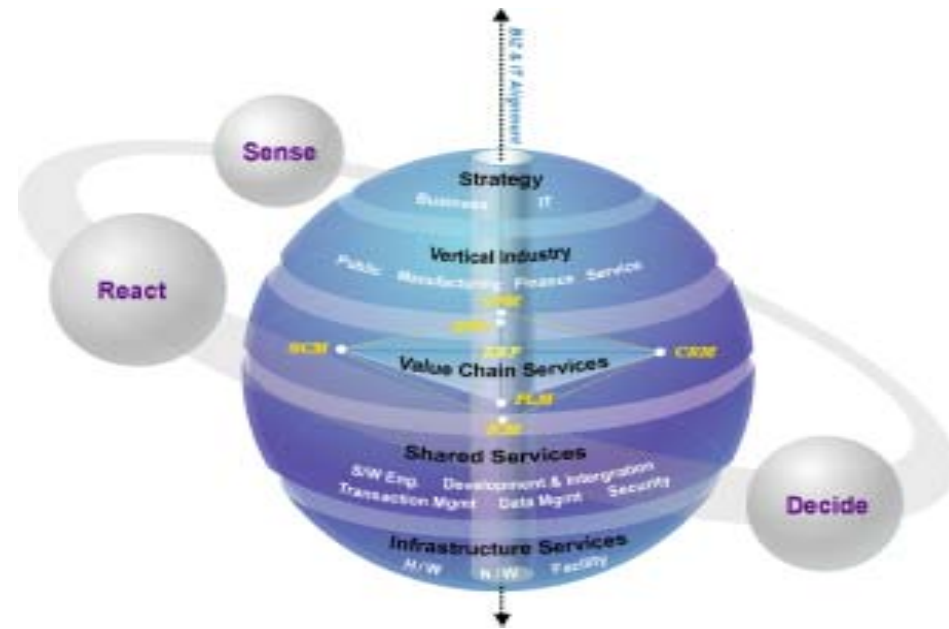


RFID



USN

(koohy@lgcns.com)



I.

II. /

III.

IV.

TAG
/

, RTE U-Biz

IT

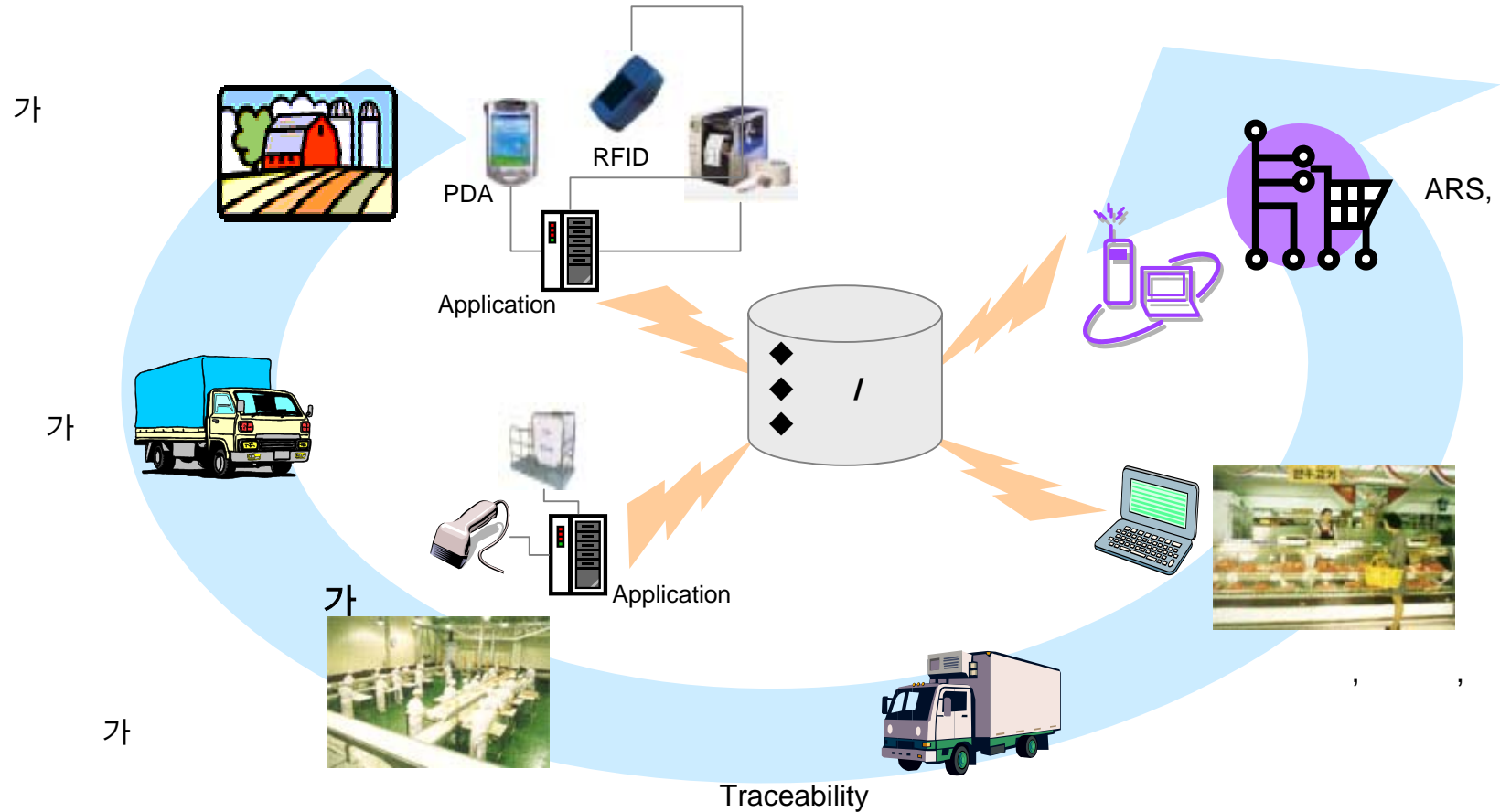
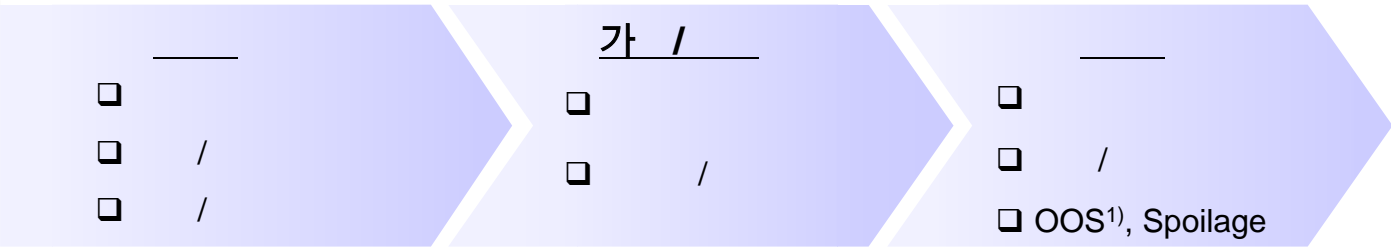
RFID¹⁾

