



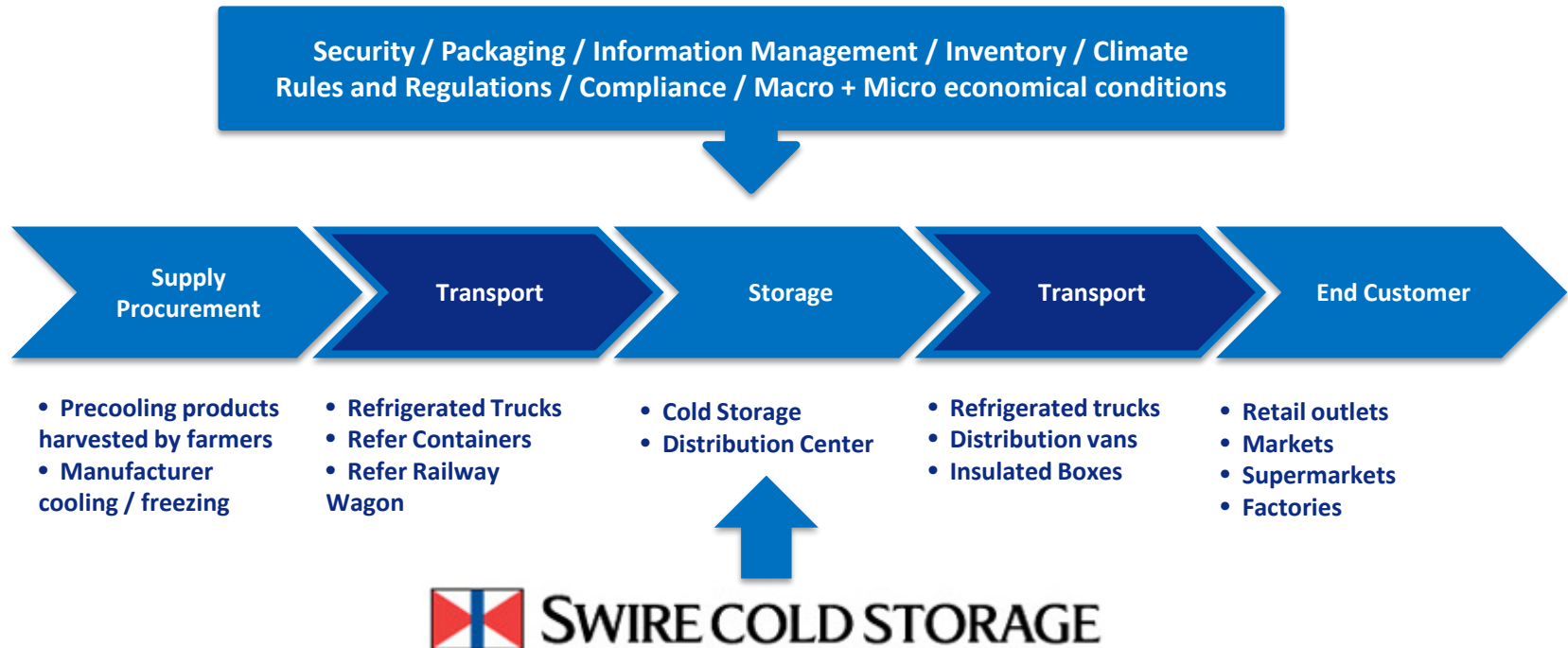
APEC FORUM ON COLD CHAINS DEVELOPMENT IN PRIVATE SECTOR IN VIETNAM

Presented by: NGO QUANG TRUNG
General Manager
Swire Cold Storage Vietnam



Cold chain definition and Infrastructure

Cold Chain is a temperature controlled supply chain – the uninterrupted storage and distribution activities which maintain the given temperature range



Swire Cold Storage in the World



Swire is No. 3 in the world cold storage operator, offer 8,4 millions cubic meters of refrigerated space



Swire Cold Storage in the World



Vietnam before Swire Cold Storage Vietnam 1998



- Mostly small cold stores with capacity less than 1,000 pallets
- Built on the seafood processing plants
- Manual handling, no rack and no forklift used
- Very low quality and stock management; poor temperature controls
- Mostly Stated Owned Enterprises
- High prices
- Not transparent operation
- Lot of spoilage and product cross contamination
- Located in the urban area
- Low demand due to low trust from product owners

Swire Cold Storage Vietnam



- Build in 1998, expanded every 2 years
- Set the new standards for cold storage in Vietnam
- The 1-st 100% foreign investor in cold storage
- Daily throughput: 1,500 tons or 3,000 pallets or 120,000 cartons
- +200 Customers, including the fastfood chains, supermarkets, seafoods manufacturers, foods importers...



