

(Session: RFID)

R&D Activities and Application
in Japan

響
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uVALUE

Hitachi, Ltd
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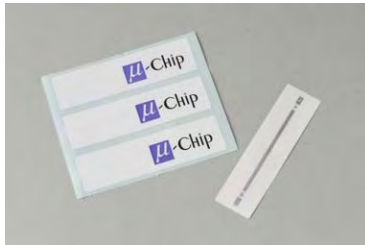
Hitachi's Activity

1-1. Hitachi RFID Product

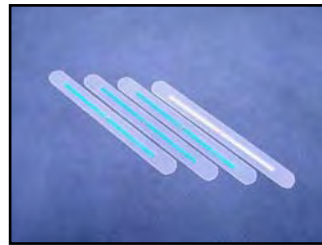


μ-Chip

2.45GHz, ROM, Unique ID



Paper



plastic



Card



Band



laundry



Metal tag
(Chipin/Metal)



Band

Passive Tag

μ-Chip Hibiki

UHF(860~960MHz)
Rewritable



μ-Chip Hibiki
label



μ-Chip Hibiki
Customized tag

Air Location



Active Tag



Wrist band

Air Sense



portable

1-2. Hitachi Activity

Product and Service

- 2001 ▪ 「 μ -chip」 released
- 2003 ▪ **Traceability** Solution
- 2004 ▪ **Hibiki** Project started
- 2006 ▪ **Secure RFID** Project started
▪ **125 Solution** RFID Traceability
- 2007 ▪ **μ -Chip Hibiki**
(Secure Protocol)

Application

- 2002 ▪ Field Trial for Steel Mgt(Management)
 - 2004 ▪ Traceability ASP Service (Meat)
 - 2005 ▪ Apply to Hitachi factory
▪ 「**World EXPO**」Ticket embedded μ -chip
(Admission: 25M tickets)
▪ Child Security System (China)
▪ **WSIS** Admission:World Summit(Tunisia)
 - 2006 ▪ Uniform Management System
 - 2007 ▪ **Returnable Cage** Mgt System
▪ Residential Parts Mgt System
- Other **over 15 Projects**

Accumulated Know-How by R&D, Field Trials, SI, etc.

2

R&D Project

- Hibiki and Secure RFID

2-1. R&D (Hibiki and Secure RFID)

Hibiki Project

(Aug 2004 ~ July 2006)

Target

Inexpensive RFID

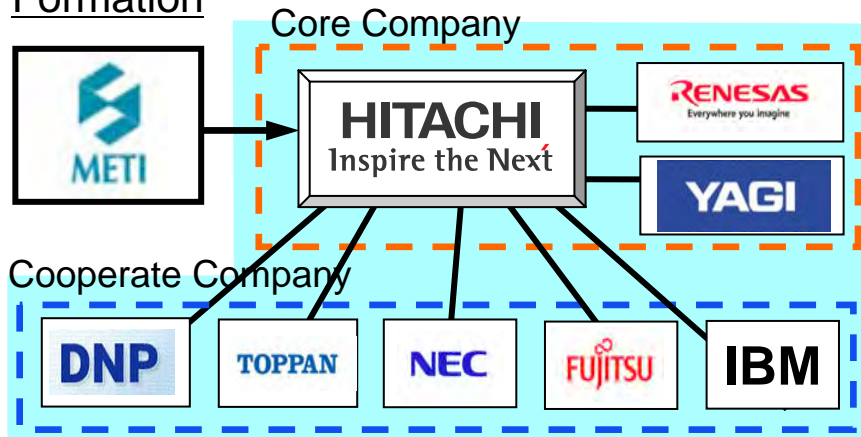
(5-yen inlay : <5cent, 100Munit/month)

Stable Supply

(Volume of Production, High Reliability)

Apply to global business
(Global Standard)

Formation



Secure RFID Project

(Aug 2006 ~ Mar 2007)