RTE/Ubiquitous Computing



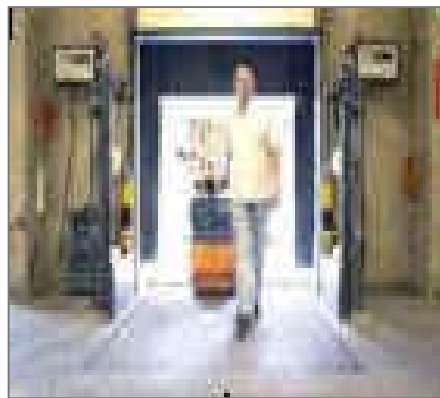
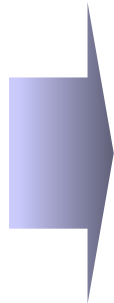
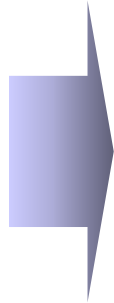
1) RFID : Radio Frequency Identification

2) : 0 ~ 50cm



1) OOS : Out Of Stock

Supply Chain Visibility

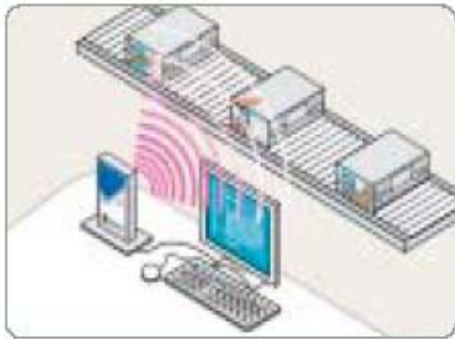


RFID

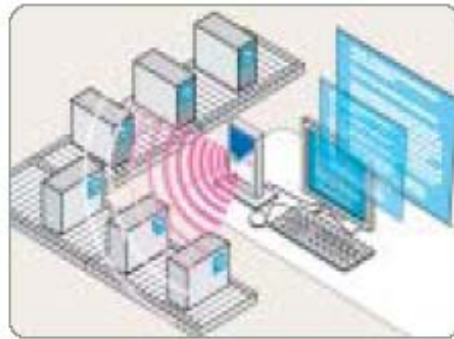
Tag

가

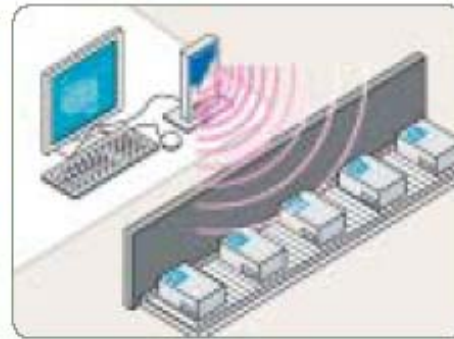
RFID



환경, 오염에 강인



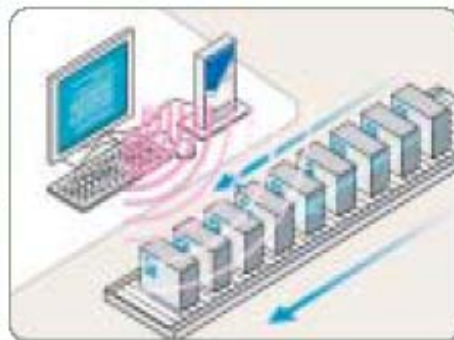
대용량 메모리



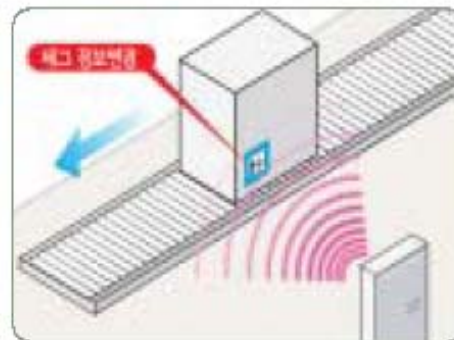
우수한 투과성



다중 태그 동시 인식



고속 이동 인식



정보 변경

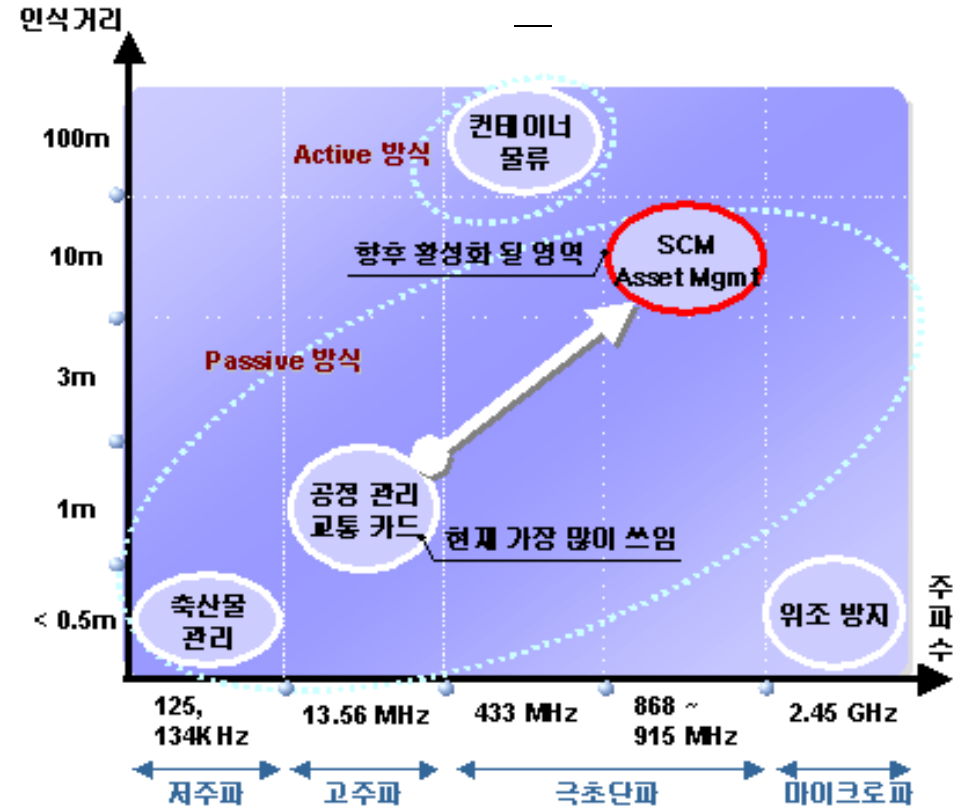
- _____ (0~100m)
- Read/Write 가 _____
- _____, Sensing 가 _____
- _____ / _____
- _____
- _____
- _____ / _____
- _____

RFID
900MHz

Smart Card
13.56MHz

가 ,

	BarCode	Smart Card	RFID
/		13.56MHz ()	125,3.56KHz~2.45GHz (900MHz)
	0~50cm	50cm	0~100m (: 0~10m)
	4	1	0.01~0.1
가	~ 1c	3 ~ 5\$	25c ~ 1\$ (5c)
			Label, Stick, Card...