Swire Cold Storage Vietnam – Fast Facts



413 INVESTMENT
BILLION VND

\$100%
INVESTMENT OF JOHN SWIRE & SONS

>300
EMPLOYEES

Σ42.500m²
TOTAL AREA

~3.000m² **12.000m²**
ANNEX AREA YARD AREA

8m-13m **38**
HEIGHT OF WAREHOUSE NUMBER OF DOCK

36.650
STANDARD PALLETS

25 PALLET TRUCK

03 DIESEL FORKLIFT TRUCK

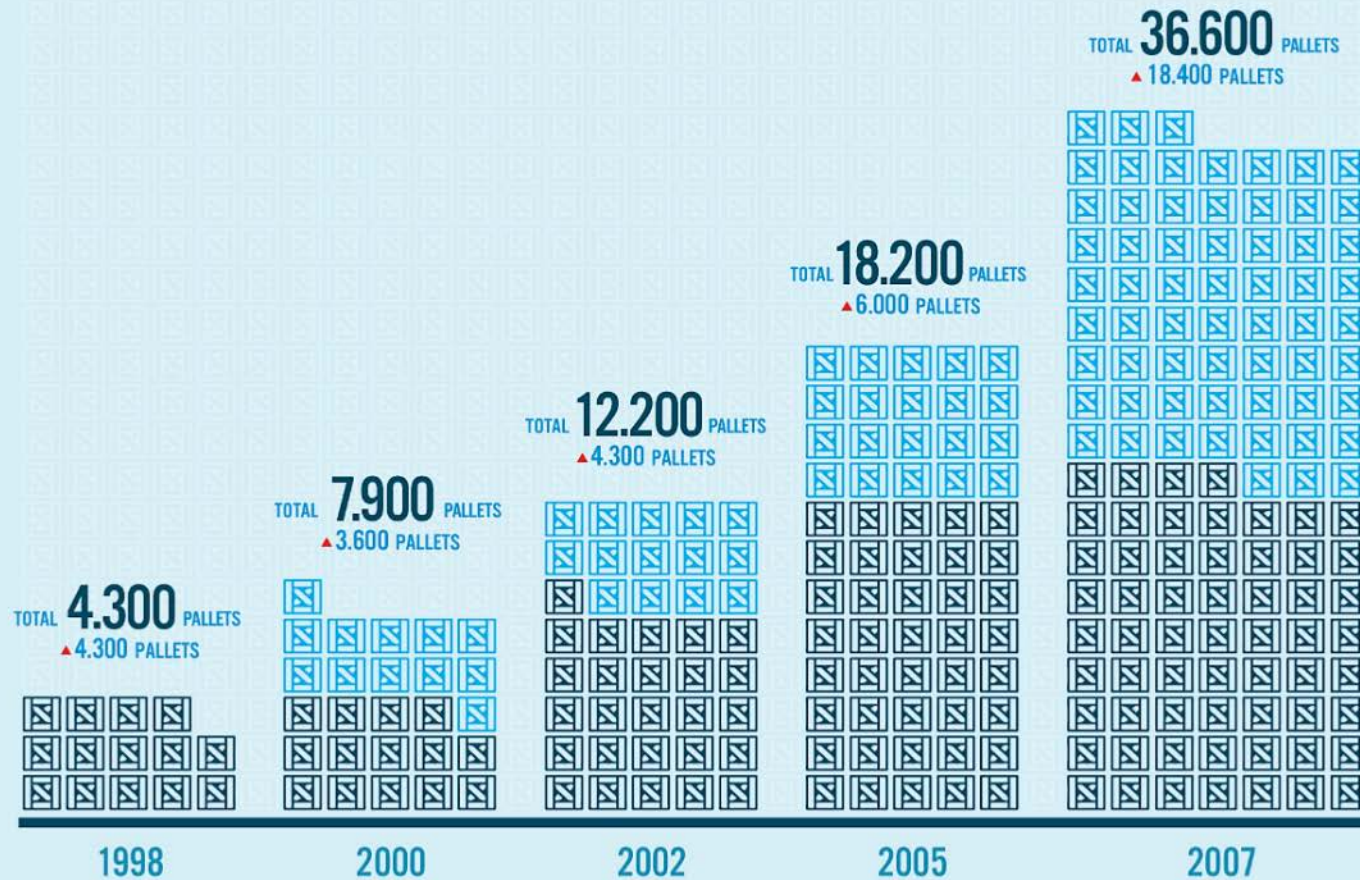
19 FORKLIFT TRUCK

OPERATION 24/7

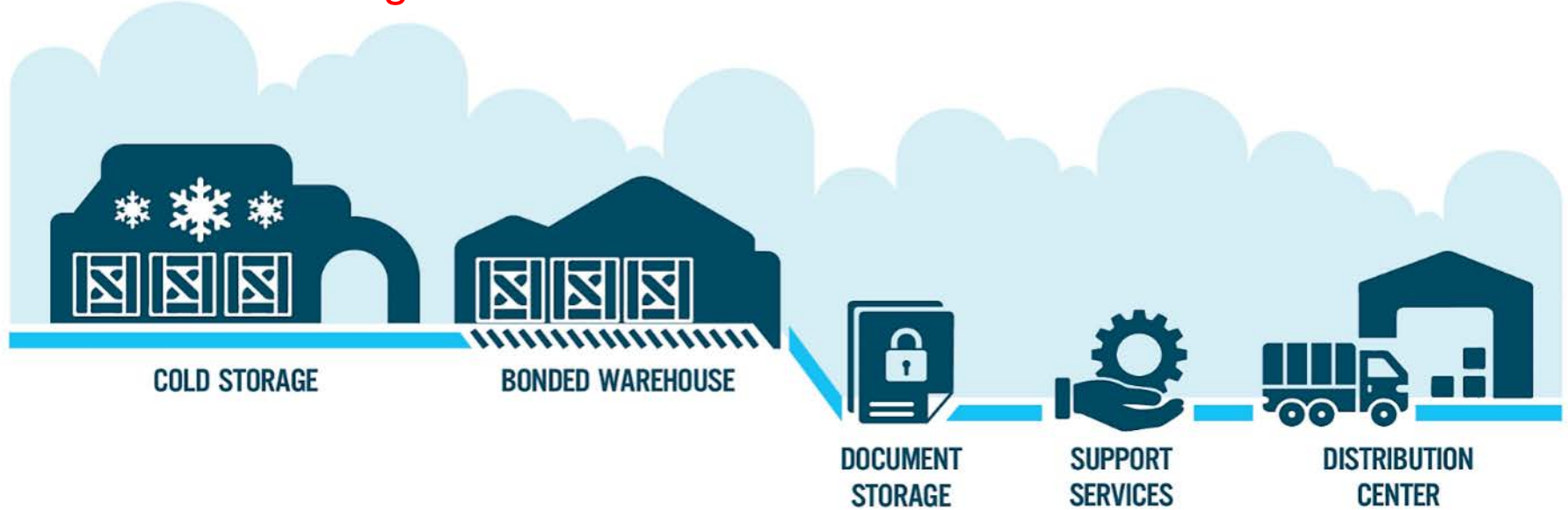
Swire Cold Storage Vietnam – Fast Facts



YEAR OF CONSTRUCTION AND EXPENSION



Swire Cold Storage Vietnam – Fast Facts



Swire Cold Storage Vietnam



Document storage room

Swire Cold Storage Vietnam





VIETNAM COLD CHAIN REALITY AND BEST PRACTICE



Vietnam Cold Chain - Reality



Products delivered in foam boxes, by motorbikes

Vietnam Cold Chain - Reality



Products are transported using non-refrigerated trucks

Vietnam Cold Chain - Reality



Frozen products are exposed under the sun, dust, thief...