Background

Requirement for **Security** from Users

Outline

RFID apply for 「Manufacture ~
Logistics ~ Retail ~ Recycle」



Privacy Protection

Corporate Data Protection

~New Features~

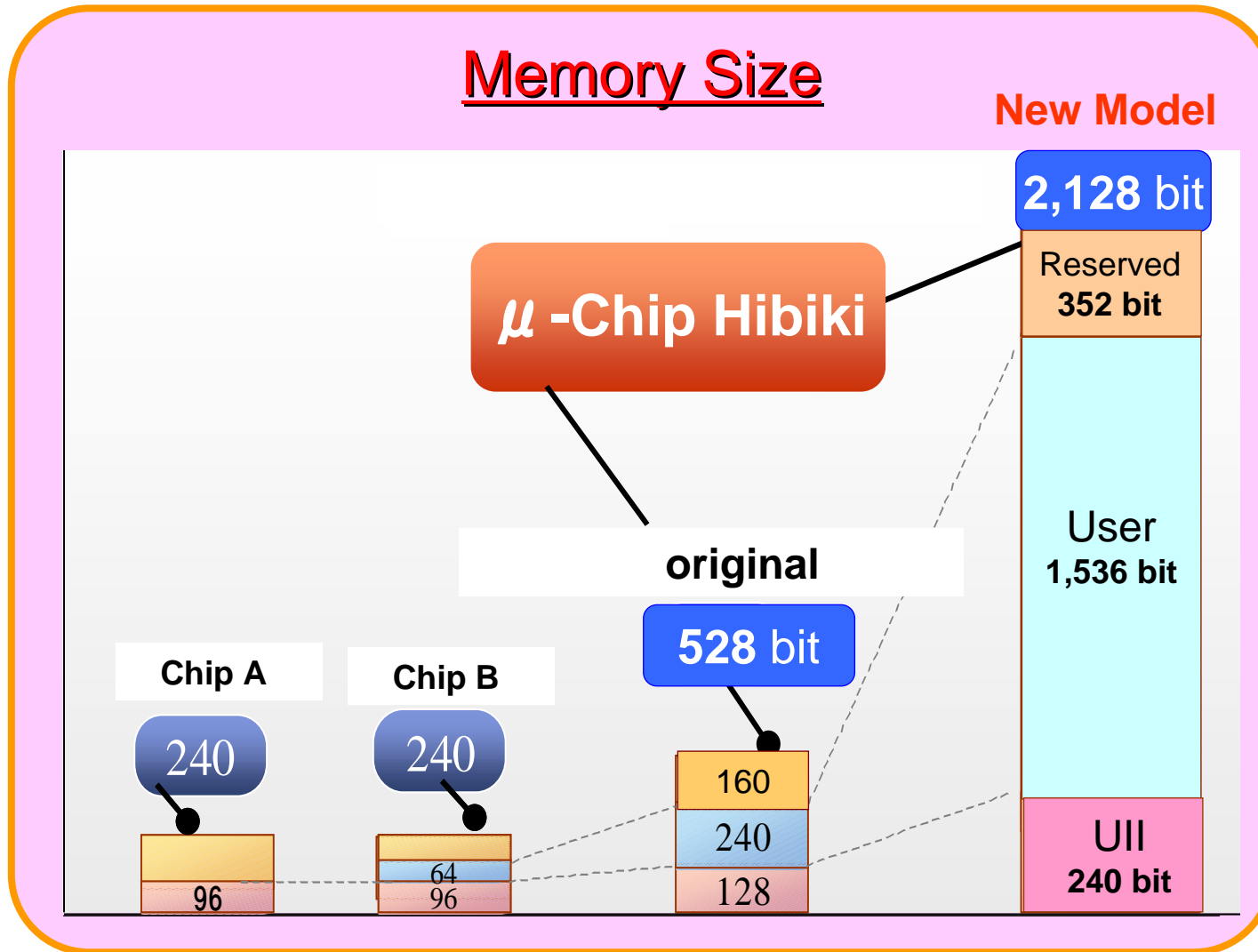
- Based on ISO/IEC 18000-6 Type C
- Large Memory (2k bit)
- Secure Features
 - > Memory Area Protection
: for Corporate Data Protection
 - > Communication Distance Control
: for Privacy Protection



