



Auto ID Center: Next Steps

Duncan McFarlane

Research Director – Cambridge Auto ID Lab

Institute for Manufacturing

University of Cambridge

Smart Labels, 29th September 2003



AUTO ID CENTER: NEXT STEPS

- Recap: Auto ID Center
- Public policy considerations
- Next Steps : Organisation
- Next Steps: Adoption
- Next Steps: Systems Vendors and Integrators



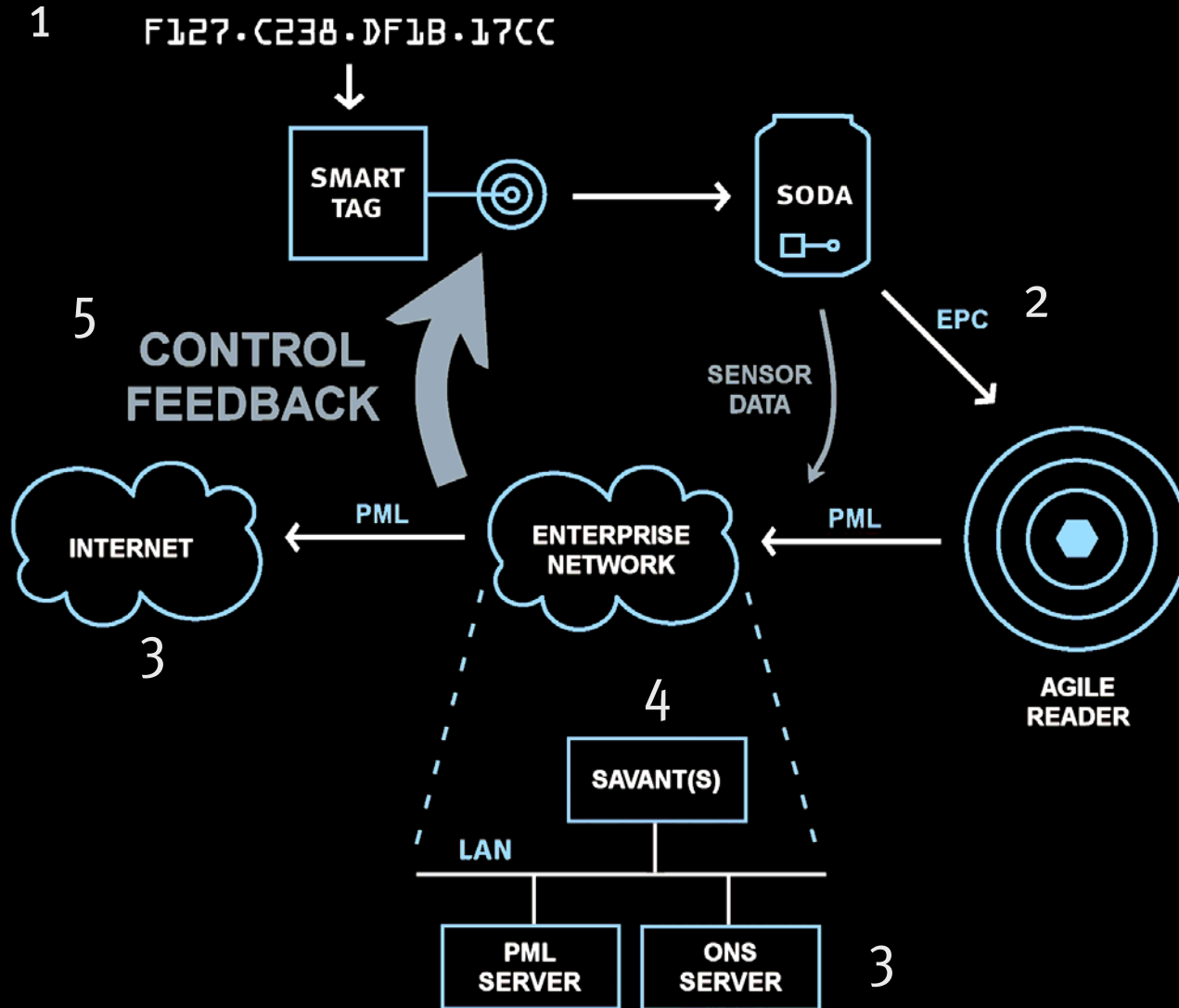
AUTO-ID CENTER

- Mission
 - Re-think the role and implementation of the barcode
 - Change the world by merging bits and atoms
- What do you need to do this?
 - Low cost, automatic, reliable transfer and update of information based on physical operations
 - One single system for the whole supply chain
- Begun at MIT in October 1999
- Six research labs –USA, UK, Australia, Switzerland, Japan, China
- Driven by industrial sponsors (103 in total)