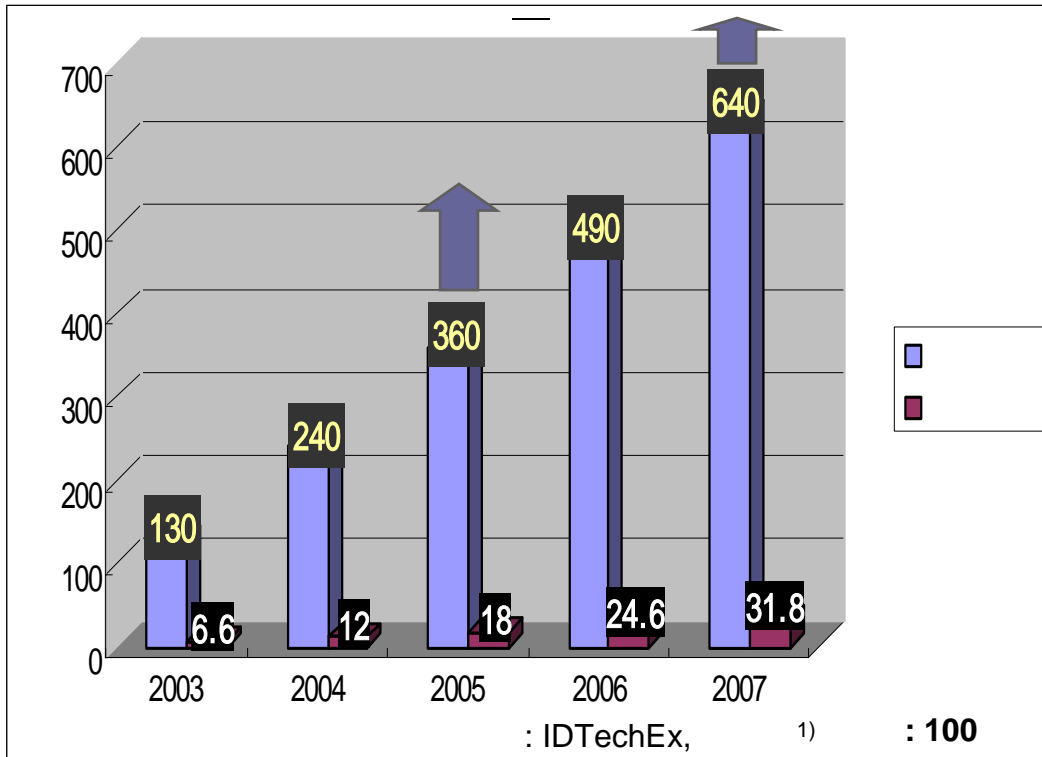
'05 , '07

RFID

TAG/Reader가 74%

SCM,

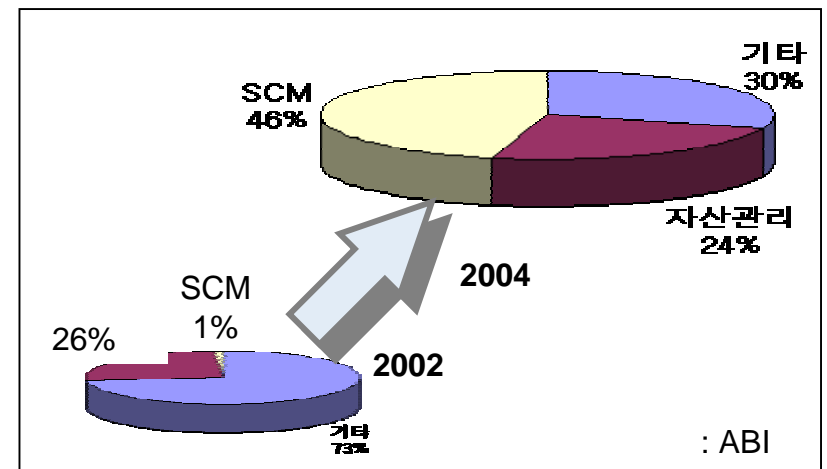
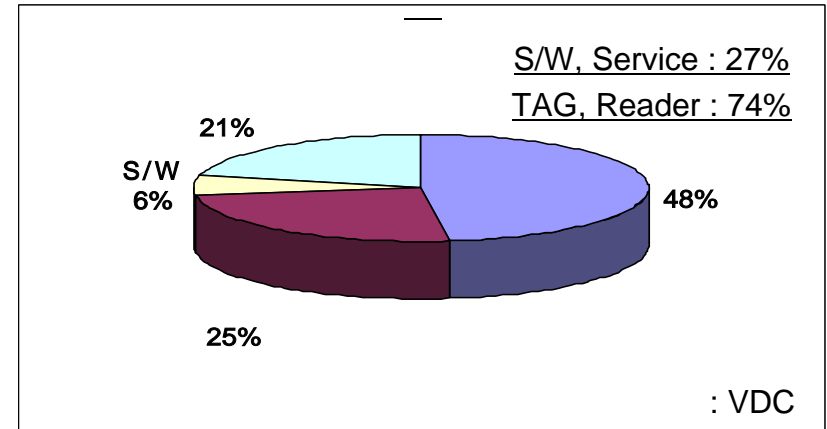
RFID



