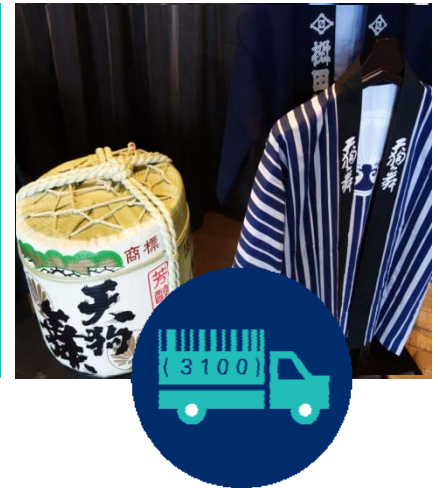


Visibility Verification of Japanese Sake Supply Chain

Demonstrated how EPCIS is efficient



Public awareness of food safety and the importance of corporate reporting and disclosure are increasing throughout the world.

Why is visibility important?

Information that ensures safety and security enhances product value. That is why it is important to develop an efficient and effective quality control system that enables consumers, distributors and producers to track and trace information at every stage of production and distribution, including the monitoring of temperature and other conditions. Counterfeiting and fraud have become a major social problem that is affecting international distribution as well. The spread of illegal and inferior products damages the reputation of Japanese brands and poses a serious threat to food safety and security. Various technologies, including holography, have been developed to identify authentic products, but this has simply led to a rise in hologram counterfeiting.

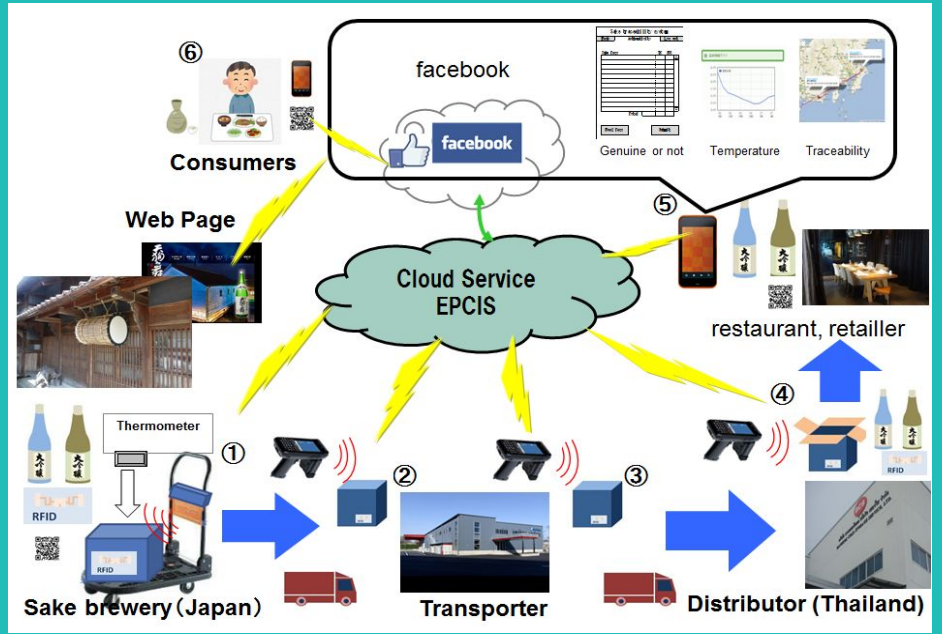
The battle against piracy is looking more and more like a cat-and-mouse game. The situation calls for a new technology that allows for supply chain visibility, enabling producers, distributors and retailers to track and identify products at every stage of the supply chain. Visibility is the key to combating counterfeiting.

EPCIS is a standard specification for supply chain visibility. It specifies the structure and meaning for visibility data (data recording events such as where a product is and where it has been) for storing on a server and sharing among users. By providing a standard data format, EPCIS allows visibility data on servers to be shared and understood between different enterprises.

Verification test

Each product has an individual EPC (RFID) tag. This verification test involves reading the product's tag when it arrives at specific points in the supply chain. This information is sent to the computer server to confirm the identity and location of the product.

Any product that cannot be identified through this system can be considered to be a counterfeit.



We conducted verification test involving many supply chain stakeholders from Japan to Thailand focusing on GS1 keys and EPCIS.

Explanation of diagram

During the test, the product's EPC tag (SGTIN stored) was first read at the time of shipment from the sake brewery. It was read again upon receipt and delivery by distributors and by the agent in Thailand to record the exact date and time it passed through each stage of the supply chain. If a product cannot be identified on the server, it has not gone through the proper channels and is therefore counterfeit. This makes it possible to identify counterfeit products and prevent them from being sold at retailers or served at restaurants.

① Sake brewery

To prevent attempts to switch bottle contents and to ensure traceability from the point of shipment, the bottles were sealed with EPC tags embedded in the caps. The bottles were individually boxed and packaged in an outer box with a temperature data logger. On shipment, the EPC tag on the outer box was linked to the EPC tags on the bottles and to the invoice number. The scan location (GLN), shipment date and time were then uploaded to the computer (cloud) server.

② Transporter (receipt)

The shipment from the Sake brewery was delivered to a warehouse near Narita International Airport.

On arrival, the EPC tag on the outer box was read and the scanning location, reception date and time were uploaded to the computer server. As this was a verification trial some outer boxes were opened, and the tags on some individual bottles were intentionally damaged and shipped in this condition.

③ Transporter (shipment)

Once the freight carrier to Thailand had been confirmed and an air waybill issued, the product was shipped from the warehouse near Narita Airport. The EPC tags were once again read and the scanning location, shipment date and time uploaded to the computer server. For this verification trial, we decided on airfreight transport to minimize the overall transit time.

④ Distributor

On arrival at the airport in Thailand, the Thai agent or distributor received the shipment and stored it in the company owned warehouse. The EPC tags were read and the scanning location, storage date and time were uploaded to the computer server along with the temperature data.

⑤ Restaurants/retailers

In addition to an EPC tag, each bottle has a QR code on its label. Scanning this code with a smartphone provides access to a webpage with information about the supply chain. The webpage has links to a Facebook page for further details and to provide the sake brewery with feedback on its product.

⑥ Consumers

Consumers accessed various information with the QR code and enjoyed their Sake.

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