LSC
LOGISTICS & SUPPLY CHAIN CLUB

LogiChain

LOGICHAIN 2021
The Great Game

TO SOMETHING

DISTRIBUTION

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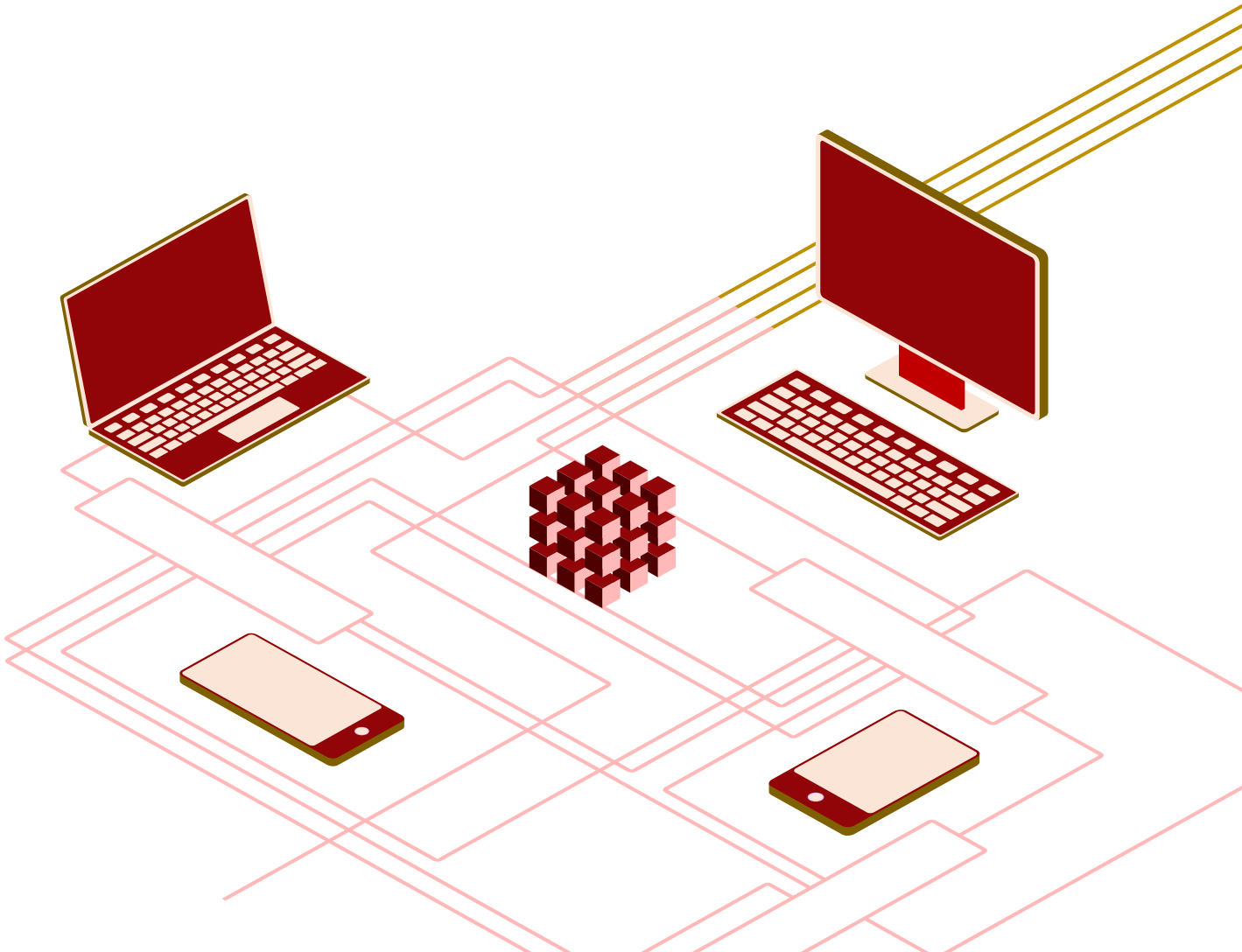
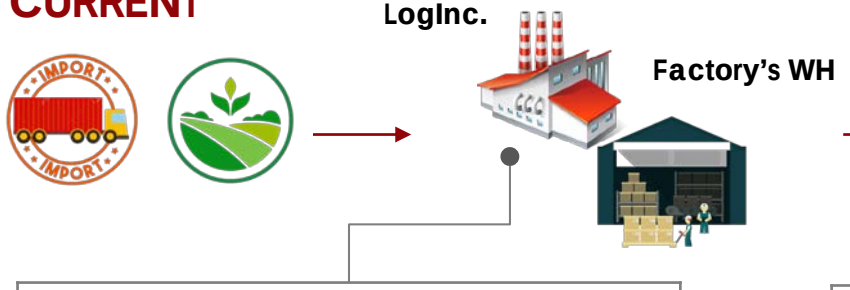


