

Warehouse planning

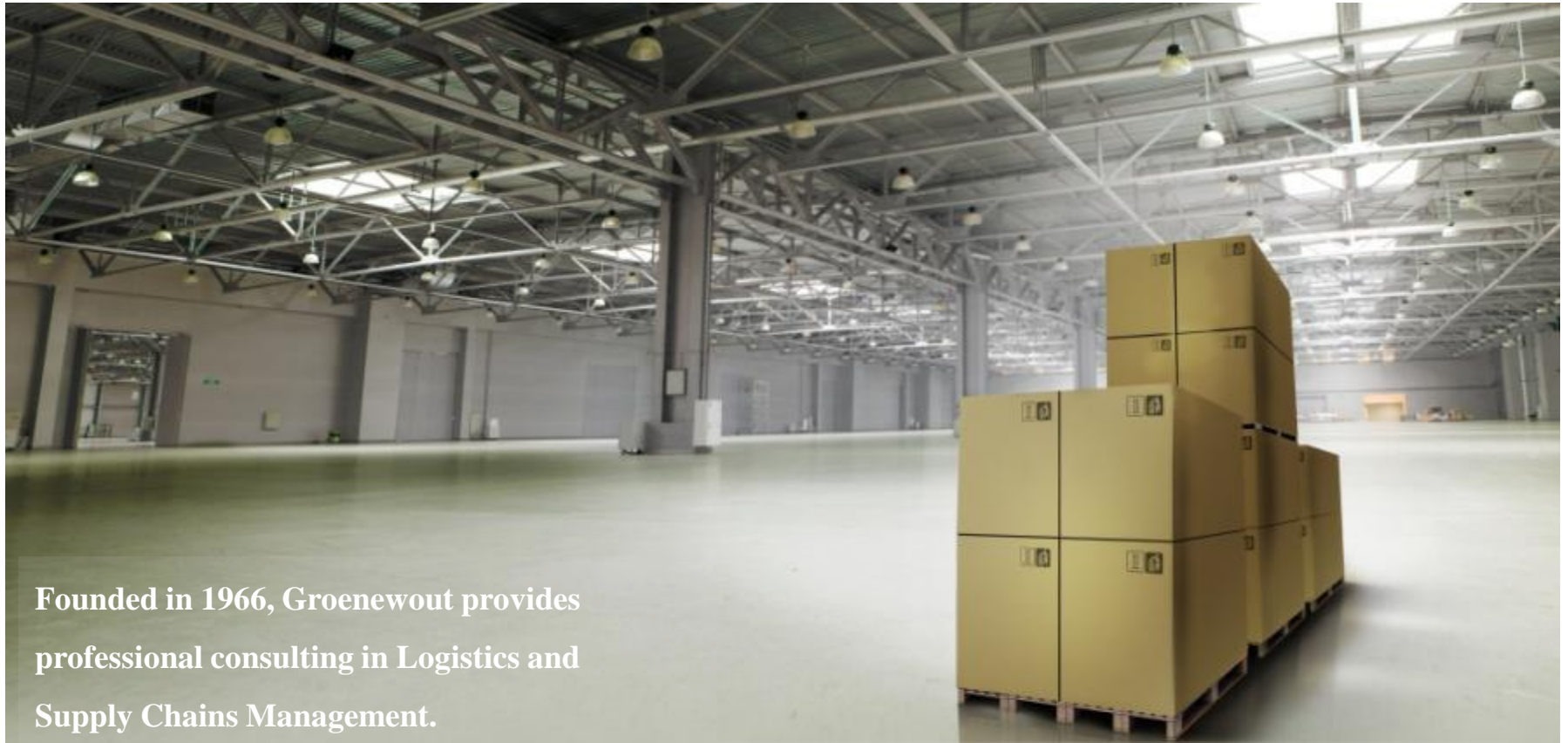
LOGISTICS COMMUNITY BRABANT



Breda, March 24, 2021

9026X141/WD/ydr

Groenewout introduction



Founded in 1966, Groenewout provides professional consulting in Logistics and Supply Chains Management.

Our core competence has been sharpened in supply chains optimization and detailed designs of manufacturing-, distribution- and fulfillment centers. We place a great deal of emphasis on both the identification and realization of feasible opportunities.

Our consulting service portfolio

SUPPLY CHAINS & LOGISTICS CONSULTING:

Strategical	<ul style="list-style-type: none"> • Feasibility studies • Warehouse tendering for building, logistics & IT 	<ul style="list-style-type: none"> • Distribution Network Studies • Global sourcing • Non Product Related Purchasing (NPR) 	<ul style="list-style-type: none"> • Organizational - & functional design • Business process (re-)design • Key Performance Indicators (KPI's)
Tactical	<ul style="list-style-type: none"> • Warehouse (lay-out) design • Plant (lay-out) design • Lean warehousing • Insourcing / out-sourcing warehousing 	<ul style="list-style-type: none"> • Transport tendering • Service Level Agreements (SLA) • Insourcing / out-sourcing transport • Benchmarks 	<ul style="list-style-type: none"> • Sales & Operations Planning (S&OP) • Production planning • Collaborative Planning, Forecasting & Replenishment
Operational	<ul style="list-style-type: none"> • Loss Prevention & Security (LP&S) • Facilities electrical, HVAC & temperature engineering 	<ul style="list-style-type: none"> • Location studies & site selections 	<ul style="list-style-type: none"> • IS selection & implementation (WMS/TMS/APS) • Inventory Mgt.
Materials Mgt.		Physical Distribution	Supply Chains Mgt.

Our consulting methodology



MULTI-DISCIPLINARY

Groenewout's team consists of highly qualified business consultants with unique, complementary disciplines.

HANDS-ON

More than 50 years of experience in operational environments & implementation processes.

INDEPENDENT

Groenewout has no formal obligations towards suppliers or contractors whatsoever and always gives an independent advice, keeping the interest of the client as a first priority.

INTEGRITY

Groenewout highest value is integrity, externally towards client organizations and their employees and internally towards Groenewout employees.

PROFESSIONAL

- Quantifiable: Quantification is the basis for our advice.
- Quality: Highly qualified professionals with more than 150 years of logistics experience.
- Leading edge expertise: Groenewout strives to maintain a leading position as a Logistics and Supply Chains Management specialist, creating a continuous learning environment to develop the organization and the individual.

Quality measured by our clients



Tjoapack

fonQ

stichd

blokker.



Hollister

allego

bloomon

AGFA

BVB
SUBSTRATES

REV'IT!