μ -Chip Hibiki RFID

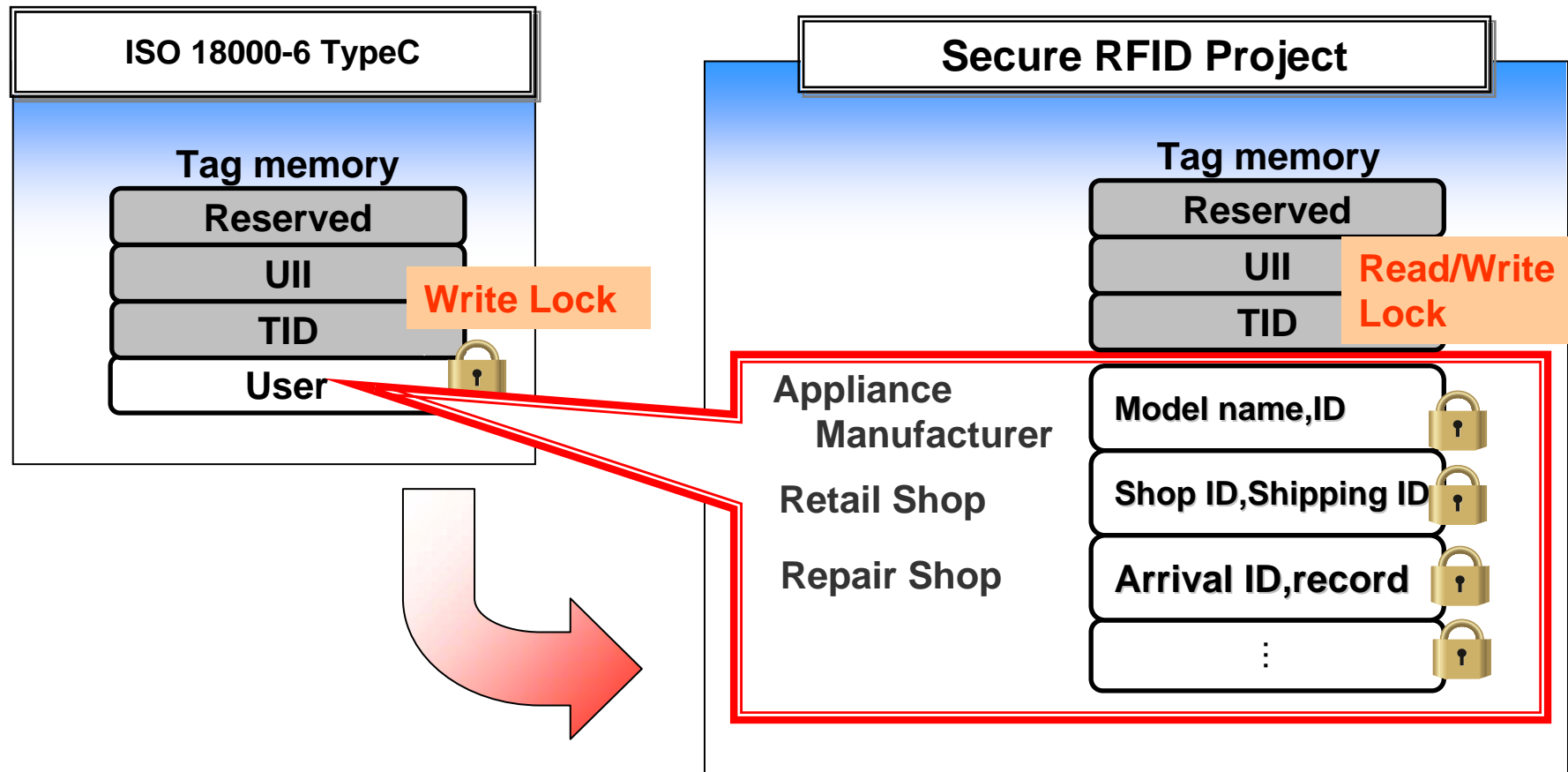
*certified by the uID Center (ucode)





