RFID & inflight equipment

- The Take-Off

TTS – Trolley Tracing System

KLM

1996

U/S tag

ID tag

SAS

1997

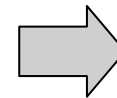Galley Equipment Tracking System
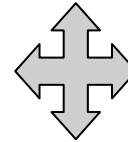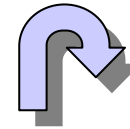By Scanpak Inc.

G.E.T.S
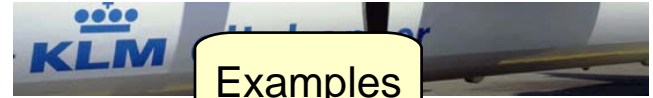Transceiver

AIR CANADA

1998

Route map

- What? - Approach used by Airlines
- Why? - Benefits, Examples

- Status of pioneering systems
- Bigger Pictures

- Next Airline Approach
- Next Steps

outflight

Executive Summary

Examples

- RFID Trolley Tracking & Tracing Systems have been launched and operated for a period.

Reasons

- The pioneering systems are inactive. After this 'hype-curve': take-off for RFID in airlines & equipment.

Vision of future co-use of detection points

- Support by actors in the value chain:

  1. Lower RFID cost from RFID suppliers.
  2. Option: Data-by-the-dollar from "Service Managed RFID".
  3. Users that can really integrate AIDC and IT with the business.

Coord-ination. Standard-ization.

Measure-to-manage. Strong, long-lasting KPI's.

Example:

Gen I: 'Semi-active'

- Commodity HF (3 m)

- Smashed!

Gen II: 'RTLS'

- Proprietary 433 MHz (30 m)

- Cost?