Tarkett

KRAMP

ESTÉE LAUDER

PartsPoint
SERVICES

COROOS

stryker



bol.com

KAMERA
EXPRESS

STRENGTHOLT

kleertjes.com

STAPLES
that was easy.™

Domino's

ERIKS



Cargill

XPOLogistics

muRata
INNOVATOR IN ELECTRONICS

GIANT
BICYCLES

HIKVISION

ISERO
IJSZERWARENGROEP

elho
GIVE REENT TO NATURE

Vos Logistics

B&S

Warehouse planning

LOGISTICS COMMUNITY BRABANT



GROENEWOUT

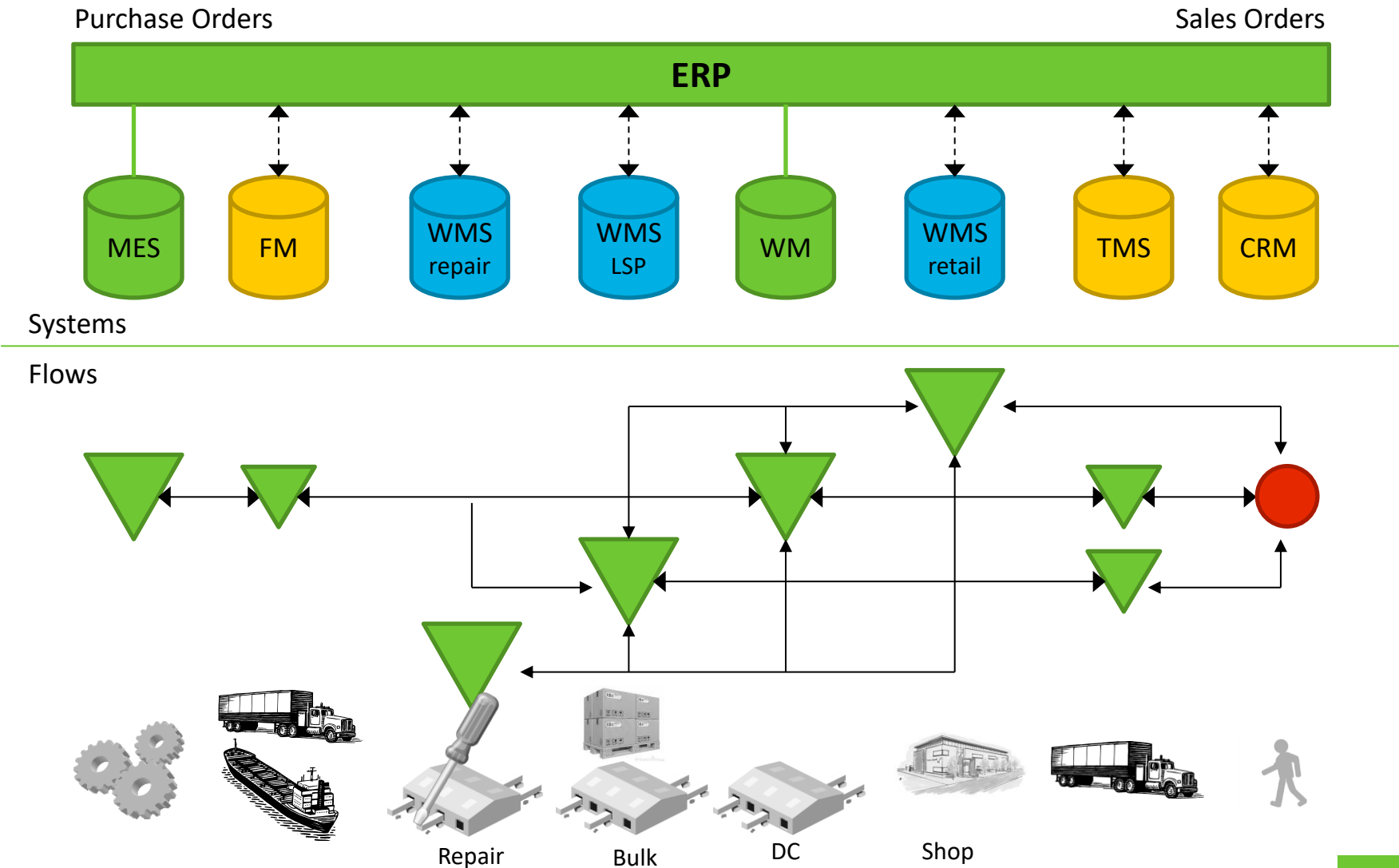


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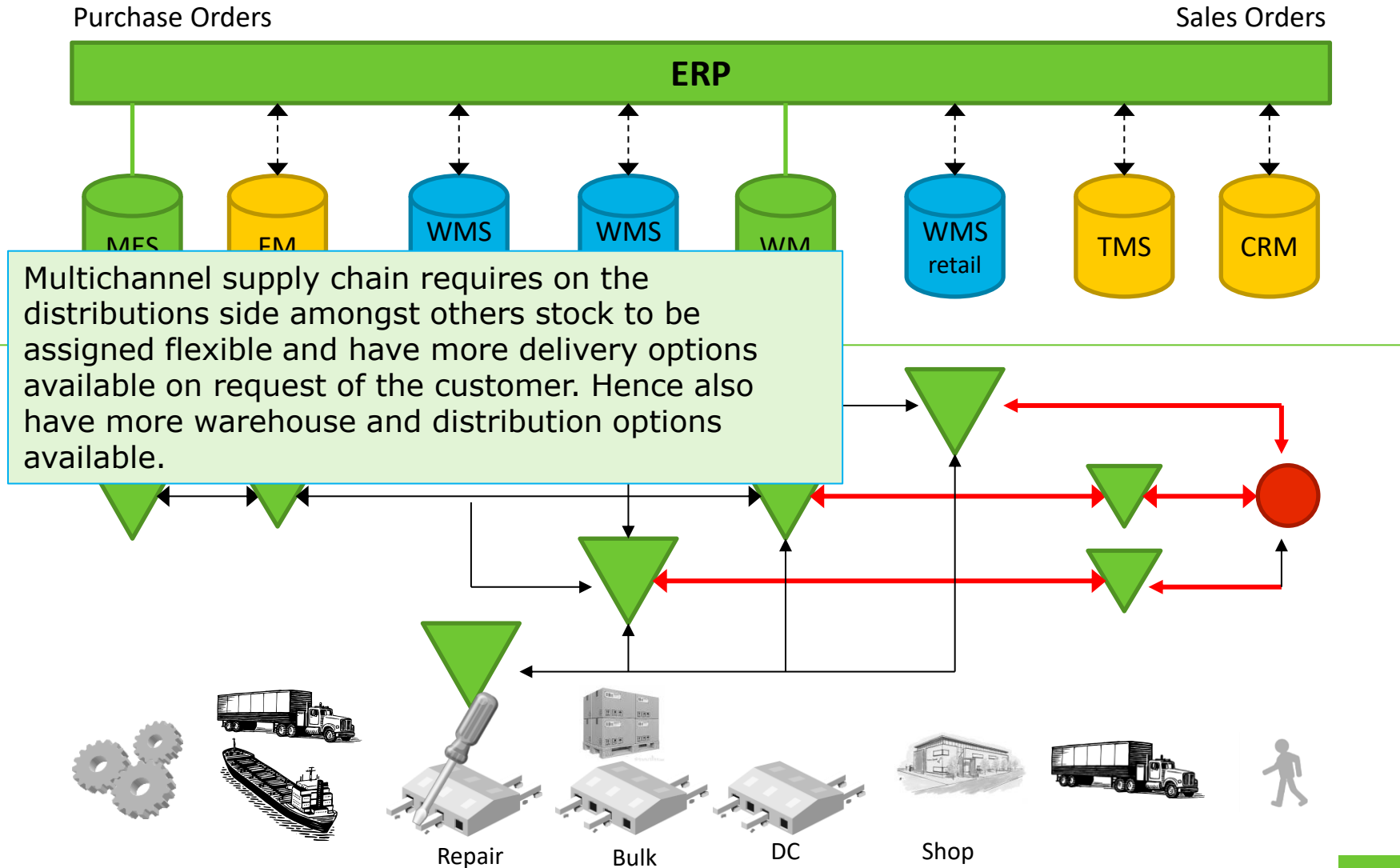
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De in dit rapport genoemde conclusies, aanbevelingen en adviezen zijn gebaseerd op door de opdrachtgever verstrekte informatie en gegevens. Besparingen, exploitatie- en investeringsramingen zijn afhankelijk van de in dit rapport genoemde randvoorwaarden en aannames. Alle opdrachten worden aanvaard en uitgevoerd overeenkomstig de Groenewout Algemene Voorwaarden 2012.