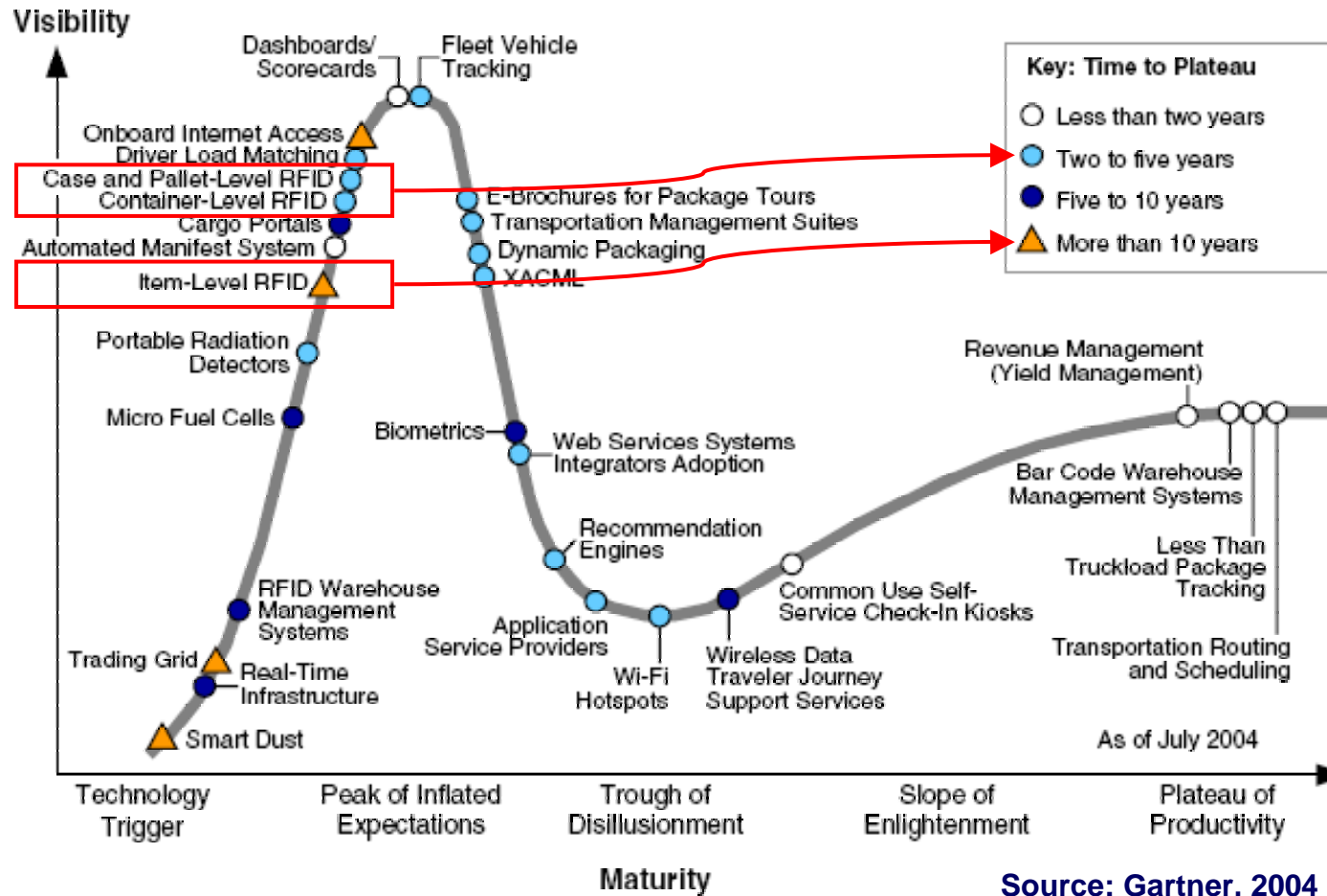
RFID (IDC, '04) : '05 218%, '07 37%

1) IT

RFID



RFID 10 RFID 2~5



CPG/ Pilot , 9.11

Wal-Mart,

'05/01 Rollout

/

- Wal*Mart, Rollout ('05/01)
- , / , 가 , RFID
- , RFID



-
- MES1, Smart Card

- ✓ '04
- ✓ '05 , '04
- Roadmap
- ✓ MES¹ RFID

1) MES : Manufacturing Execution System

RFID /

UHF

<p>Biz Solution</p>	<ul style="list-style-type: none"> <input type="checkbox"/> <u>Savi</u> <input type="checkbox"/> SAP/Oracle <input type="checkbox"/> WMS 	<ul style="list-style-type: none"> ▪ ERP, WMS ▪ Asset Tracking 	<p>RFID M/W / S/W</p>
<p>Middleware</p>	<ul style="list-style-type: none"> <input type="checkbox"/> <u>Sun</u> <input type="checkbox"/> GlobeRanger <input type="checkbox"/> OAT System <input type="checkbox"/> <u>Allixon</u> 	<ul style="list-style-type: none"> ▪ EAI, Web Service ▪ 	<p>Integration S/W RFID M/W</p>
<p>/</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Matrics <input type="checkbox"/> Alien Tech. <input type="checkbox"/> Kisscom <input type="checkbox"/> EMS, Omron <input type="checkbox"/> LG 	<ul style="list-style-type: none"> ▪ UHF / 가 ▪ 13.56MHz 	<p>Matrics, Alien 5c Play ()</p>

