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iCargo - ECITL

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Zaragoza

Intelligent Cargo

Bringing the concept into practice

Business Drivers in Supply Chains

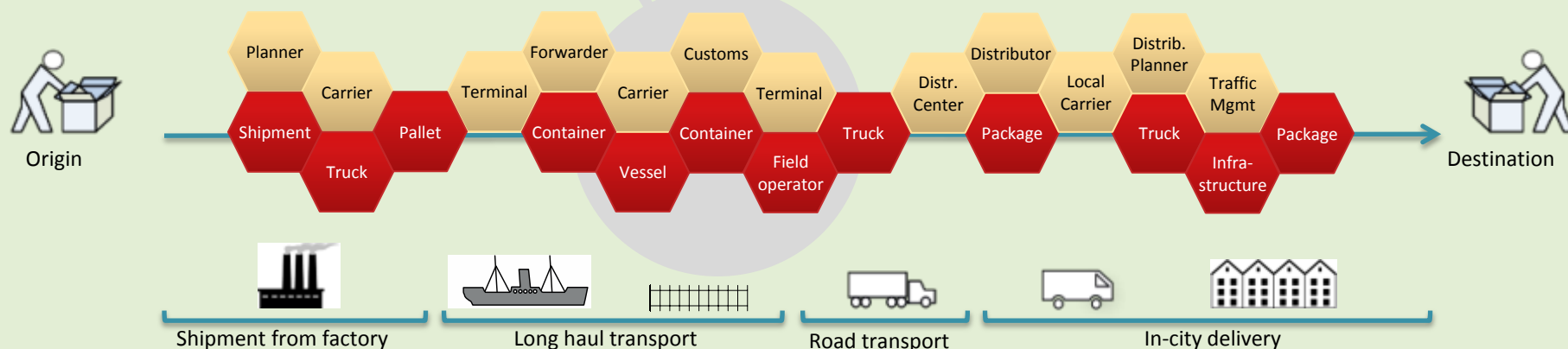
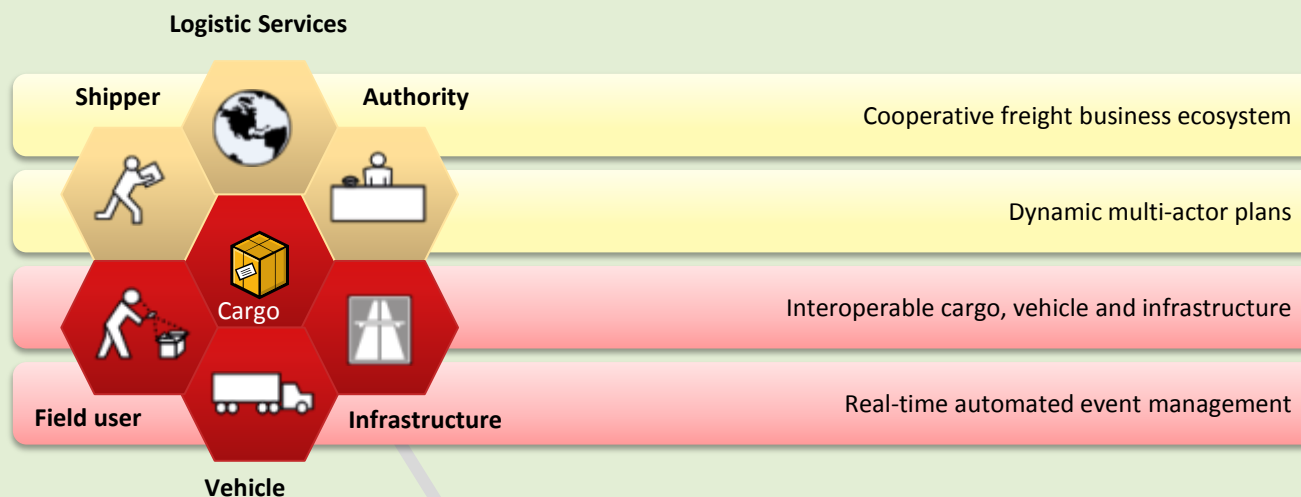
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- The following business drivers are often identified as main areas of focus when optimizing Supply Chains:
 - **Increased control** over the supply chain to ensure product integrity, regulatory compliance and efficiency gains;
 - **Increased quality of service** by having more information in advance;
 - **Reduced cost** by making efficient and flexible use of resources
 - **Corporate social responsibility** by making better use of available resources (due to increase of utilization)
- Achievable benefits depend strongly on how the business process will be organized and differs per case. In general a rough estimate is:
20% reduction of handling cost and 25% CO2 reduction.