AUTO-ID TECHNOLOGY BUILDING BLOCKS

- Uniquely identifying items
 - EPC – Electronic Product Code
- Detecting the presence and identity of items
 - RFID tags & readers
- Representing item characteristics and movements
 - PML – Physical Markup Language
 - ONS – Object Name Service
- Passing the information across the network
 - Savant
- Interpreting and acting on the information
 - Control





AUTO-ID CENTER RESEARCH

- Technical development of “Building Blocks” – leading specifications
- Focussed technical studies (e.g. tag security, shelving)
- Applications studies (e.g. Pharma, Recycling)
- System Integration Use Cases
- Business Cases (Genericc / Specific)
- Consumer Research
- Public Policy Research
- Demonstrators (Industrial and Laboratory)



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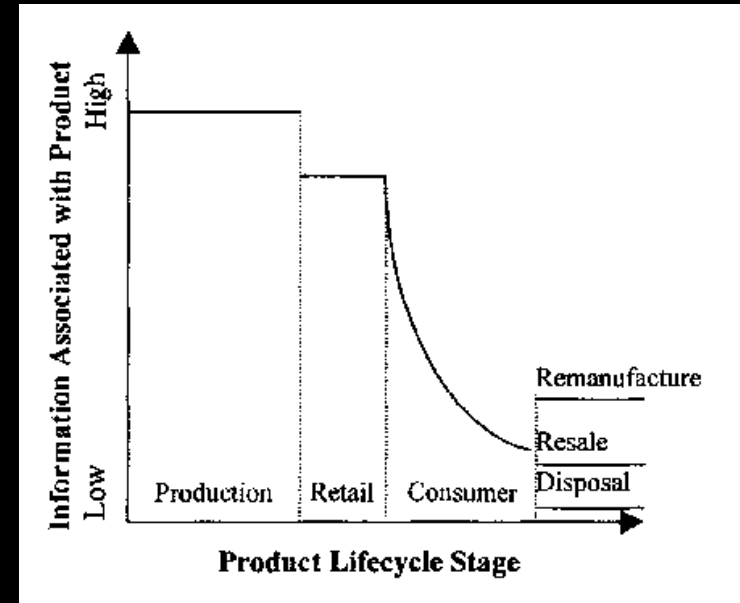
UPDATE ON SPECIFIC ISSUES: CONSUMER PRIVACY CONCERNS

- consumer concern is real and must be addressed
 - No real concern at pallet and case level
- Auto-ID Centre has always been a privacy advocate
 - Research into public concerns
 - Public policy advisory council
 - Technology supporting privacy
- Recommendations for implementation/deployment
 - Information
 - Choice
 - Anonymity
- Consumer benefits



UPDATE ON SPECIFIC ISSUES: RECYCLING

- Poor information inhibits effective use of materials at end of life
- WEEE Directive (Waste from Electrical and Electronic Equipment)
 - Separate collection of WEEE
 - Meet recovery (70%) and recycling targets (50%)
 - PRODUCER pays from collection onwards.
 - Retailers to offer take-back (not a requirement).
 - Consumers are not to be charged for take-back.
- also Packaging, whitegoods legislations
- EPC systems provide an opportunity for organising EOL information more effectively



(source: Thomas et. al., IEEE 1999)