Best Practices – Cold storage / Warehouse



Products unloaded not in the refrigerated environment

Best Practices – Cold storage / Warehouse



Cold Storage doors are very small, takes long time to load trucks

Best Practices – Production & Procurement

Production Factory

- Build larger warehouse / cold storage to cope with production growth
- Use external cold storage to get international standards
- Avoid old cold storage design with very small doors
- Properly maintain the cold storage, avoid racking collapse, ice build up on the floor
- Separate storage between different products and production lot.
- Use higher quality packaging materials and effective design. Recycle materials are selling points

Farmers

- Build precooling facility instead of using refrigerated containers
- Follow strictly the after harvest procedures in order to preserve the quality of fresh products
- Minimize time between harvesting and storage

Best Practices – Transport

- Avoid small trucks, unless for convenient store delivery.
- Using pallets during transportation to reduce loading / unloading time.
- Consider refrigerated containers vs refrigerated trucks.
- Using crates or plastic baskets instead of cartons to prevent product damage.
- Using Olivo Box for transport refrigerated products in dry truck!
- Always use temperature recording tag for the transportation time, it help to identify the broken chain and stop driver from switch off the cooler !
- Using fleet management software + Android in-vehicle device (it is very cheap now) with GPS to improve route planning, driver behavior and cold chain monitoring.
- SME: Using cloud based software to reduce cost.

Best Practices – Transport



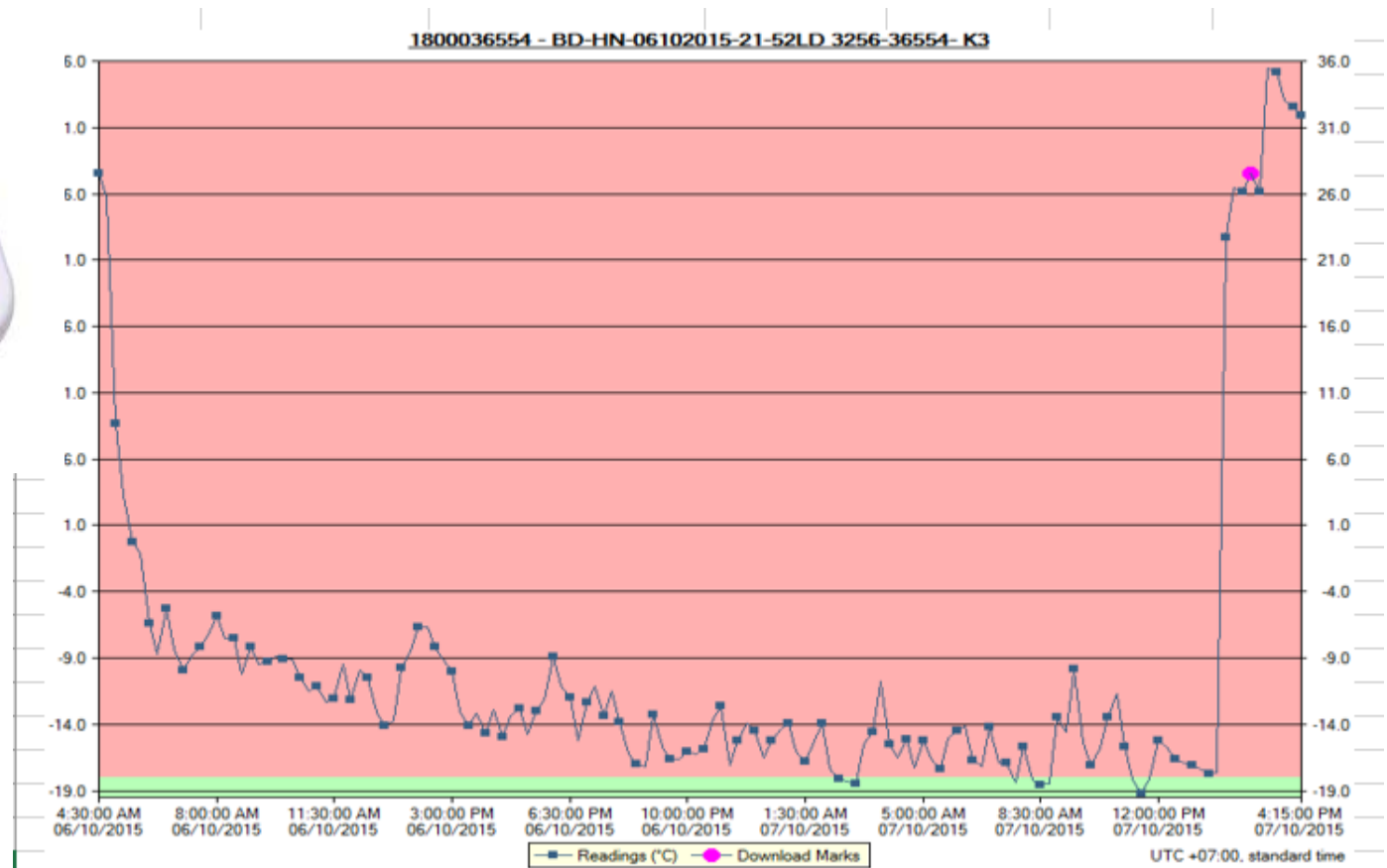
Using crates to deliver mixed products to Convenient Stores. It helps preventing damages

