



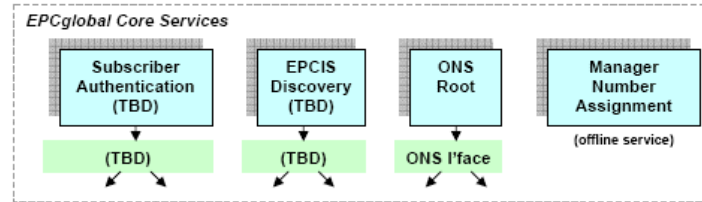
EPCIS Overview GS1 New Zealand

*Craig Asher – IBM –
EPCIS Co-Chair and Data Exchange Co-Chair*

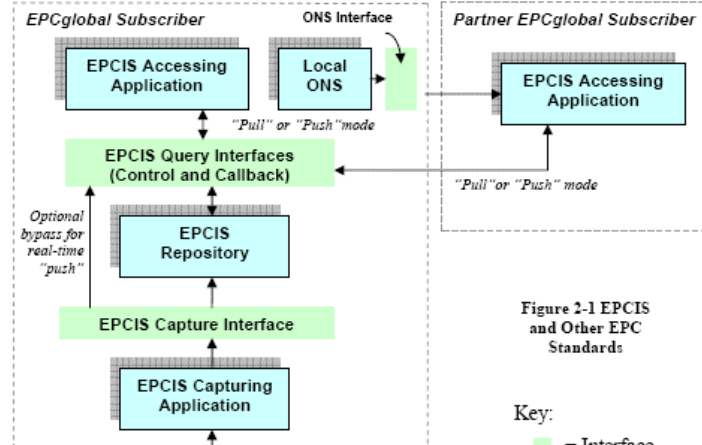


Evolution of the EPCglobal Network standards

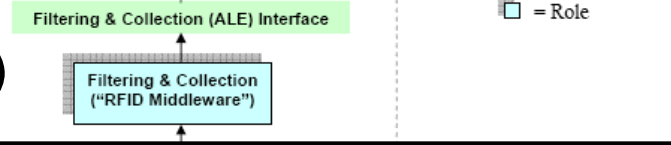
2007-08 – Discovery Services & Subscriber Authentication



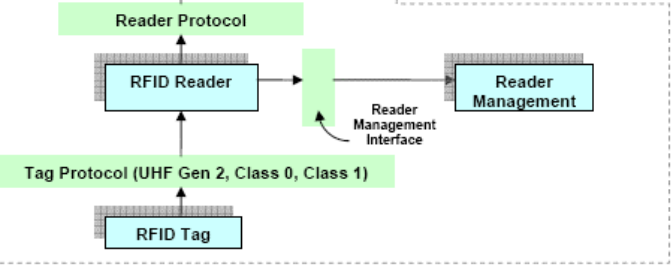
2006-07 – Electronic Product Code Information Services (EPCIS)



2005-06 – Filtering & Collection (ALE)



2005-06 - Tags & Readers





What is EPCIS?

- An EPCglobal standard for Visibility Information at a Business Level
 - Data model for events in life of uniquely identified objects
 - Interfaces for capture and query of events
 - Ratified April 12, 2007 – URL may be found at the end of this presentation
 - Certification Testing planned for August 2007 – beta testing now
- Industry and Application Agnostic
 - Cross-industry framework
 - Cross-industry and industry-specific vocabularies and extensions
 - User-extensible
- A supplement to, not a replacement for, existing enterprise information systems