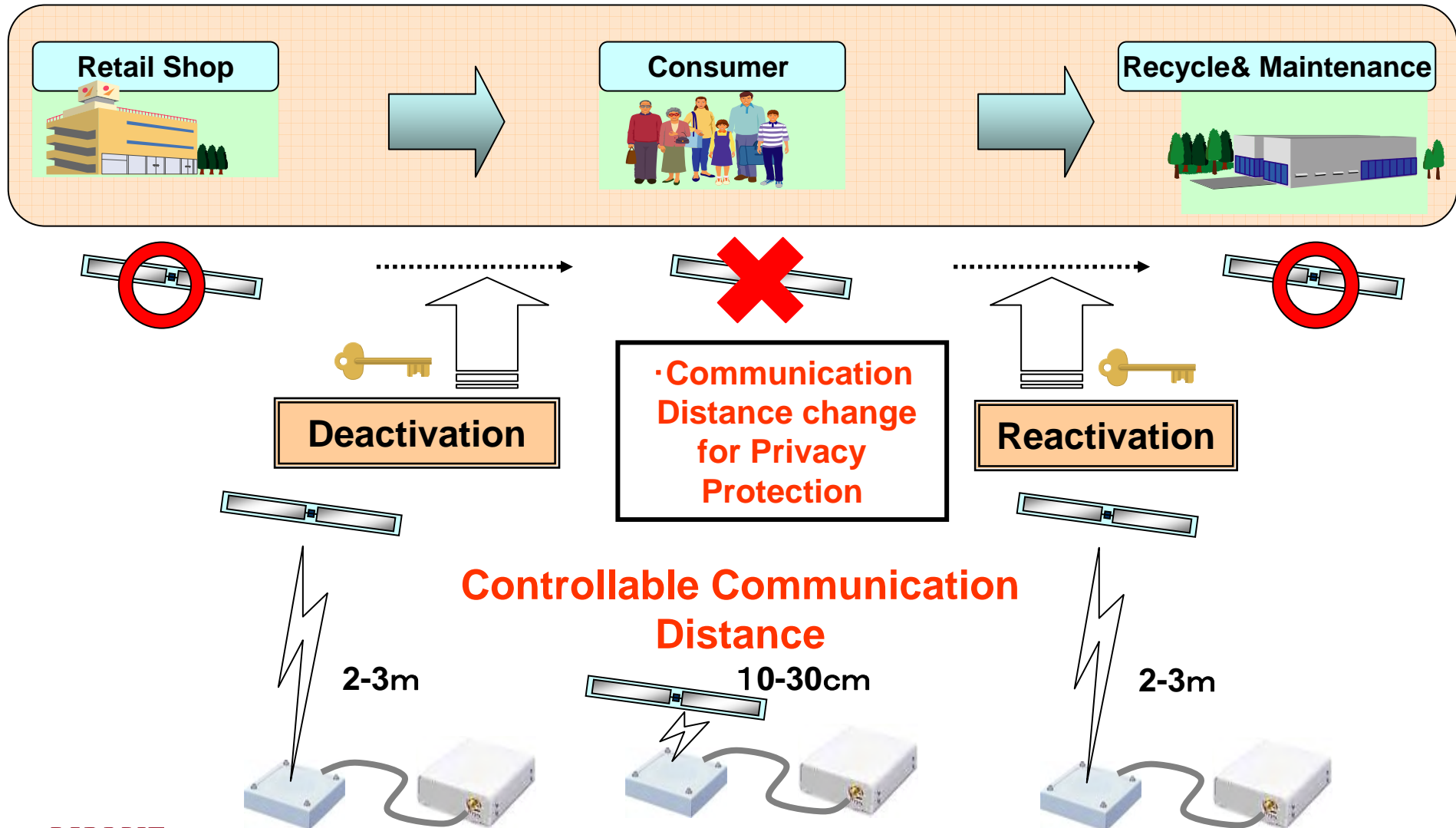
2-4. Secure RFID Function(1)

> Memory Area Protection : for Corporate Data Protection



2-5. Secure RFID Function(2)