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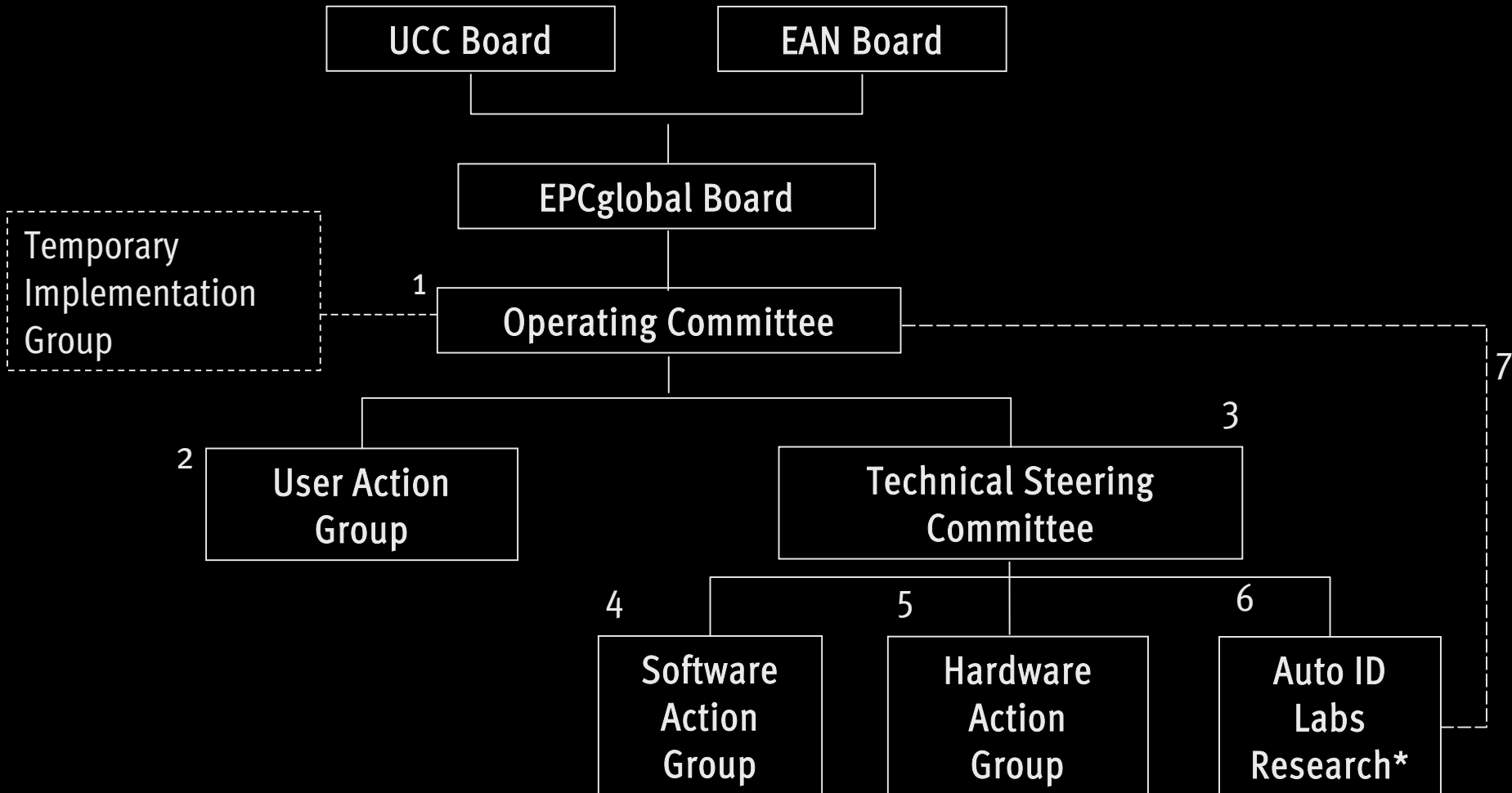


FORMATION OF EPCglobal

- UCC signed a technology licensing agreement with Auto ID Center (MIT) May 21, 2003
- EPCglobal – a joint venture between UCC & EAN International – is being formed
 - Not-for-profit organization
 - Develop & oversee the technical standards for the EPC Network
 - Timeline: proposal approved by EAN community, Operational as of 31st of October 2003



EPCglobal ORGANIZATION STRUCTURE





CONTINUATION OF AUTO ID LABS

- 6 labs continuing
- Part funding via EPCglobal / roles in EPCglobal
- Involvement in both precompetitive and commercial R&D
- E.g. Cambridge Lab
 - Auto ID – Automation System Integration
 - Auto ID in Manufacturing
 - Education Programmes
 - Industrial Demonstrators / Evaluations