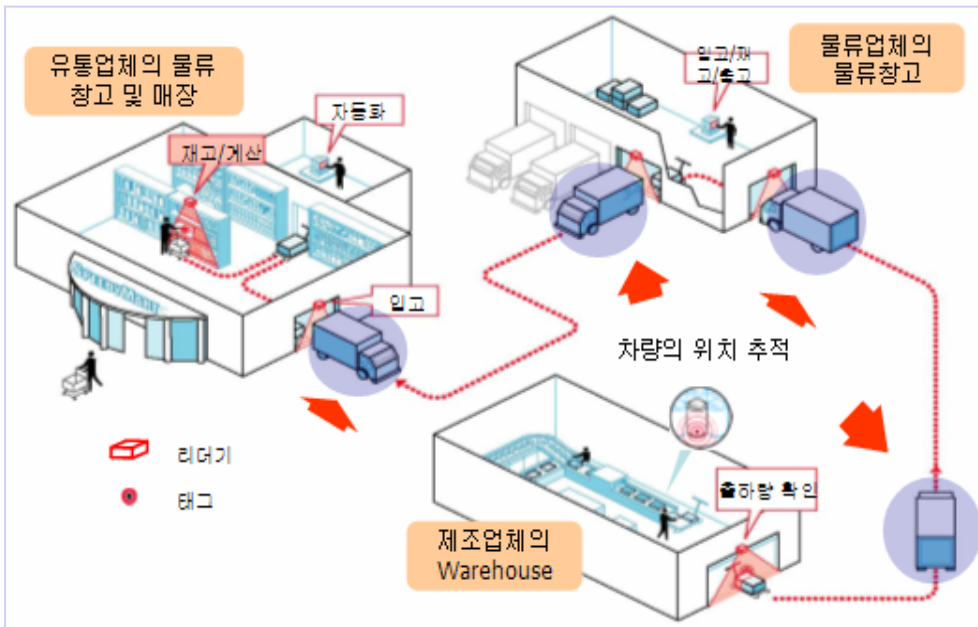
가 , U-Biz
SCM, 가

RFID

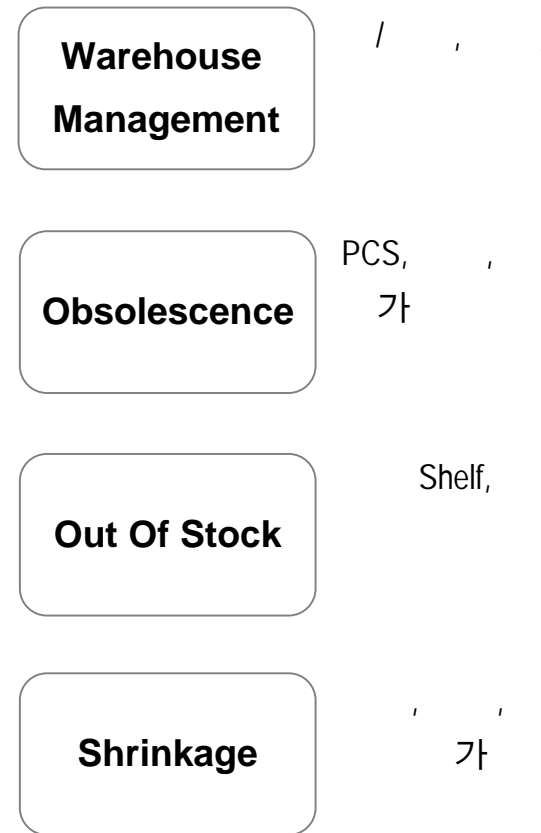
	가	<ul style="list-style-type: none"> • / / ③ Track & Traceability, ..., U-logistics
	/	<ul style="list-style-type: none"> • , , ...
		<ul style="list-style-type: none"> • , Telematics, , , ...
		<ul style="list-style-type: none"> • / , / , ...
		<ul style="list-style-type: none"> • , , Smart Card, ...
	SCM ①	<ul style="list-style-type: none"> • , CPG/Retail / /
		<ul style="list-style-type: none"> • ④ , ⑤ , 가 ⑥
	⑦	<ul style="list-style-type: none"> • 가/ , / , ...
		<ul style="list-style-type: none"> • / , ...

Value Chain 가 Benefit ,
 Quick Wins Warehouse, Obsolescence, OOS1, Shrinkage

SCM



- Manufacturing Execution
- Warehouse/Transportation Mgmt
- Store Operation
- Inventory Mgmt
- Demand Mgmt
- Asset Mgmt



1) Out Of Stock

, 2005 1

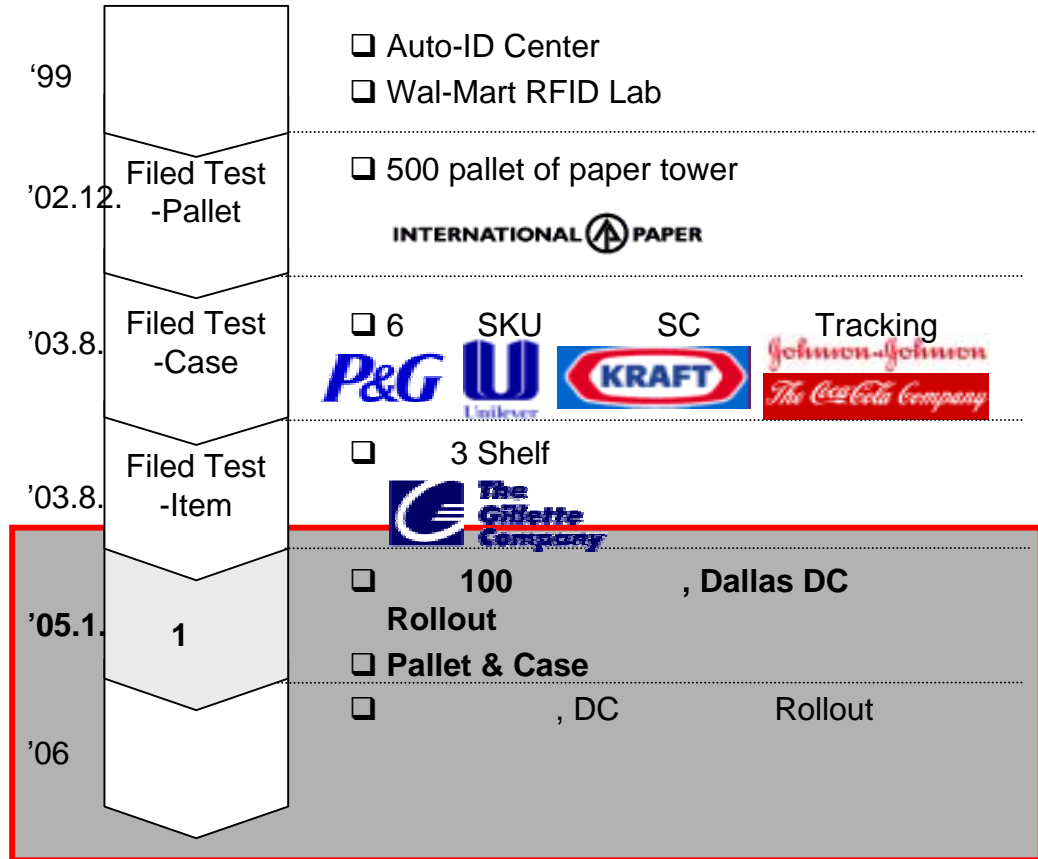
Tag

Wal-Mart

- 1 (4,750)
- / : \$245/8 Billion (2002)
 - : 1,400,000
- Cotsco Wholesale, Kmart, Target

1)

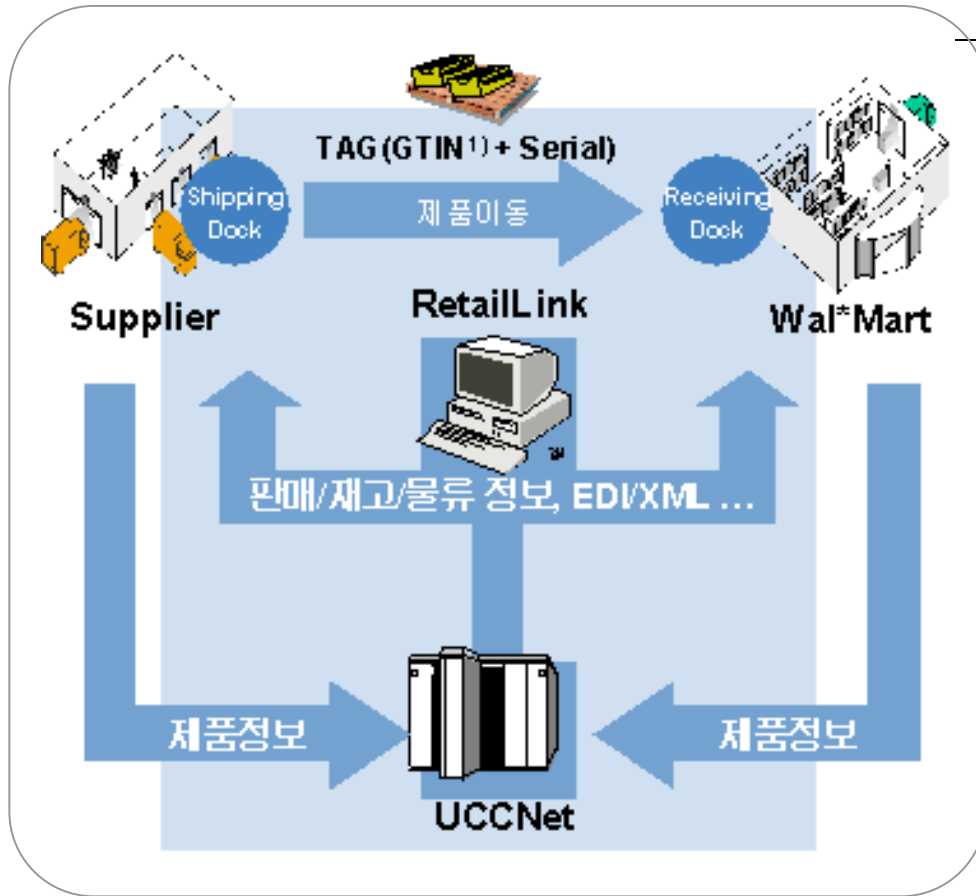
- \$8,300 million
- 15% (\$5,700M)
- Out of Stock (\$600M)
- , (\$575M)
- (\$300M)
- (\$180M)