SAS

Trolley, Contents & Smart Labels

Barcode

42000 06200

Data matrix
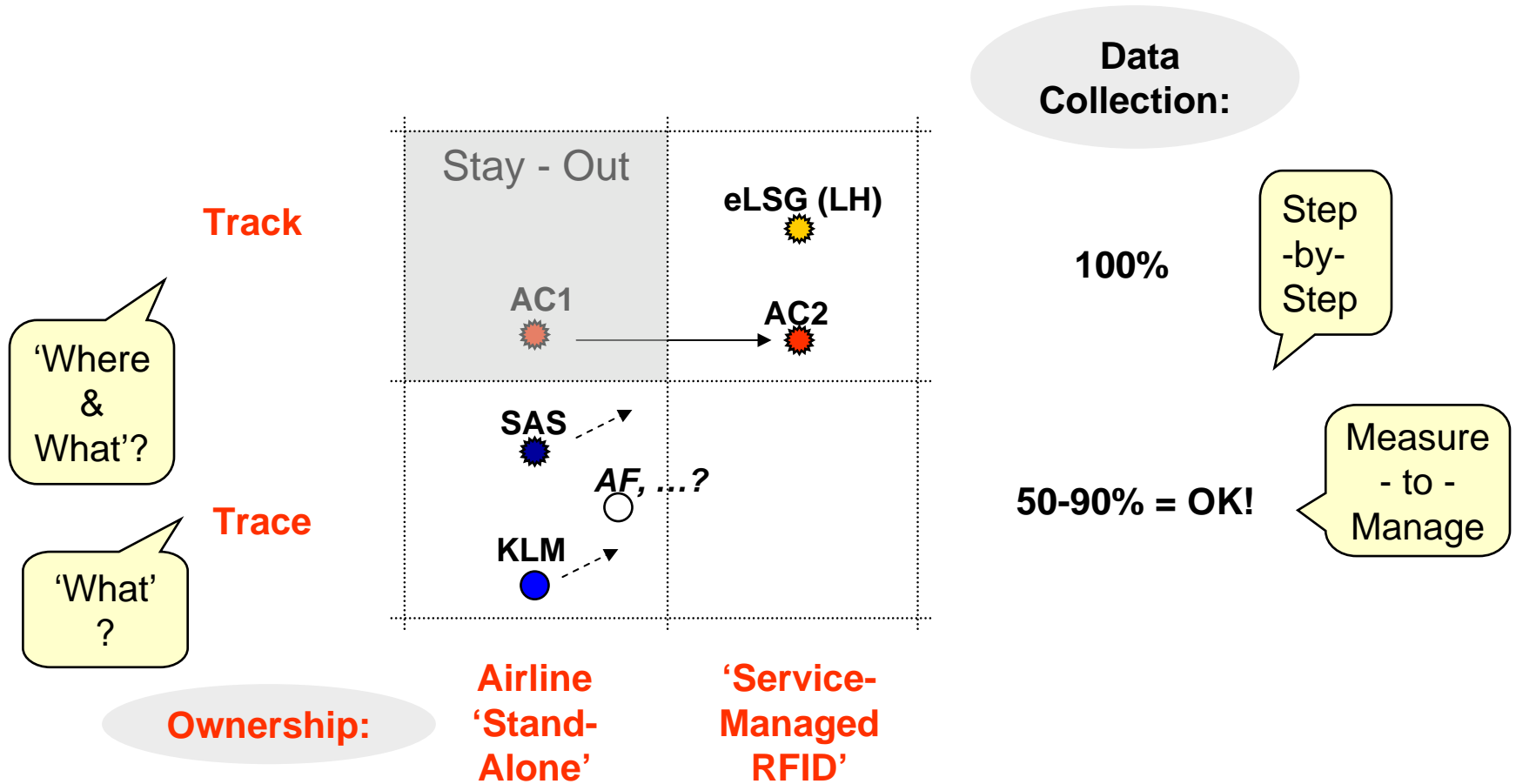

Infrared (IRID)

scirocco

Vitsab® Flight Label

Monitoring meals & cool chain on BA flights

Developed with British Airways

Measure - to - Manage

Ex.:	Smart labels found yellow on board
LHR	0.43 %
LGW	1.19 %

Approach used by Airlines

Example: 'ROI'

A conservative forecast:

IATA

All members
Est. **MUSD $470 / yr.**

Improvement area		Est. saving / yr.
Inventory (~2%)	Total Cart Inventory	$
Trucking (~20-50%)	Charges incurred	$
Shrinkage (~80%)	Unexplained losses	$
Maintenance (2%)	Cart Maintenance	$
Inventory Count (100%)	Auditing	$
Total		$

Incl. "Smart Labels"

www.outflight.net

Costs	$	Qty.
Tags	$	11.649 ea.
Readers	$	320 ea.
Other	$	
Total Cost	$	**Payback 1.1 year**

65 stns. x ~5 doors

But still: "Effort not justified by results"

AIR CANADA ✿

Example: 'ROI'

The benefits from Trolley Tracing Systems has been in QUALITY PLUS initial and annual cost savings.

Ref. KLM: 80% reduction of crew complaints

SAS: Inventory 11.500 trolleys. 13.000 (!) RFID tags installed.

Improvement area	Est. capital saving	Est. cost saving / yr.
Maintenance (KLM, SAS)		
Reduction US-time[1] (12 days)	€ 2	
Reduction of trolleys (15%)	€ 1.	
Total		
	Tot	000

www.outflight.net

Prevent & Preventive Maintenance

… after it's fully implemented and tuned in (1-2 years) …

KLM: increased average trolley age to 13,4 years from ca 5-10

FAR / EASA Part 21: Company procedures for 'release to install'.

But still: "Effort not justified by results"

KLM

Status Summary

	KLM	SAS	Air Canada	eLSGSkyChefs (Lufthansa)	(Air France), BA, …
Status:	Not operating	'Sleeping'	'Inactive - Detectors offline'	http://solutions.lsgskychefs.com	OPEN
Reasons:	Other priorities? Loss of keyperson,	Other priorities. Collapse of inflight (post 9/11). New catering buildings, …	Post 9/11. 'Expense not justified by results' …	Cost? ROI? "Hidden" agenda? Lack of launching airline.	OPEN

Data - by - the - Dollar

Pilots: Duty Free, Cool Chain

All suffered from 9/11 and 'inconsistent' process management ?