Best Practices – Transport



Using pallets to transport larger quantity of products.

Best Practices – Transport



Temperature recording during transportation. Must be managed by 3-rd party to keep high transparency.

Best Practices – Transport

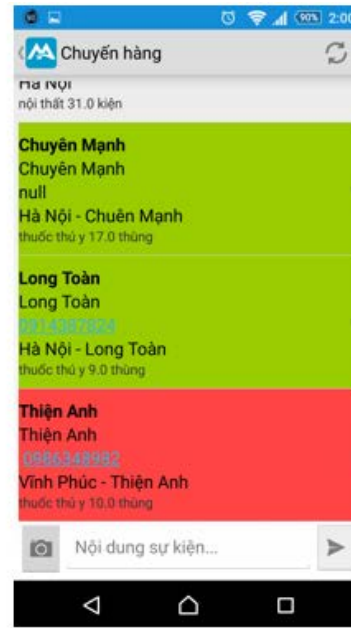


Aviation

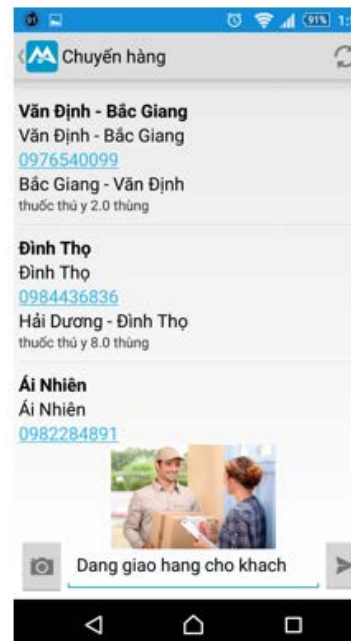
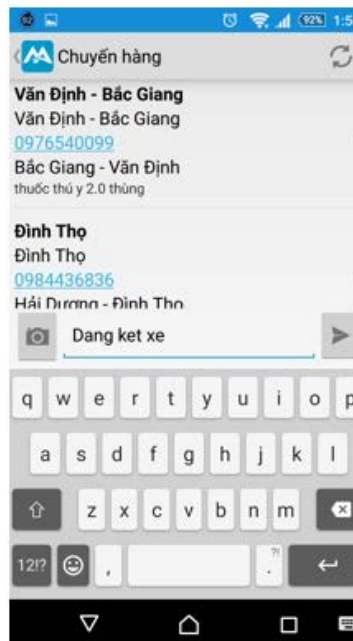
Agribusiness
& Food Chain

Marine
Services

Trading &
Industrial



Android App with maps, tasks and all related information directly pushed to the drivers. Also can take notes, temperatures, photos... update in realtime for Managers / Customers