1) CIO insight, Sept. 2003

RFID 2004 2005 1 100 supplier

Wal*Mart 2005 RFID



- '05/01 : Dallas DC Rollout
- UHF 96-bit tag : GTIN + Serial #
- Case/Pallet
- 10feet 100%
- RetailLink™ EDI

- Supplier**
- Shipping Dock
 - \$10 ~\$20 /facility +
 - RetailLink™ UCCNet
 - RFID
 - : 3~5 \$2
 - : VMI, Scan-based Trading
 - Legacy SCE

1) GTIN: Global Trade Inventory Number
 2) VMI: Vendor Managed Inventory

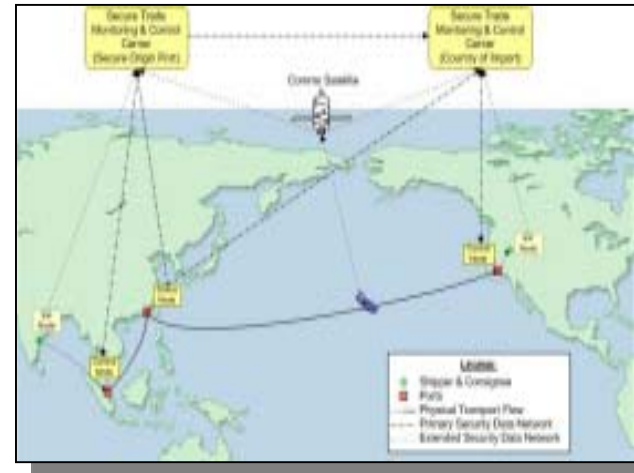
Green Lane

Smart and Secure TradeLane

/

Smart and Secure Tradelanes(SST¹⁾)

- Global Supply Chain
- DHS¹⁾ 3, 65
가, Savi Solution / (
Rollout, ~'04/09)
- SCST(Strategic Council on Security Technology)
3 HPH, PSA, P&O Ports,
SAVI가
(3 가 70%)
- : 65, 20, 12
, 85%

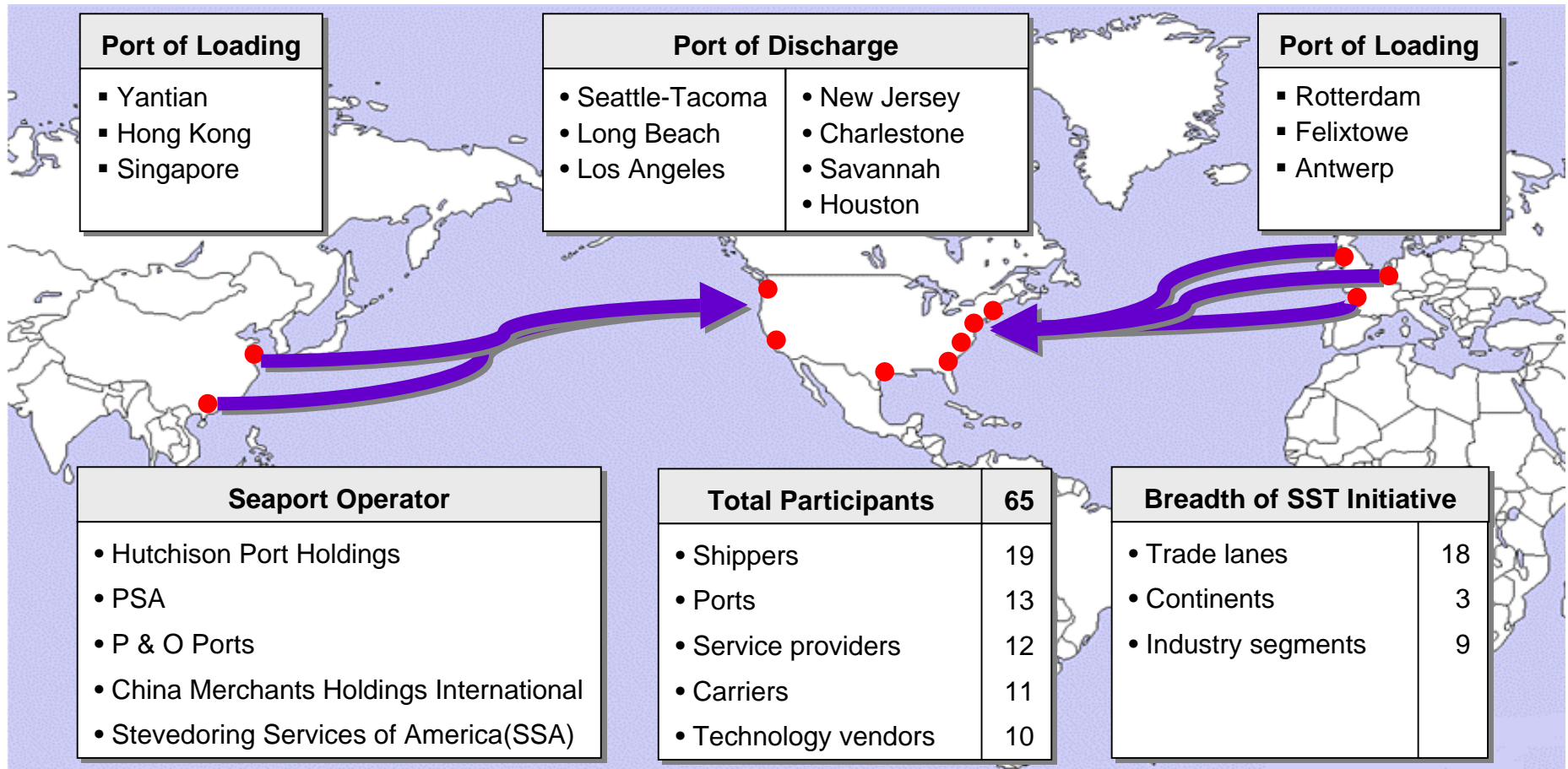


1) SST: Smart and Secure Tradelane

2) DHS: Dept. of Homeland Security

Hutchison Port Holdings, PSA, P&O

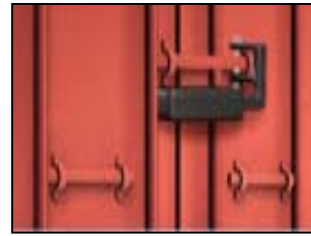
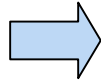
가



가 e-Seal



1.