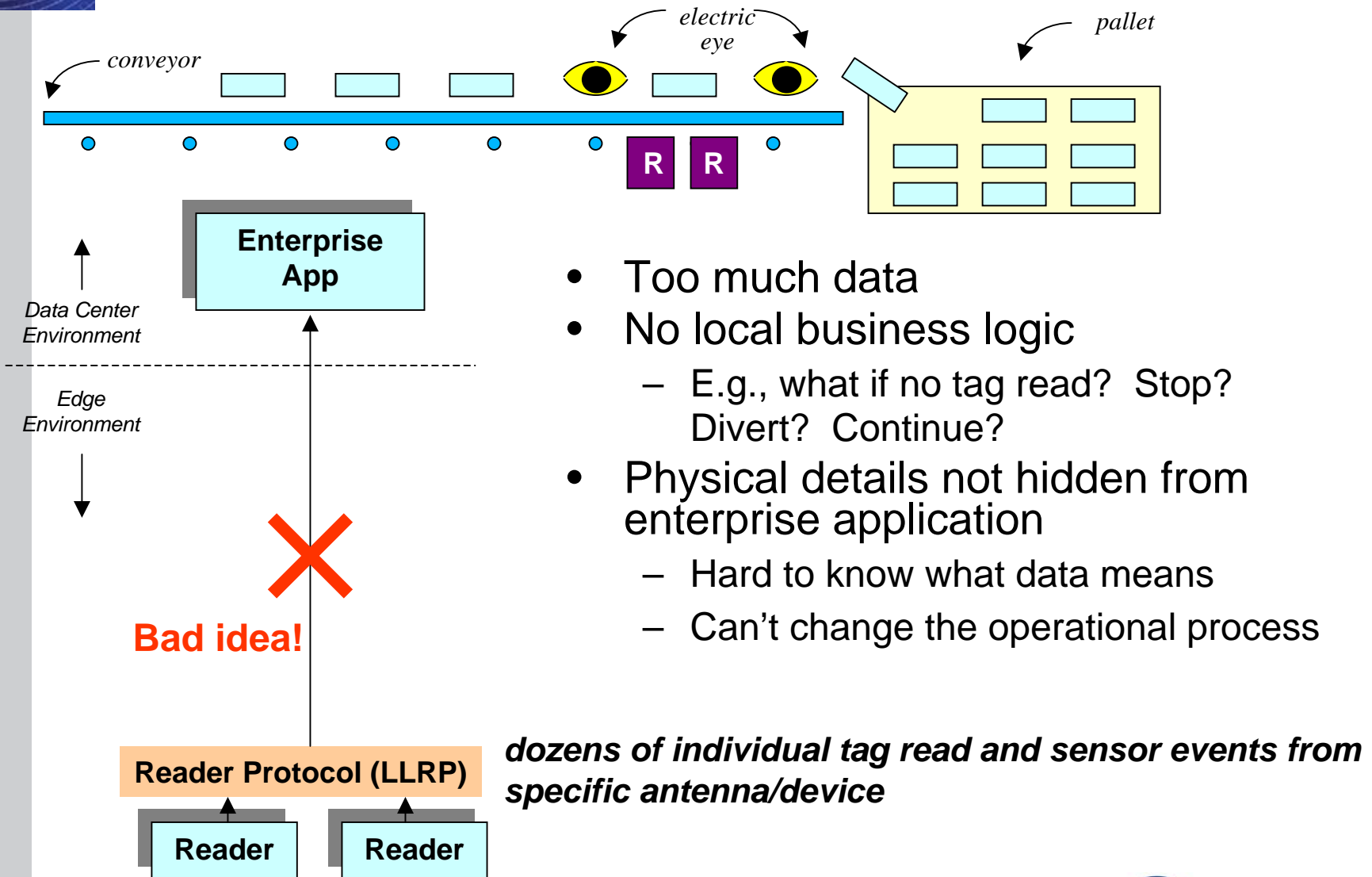


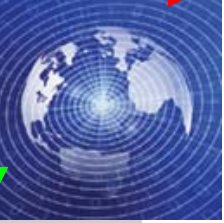
Why not just use EDI?

- Need appropriate **data model for product movements** – WHAT, WHERE, WHEN, WHY
- Need **query** capability – to ask a trading partner or internal system about product movements
- Need inherent **extensibility** - to add fields as needed - without fear of breaking the system
- Need to **link** product movement information to EDI payment information