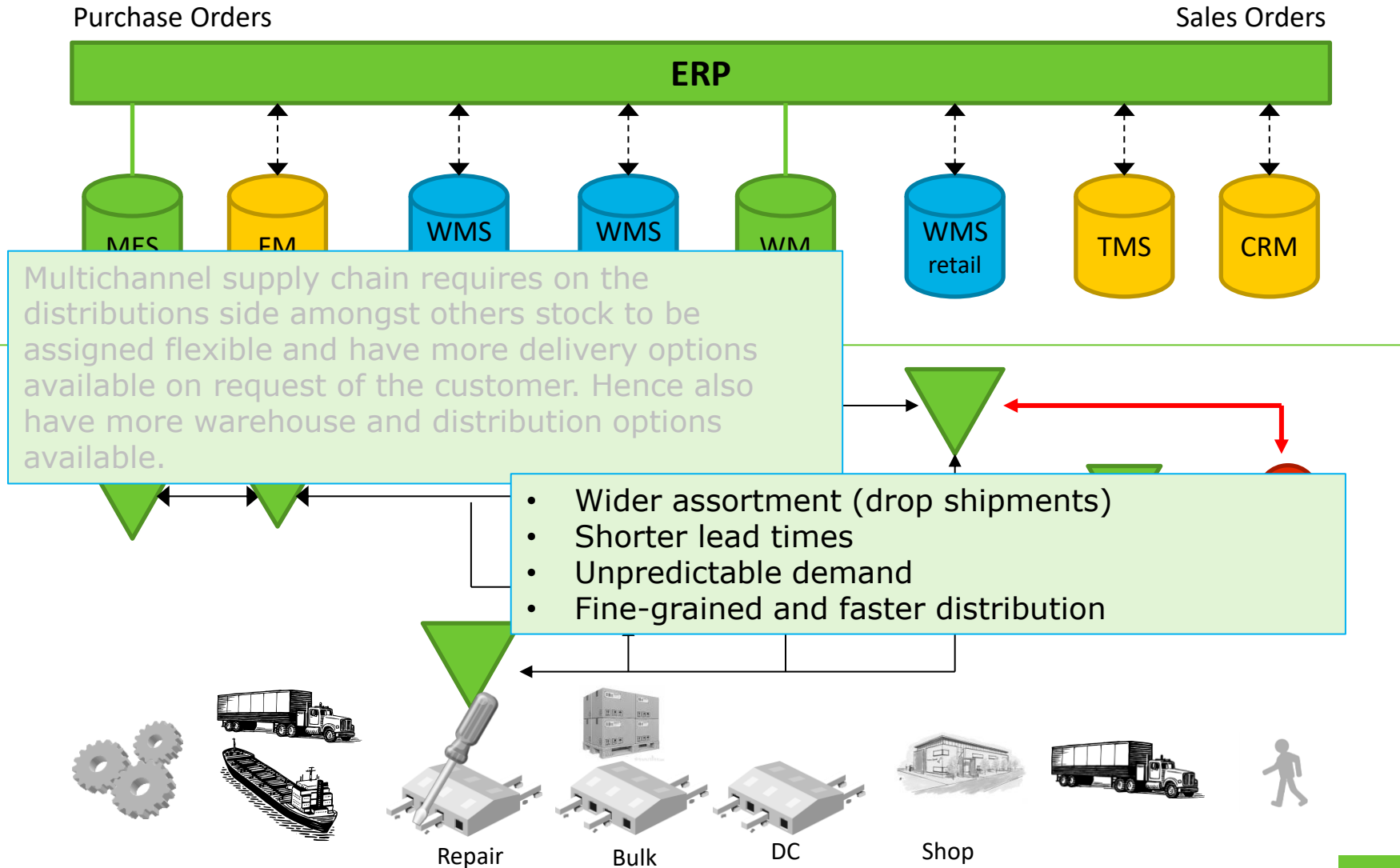
Function Warehouses within the Supply Chain



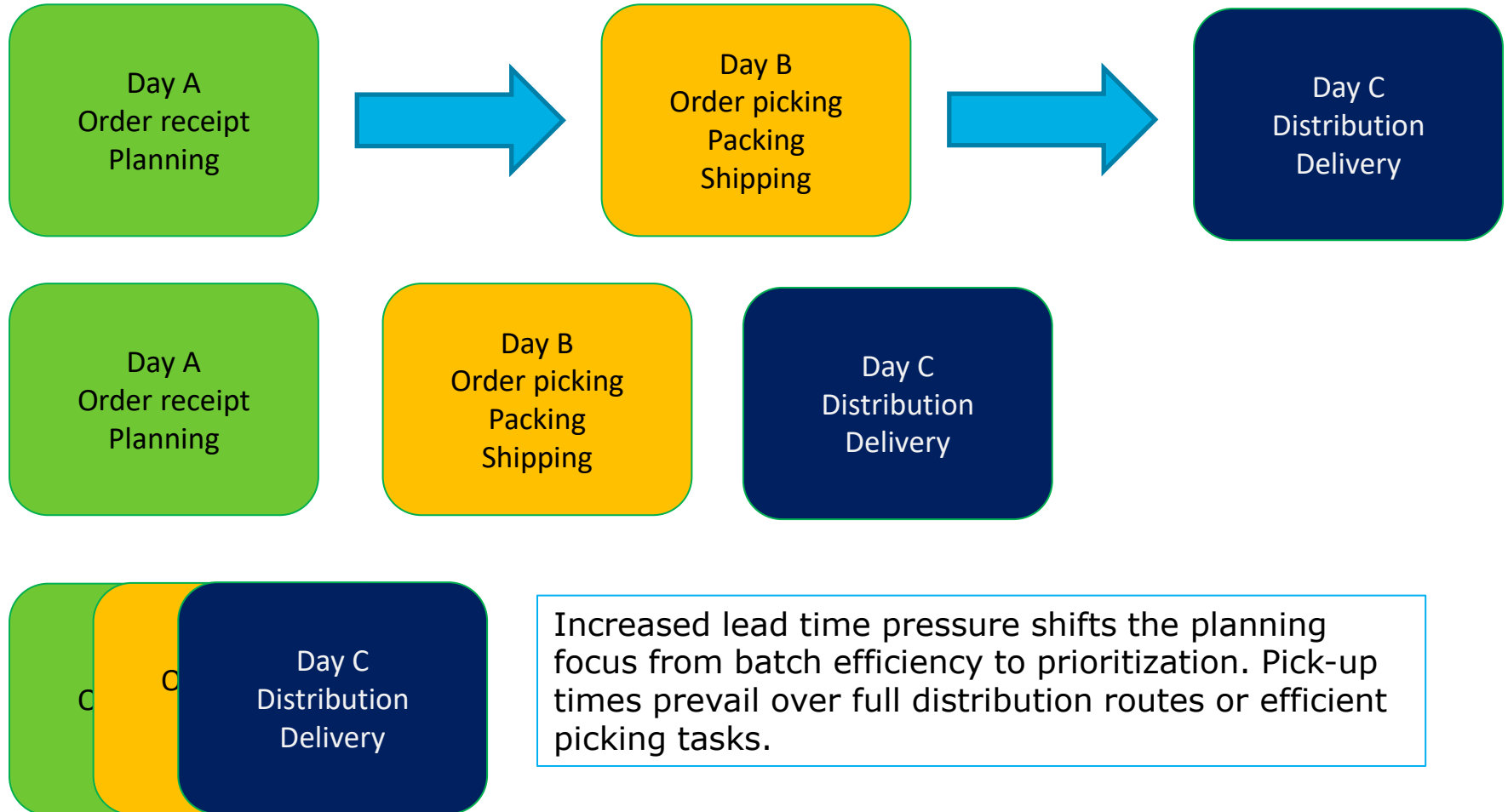
Multichannel



Multichannel



Lead times



E-commerce effect on lead times

LEAD TIMES

With a focus on e-commerce this lead time decrease seems the standard specifically in the BtC retail market. However the traditional A for C is still common practice in other markets BtB, pre-sold seasonal sales.