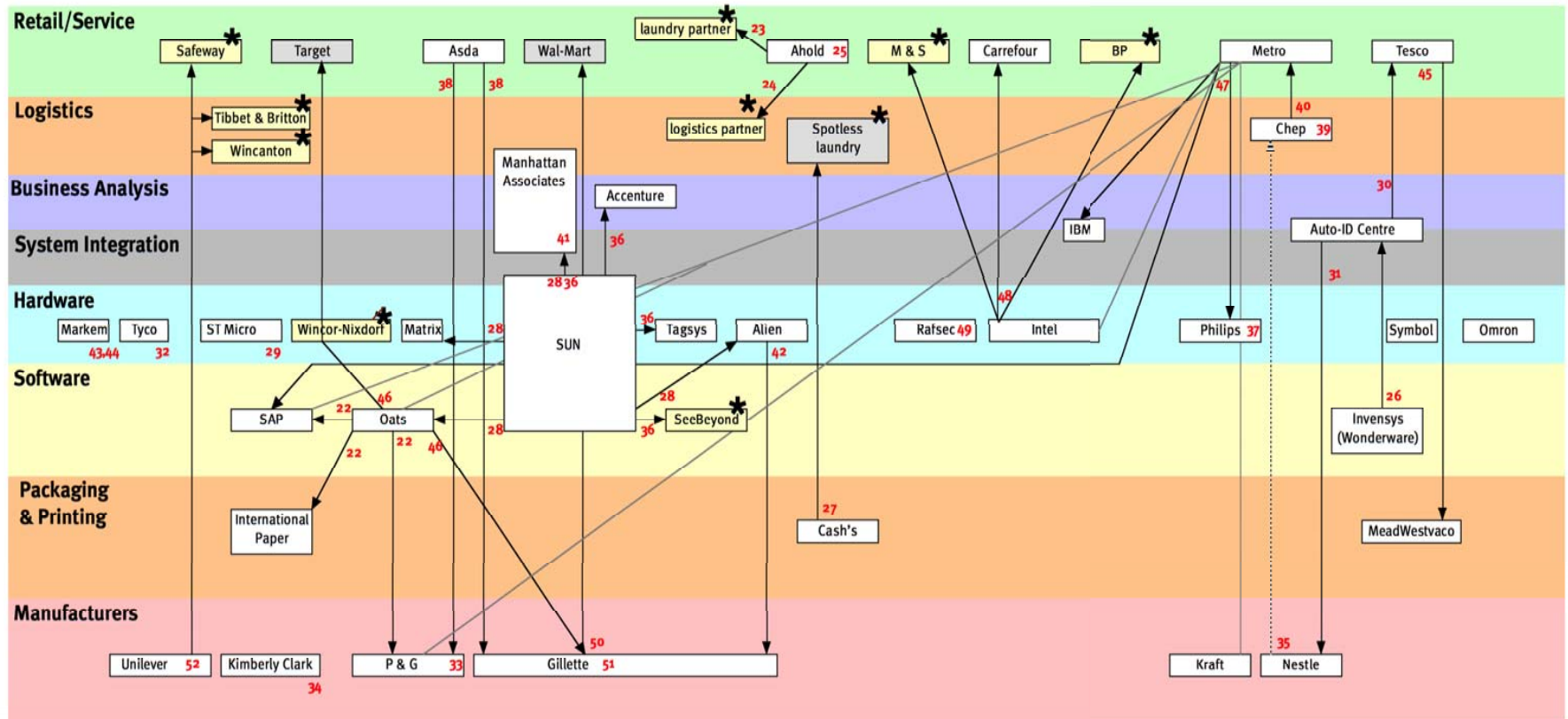


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EUROPEAN RFID TRIAL MAP 3/03 (INCOMPLETE)

