



# SAP Innovation Awards 2019 Entry Pitch Deck

Cold Chain Quality Assurance

Capgemini

# Cold Chain Quality Assurance

## Capgemini



### "Quote"

Cold Chain Quality Assurance enables our customers to monitor, analyse and act upon temperature related events during their cold chain operations.

### Challenge

Lacking visibility of the cold chain performance and impact on cost of quality. Make the lifecycle of goods and materials visible to stakeholders in the supply chain, and find the potential parts of the chain to be optimized. Additionally it addresses issues around Integrity and quality of goods, so that one drives down cost related to quality and integrity, and improves customer satisfaction. Finally it addresses challenges around compliance. Be compliant with stricter regulations in an efficient way and trace back the goods to their origins when needed.

### Solution

Combining condition monitoring of goods and materials in transit, with master and quality management data from ERP core systems. It enables clients to achieve efficient distribution, improve quality of goods by preventive actions, and trace deliveries to cut waste and spoilage.

### Outcome

Less waste and spoilage of materials that have been exposed to temperature variances. Optimized chain performance and flexibility. Better insights in quality assurance and dynamic pricing based on quality of the materials. Standardization framework for better compliance.

Real-time insights into temperature around perishable goods

25% less spoilage of goods

Streamlined processing of goods based on their quality conditions



## Partner Information

### Capgemini Owner



Cold Chain Quality Assurance enables our customers to monitor, analyse and act upon temperature related events during their cold chain operations.



## Business Challenge & Objectives

Lacking visibility of the cold chain performance. Make the lifecycle of the goods visible to the stakeholders in the chain, and find the potential parts of the chain to be optimized. Additionally it addresses issues around Integrity and quality of the goods, so that one drives down cost related to quality and integrity, and improves customer satisfaction. Finally it addresses challenges around compliance. Be compliant with stricter regulations in an efficient way and trace back the goods to their origins when needed.

Integration of condition monitoring on sensitive goods with ERP data such as logistics data, quality management data and master data. Event driven notifications of anomaly's and disruptions in transport of the goods. User friendly interface that enables a real-time overview of the situation around the sensitive goods. Improved decisions making by using predictive and prescriptive models.



## Project / Use Case Details

We have applied the general idea of integrating sensors, digital twins and core ERP data on the processing of milk. The use case focusses on milk collection from farms, and processing at plants (inbound process).

The challenges what we are trying to address here are lacking visibility on product conditions and integrity when the collection process is ongoing, as well as improving the chain performance. After all, we try to improve customer satisfaction downstream and minimize cost.

The idea is that quality assurance employees can take preventive actions on changing conditions during transport. For instance, a truck with raw milk is driving around collecting milk at the farms. Suddenly it finds itself in a accident or traffic jam, which leads to a temperature increase in the milk batch. The sensors alert the system and the system can suggest the quality assurance employee to reroute the batch to another plant, schedule an additional inspection, or completely chuck the batch.

By showing a physical sensor setup, a set of applications and services, and a real (toy) truck we are trying to make it visual and appealing to the audience.



# Benefits and Outcomes

## Business / Social

Less waste and spoilage of materials that have been exposed to temperature variances

Optimized chain performance and flexibility

Better insights in quality assurance and dynamic pricing based on quality of the materials

Standardization framework for better compliance

## IT

Advanced monitoring for temperature sensitive materials in large scale operations