Bigger Pictures :

Status & Recommendations :

Hype Curve :

Plateau of Productivity

Sustainable Approach ?

Stay - Out

Take - Off

Issues:

1. Cost & Tech.
2. Ownership
3. Users

Visibility

eLSG

AC

SAS

KLM

AF, BA, …?

1995

2010

Lessons Learned
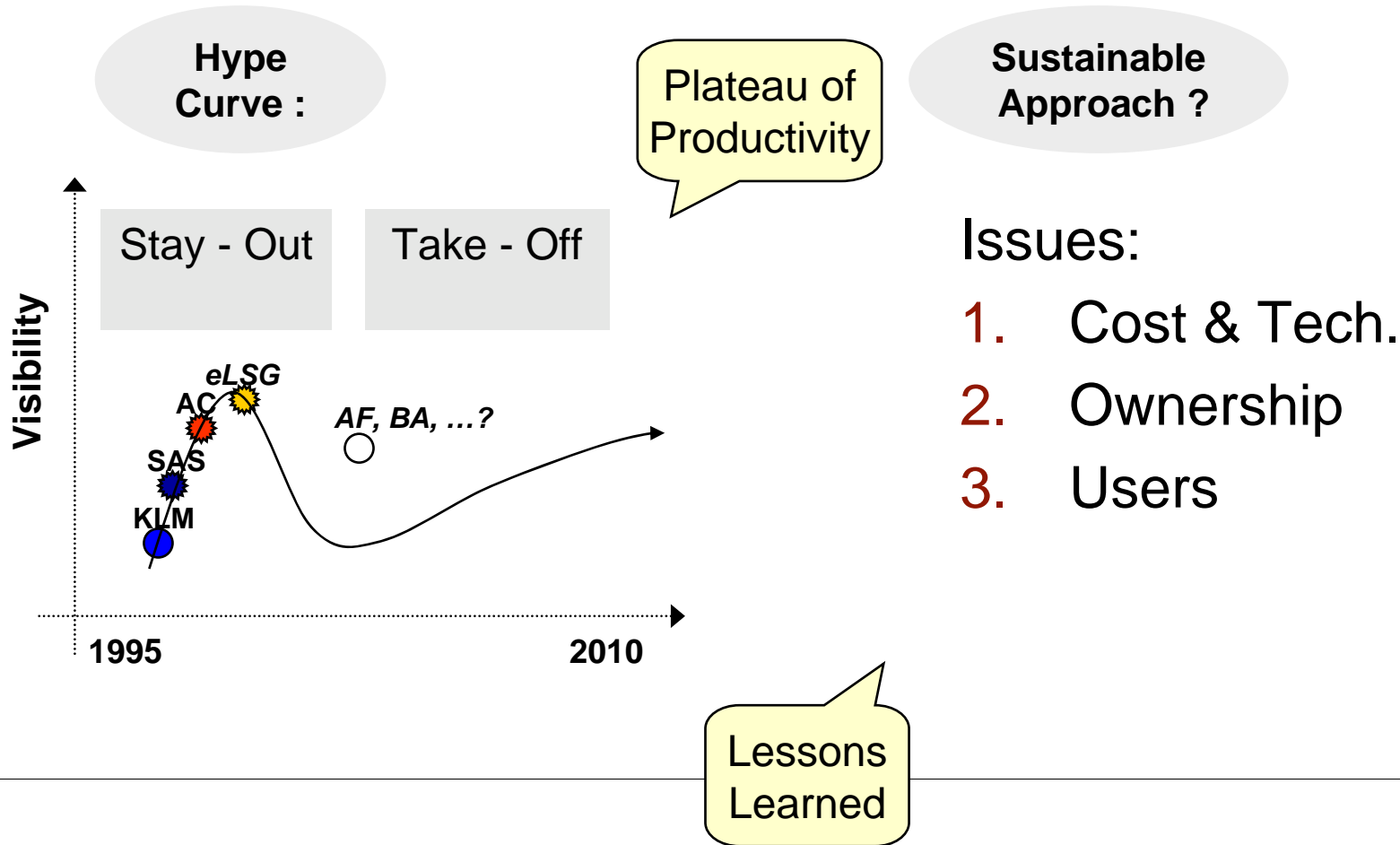
Investments & Synergies

There will be investment in readers ...