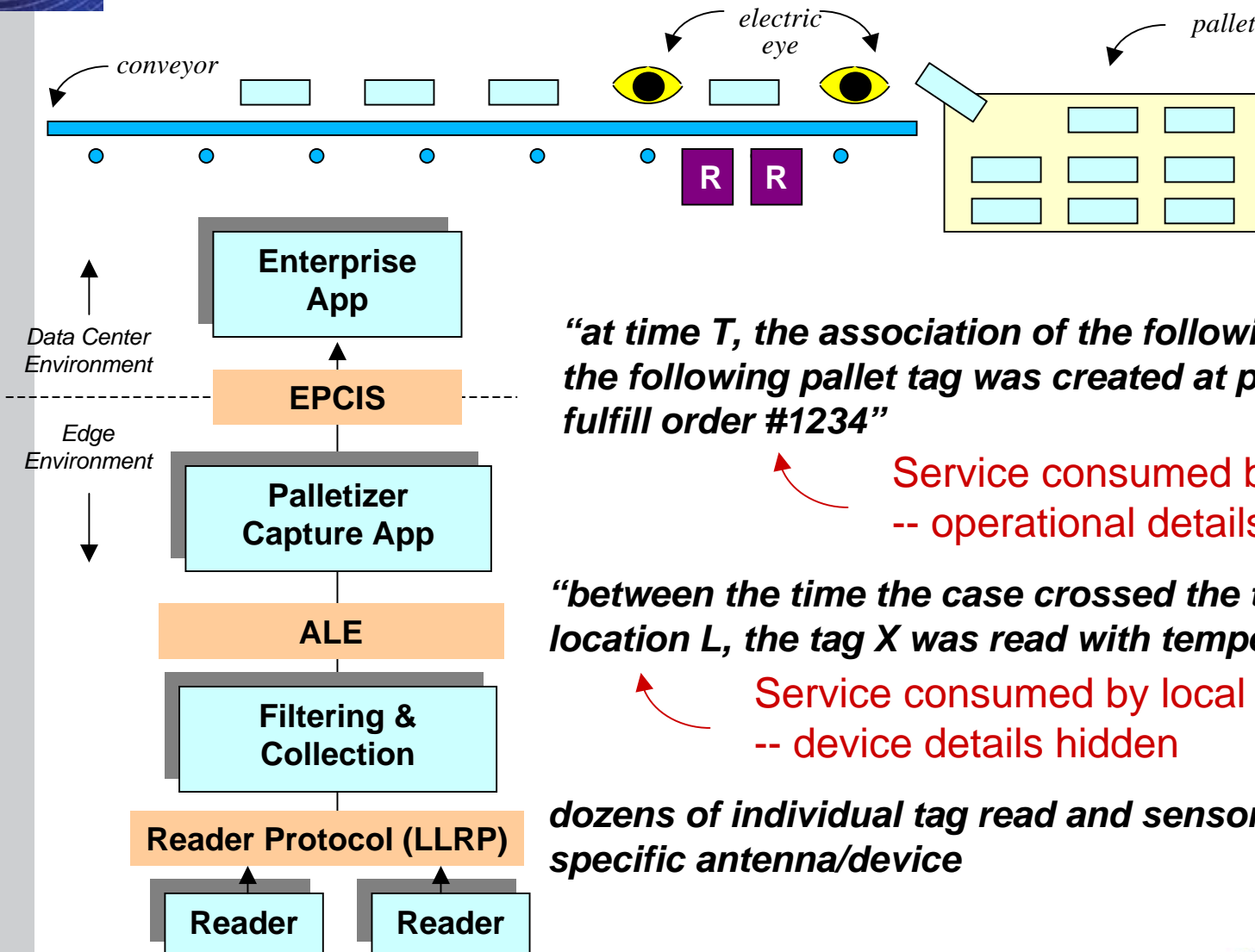


Data Capture Example – Palletizer





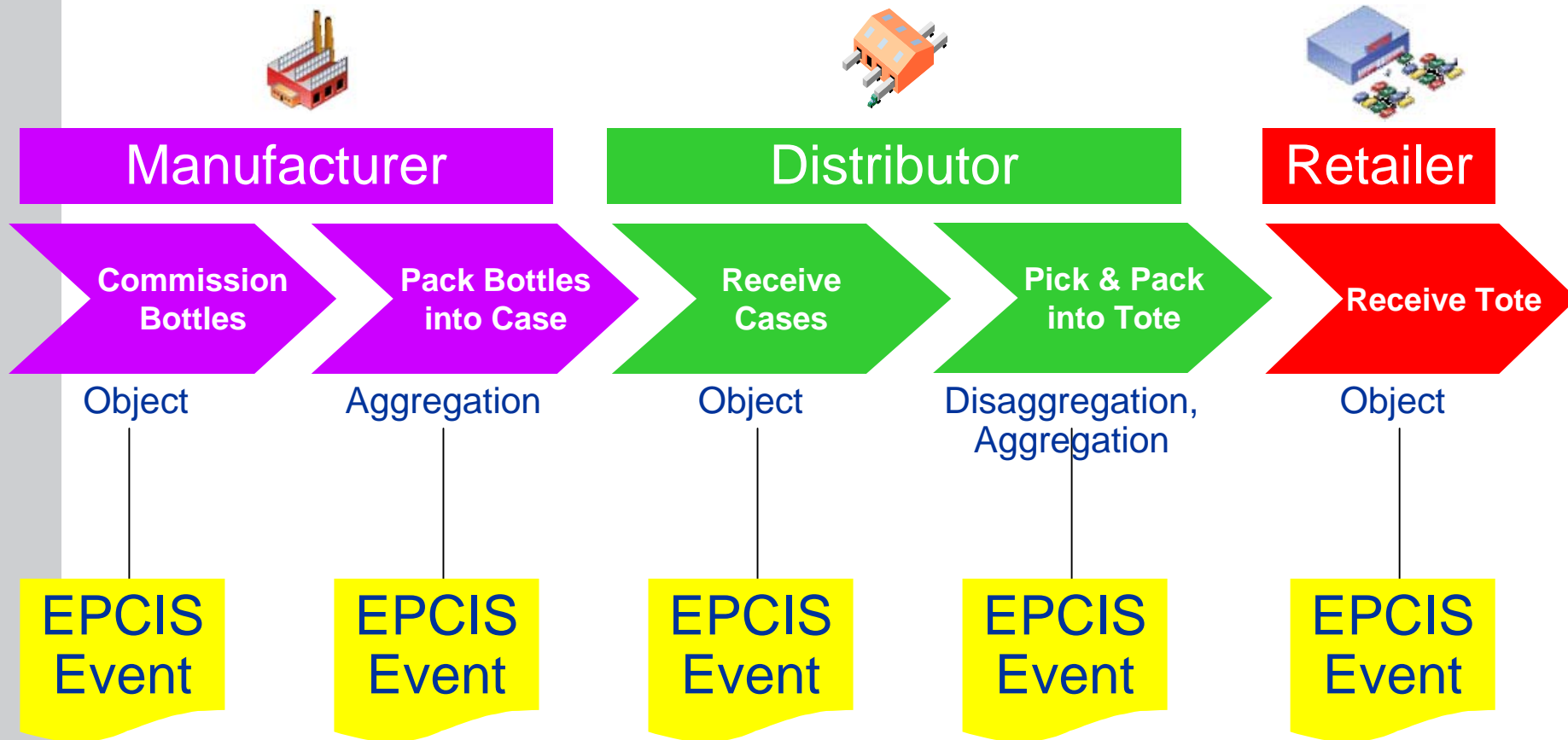
Data Capture Example – Palletizer





Example Scenario (pharma example)

- Goal: Record bottle movements in supply chain





EPCIS Events

- Four dimensions:

	Retrospective (at the time of the event)	Prospective (true until contradicted by subsequent event)
What	EPC (or other object ID) EPCClass + quantity (QuantityEvent) BusinessTransactionList (TransactionEvent)	
When	Event Time [Record Time]	
Where	Read Point	Business Location
Why (business context)	Business Step	Disposition



EPCIS Data

- Events
 - Records of activity happening in real world
 - “What, where, when, why”
 - More events generated as you do more business
- Descriptive information (“master data”)
 - Provides context for the events
 - Descriptions of locations, products, etc
 - Does not grow merely because business is transacted (grows slowly as companies grow)



EPC can work with any data carrier

- Product Identification that can be captured may come in the form of:
 - Passive RFID Tag – UHF Gen 2, HF
 - Barcodes – Linear, Data Matrix
 - Active RFID Tag
 - Human Readable Number
 - And more in the future!



HLS Industry Adoption Guide

RFID and Barcode Co-Existence

Pallets, Mixed SKU Cases

Items, Single SKU Cases

RFID	<p>SSCC-96</p> <p>030001.5 1234567890</p> <p>EPC Mgr ID Extension Digit (5) +Serial Number</p>	<p>SGTIN-96</p> <p>030001.2 123498.123456789012</p> <p>EPC Mgr ID Pkg. Level (2) Serial Number +Item Reference</p>
	Barcodes	<p>SSCC-18</p> <p>(00)5 030001 1234567890 3</p> <p>Extension Digit (5) Serial Number +EPC Mgr ID + Check Digit (3)</p>

This table is intended to illustrate synchronizing serial numbers between RFID and Barcode data carriers. It is NOT intended as guidance on choosing data carriers.