Day C
Distribution
Delivery

Day A
Order receipt
Planning

Day B
Order picking
Packing
Shipping

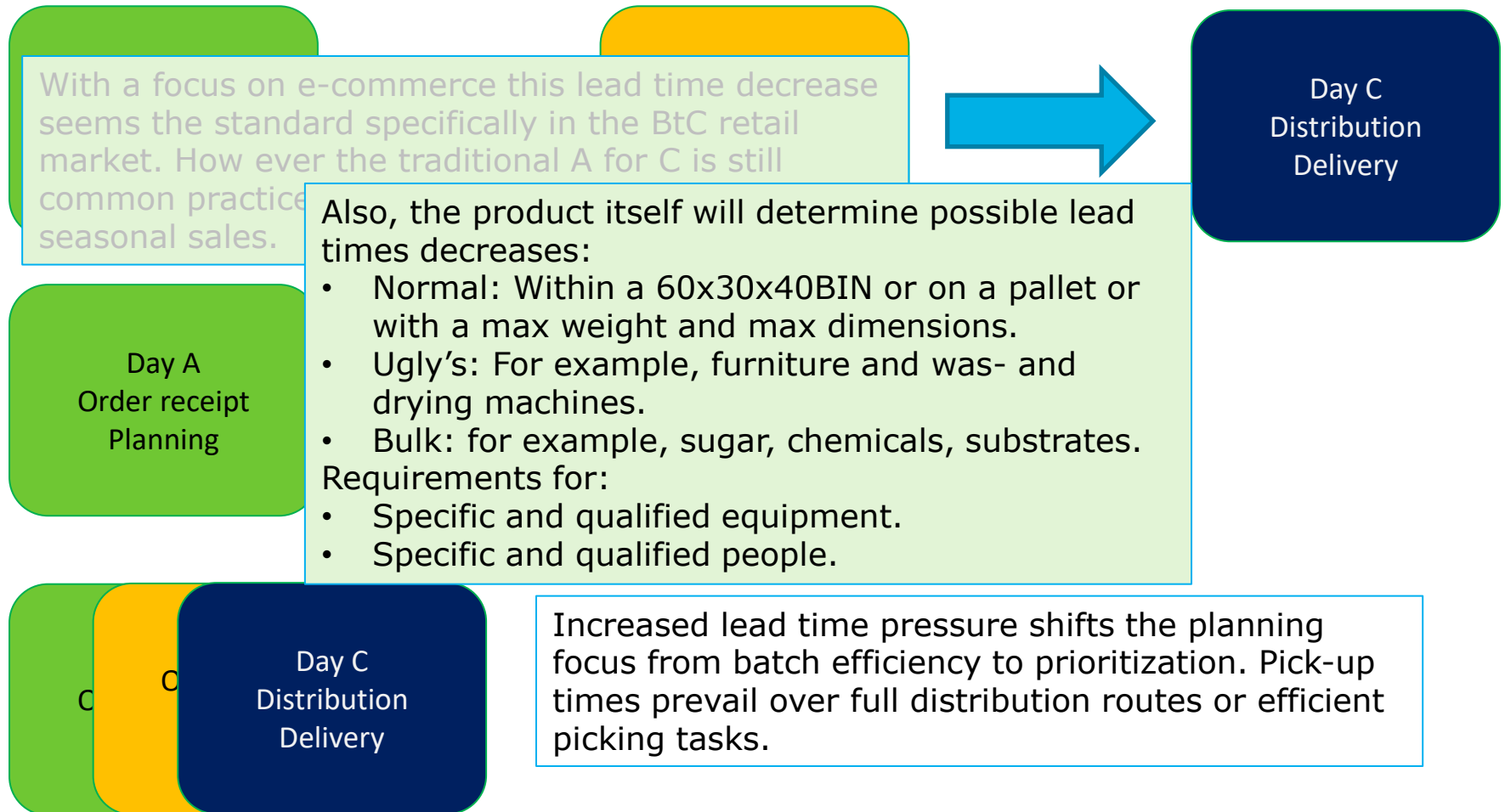
Day C
Distribution
Delivery

Day C
Distribution
Delivery

Increased lead time pressure shifts the planning focus from batch efficiency to prioritization. Pick-up times prevail over full distribution routes or efficient picking tasks.