Check-in
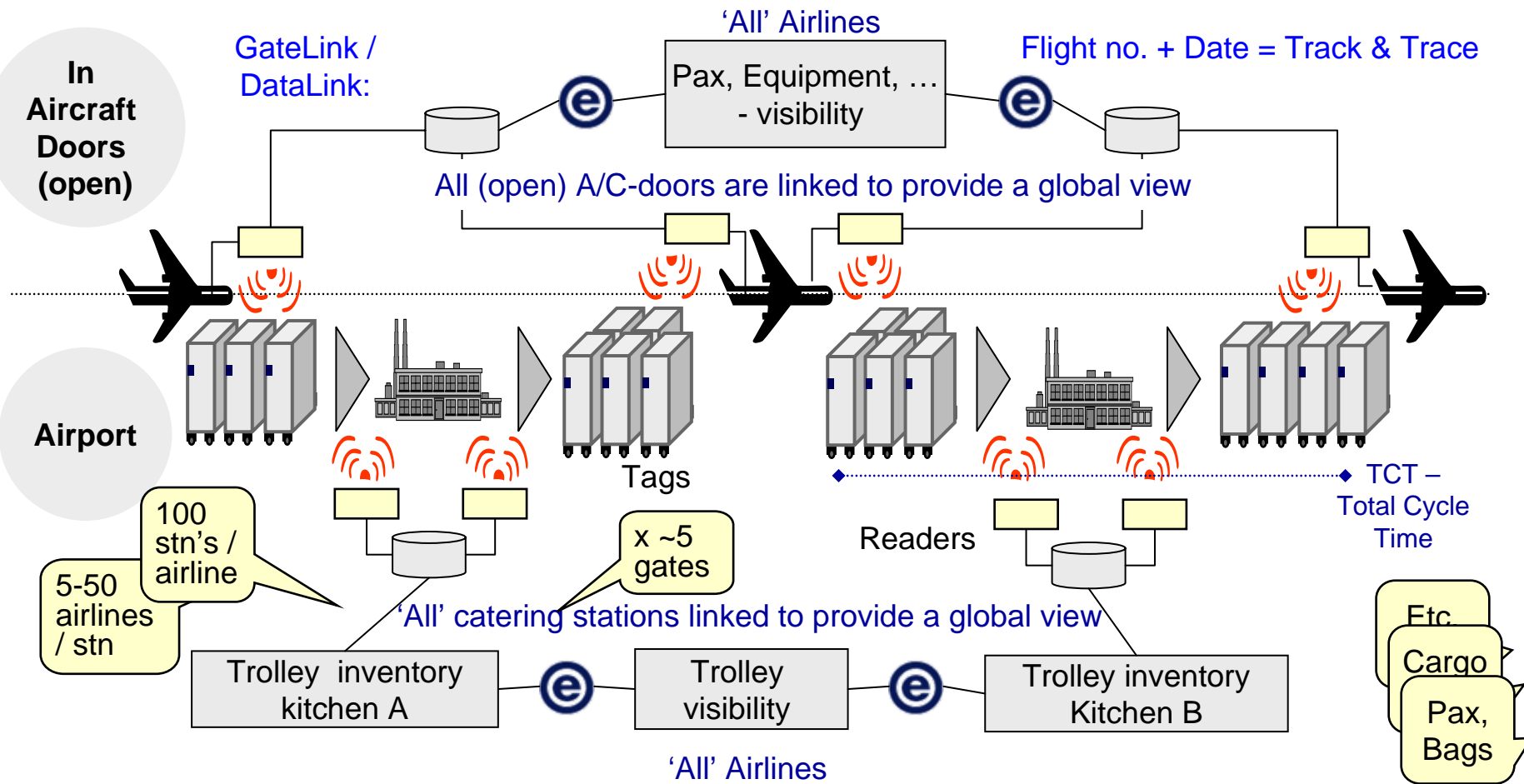Mr Seaton
London
LHR

Airlines and Airports:

Case studies: 79

Companies covered: 127

© OCT06 IDTechEx Ltd

… 'Smart Airports', Pax, Bags, Cargo, Spares, Equipment, Life Jackets
… Airbus - Boeing Global Aviation RFID Forum ... A/C turn-around …

+ Vision of Data Collection

10 years?
20 years?

In Aircraft Doors (open)

GateLink / DataLink:

'All' Airlines
Pax, Equipment, … - visibility

Flight no. + Date = Track & Trace

All (open) A/C-doors are linked to provide a global view

Airport

Tags

Readers

TCT – Total Cycle Time

100 stn's / airline

x ~5 gates

5-50 airlines / stn

'All' catering stations linked to provide a global view

Etc.
Cargo
Pax, Bags

Trolley inventory kitchen A

Trolley visibility

Trolley inventory Kitchen B

'All' Airlines

= Next Inflight Approach

Data Collection:

In Aircraft Doors (open)

On Ground

Stay - Out

SAS

AC   'eLSG'

AF, BA, …

Trace   **Track & Trace**

KLM

Airline 'Stand-Alone'   **'Service-Managed RFID'**

Small, existing systems only

Data - by - the - Dollar

Airlines do not care how we provide it – they just want to buy certain data – in order to manage and improve process and flow.

Measure - to - Manage

Examples:

'Neutral': SITA, IBM, Amadeus, CSC, Accenture, Sabre, ARINC, Kinetics, BT, etc.
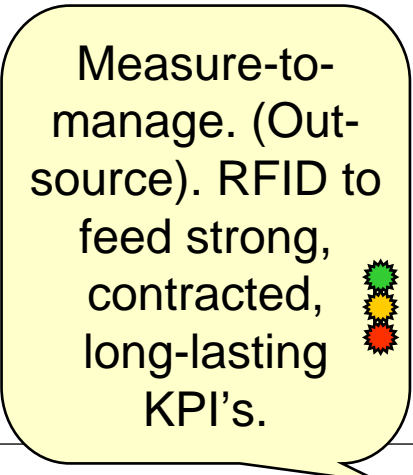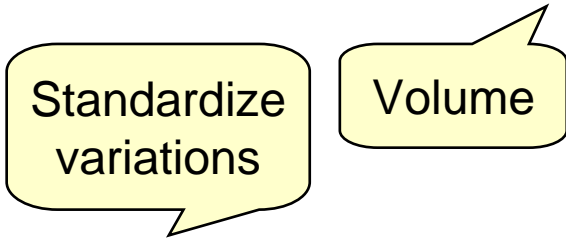
Airbus, Boeing, …

'Stake': LSG, e-gatematrix, ...

Support the take-off for RFID …

Sustainable approach:

Lower RFID cost from RFID suppliers.

Option: "Service Managed RFID".

Users that can integrate IT with the business.

Standardize variations

Volume

Measure-to-manage. (Out-source). RFID to feed strong, contracted, long-lasting KPI's.

… *in the value chain* …

Standards	Chip design	Tags	Readers	Software	Distribution	System integration	Users

Next Steps (JAN07-)

Coordination

Inflight Initiative

Trolley
- **Track**
- **Trace**
- **Content**

Match Making
Implementation Plans
Standards
Type Trials
Feasibility Studies
Industry Business Case

Lessons Learned

Step by step

Standardization

Aerospace & Defence

Summit 16-17JAN07 BRU, …

EPCglobal
POWERED BY GS1
U.S.

42000 06200

© Peter Melander

peter@outflight.net

… at your
service.

Projects
Technology
Procurement

*- Don't get
sucked in
by the
technology*