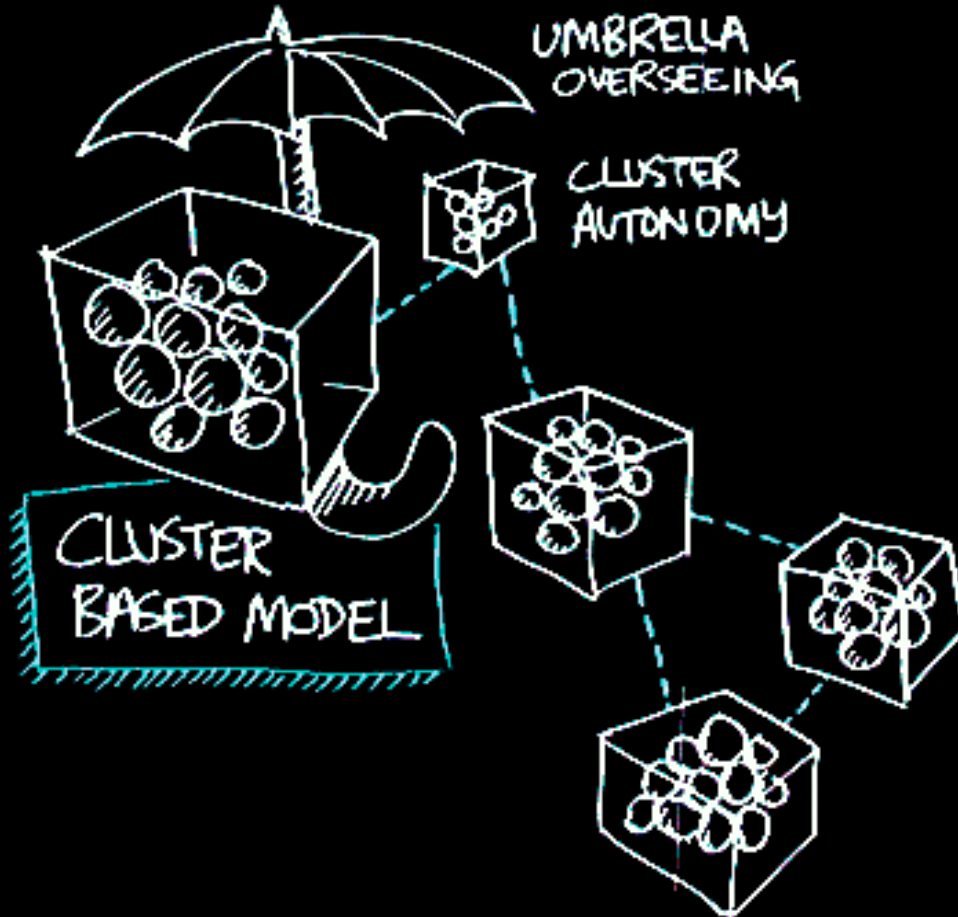
European Field Trial Partnership Map



Grey background = no European presence
 Pale yellow background and * = Non-sponsor of Auto-ID



EAP OPERATING MODEL: CLUSTER-BASED ACTIVITIES WITH UMBRELLA COORDINATION



- Pilot activities are set up by groups of companies
- Similar pilot activities may be grouped into clusters
- Work in clusters is autonomous
- Provides a hierarchical approach to coordination
- Supports company ROI whilst furthering higher level objectives of the EAP



COMPANIES SHOWING INTEREST IN THE EAP

- Accenture
- Ahold
- Alien
- Asda
- BT
- Cap Gemini Ernst & Young
- Carrefour
- Chep
- EMS
- Gillette
- Kimberly Clarke
- Kodak
- IBM
- Intel
- Invensys
- Manhattan Associates
- Markem
- Mead Westvaco
- Metro
- Nestle
- OAT Systems
- Philips
- Proctor and Gamble
- Rafsec
- SAP
- Siemens
- ST Microelectronics
- Tagsys
- Tesco
- Tyco/sensormatic
- Sun Microsystems
- Unilever



END USER OBJECTIVES OF THE EAP

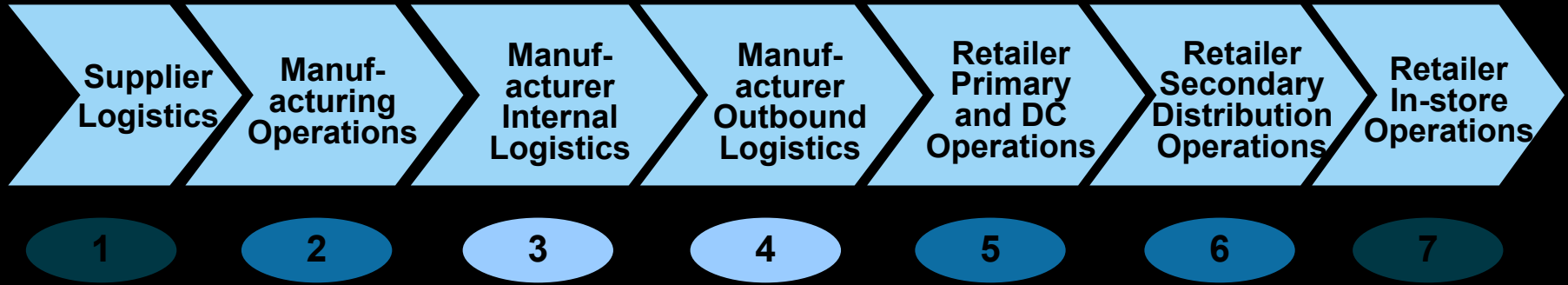
In conjunction with
accenture

- Prove Auto-ID business value at scale
 - Jumpstart and promote European adoption of Auto-ID
 - Leverage the momentum in individual companies
 - Motivate suppliers to provide solutions for Europe
- etc