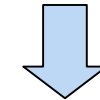
2. e-Seal



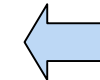
3. Internet-based security software platform



4. In-gate (Hand-held Reader)



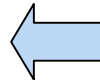
5.



6.



7. Integrity



8. e-Seal

RFID

Privacy

Apparel

Benetton (2003)	-Tag : 15,000,000 -Tag 가 : \$0.25 ~ \$0.50	- : - : Item-Level Tagging (Sisley) - Tagging	-Tag: Philips (Passive) - : 13.56MHz -HH Reader: Psion -Fixed Reader: Lab ID	- Roll-Out : Field Test privacy
The GAP (2001)	-Tag : 3,000 -Tag 가 : \$1	- : OOS - : Item-Level Tagging (Denim) -Back room	-Tag: TI (Passive, R/W) - : 13.56MHz -Reader: Symbol	- 3 Field Test
Prada (2002)	-Tag : 5,000 -Tag 가 : \$2 ~ \$3 - : \$500,000~\$700,000	- : - : Item-Level Tagging () -HH Reader	-Tag: TI (Passive, R/W) - :13.56MHz -Reader: TI	- Open - 가 2 ROI
Marks & Spencer (03' 9~12)	- : \$478,846	- : - : Item-Level Tagging (Shirts) -Box Suites on Rack POS	-Tag: 가 - : UHF -Reader: 가	-EPC Tagging 350

2 Reader

Tag

Phase I

Phase II

Paint Station

Assembly Line

Tag

• \$85 Tag 500

• Reusable Tag

• Tag

• : EMS(Philips Chip)

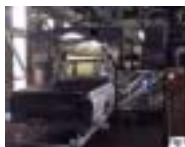


Reader

• 14 Passive Reader/Writer

• Paint Tag Painting Robot model, body style, paint color

Install



Car Frame




Reader

• Label Tag 20,000
• Disposable Tag
• Label 가 ()
• : EMS



• Reader : Assembly Hall, Paint Shop, QAD, Vehicle Final Line, C-Yard, TSB A-Yard, Truck Plant
• Fixed Reader Hand-Held Reader
• 34 Reader

 Tag ()

가 RFID , DC Supply Chain /

Seagate (2000)

Dell Computer-China (2002)





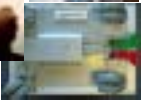


HP (2003)

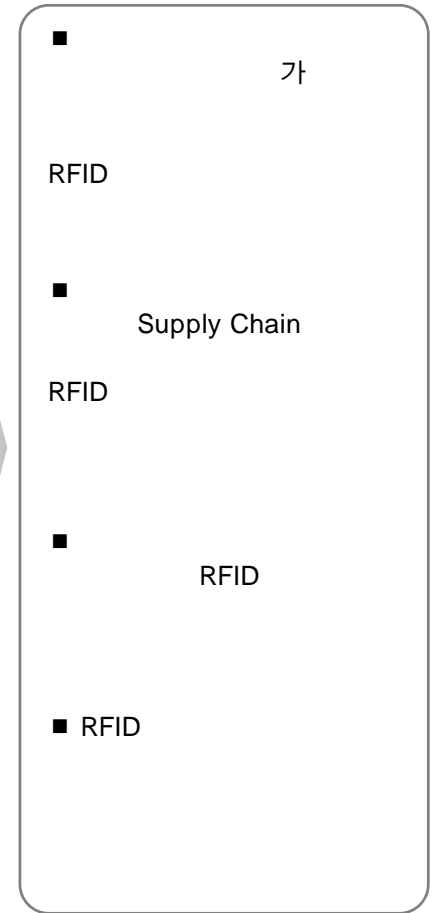
- WIP
- (Disk)
- - TAG/Reader : 13.56Mhz Tag(38,000), Reader: 600
 - MES /ERP
 - ERP
- - Bar Code 가 가

- Shipping Visibility
- & Shipping
- : 4,000 trays
- Shipping : PC Box
- : →
- Shipping

- **First Program (Roll out)**
 - Level : Pallet Level
 - : HP's inkjet distribution facility
 - : Passive tags
 - : 3 Pilot →03 11
- **Second Program ()**
 - Level : Pallet and Case
 - : HP's inkjet-cartridge facility
 - : Passive tags
 - : 03 11
- **Third Program (Pilot)**
 - Level : Pallet and Case
 - : HP's printer DC
 - : Passive tags
 - : Pilot