EXECUTIVE SUMMARY

CURRENT



LogInc.	Current distribution network	Market
- Products: Dried fruits (60% market share – VN) - Expanding products → higher demand or SKU - Now focus on Cost optimization	- 10 DCs: South (5), North (4), Central (1) - Factory's WH → Local DC → milkrun delivery to customers' stores (1000 stores) - Factory WH cost = 1/3 total DC cost	- 2 sales channel: Modern Trade & Traditional Trade - Traditional Trade: South (2), North (1), Central (1)

OBJECTIVE

Cost optimization while ensuring customer service level

ACTION

- **Short-term:** work on current network + planning and preparation for Long-term application
- **Long-term: Lean Distribution** (Network, Warehouse, Transportation), **Sustainability and Resilience** (market leader position)

PROPOSED NETWORK

DISTRIBUTION DEPARTMENT

VISION

Distributions operations that are Safe, Lean, Flexible
and Focused on Optimizing Cost and Delivering Value to Customers

OBJECTIVE

Enhance people-focused & progressive SC team

Functional training
Functional competency
Employee empowerment
Leadership

Enhance Distribution towards Lean approach

Equipment utilization rate
Network utilization rate
Customer Order Fulfilment rate
On Time In Full delivery
Distribution cost

Enhance End-to-End operation with strong support to sustainability

Recordable Accident
(OSHA incident rate)
Carbon Footprint
Reverse Logistics

Enhance Distribution resilience in VUCA world

Risk profiling / Risk assessment
Contingency plan

STRATEGY

Strategy 1

- Empower worker to speak up
- Get them training, cross training
- Level workload/planning to avoid strike
- Improve innovation mindset of all leadership levels
- Continuous improvement culture

Strategy 2

- Redesign distribution network
- Eliminate warehouse wastes
- Apply 5S method, Gemba walking
- Collaborate with customers to reduce peak (CPFR, VMI)
- Truck fleet: outsource
- Transport optimization program