Complexity of the Supply Chain information flow



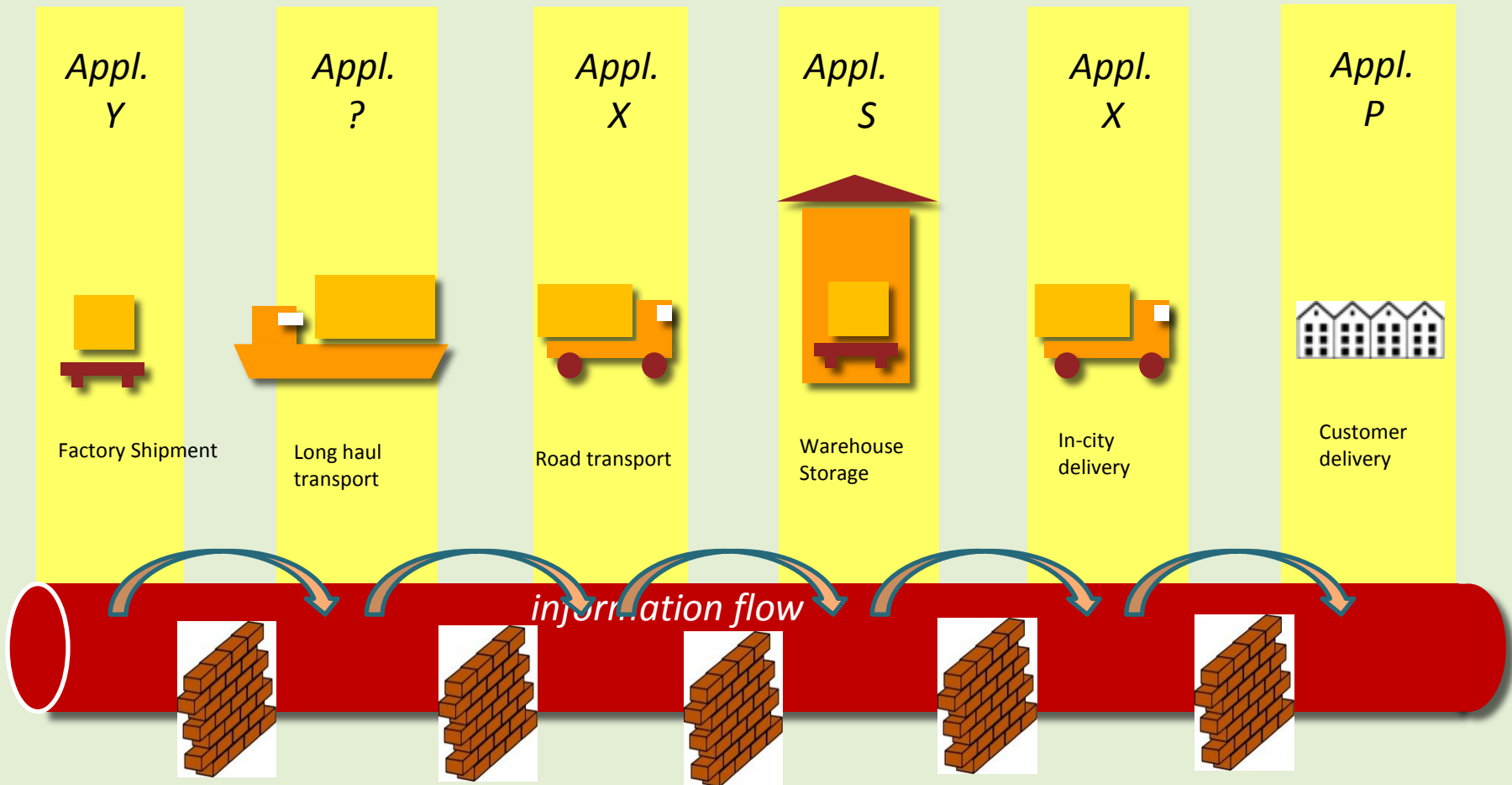
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Current information flows Process/Application centric



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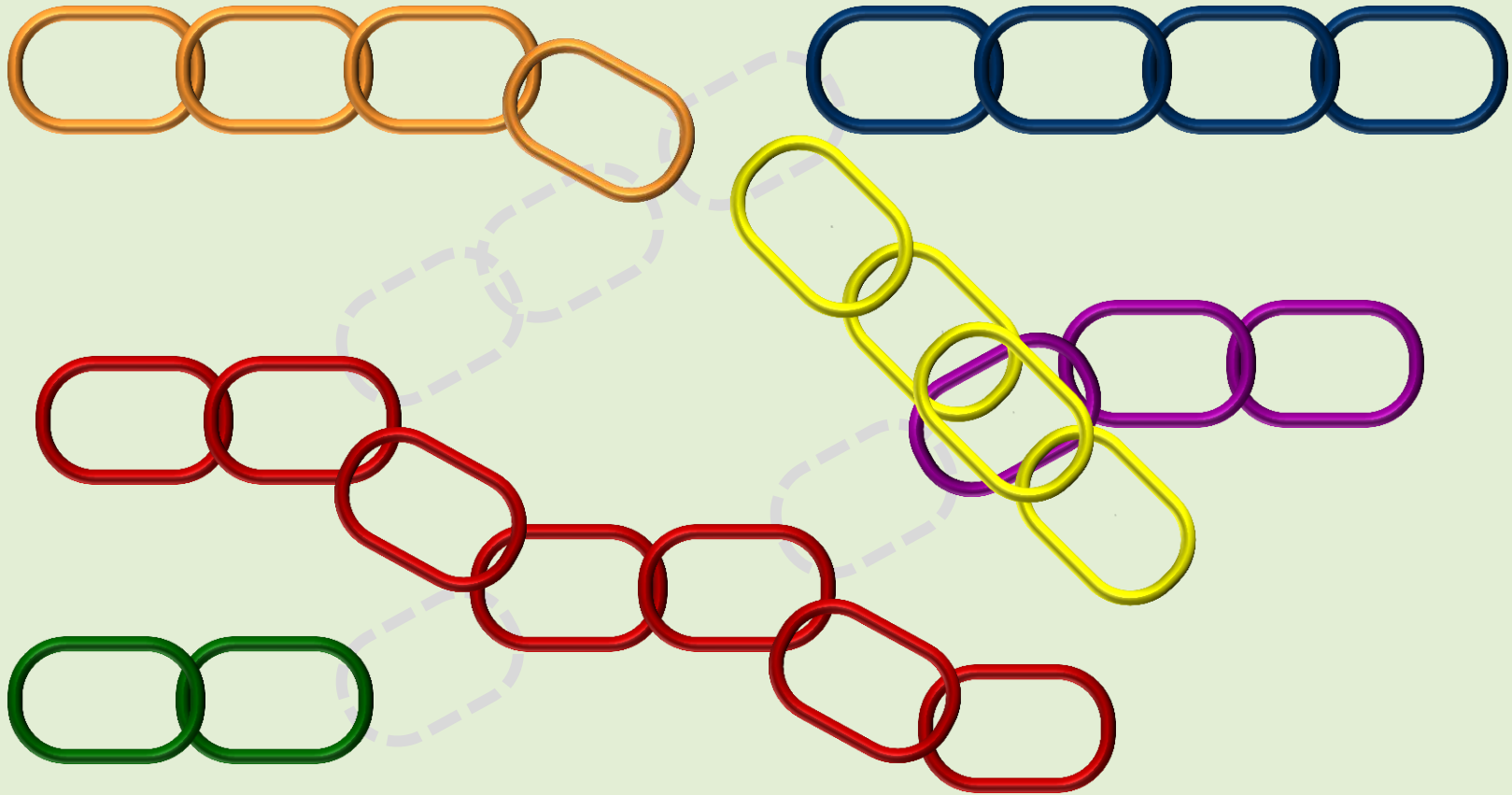


