy**

Improve energy and operational efficiency in supermarkets and food retail stores.



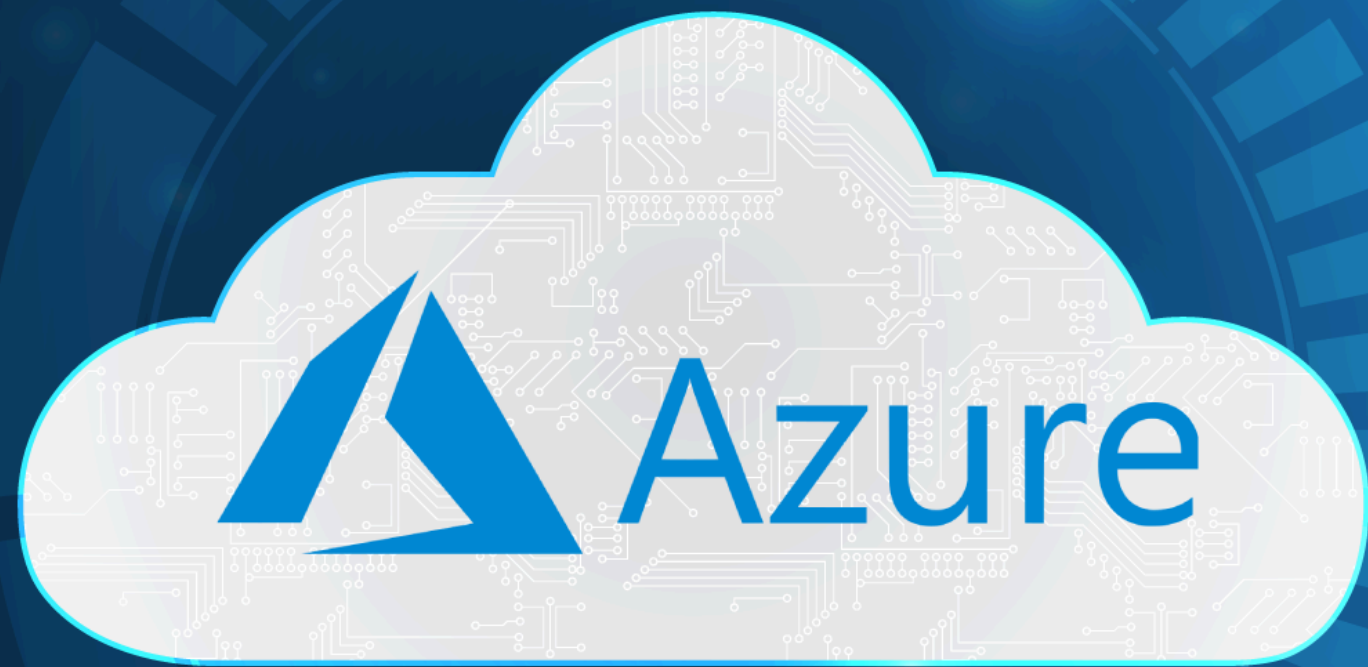


# Cloud Services Used

## ✦ Services

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- **Azure, Azure SQL Database, Power BI.**
  - **Azure Databricks:** Collaborative analytics platform based on Apache Spark, enabling big data processing, machine learning, and AI development.
  - **Azure Events Hubs:** A real-time data ingestion service that allows the collection and streaming of massive amounts of data from multiple sources.
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# Benefits

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- Scalability to handle large volumes of data from multiple stores.
  - High availability and reliability for real-time data processing.
  - Integration with other Azure services for data analysis and storage.
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# Technical Details ✨

## EcoHub

**Collects temperature data from IoT sensors installed in refrigerators, freezers, and other food storage facilities and transmit to the cloud.**

- High-Precision IoT Sensors
- Cloud Connectivity
- Integration with Other Systems

## ServiceHub

**Monitors and optimizes the performance of refrigeration systems, ensuring their maintenance and energy efficiency.**

- Real-Time Monitoring
- Preventive Maintenance
- Energy Optimization



# Technical Details

## AlarmHub

**Sends automatic alerts in case of temperature deviations, allowing for a rapid response.**

- Automatic Alerts
- Real-Time Notifications
- Alert Scalability

## TempHub

**Analyzes and visualizes real-time and historical data, enabling informed decision-making and regulatory compliance.**

- Real-Time Data Analysis
- Temperature History
- Detailed Reports
- Regulatory Compliance

# Business impact

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✦ **Reduce operating cost**

✦ **Improve asset performance**

✦ **Reduce food waste**

✦ **Reduce energy consumption and cost**

✦ **Improve food safety compliance**

## VALUE DRIVERS



By:



Meaning:

**reduce** operating cost

- **reduce** 'noise' alarms and alerts.
- **reduce** service call-outs.
- making setting changes **once** and deploying across multiple sites.

- **€325** per store/month saved from non-standard call-outs per month.
- **390 hours** saved per year across a chain of 430 stores using the Broadcast feature.

**improve** asset performance

- **maximizing** uptime of your business-critical assets.
- **ensuring** a consistent configuration in the System Manager, estate-wide.
- **identifying** critical setting deviations.

- **30-minute** notification if a System Manager goes offline providing peace-of-mind.
- **26 settings** in every System Manager are monitored to trigger inconsistency alerts.

**reduce** food waste

- **preventing** or reacting quickly to critical alarms.
- **traceability** of all alarm actions from inception to resolution.

- **€650** on average per store/month in food waste prevention.

**reduce** energy consumption and cost

- **establishing** benchmark values for critical data points and being alerted of deviations.
- **identifying** quickly and acting on problem sites.
- **systematic** energy curtailment actions.

- **>5%** energy reduction potential in refrigeration requiring no capex investment.
- **€1,635** per store /year potential from demand response through curtailment and incentives (based on local tariff rate).

**improve** food safety compliance

- **Automatic** generation of daily food safety reports.
- **Identification** of reports that contain exceptions, with option to regenerate.

- **Up to 3 years** of food safety reports accessible on-demand (more if required).
- **Audit-ready** reports stored in PDF format.

## CONCLUSION

30% reduction in food waste by ensuring optimal storage conditions.

Up to 15% energy savings, contributing to more sustainable operations.

improved regulatory compliance with automated and accessible audit reports.

This innovative approach is not limited to the food retail sector. Industries such as logistics, healthcare, and manufacturing can significantly benefit from adopting cloud-based IoT technologies to optimize operations, reduce costs, and minimize their environmental impact.



**Thank You  
For Exploring**