> Communication Distance Control : for Privacy Protection



2-6-1. SCM/PLM Innovation



3

Application

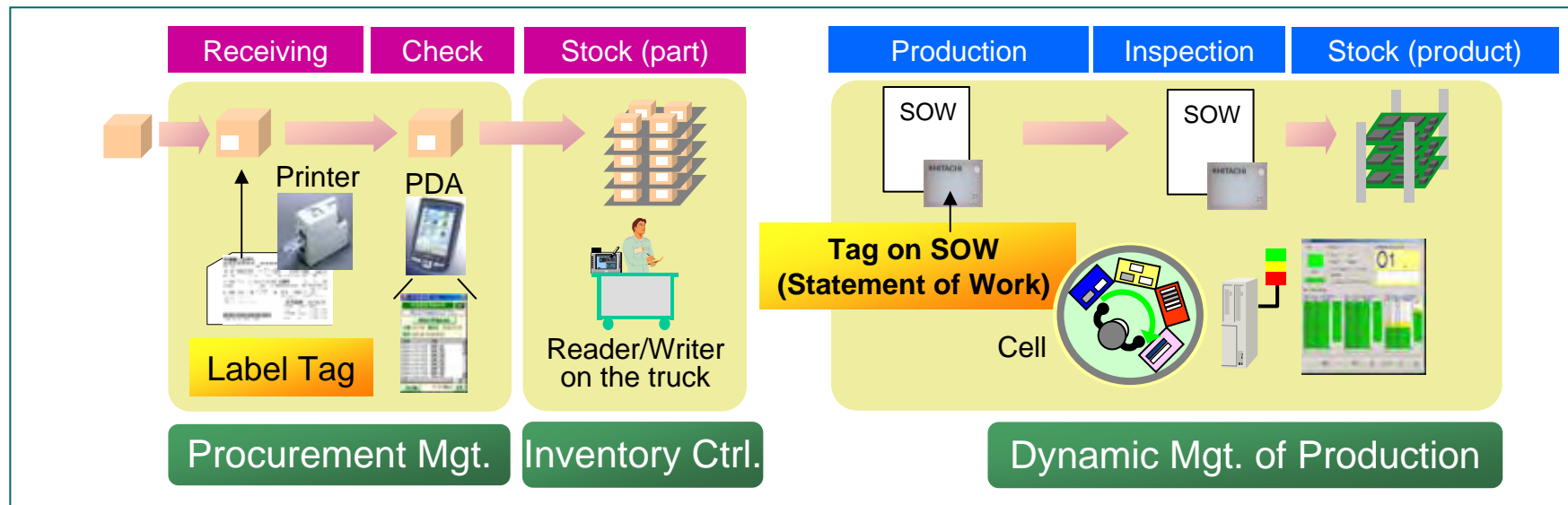
3-1. Production Management

Hitachi, Ltd

PCB(Printed Circuit Board) Production line since Dec.2004
Efficiency improvement of production in the factory



Business Image



- Appropriate work space layout
- Find out the bottleneck process
- Raise the efficiency of the picking operation



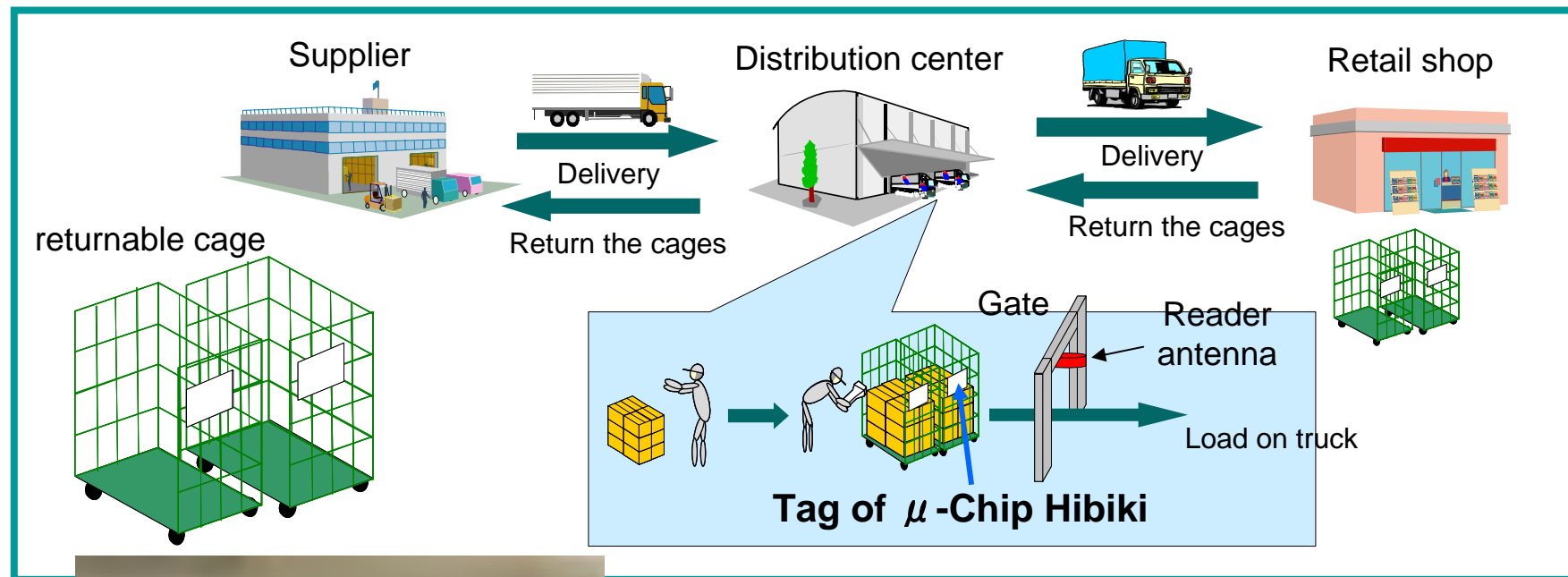
Lead time 20% reduction
Productivity 20% UP