Supply chains are managed using multiple, often disparate applications with no or limited means to optimize and control centrally

The current information network



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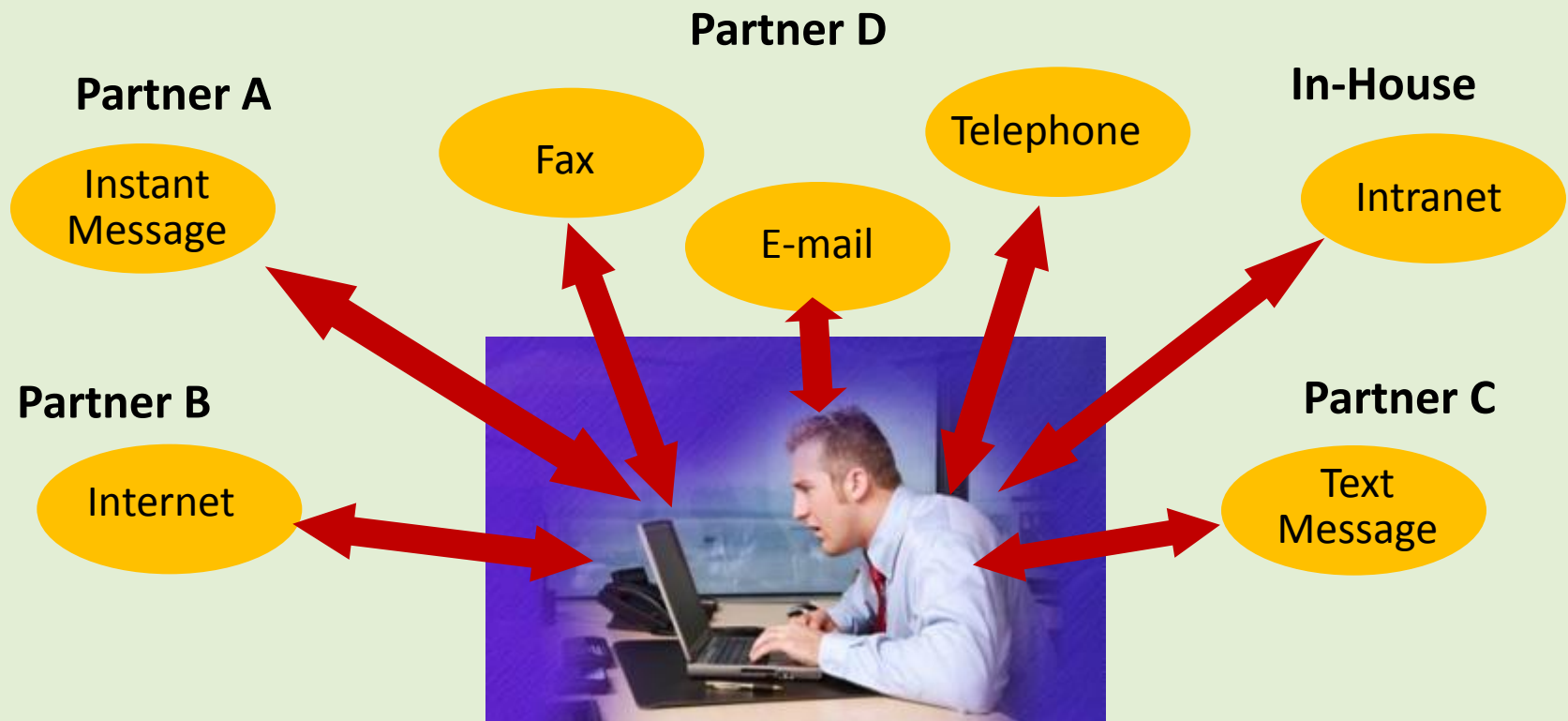