Real-time alerting and reacting on issues

Integrated with on-prem S/4 system for quality assurance and logistics data

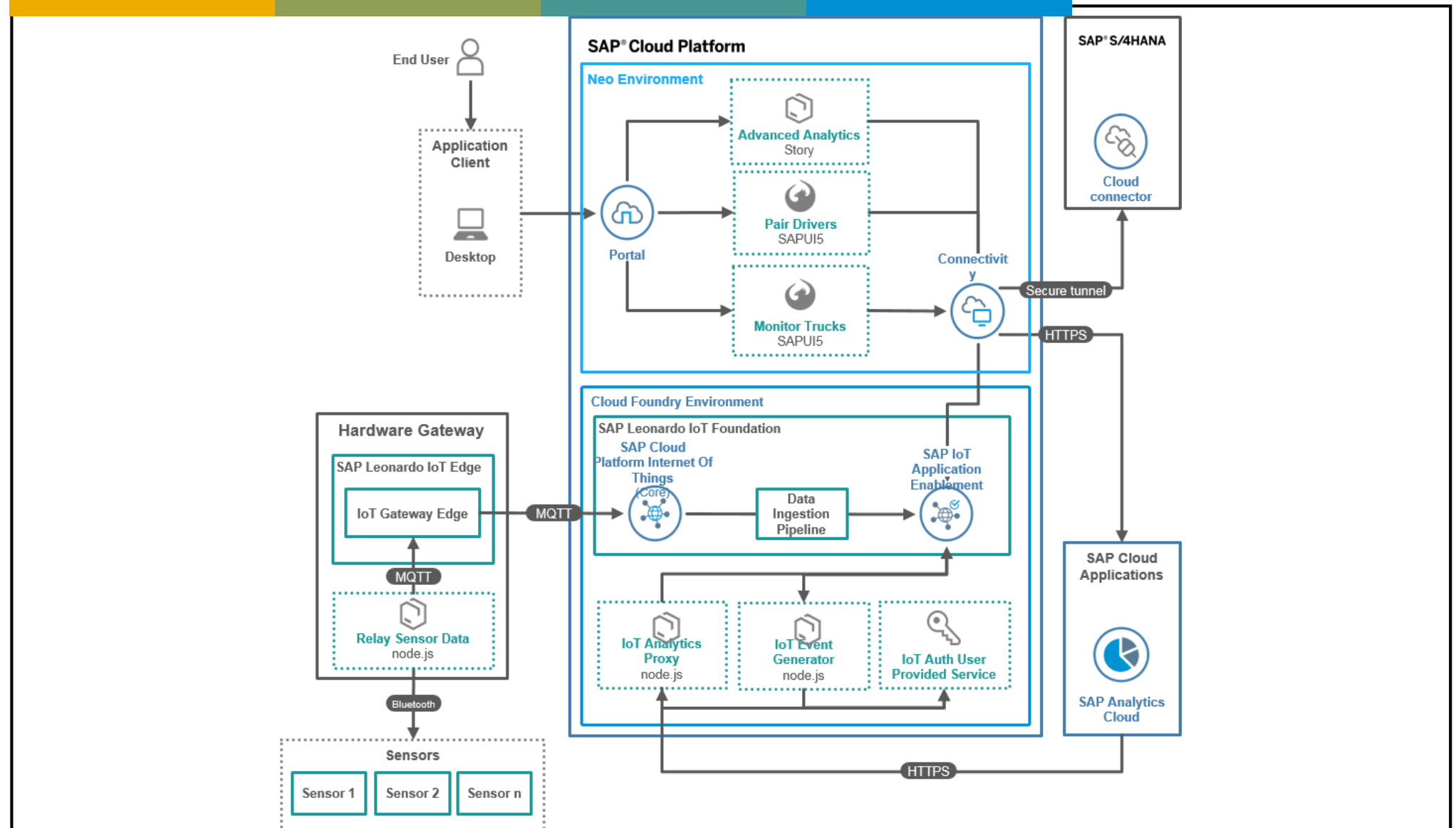
## Human Empowerment

Event driven actions enable employees to respond adequately on unforeseen challenges and take preventive measures to avoid disturbances down the chain





# Architecture





## Deployment

Date of Deployment or POC:

-

Number of live users:

-

### SAP Technologies Used:

SAP Cloud Platform	Test
SAP Leonardo IoT	Test
SAP Analytics Cloud	PoC
SAP S/4HANA	Test

Server Processor:

-

Linux Distribution:

-





## Emerging Technologies and Use Cases

The following Emerging Technologies and use-cases are part of the project and describe the contribution

	Technology or Use Case	Yes/No	Contribution to Project
1.	Machine Learning / Artificial Intelligence	No	
2.	IoT	Yes	Sensors gather temperature information from the trucks that move the goods. This data is send to the IoT services on the platform
3.	3D printing	No	
4.	Blockchain	No	
5.	API Economy / Integrate the Intelligent Enterprise	Yes	Microservices to expose sensor data to analytics cloud, microservice to monitor threshold values
6.	Cloud Native / Event Based Architectures	Yes	Running on Neo and CF architectures
7.	Extending the digital core with SAP CP / ABAP in SAP CP	Yes	Integration with S/4HANA for QM and shipping data
8.	SAP Leonardo Application ( extending SAP application, using Industry Innovation Kits or result of Design Thinking workshop)	Yes	Used design thinking to get to this solution