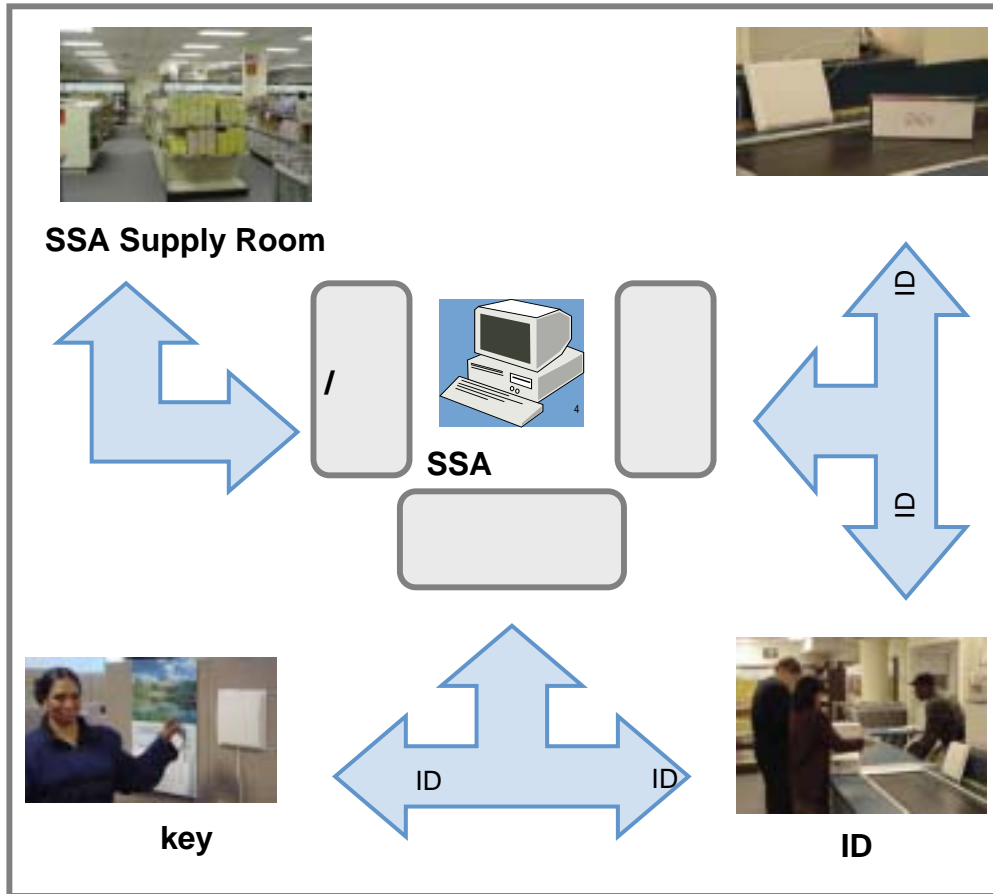
RFID

	<ul style="list-style-type: none"> • 가 (,) • (Key) • (Book, CD, Video) 	<ul style="list-style-type: none"> • SSA • Colchester Librar  
	<ul style="list-style-type: none"> • (Pallet) • () • (Tape) • / (, , Food Trolley) • (Video) 	<ul style="list-style-type: none"> • Woolworth • Boijmans Van Beuningen Museum • Playboy • SBB • Vejle • Air Canada • Video   
	<ul style="list-style-type: none"> • () • / (가) 	<ul style="list-style-type: none"> • Crosslink • Nortel Networks  



SSA(Social Security Administration) 가

RFID



/	<ul style="list-style-type: none"> ▪ SSA : \$350million 86 ▪ / ▪ : 10~15 ▪ : 가 ▪
	<ul style="list-style-type: none"> ▪ : 2002.11 ~ 2003.03(4) ▪ ▪ 4 ▪ Supply room ▪ : OOS¹⁾

*

Rollout

1) OOS: Out-of-Stock

가 /Roadmap 가 , , Field Test , Pilot 가

RFID

Barcode RFID TAG 가

TAG/Reader (, ,)

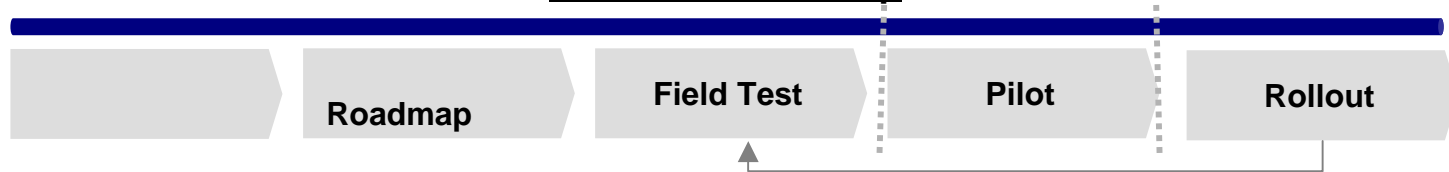
/ , / Challenge

Bar Code IT Infra



- Benefit Model
- Case/Pallet , 가
- Reusable Tagging
- /TAG , Engineering
- App. Scalability 가
- Roadmap

RFID Roadmap

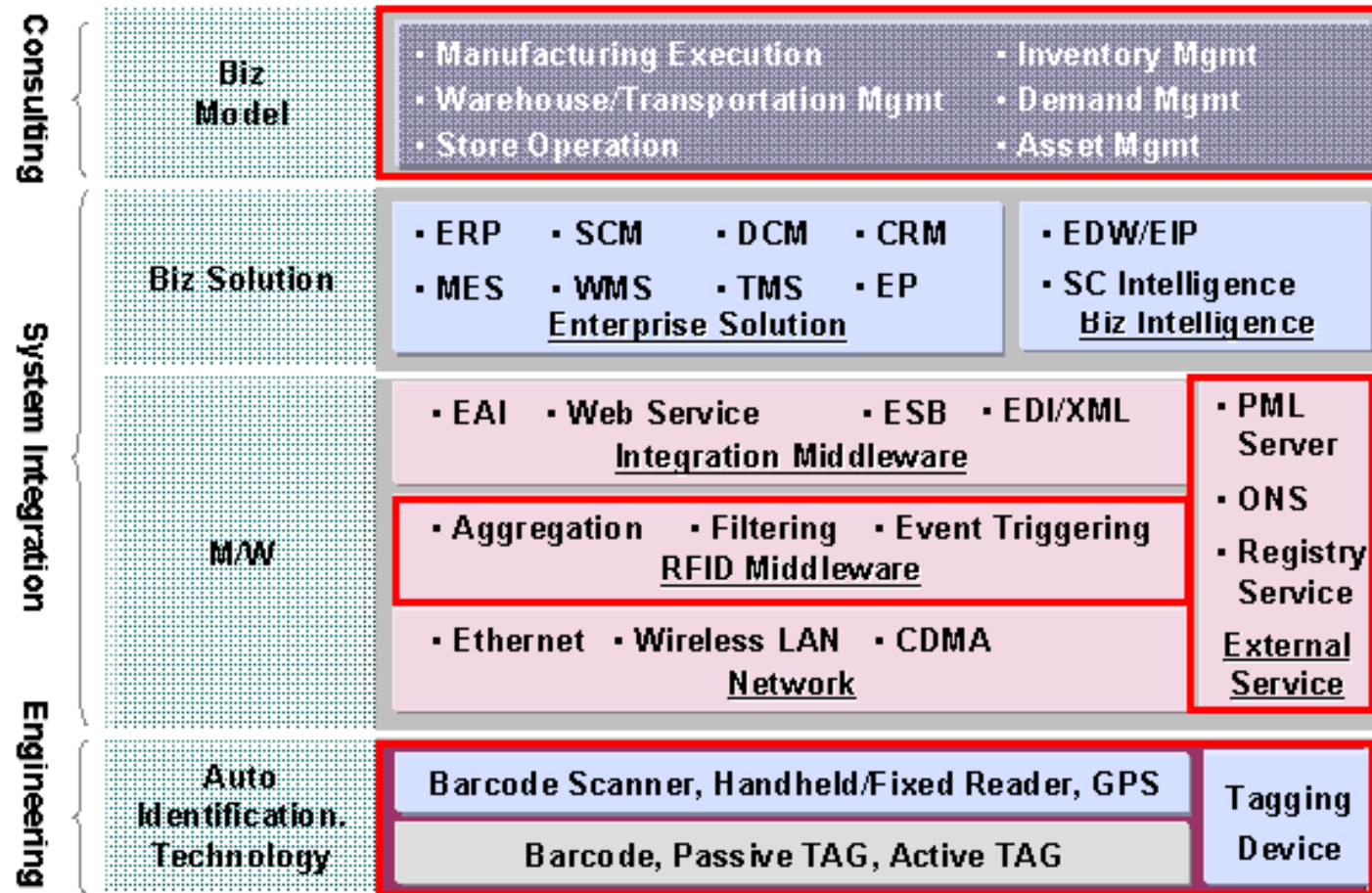


Product Category , Chain

TAG/Reader

, RFID Centric Process/IT
EA/ITA

RFID Framework



■
(koohy@lgcns.com)
USN
LG CNS