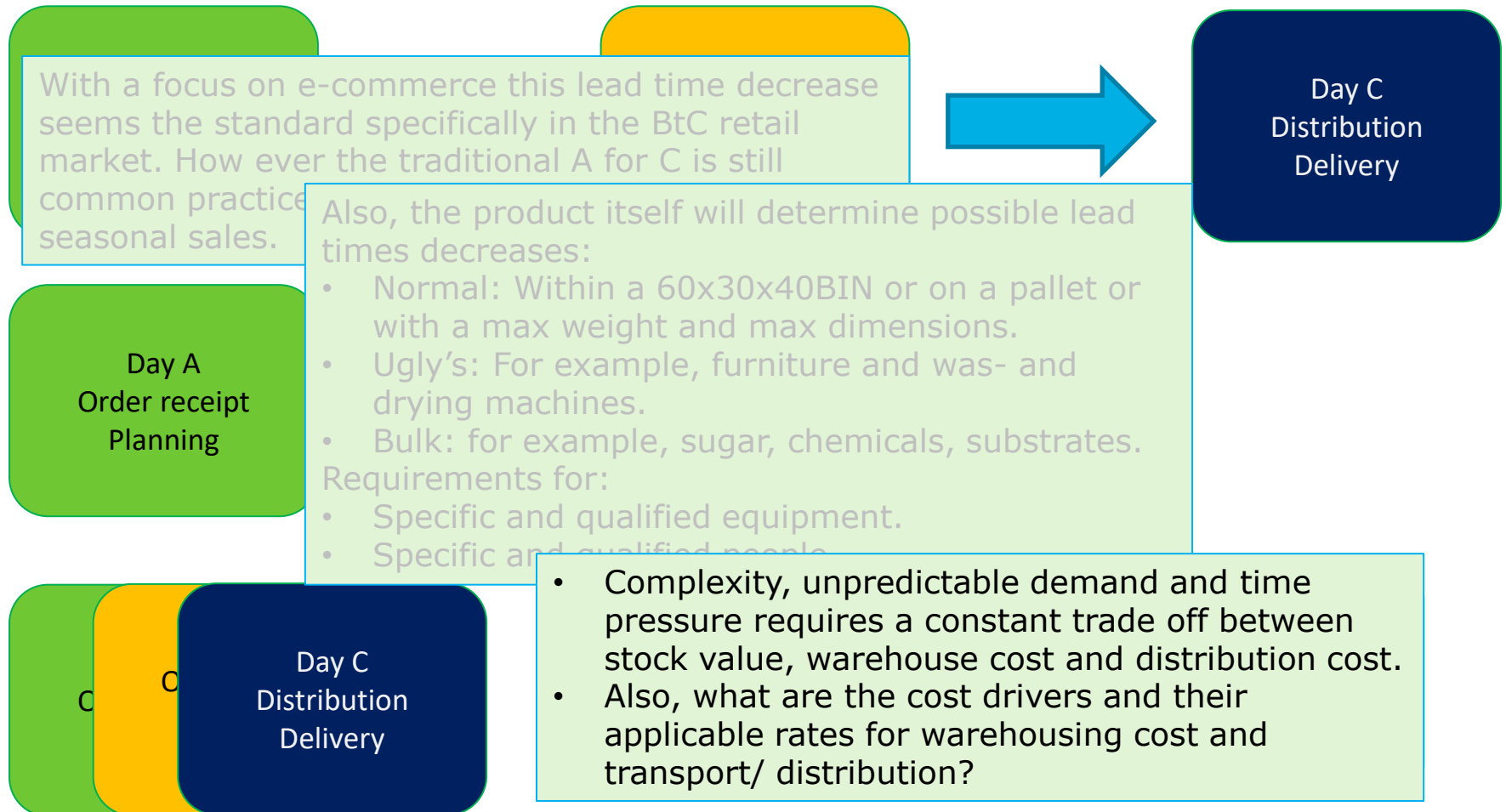
Product limitations

LEAD TIMES

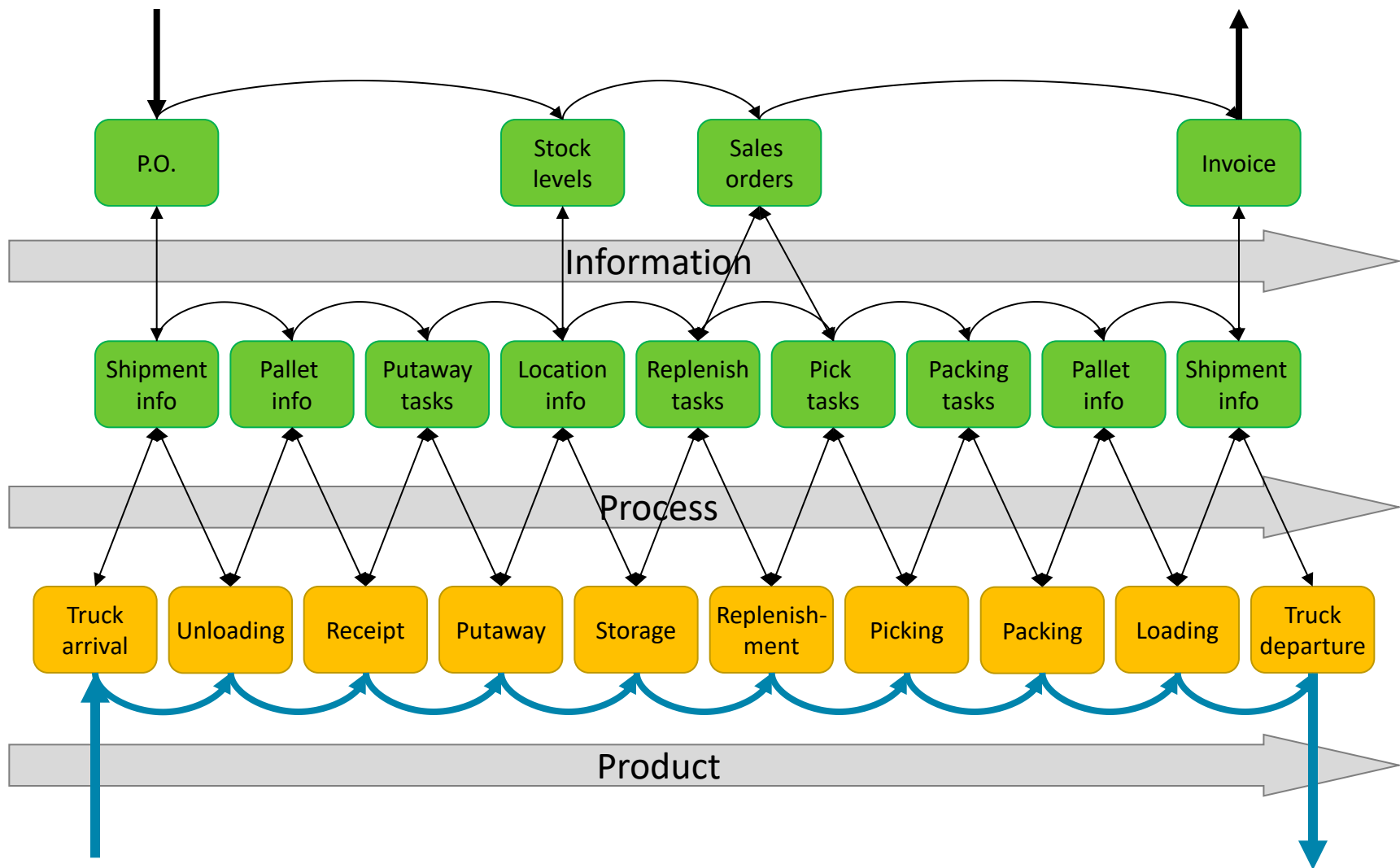


Trade off

LEAD TIMES



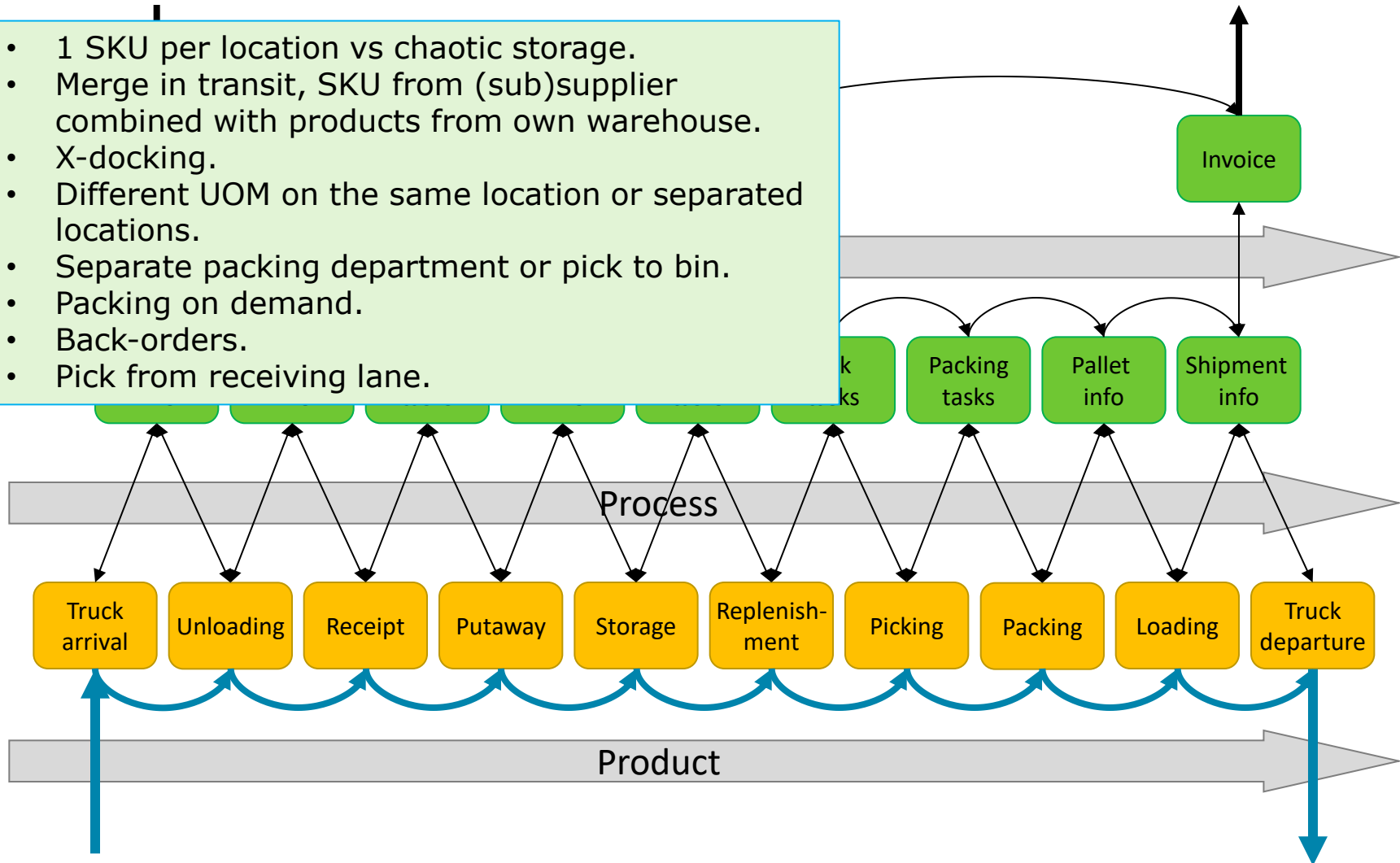
Integrated warehouse flows



Increase complexity

INTEGRATED WAREHOUSE FLOWS

- 1 SKU per location vs chaotic storage.
- Merge in transit, SKU from (sub)supplier combined with products from own warehouse.
- X-docking.
- Different UOM on the same location or separated locations.
- Separate packing department or pick to bin.