Supply Chain coordination TODAY

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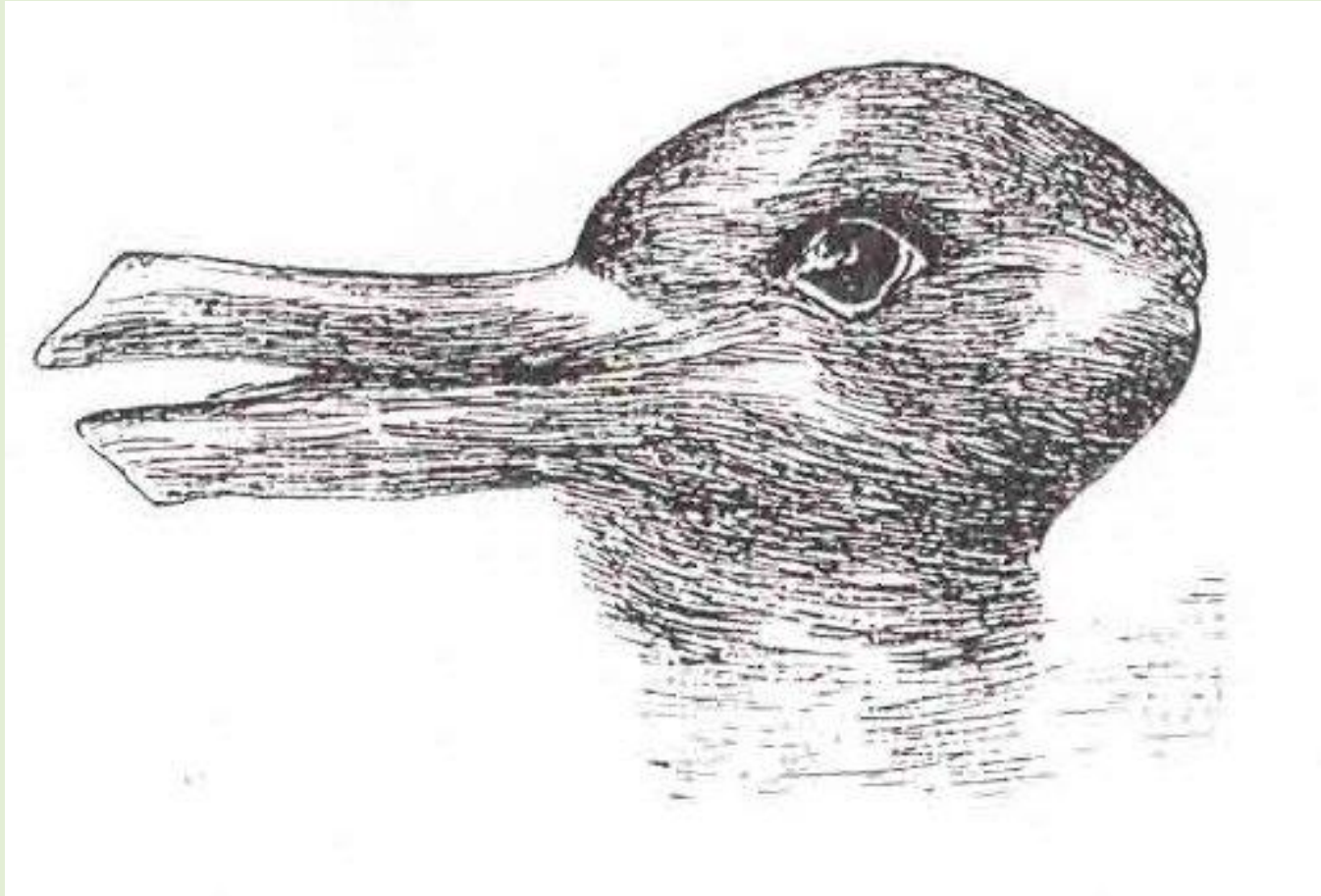
Integrated solutions are only available in closed systems

Manual Inputs are required to support sharing of data



There is a need for conceptual change a Paradigm Shift

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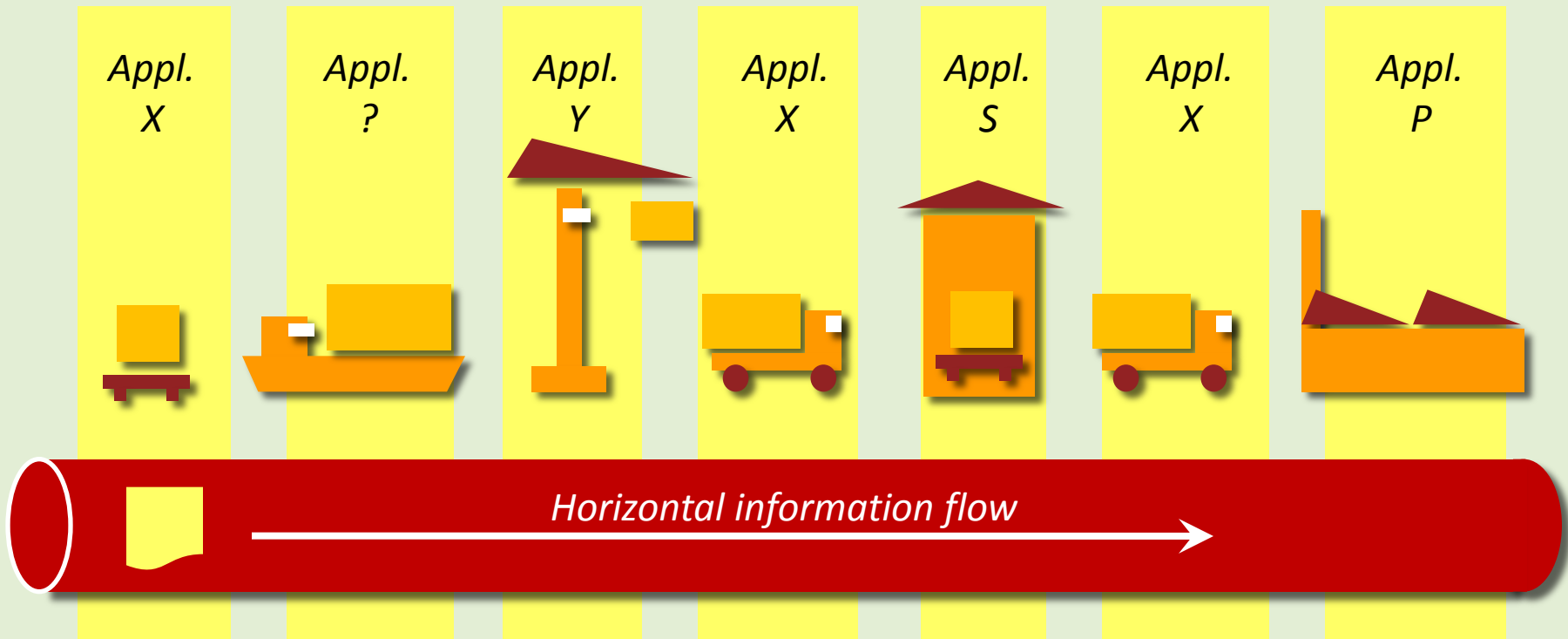


We look at the same picture,
But are we all seeing the same thing?