Strategy 3

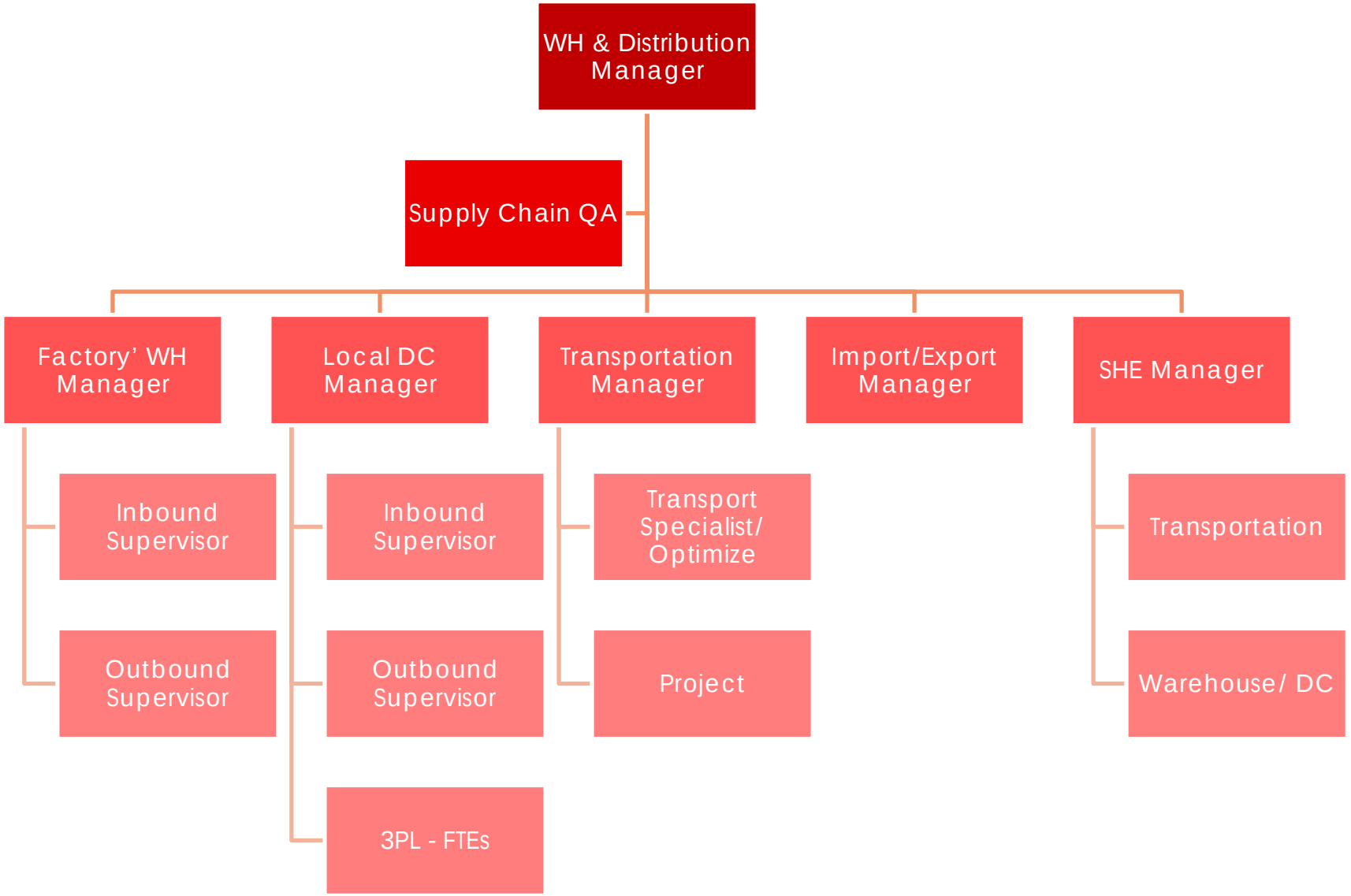
- Support 3Ps (Tripple Bottom Line)
- Enhance Warehouse S.H.E
- Enhance Transportation S.H.E (carbon footprint)

Strategy 4

- Risk profiling/ Known risk & Unknown risk
- Build Contingency plans
- Build a risk-awareness culture

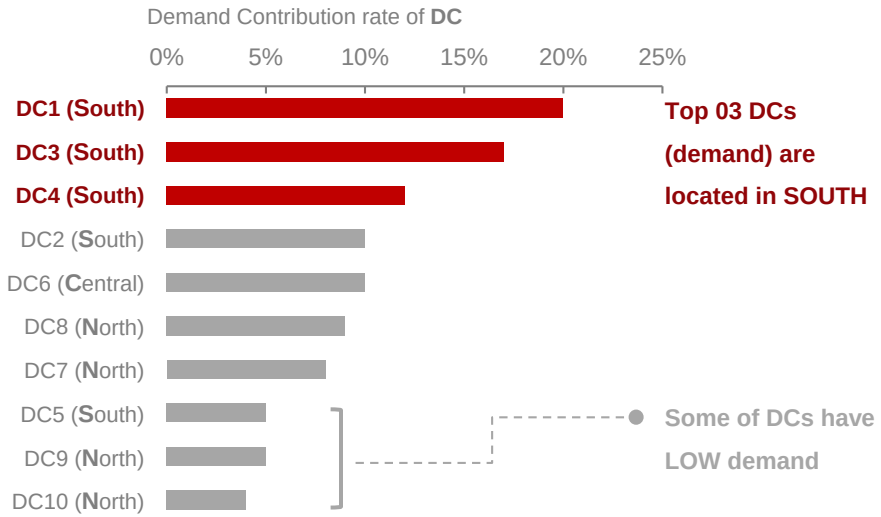
Company strategy: **Lean** (delivering value to customer while optimizing cost) + **Sustainability and Resilience** (market leader position) – CSR, DfE, 3Ps, Risk management