- Packing on demand.
- Back-orders.
- Pick from receiving lane.



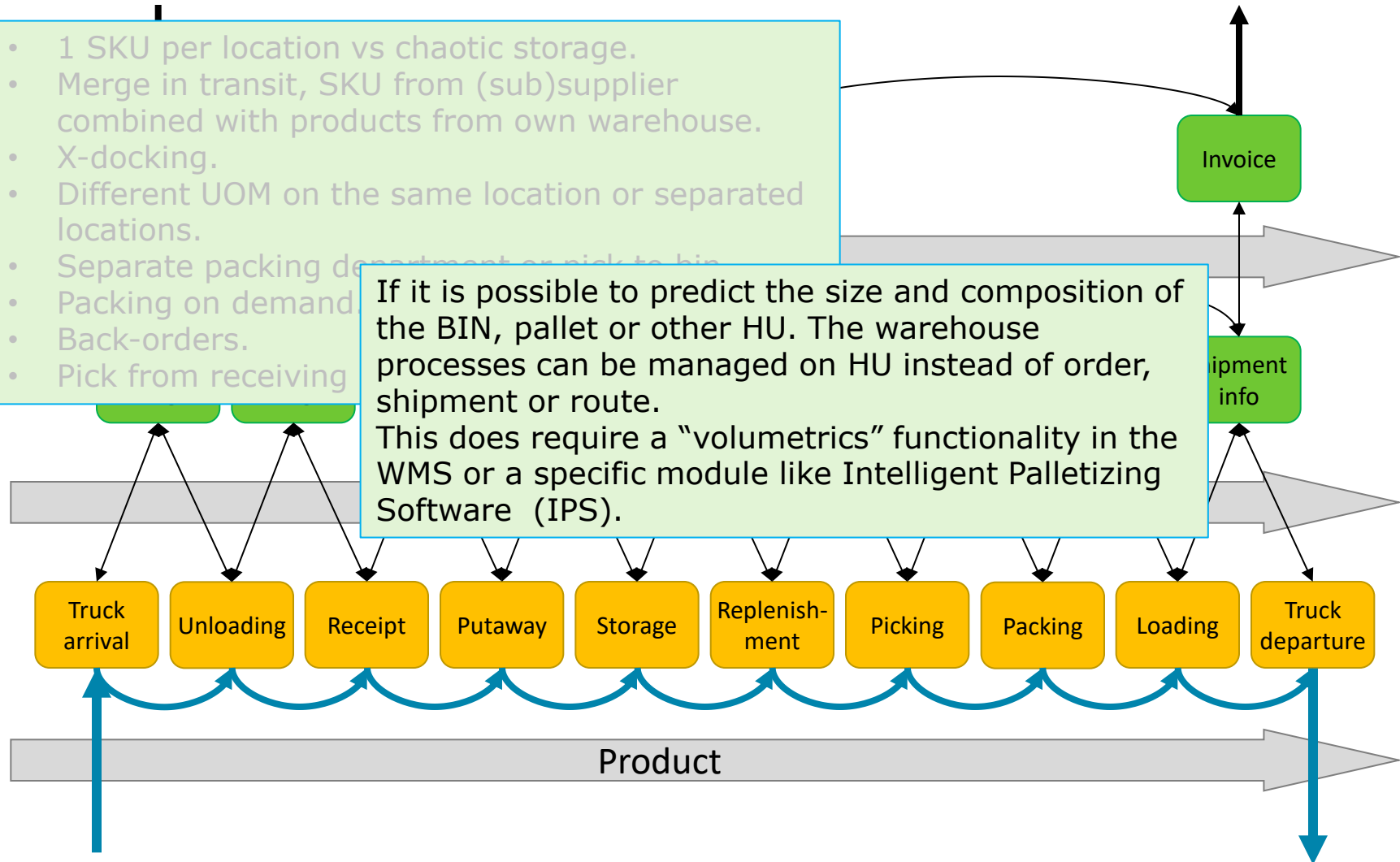
Predictable Handling Unit (HU)

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If it is possible to predict the size and composition of the BIN, pallet or other HU. The warehouse processes can be managed on HU instead of order, shipment or route.

This does require a "volumetrics" functionality in the WMS or a specific module like Intelligent Palletizing Software (IPS).