Intelligent Cargo - a centric approach



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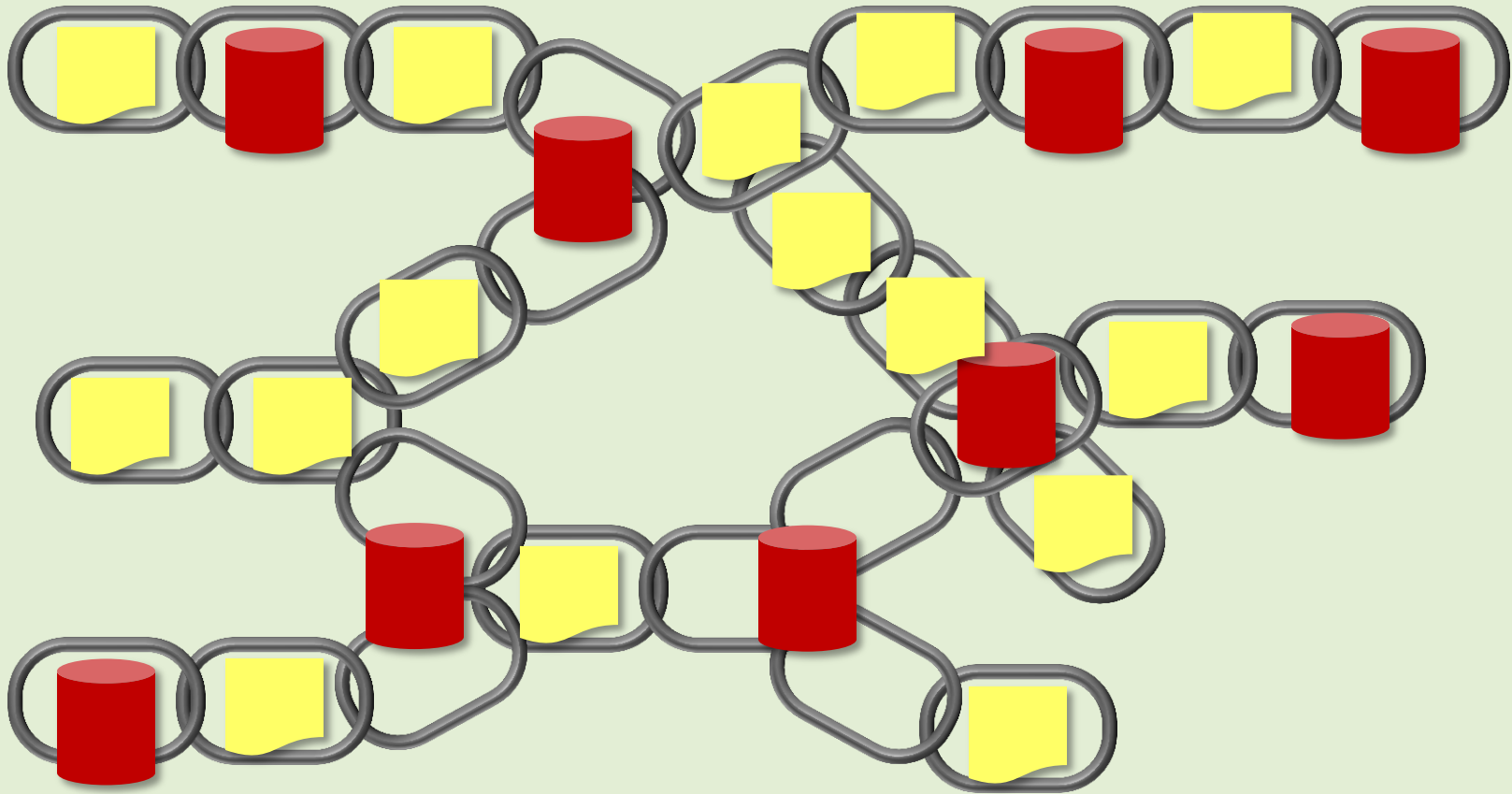


