RFID pallet as a key device for logistical efficiency

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Japan Pallet Rental Corporation
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About JPR

Pallet Rental Business

- We own 10M pallets
- Ownership ratio in the rental pallet sector around 45%

(Rental Pallet qty)

(一般社団法人日本パレット協会 調査)
About JPR

Business partners
3,300 companies
Processed food, Consumer goods etc.

Customer’s factories & warehouses
60,000 bases

Total rental pallets
42M pallets
### About JPR

**Wooden Pallet**
Type T-11
SIZE: 1,100×1,100×144mm (L×W×H)

**Plastic Pallet**
Type PT-11
SIZE: 1,100×1,100×144mm (L×W×H)
JPR Revolution

1970~

JPR1.0

Logistics Mechanization

1980~

JPR2.0

Logistics Standardization

2000~

JPR3.0

Logistics Sharing

2018~

JPR4.0

Logistics Digitalization
Logistics **Mechanization**
By consolidating the pallets among companies, it is possible to reduce the work of replacing items:

- Improve efficiency of delivering products
- Improve efficiency of pallet management
Logistics Sharing

Improve inefficient pallet return
JPR reduces number of trucks by undertaking collection work.
What is JPR 4.0?

JPR4.0

Logistics Digitalization
Pallet tagging started in 2009. Regarding the current plastic pallets, tag installation is carried out in the manufacturing stage.

RFID tag attachment rate

95%
RFID solution at Depot

Automated Line

Receiving

Inspection

Cleaning

Shipping

Repair & Inspection
Tag performance checker
A pallet is discharged.
② the pallet cuts the sensor and radio waves are emitted from ③
④ Read the pallet tag and judge "normal", "RSSI shortage (weak reaction)" "multiple tags (paste two or more)" and "no tag".
⑤ The judgment result is indicated by screen and sound, and the sorting the pallet to the specified line
⑥ The result goes up to the cloud service.
Video
Tag Performance Checker
Tag reading forklift
## Tag reading forklift

### Judgment time

<table>
<thead>
<tr>
<th>Type1</th>
<th>Type2</th>
</tr>
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<tbody>
<tr>
<td>17sec</td>
<td>8sec</td>
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RFID antenna & reader
Video
Tag reading forklift
Joint trunk line transportation

■ Before

■ After

Tokyo area

Kewpie

LION

JPR

Kewpie

LION

JPR

Tokyo area
What JPR 4.0?

JPR4.1

Logistics Digitalization

Reduce customer's management of rental pallet, further improve efficiency of on-site work
RFID gate

Automation of pallet management work

- Data collection during shipping / receiving work
- Gate chassis offers rental
Current flow

Shipment
- Fill in invoice
- Deliver with goods

Receiving
- Investigation
- Inquiry

Enclosed
- Investigation
- Inquiry

Collection
- FAX or call

JPR
- Investigation
- Inquiry

Paperless with RFID
- Read tag automatically
- Improve accuracy of pallet in/out control

Inquiry
RFID gate use case

Manufacturer

Conveyor

Elevator

Wholesaler

③barcode scanner
Read the pallet label
Video
RFID gate
Next phase

Logistics *Digitalization*+

The next goal is to connect RFID pallet and customer's product and reduce the arrival and shipping work.
Physical → Cyber
Thank you!