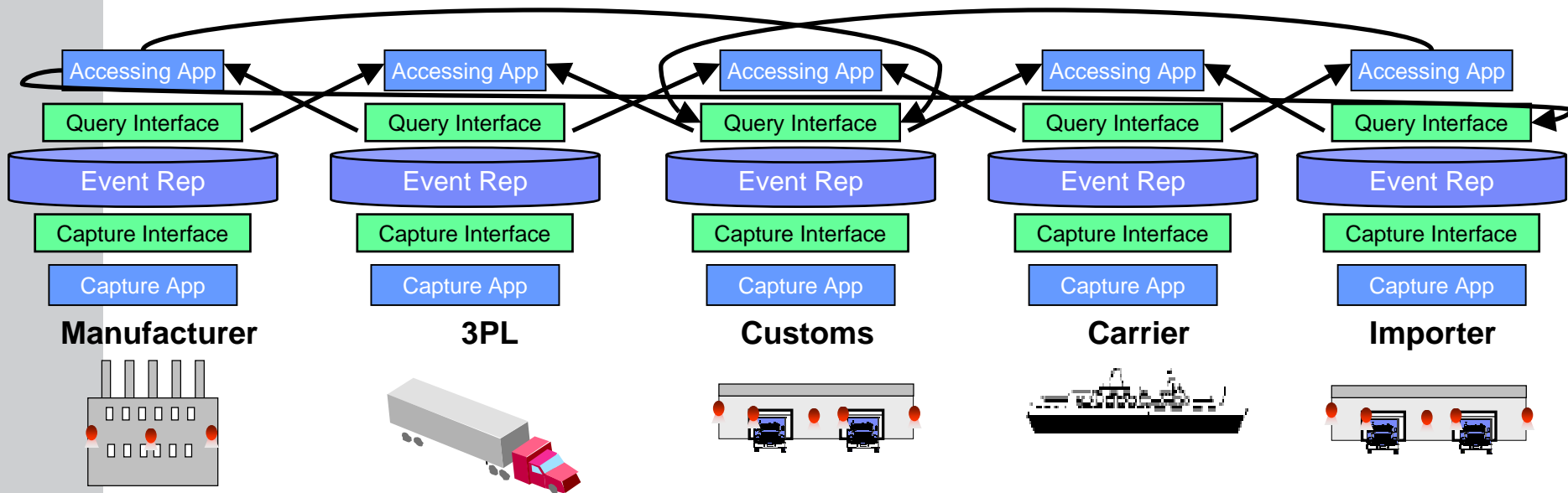
Vocabulary Values for EPCIS Data

Business Steps
accepting
receiving
holding
inspecting
storing
stocking
repackaging
packing
picking
loading
shipping
staging_outbound
reserving
encoding
commissioning
decommissioning
destroying
dispensing
other

Dispositions
active
inactive
reserved
encoded
in_transit
sellable_not_accessible
sellable_accessible
non_sellable
non_sellable_expired
non_sellable_recalled
non_sellable_damaged
non_sellable_no_pedigree_match
returned
in_progress
sold
destroyed
unknown