Shift in paradigm: from process into "thing" oriented

The to-be information network



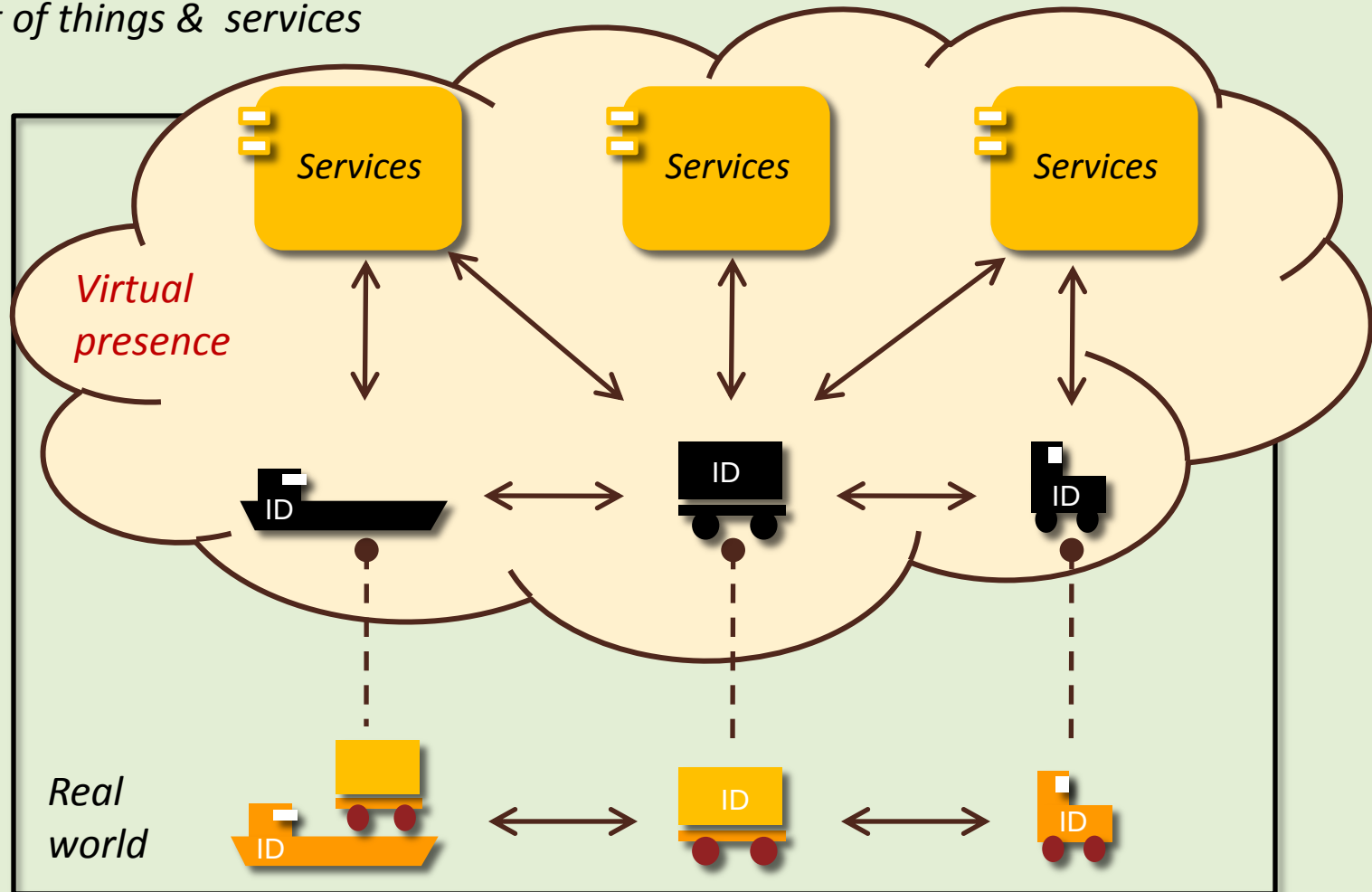
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Connectivity between digital shadows

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Internet of things & services

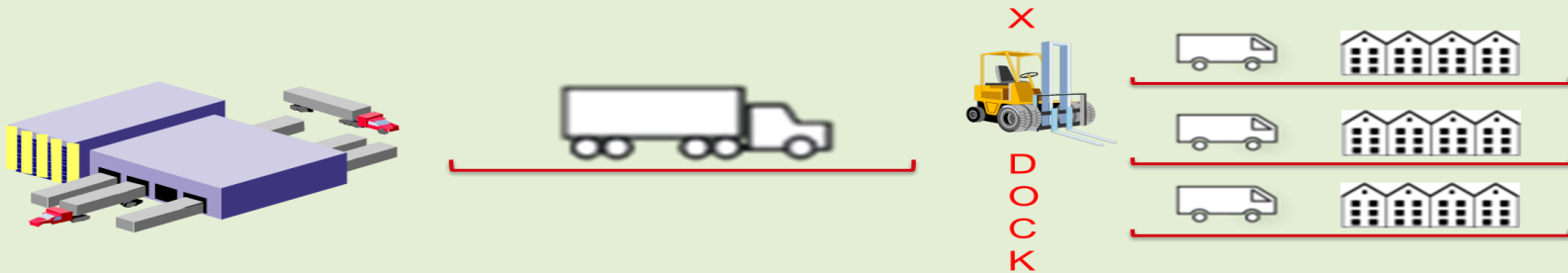


Example of a current, basic Logistic Flow



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- At a (European) distribution centre shipments are created based on individual customer orders
- Long-haul shipments with consolidated shipments bring goods to a x-dock location closer to customer
- At a x-dock location shipments are separated based on final mile destination



Possible Consequence (real life example)

Customer order



Order creation per customer



Palletisation per Customer

Impact truck



But what if



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- We do not already combine the complete customer order as one shipment immediately in the warehouse, but delay this until the final x-dock location
- Instead, we only add information / intelligence to products at the warehouse about its final destination (manage and control orders virtually)
- Option 1:
We continue to keep products as much as possible in the configuration which is best suited for shipping to the cross-dock by consolidated order picking for same products going to the same x-dock, irrespective of the final customer
 - So where possible we continue to ship full pallets, boxes, crates, etc
- Where needed create the labels and paperwork needed for the deconsolidation at the x-dock and preparation for final shipment (“add intelligence” without direct consequences for physical configuration)
- Option 2
Already label the goods based on the customer order (“add intelligence”) but not yet consolidate into one shipment per customer:
Optimize pallet building to a specific cross dock irrespective of the final customer order configuration (mixing all orders going to the same x-dock in an optimal way) to optimize transport
- Only at the final x-dock we use the information / intelligence originally provided to the products to split the consolidations into the final customer specific deliveries