DISTRIBUTION DEPARTMENT

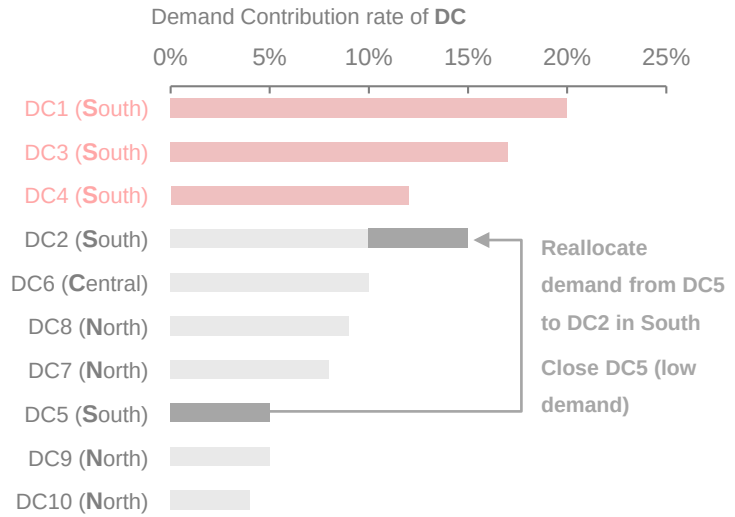


DISTRIBUTION NETWORK PROPOSE

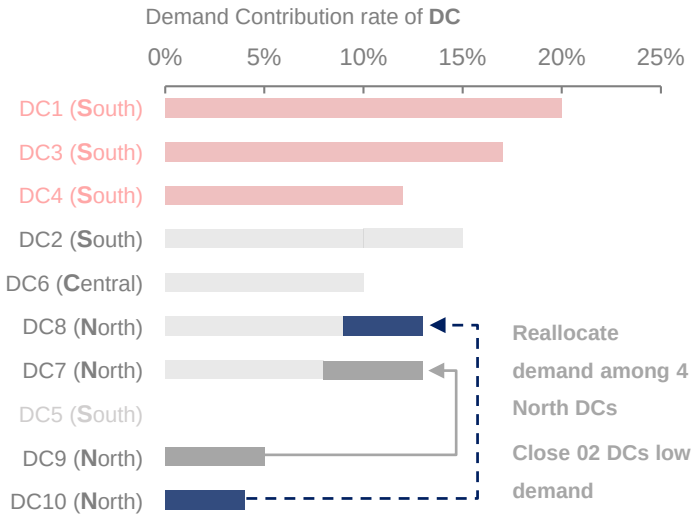
Current demand among 10 DCs



Re-allocate South demand, reduce DC quantity

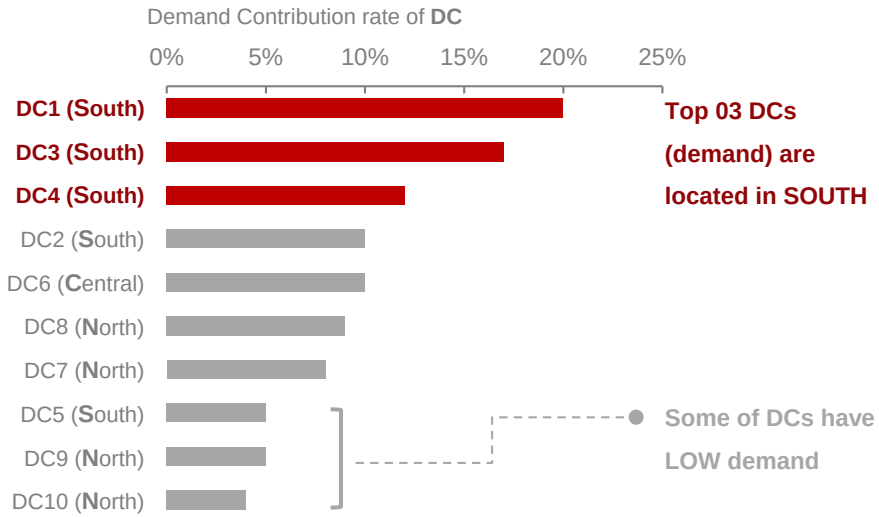


Re-allocate North demand, reduce DC quantity

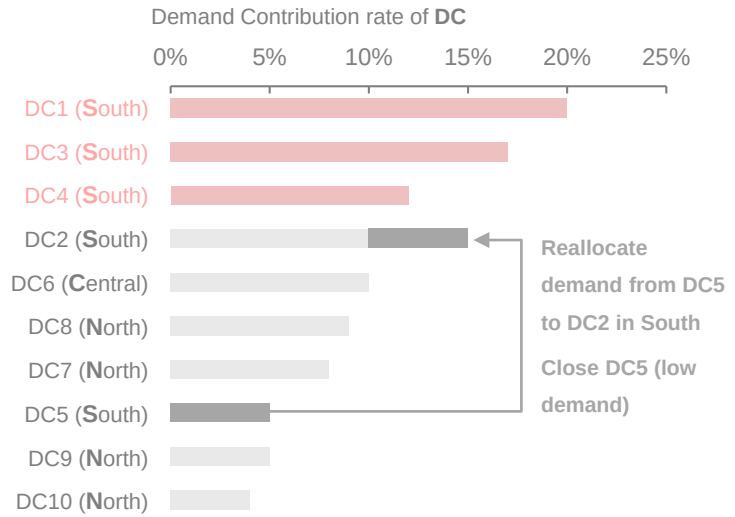