3-2. Returnable cage management

Retail Superstore

- Many returnable cages are lost
- Huge cost of filling up the cages

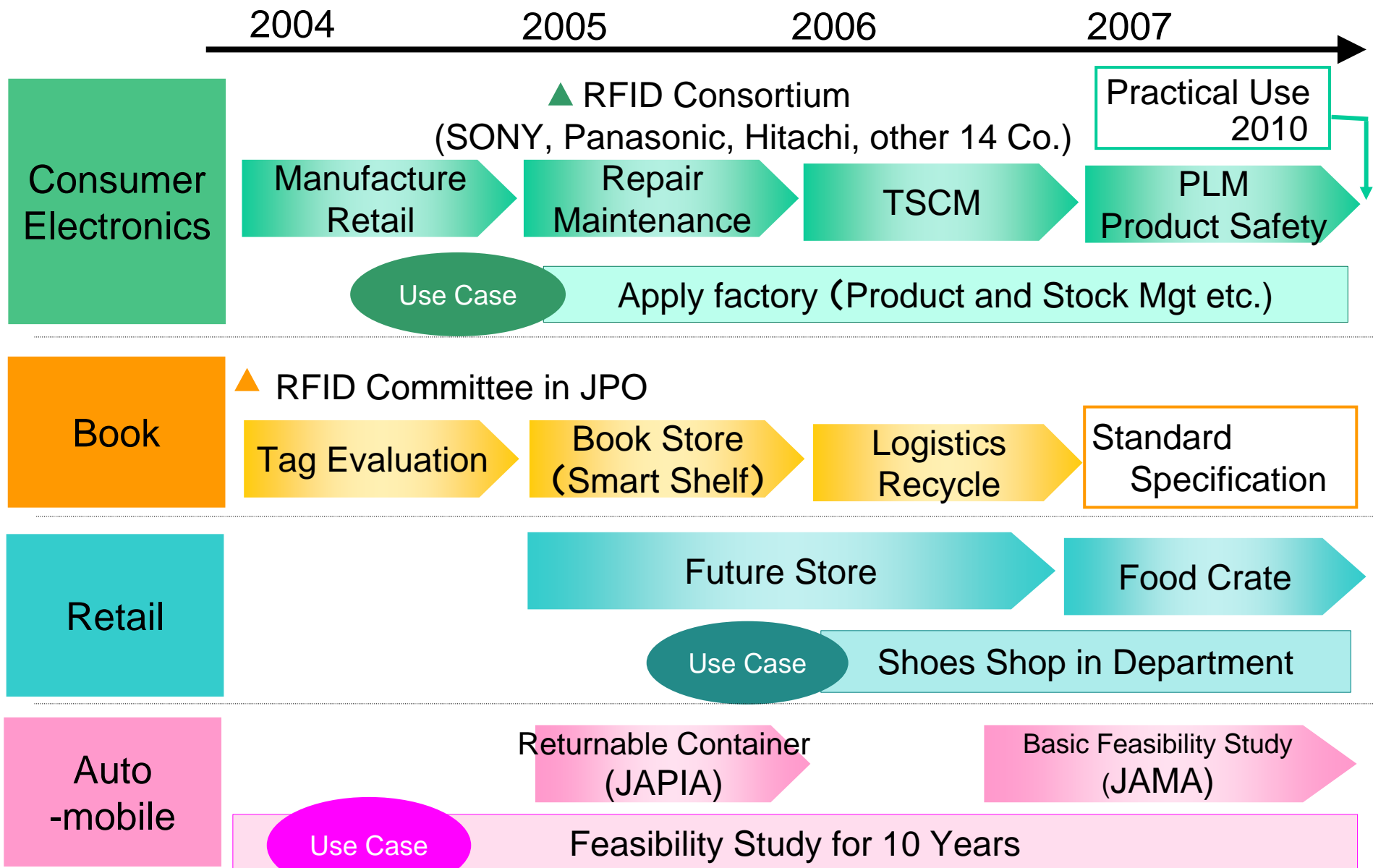
1,000 cages/year lost !