Real life example – The challenge

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Customer order



BEFORE

Order creation per customer



Palletisation per Customer

Impact truck



AFTER

- optimising for vehicle use on long hauls



Pick by product
Label each box

Pack on
huge mixed
pallets



Order
Reconstruction



Customer



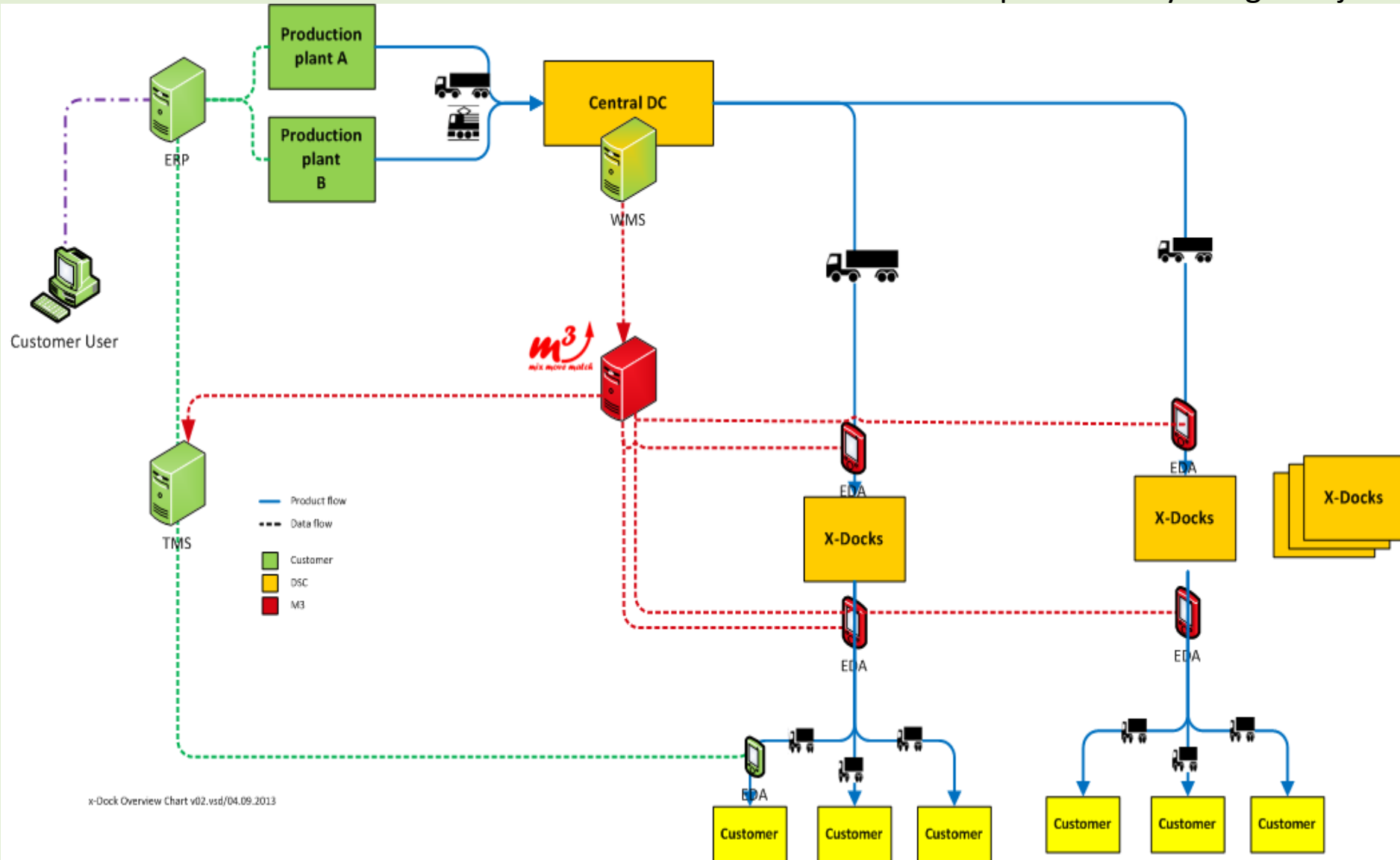
Customer

Customer

M3 - An iCargo pilot example of a tool to manage orders virtually



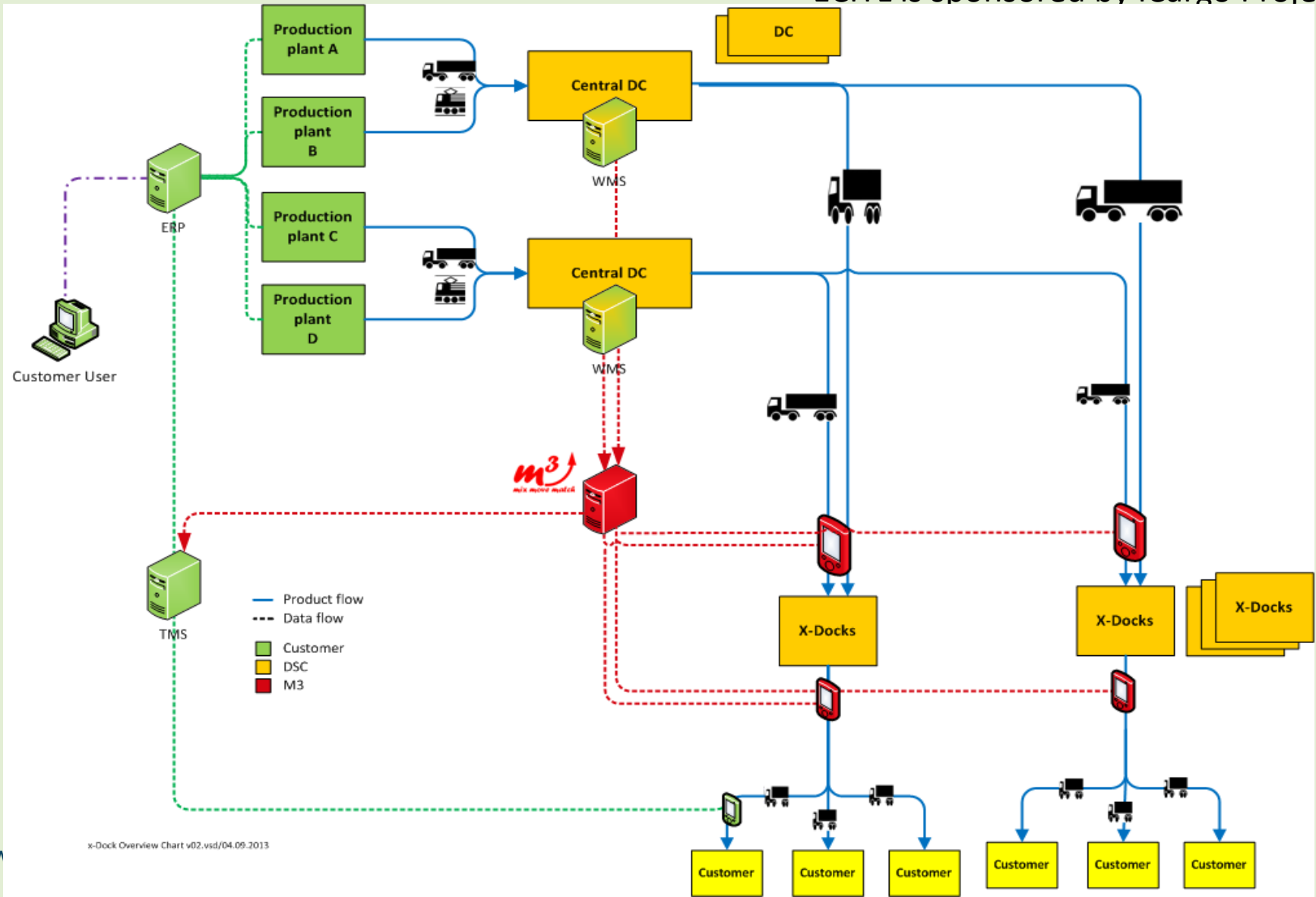
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M3 - An iCargo pilot example of a tool to manage orders virtually