DISTRIBUTION NETWORK PROPOSE

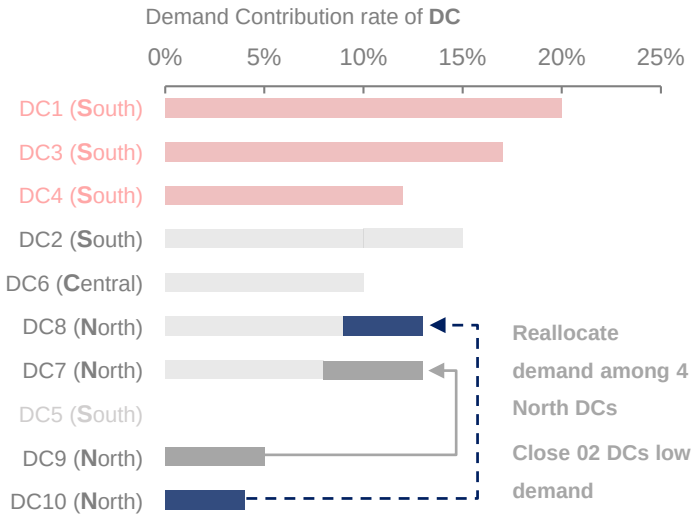
Current demand among 10 DCs



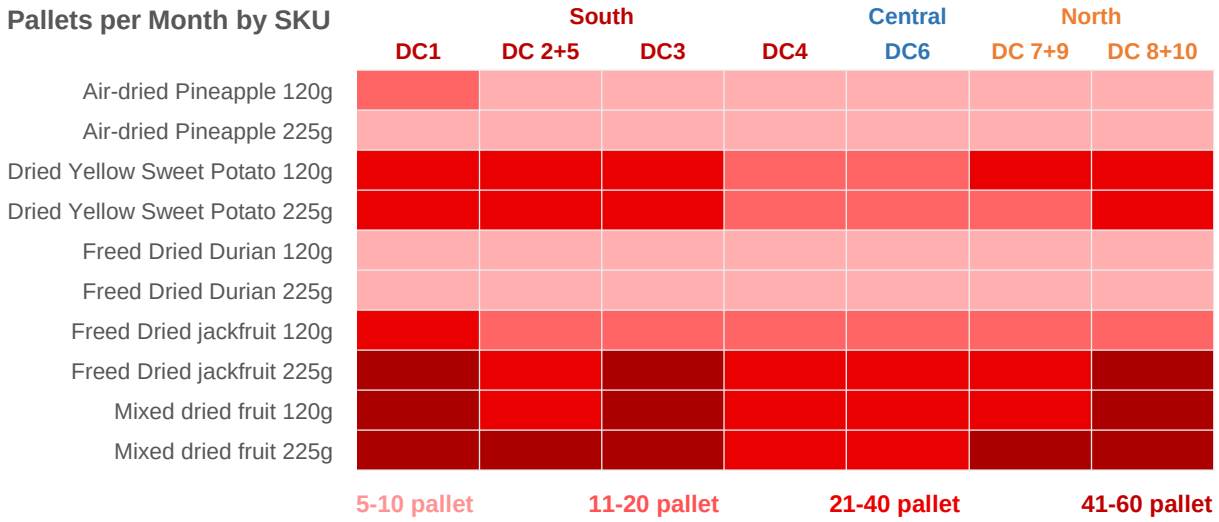
Re-allocate South demand, reduce DC quantity



Re-allocate North demand, reduce DC quantity



Pallets per Month by SKU



MIN average **monthly** demand of 1 SKU from 1 DC: **~5 pallets** (around more than **1 pallet per week**)