embedded
 μ -Chip Hibiki

- Manage the each cage location point automatically
- Send shipping information via email (PC or Mobile phone) automatically

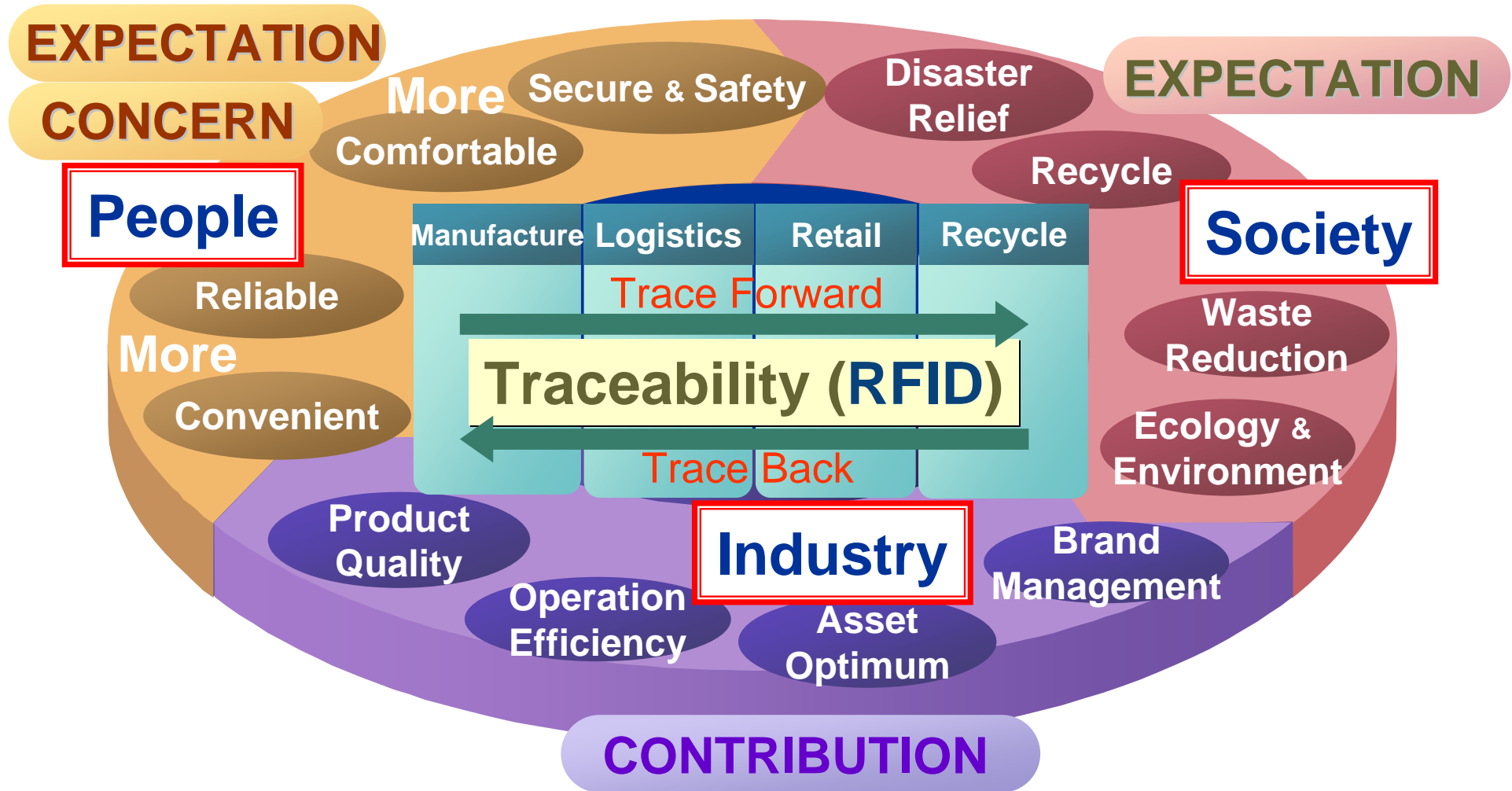
3-3. RFID Movement