Integration WMS and TMS

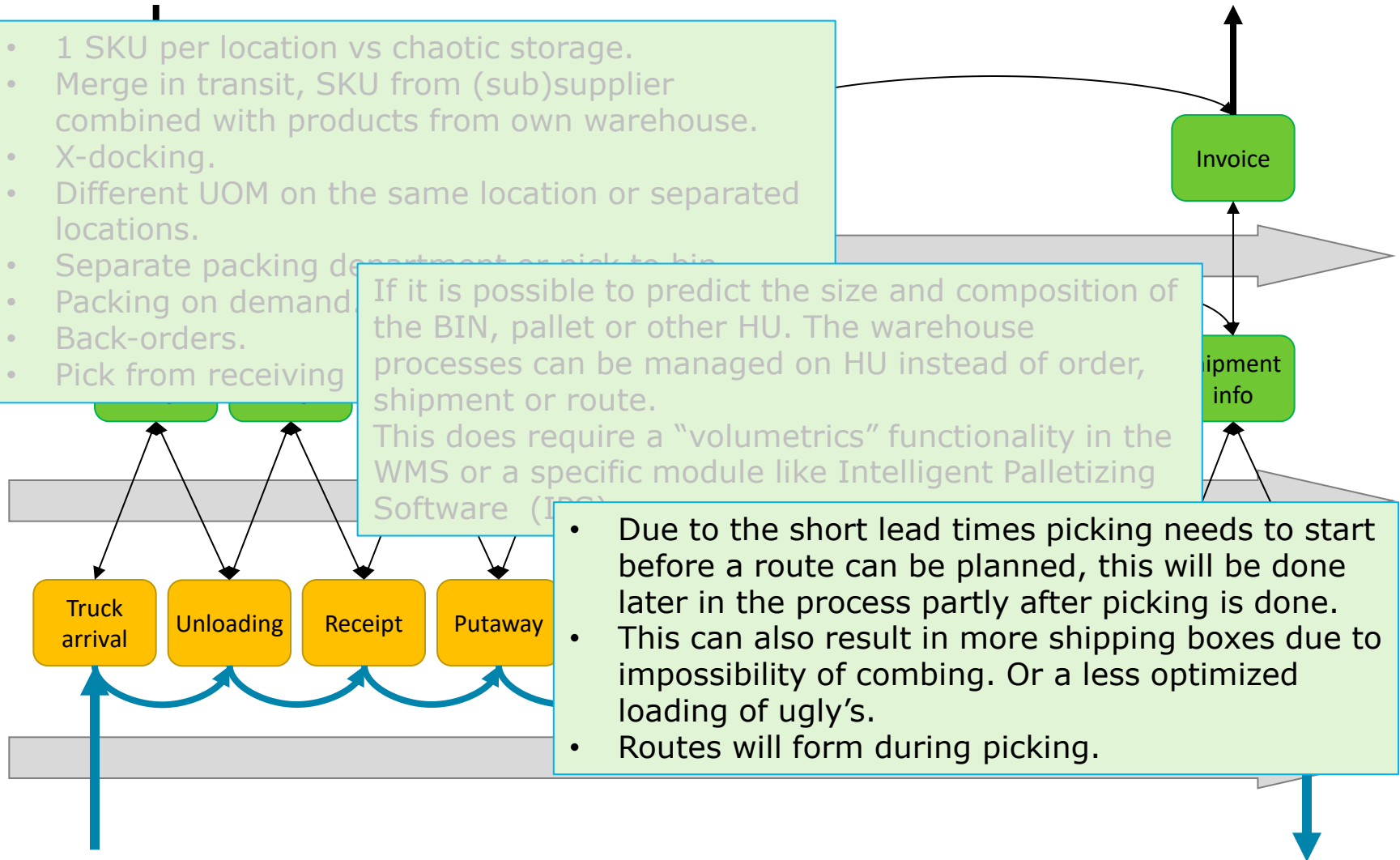
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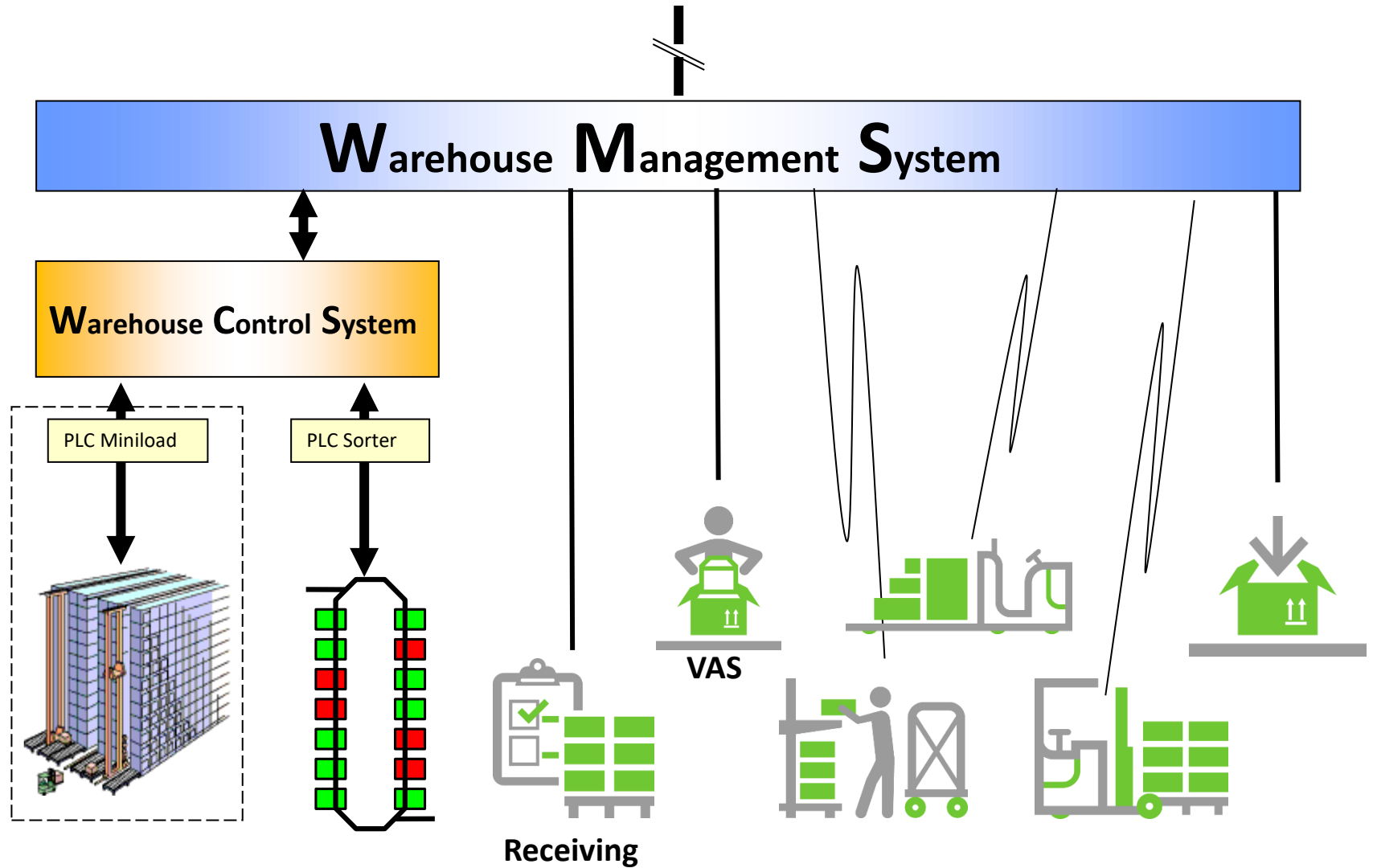
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- Due to the short lead times picking needs to start before a route can be planned, this will be done later in the process partly after picking is done.
- This can also result in more shipping boxes due to impossibility of combing. Or a less optimized loading of ugly's.
- Routes will form during picking.