STAGES OF THE FMCG RETAIL SC AND SPECIFIC INTEREST

In conjunction with **accenture**

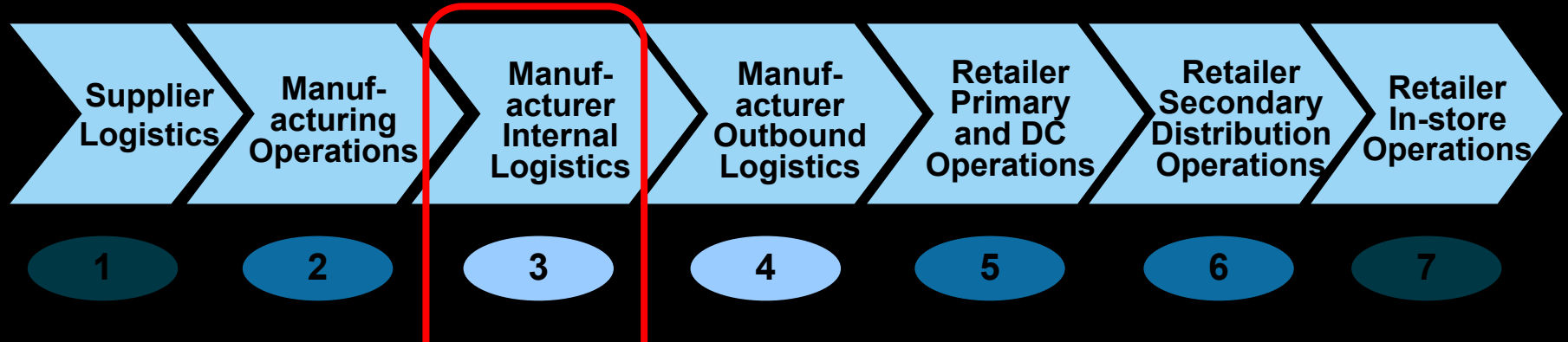


Level of interest: weak medium strong



EAP CLUSTER: TRACKING FG IN MANUFACTURER'S LOGISTICS CHAIN

In conjunction with
accenture

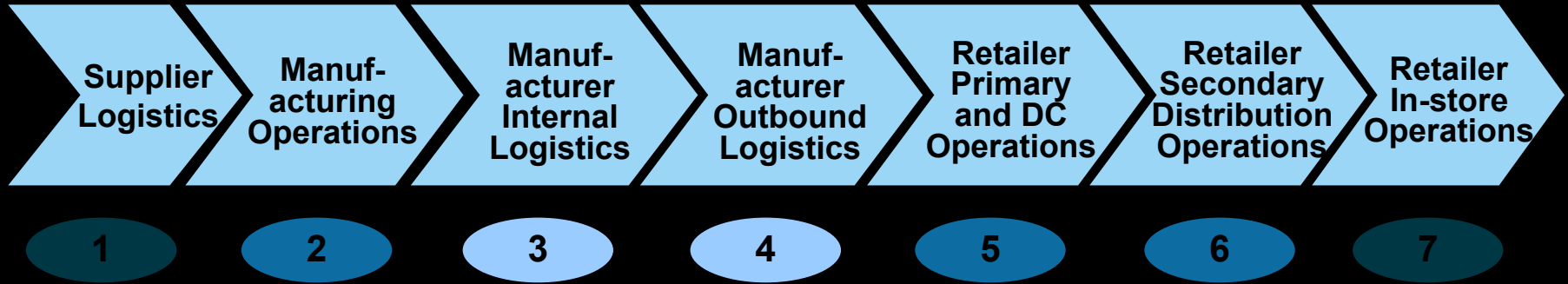


Interest in cluster involvement:



EAP CLUSTER: 'CLOSED LOOP' REUSABLE LOAD CARRIER TRACKING

In conjunction with
accenture



General supplier

General supplier

General supplier



Interest in cluster involvement:





ANTICIPATED EAP TAGGING LEVELS

In conjunction with
accenture

Company	Bulk	Pallet	Case	Load Carriers	Item
1	X	X	X		
2	X	X	X		
3			X		
4		X	X		
5		X	X		X
6		X	X		
7		X	X	X	
8		X	X		X
9		X	X	X	

2003-04

2005-06

2007-09

“Do you need the pallet level if you can get to case level?”

“Case level adoption for the majority of cases shipped by 2007”

“I’m not seeing item level as an early phase”



EAP – MECHANICS OF OPERATION

- Website

<http://www.autoid-eap.org>

- Next meeting dates (see website)

Wednesday 22nd October 2003, London

Tuesday 2nd December 2003, Geneva

Tuesday 13th January 2004, TBD

- Contact (see website)