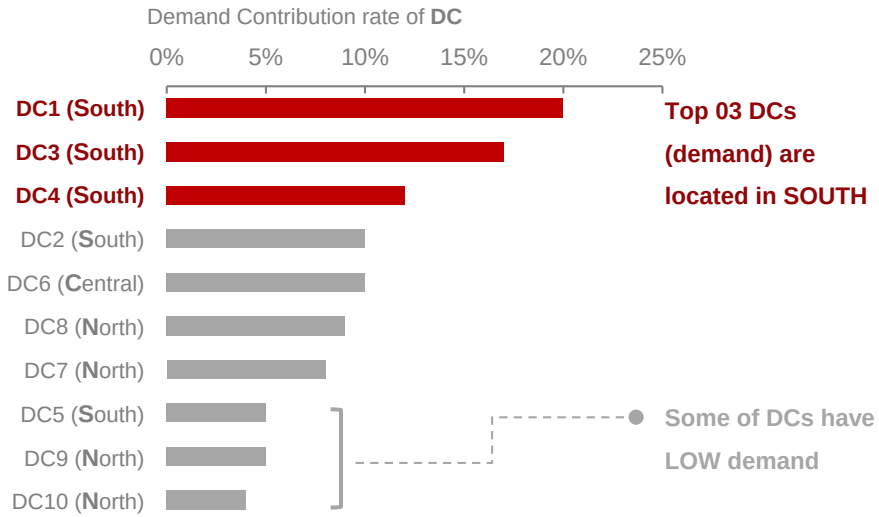
6/10 SKUs have average of **30 pallets per month per DC**

→ In case of Production interval of **each SKU** is 1 week, **pallet** is still a proper choice of **handling unit** (inbound/outbound) within Factory's Warehouse and Local DCs.

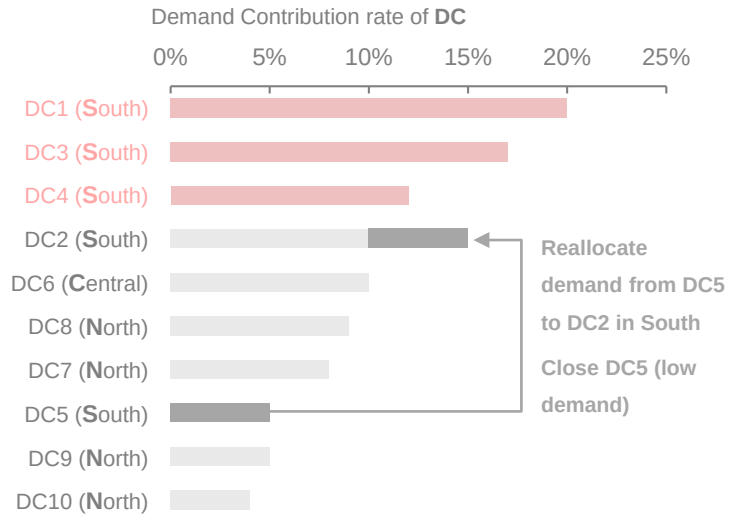
Packing specification (assumption):
1 pallet (1m x 1m x 1m) = 32 carton (42x25x25cm) = 160kg ~ 200kg
(1 carton = 20 packs 225g = 40packs 120g = 4.5 – 5kg)

DISTRIBUTION NETWORK PROPOSE

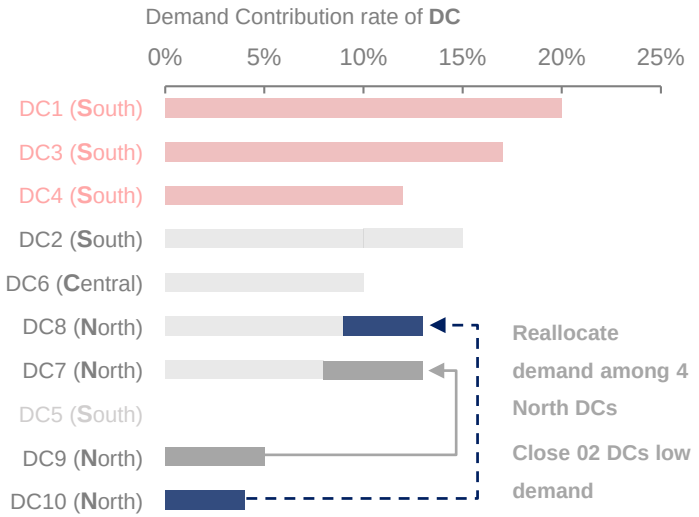
Current demand among 10 DCs



Re-allocate South demand, reduce DC quantity



Re-allocate North demand, reduce DC quantity



Factory

Factory's WH

Factory's WH

- Company **own** investment
- FGs is transferred to this WH
- Cost = 1/3 Total 10DCs cost → sufficient storage capacity
- FGs shall be dispatched to Local DCs **no later than 1 week**