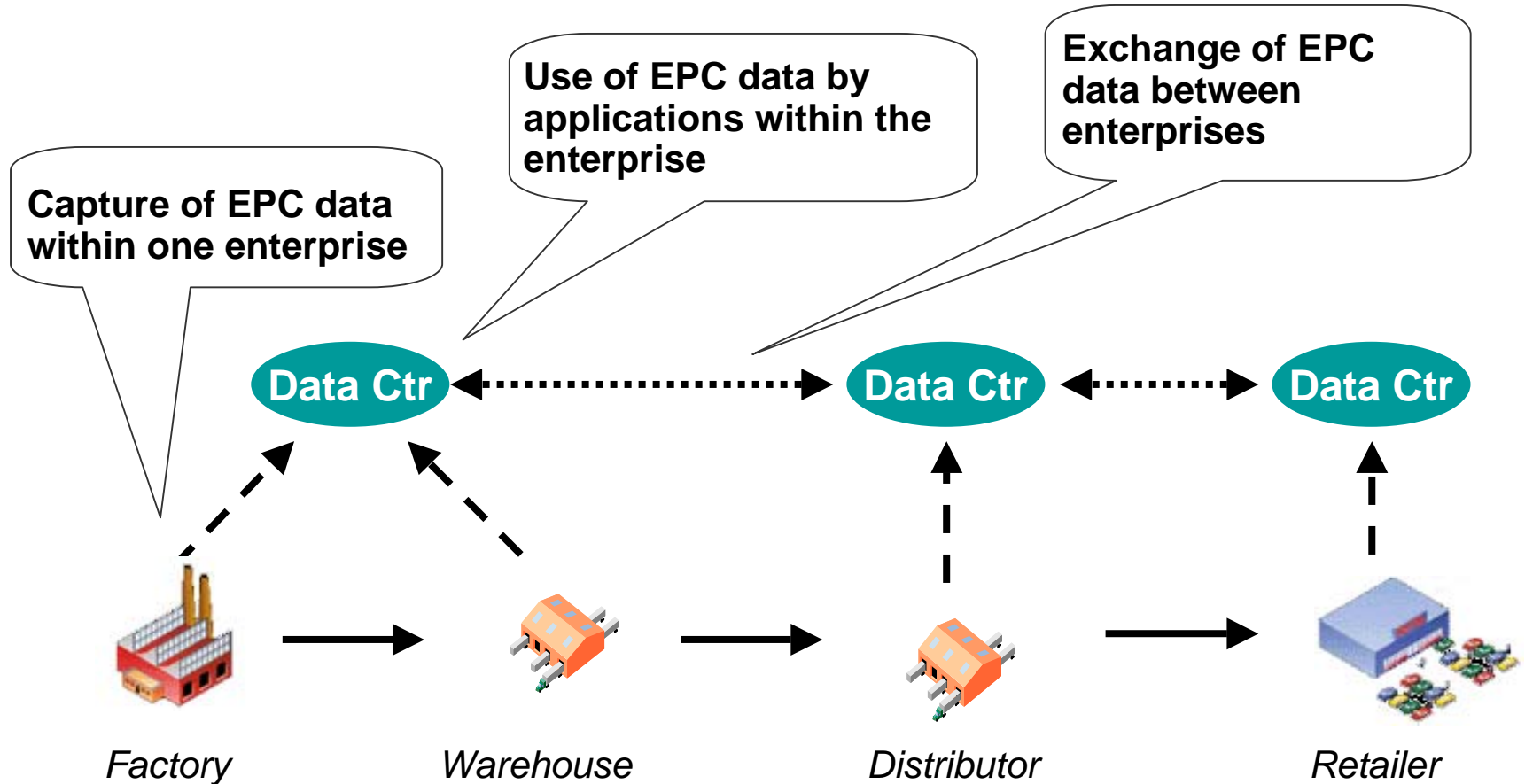
How does Data Exchange via EPCIS work?



- EPCIS instances at each enterprise communicate via the EPCIS Query Interface
- Today, trading partners know each other through pre-arrangement
- Future: “discovery” services to find partners