as2@eng.cam.ac.uk



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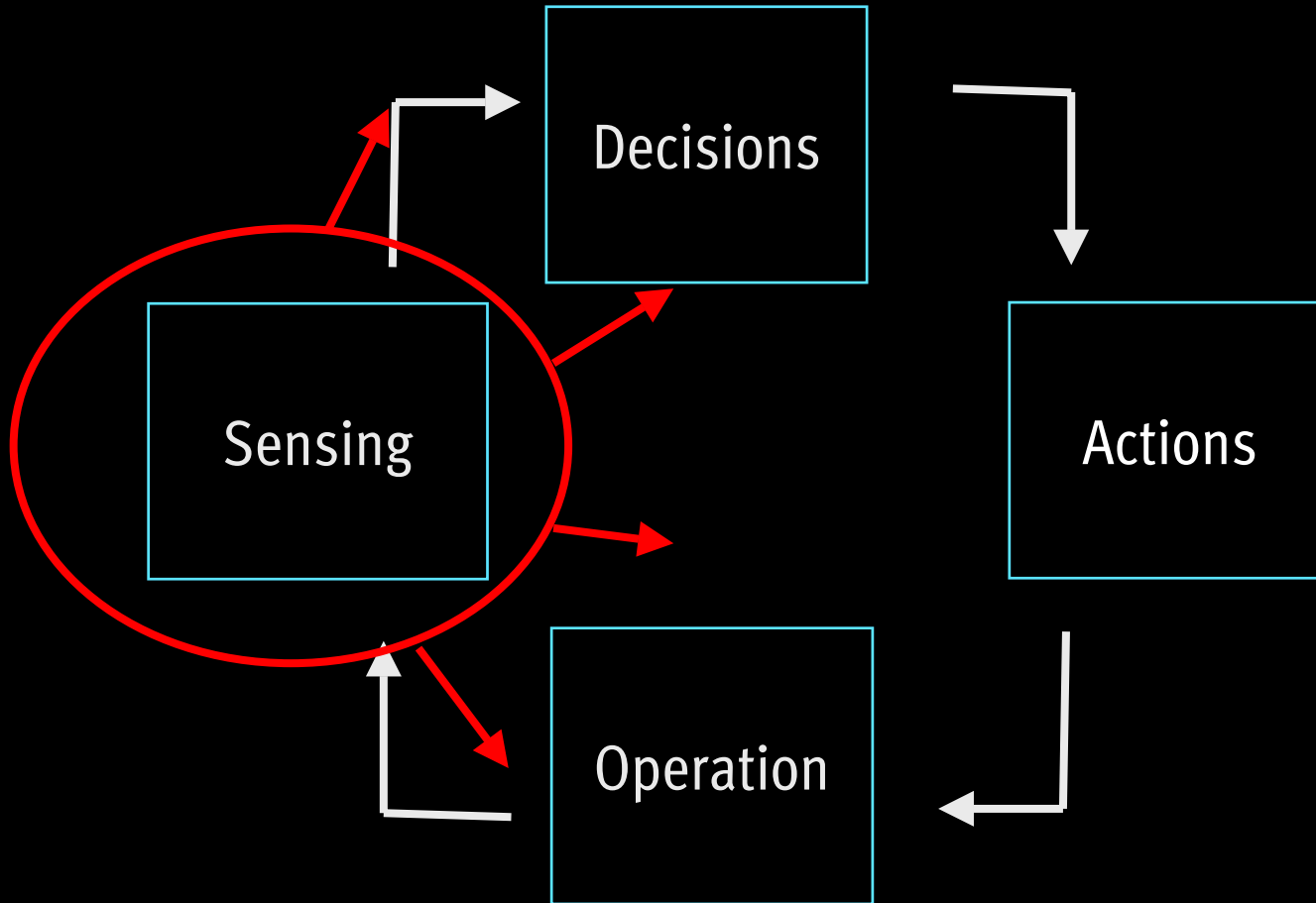


SYSTEMS VENDOR PRESSURES

- Pressure from Wal Mart announcement
- Skills shortage
- Guidelines
- Non FMCG applications
- Lack of full spectrum of vendors