Full pallets
LTL or Full truck

Transport

- Full pallet
- Truck fleet: outsource

7 Local DCs

Local DCs

- **Outsource** (rental) *(current & future)*
- Safety stock is built up
- Additional **cross-dock:** allow sortation & delivery to Customer DC without putaway or storage

Full pallets
LTL or Full truck

Transport

- Full pallet
- Truck fleet: outsource
- Ship to Customer DC: aggregate demand →higher shipped qty

Customers' DCs

Customer handling

Customers' stores

Customer

- Deliver to Customer's DCs
- Why possible & lean?
- **Traditional Trade** (Wholesale market) **has WH**;

Modern Trade (store/supermarket chains) has **it own DCs** for combining shipment from several suppliers and distributing to its stores

- **Benefit**: decrease complexity & cost in **handling** (**both 2 parties**)

DISTRIBUTION OPERATIONS & LEAN WAREHOUSE/DC

Factory WH

Putaway: Dynamic location at Factory's WH, indirect putaway

Picking: Discrete picking (pick by shipment route), FIFO

Zone is defined by SKUs or combined SKUs (based on Production Interval and Average demand to balance)

Forklift route (Putaway/Picking): multi-cycle mode

Handling unit: Full Pallet (1 pallet ~ 200kg)

Local DC

Putaway: Fixed location at Local DC, direct putaway

Picking strategy: Zone picking, FIFO

Zone is defined by SKUs.

Forklift route (Putaway/Picking): multi-cycle mode

Handling unit: Full Pallet (1 pallet ~ 200kg)

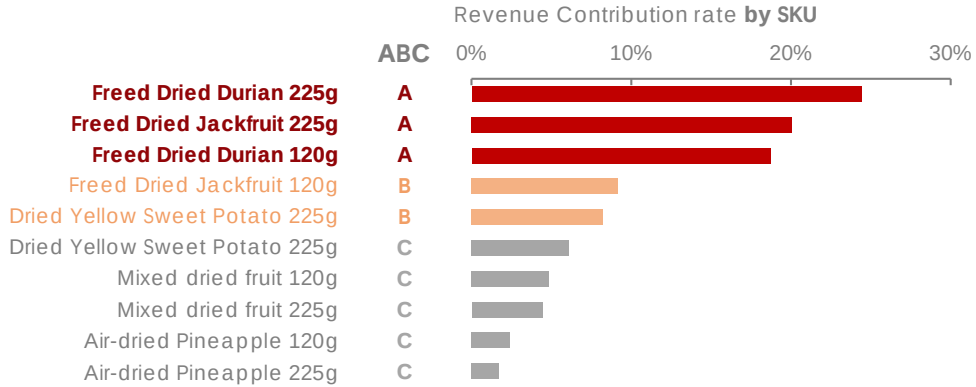
Cross-dock is available to use if needed

Inventory

Inventory Counting: ABC analysis
A: once per month | B: every 3 months | C: every 6 months

Inventory Level: Multi Echelon Inventory Optimization (MEIO)

Order policy: R,S (Stock is reviewed by production interval, order lot size is based on inventory position and maximum inventory level)



LEAN WAREHOUSE/DC

Equipment setup on space: must **add value to workers**

SKU location (Local DC): Fast-moving items are located near the dock

Picking & Putaway:

+ Route optimizing tool → Shortest distance

+ Multi-cycle → Avoid empty forklift route

Equipment is **within worker's arm reach**

Automated equipment streamline process: AR/RS, electronic scale on forklift, bar code, ...