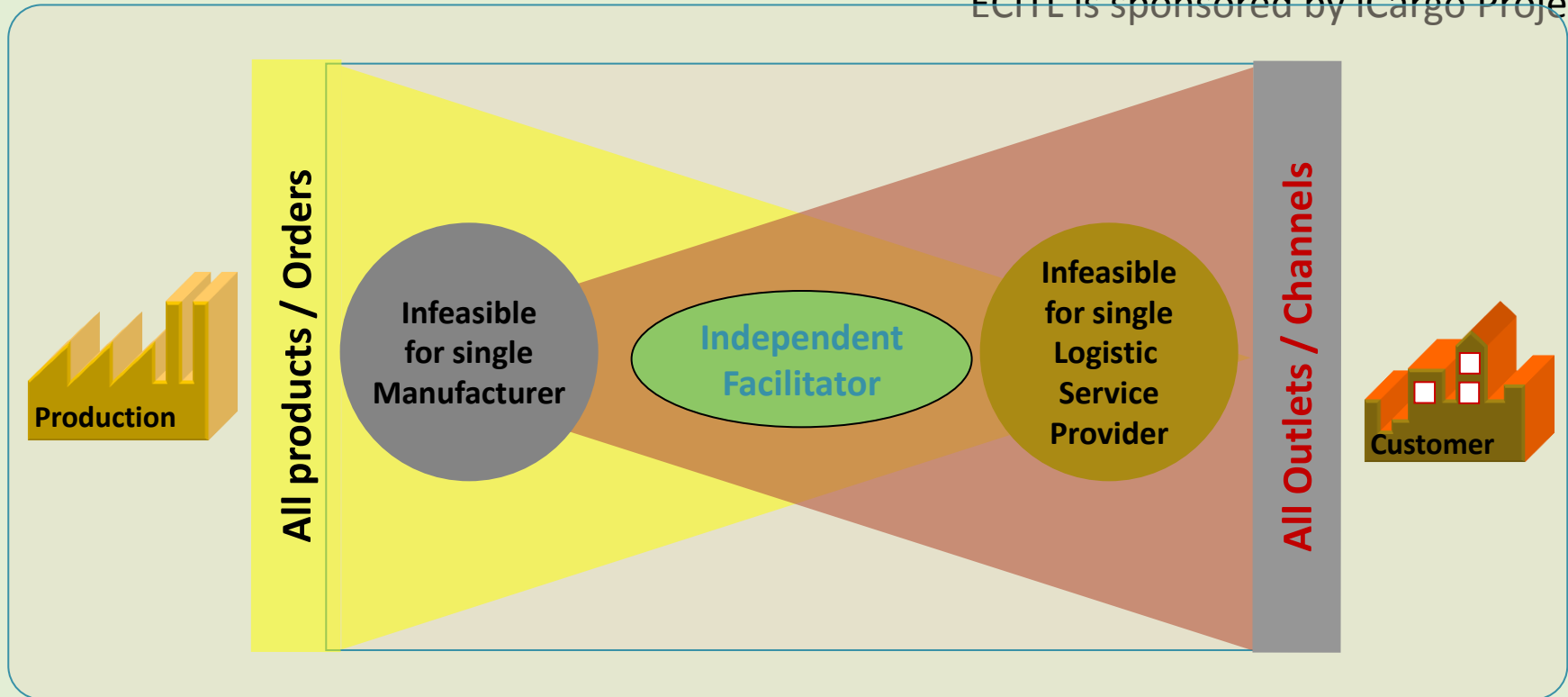
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Intelligent Cargo concepts independent facilitators



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M3 application hosted by independent software service provider
not proprietary to any Shipper or LSP.

Multi-Player inclusive Networks require all participants are confident they are
operating within a trustworthy environment.

Considerations regarding new services



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- Combining supply chains of different suppliers by identifying optimal cross dock locations for combined final mile deliveries
- For products that travel weeks (e.g. Asia by ship):
At the factory already assign a dummy order number to normal order quota (pallets, pieces) and assign an actual sales order to this dummy sometime during transport, so it is set to go to the final destination upon arrival at the European port (eliminating warehousing)
- Merge-in-Transit and X-dock solutions involving short-term storage and or outbound consignments consisting of both warehouse stock and cross-docked Goods. Examples would be:
 - * Consumer/Retail Consolidation Centres
 - * I2M / MRO multi-Supplier product consolidation.
- Support city logistics and urban transport
- Include other LSP's in the Supply Chain easily and with all required information
- Other?

Partners