EPCIS: EPC-based Visibility Data Within and Across Enterprises



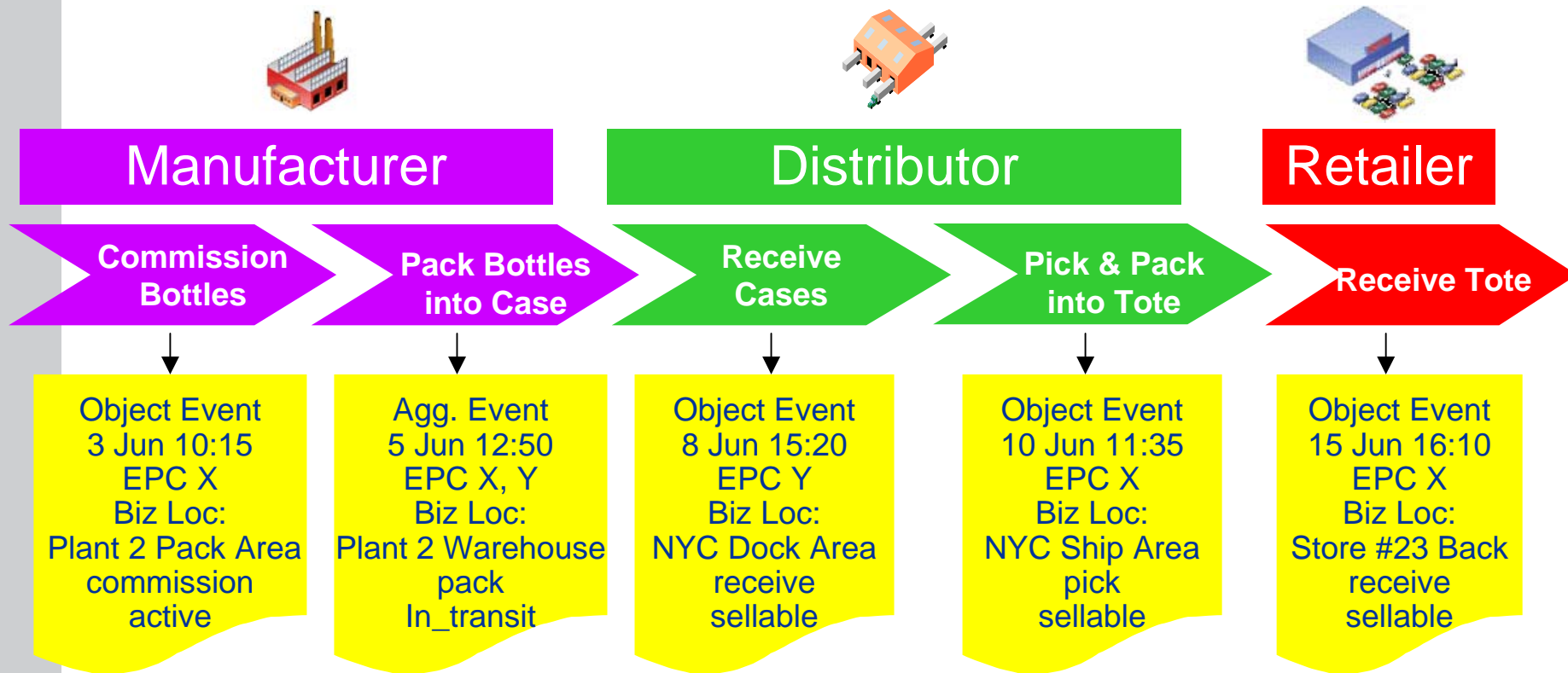


Who is using EPCIS today?

- **Retail/Consumer Products**
 - Wal-Mart, Target, Procter & Gamble, Unilever, Kraft, Kimberly-Clark
 - METRO starting up now
 - A luxury products manufacturer with company-owned stores
- **Health Care**
 - AmerisourceBergen and two top 5 worldwide manufacturers
 - About 20 more manufacturers and distributors in various stages of deployment
- **Transport & Logistics**
 - Completed EPCglobal TLS Phase I pilot; Phase II starting soon; IBM Beer Living Lab Pilot
- **Others Showing Interest**
 - Aerospace
 - Automotive
 - Media & Entertainment
 - Consumer Electronics



Putting it Together



- Mfr: Are promotional goods reaching retailer in time?
 - Measure time between mfr ship event and retailer receive event
- Retailer: Are received products authentic?
 - Query other events to ensure sighting by legitimate mfr and distributor
- Distributor: Were shipped goods received? (proof of delivery)
 - Query retailer to find sightings



Uses Currently Underway

- Promotions Management
- Electronic Proof of Delivery
- Chain of Custody Traceability/ePedigree
- Product Authentication
- Returns Management
- Operations Management (Expiration Management)
- Diversion/Theft Detection
- Work in Process Inventory Tracking
- And more ...



Where Do I Learn More?

EPCIS Standard v1.0

http://www.epcglobalinc.org/standards/EPCglobal_EPCIS_Ratified_Standard_12April_2007_V1.0.pdf

EPCIS Frequently Asked Questions

http://www.epcglobalinc.org/standards/FINAL-EPCIS_FAQ042707.pdf

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