WMS: minimize access time and maximize capacity usage

Automatically email alerts based on specific conditions

Training → solve daily issues

Cross training → flexible in case of shortage of labor

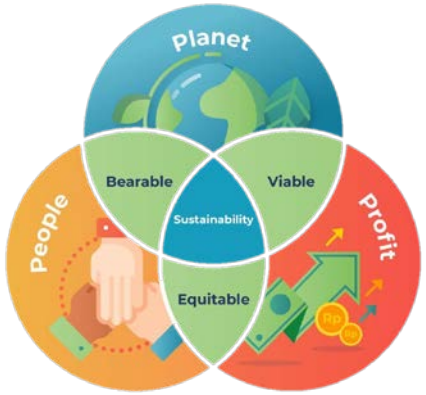
Empower worker to speak up → quickly know which area should be improved

Level distribution (inbound planning, outbound planning / Yard Management System)

Avoid receive/dispatch **large** shipment into **peak hours**

SUSTAINABILITY & RESILIENCE

SUSTAINABILITY



COMPANY

- Support 3Ps (Tripple Bottom Line): **Planet, People, Profit**
- Design product for Sustainability: **3Rs** (Reduce – Reuse – Recycle), **DfE** or **Eco-design**
- **Reverse Logistics**: damaged goods or collect Zipper (to recycle, or to discard in environmental manner)
- **Social** support, **employee** engagement

DISTRIBUTION

- **Warehouse: S.H.E**, **energy saving** (eg, Energy-efficient light, A shift to lower-emission fuels and electric forklifts)
- **Transportation: CO2 emission**

Effective planning > reduction of empty and underutilization running in transport fleet > reduce emission

Avoid rush hour > because it increase waiting time on the way > increase emission

- **Reverse Logistics**: adhere to return policy (goods condition – both purchased goods and selling goods)

RESILIENCE

Risk management: Risk profiling/ Known risk & Unknown risk

+ Known risk: Risk monitoring system, improve SC Visibility, Periodically review risks and Contingency plans

+ Unknown risk: Create a strong defense combined with building a risk-awareness culture

Network risk: route blocking (eg, Covid-19), DC lock down due to impact of external factors (eg, Covid-19)

WH risk: Inventory risk (obsolete, security, damaged, ...), Accident, Fire/Flooding

Transportation risk: Partner failure (3PLs), Delivery failure (damaged, broken, delay, accident)

Service risk: other events which don't have direct impact on Distribution but still impact customer service which is direct provided by Distribution

IN CASE 01 main vendor of Zipper/Fruit shut down,

Functions within SC must collaborate to maintain business with optimal cost

Inventory Transfer → higher transport cost but will maintain sales

Set priority for customer and replenishment DC in this shortage situation

Use backup vendor as each material we have 3 vendors → put order into Back order to retain customers → collaborate with 3PL to be ready for transport when production is completed

DISTRIBUTION IMPACT ON FINANCE INDICATORS

Distribution Network Change

Lean Distribution

(0)	**ROI (0 = 19/24)**
(1)	Contracted Sales Revenue
(2)	Bonus/ Penalties
(3)	**Realized Revenue (3=1+2)**
(4)	Purchase Value
(5)	Production Cost
(6)	**COGS (6=4+5)**
(7)	WH Inventory Cost
(8)	WH Facility Fixed Cost
(9)	WH Employee Cost
(10)	WH Cost (10=7+8+9)
(11)	DC Inventory Cost
(12)	DC Facility Fixed Cost
(13)	DC Employee Cost
(14)	DC Cost (14=11+12+13)
(15)	Project cost
(16)	Handling Cost
(17)	Distribution Cost
(18)	**Indirect Cost (18=10+14+15+16+17)**
(19)	**OPERATING PROFIT (19=3-6-18)**
(20)	Facility investment (Building rental fee,...)
(21)	Stock (stock value - RM & FG)
(22)	Machines/Equipment investment (CAPEX)
(23)	Payment terms
(24)	**INVESTMENT (24=20+21+22+23)**

In proposed network, Factory's WH is maintained the same operations in terms of quantity of stock, space > no cost increases significantly.

Deliver to Customers' DCs > reduce demand fluctuation > decrease Safety Stock

Allowing CrossDock at Local DCs > reduce stock cost

Reduce the quantity of DCs

Demand is reallocated > remain same > reduction of DCs will increase workload at this DC while decreasing workload at other DC > Overall, FTE is same.

Trade in Pallet > reduce handling time

Deliver to Customers' DCs > reduce handling time (order line decreases)

Deliver to Customers' DCs > reduce delivery distance

Reduce the quantity of DCs

Warehouse/DC operations is optimized > balance workload > reduce overtime > reduce employee cost

Warehouse: invest to utilize warehouse operations and space (eg, route optimizing tool, tools facilitating multi-cycle, ...)

Transport: transportation optimization/control tower

Warehouse and Transport is optimized > Handling reduce

Transport is optimized > Cost reduce

Equip warehouse with automated equipments

THANK YOU FOR LISTENING!!

TO SOMETHING