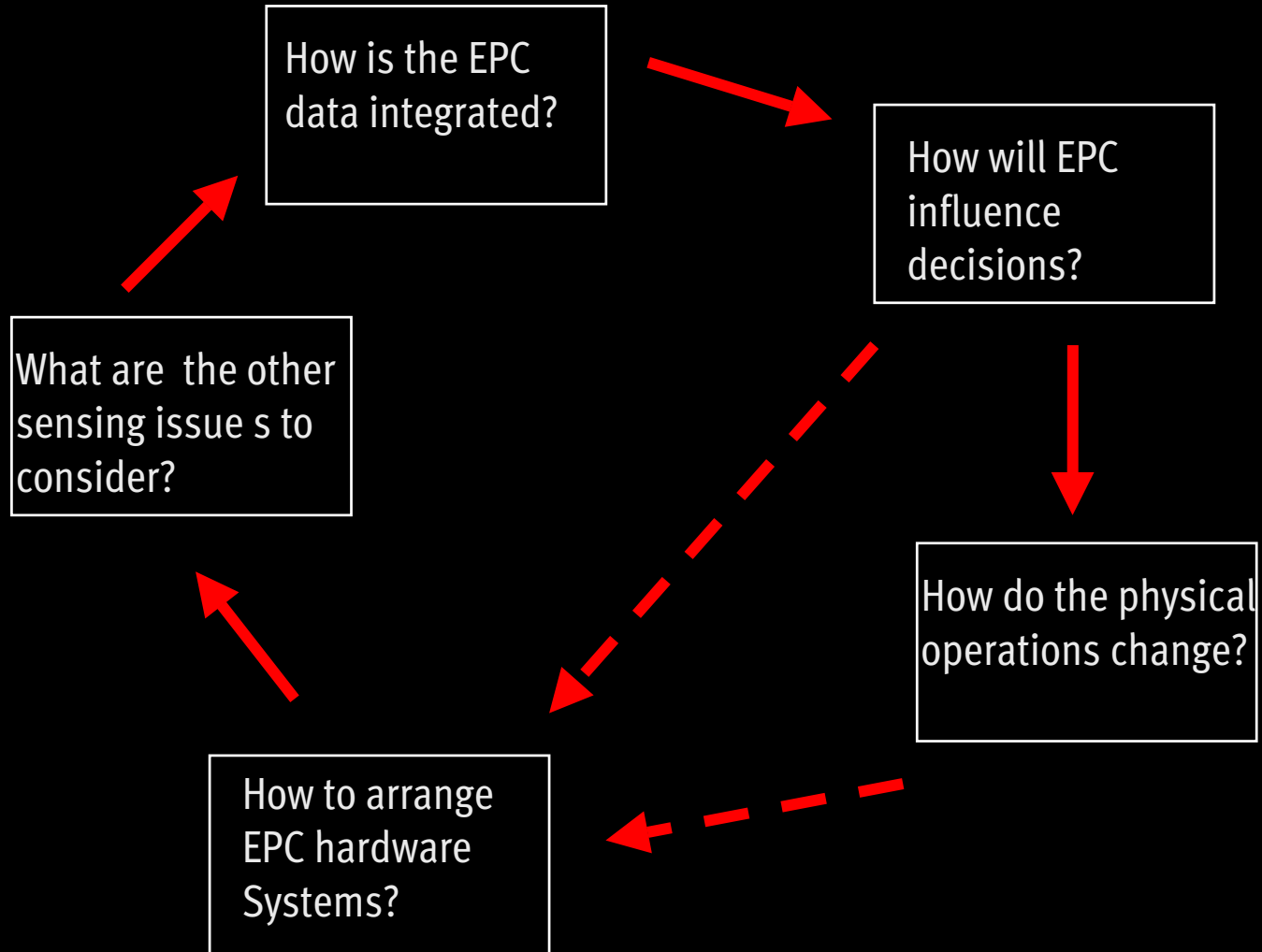


INFORMATION INTO ACTIONS





INFORMATION INTO ACTIONS





OVERALL VENDOR MAP

INFORMATION SYSTEM: ORDER PROCESSING

SALES/SERVICE RELATED SYSTEM
(E.G. CRM, FINANCIAL MANAGEMENT)

DEMAND
MANAGEMENT
SYSTEMS

SCM SYSTEM OR (ADVANCED) PLANNING AND
SCHEDULING SYSTEMS

MFG. EXECUTION SYSTEMS

PRODUCT
MANUFACTURE

SOLUTIONS
ARCHITECTURE

PROCESS CONTROL SYSTEM
(SCADA, PLC, DCS, DNC)

POS
SYSTEMS

IDENTIFICATION
SYSTEM
DEVELOPERS

PRODUCT
DESIGNERS

TAG
PACKAGING

SENSOR
DEVELOPERS

PRODUCTION
EQUIPMENT
DEVELOPERS

CONTROL
HARDWARE
DEVELOPERS

WAREHOUSE
MANAGEMENT
SYSTEMS

TAG
DEVELOPERS

READER
DEVELOPERS

MATERIALS
HANDLING
EQUIPMENT
DEVELOPERS

SHELFING
SYSTEMS
DEVELOPERS

STORAGE
SYSTEMS
DEVELOPERS

PRODUCT SYSTEMS

CHIP
MANUFACTURERS

RESOURCE SYSTEMS

TRANSPORTATION/
LOGISTIC PROVIDERS
(E.G. DELIVERY SERVICE)



SUMMARY

- EPC global now in place
 - Balanced, open discussions on policy issues are welcome
 - European EPC adoption programme developed
 - Many unidentified vendor opportunities
-
- Don't forget EPC in manufacturing!