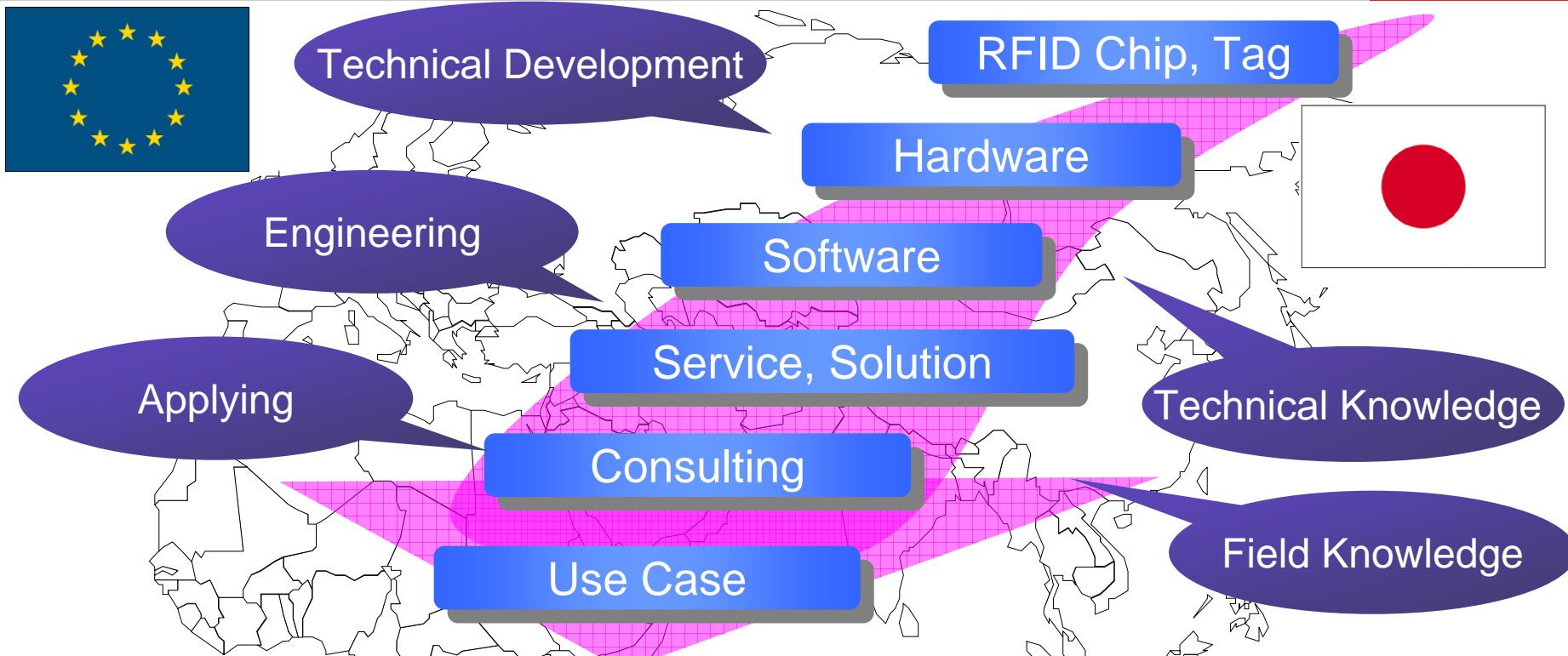
4

Conclusion

4-1. Creating Innovative Value Chain



4-2. Conclusion



“ Inspire the Next “



■ URL Hitachi RFID Home Page

<http://www.hitachi.co.jp/Prod/mu-chip/index.html>