Integrated warehouse processes

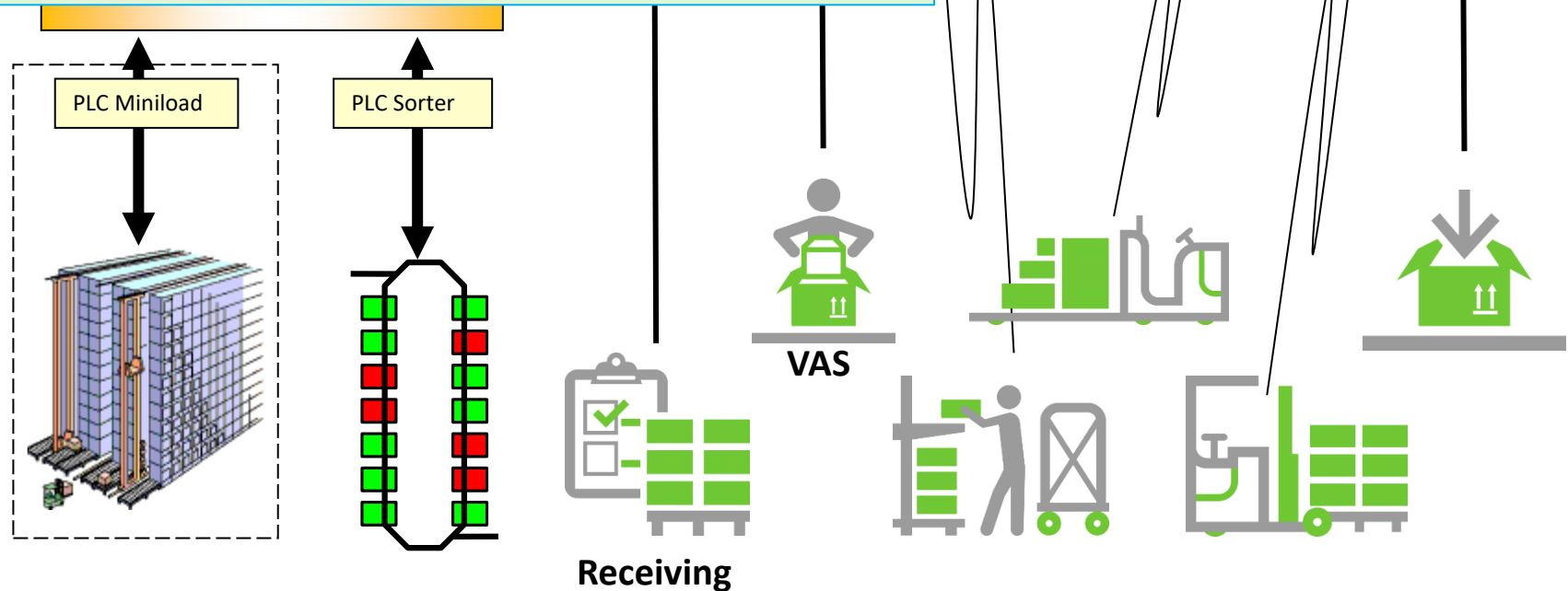


Multiple tasks

INTEGRATED WAREHOUSE PROCESSES

Warehouse processes need to be aligned and separate processes can have their own best practice to manage:

- Single piece picking.
- Bulk picking.
- Order picking.
- Multiple order picking.
- Batch picking.



Time windows and transport planning

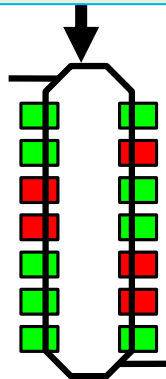
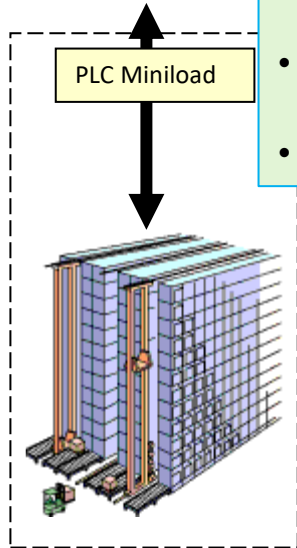
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- Using a portal for forwarders increases the visibility and reliability of transport capacity. This can therefore be actively used in the warehouse planning.
- The same is of course also applicable on the inbound side.
- Dock planning.

PLC Miniload



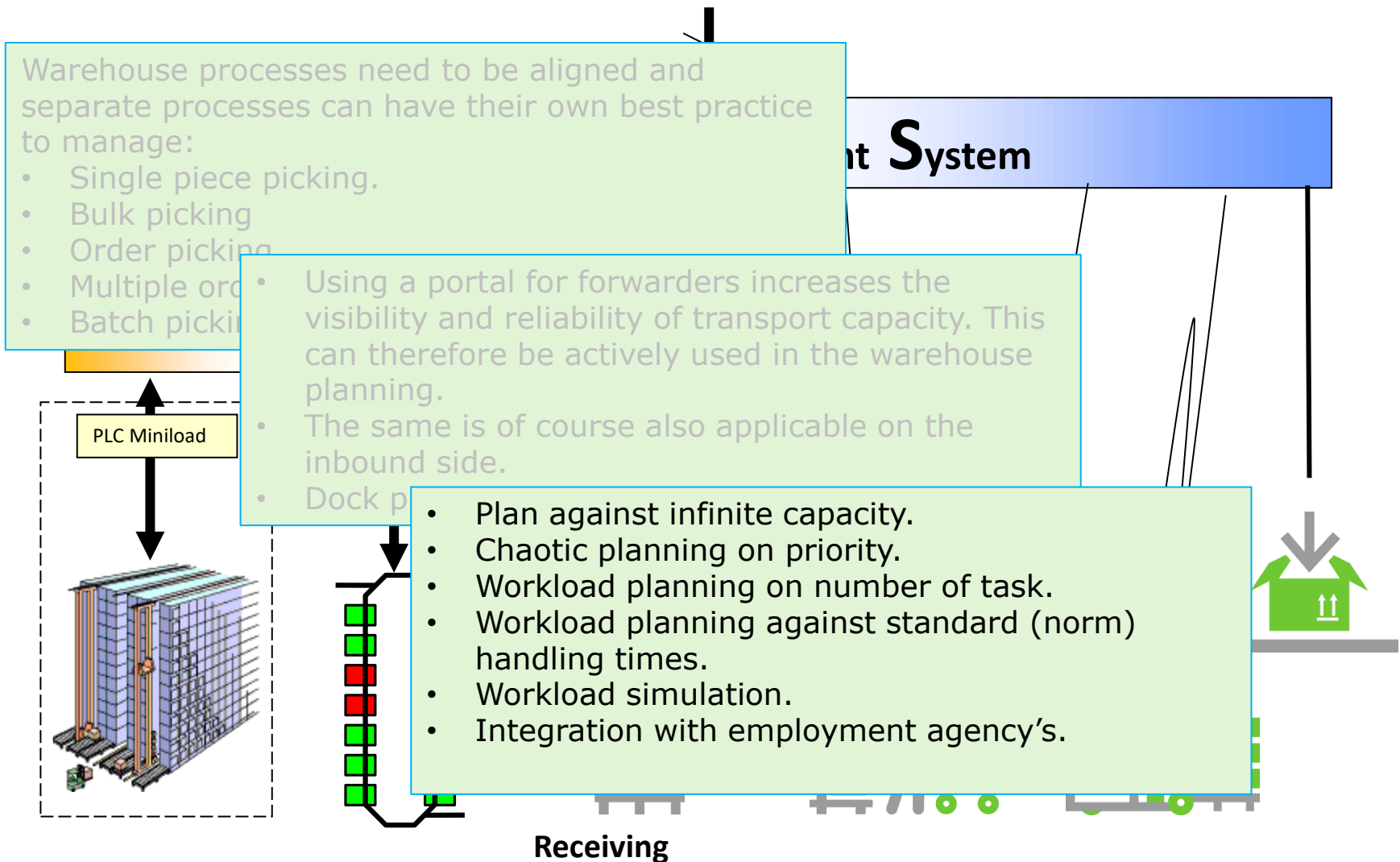
Receiving



System

Workload planning

INTEGRATED WAREHOUSE PROCESSES





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