Best practice - Transport



Using reinforced insulated boxes (Olivo) to transport frozen products in dry truck



Best Practices – Cold storage / Warehouse



- Design larger alter room for product sorting and palletizing.
- Build higher cold storage (13m-15m) with forklifts.
- Build very high cold storage with ASRS.
- Office space for lease on premise.
- Different room temperature / humidity to store different products, including dry warehouse.
- Different Dock shelter / Dock Door / Inflatable seals to fit with different truck sizes.
- Rolled door for freezer room, together with strip curtains.
- Use LED light with motion sensor for more energy efficient and less heat.
- Consider CO2 refrigeration system for environment friendliness and efficiency on low temperature.
- Large truck parking / pallet storage yard.
- CCTV everywhere. Now it is very cheap and intelligent.

Best Practices – Cold storage / Warehouse



Inflatable seal /dock door size does not fit with small truck – losing energy

Best Practices – Cold storage / Warehouse



7-th high warehouse; labelling service; large truck / container yard



Best Practices – Information Technology

- **Must have good IT support.**
- **Warehouse Management System is critical and must be flexible to adapt with ever-changing Customers' requirements.**
- **Web-based online report for Customers.**
- **EDI for international Customers.**
- **Paperless operation system / barcode scanning / RFID.**
- **Ready to serve Supermarkets with piece picking and very large number of transactions.**
- **Consider Optical Recognition module to record trucks and container in-out of the gate.**
- **WMS Functions: Batch picking; Pieces picking; Automatic reporting; Pallet joining and Splitting; Pick and Pack; Distribution; Cross Docking; Weighting; Random weight...**

Best practice - IT



Property



Aviation



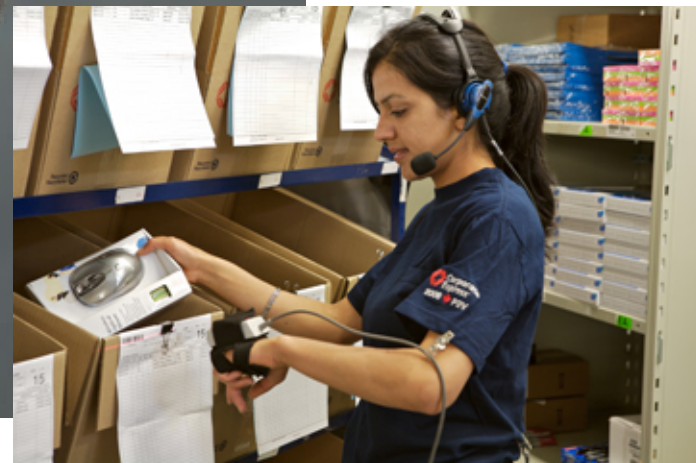
Agribusiness
& Food Chain



Marine
Services



Trading &
Industrial



Voice operation in combination with finger ring barcode scanner to improve productivity



Best practice - IT



Swire Cold Storage Vietnam x

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Ứng dụng News SCS VN Tools Photography Properties News 2 Travel BẢNG SỔ ĐIỆN THO... Floorplanner - Stage...

SWIRE Home Today Stocks On Hand Operations Stocks Charts Users Admin Trip F & V PAXD KPI Seal Basket

EXECUTIVE SUMMARY

Enter text to search: Search in: Products

Receive

RO No.	Date	Reference
RO-342412	08/10/2015	NL DO-544138(XuẤT XÁ KIỂM)
RO-342405	09/10/2015	83C02583/4900290743
RO-342388	08/10/2015	51C12272/4900290666-Chạy ngày
RO-342381	09/10/2015	69C01043/4900290565
RO-342380	09/10/2015	69C00840/4900290504
RO-342379	08/10/2015	69C00840/HÀNG MẪU
RO-342377	08/10/2015	57L1302/HÀNG MẪU
RO-342376	08/10/2015	94C01743/HÀNG MẪU
RO-342372	09/10/2015	57L8289/4900290112
RO-342371	08/10/2015	57L1302/THÁI SON

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Dispatch

DO No.	Date	Reference
DO-544138	08/10/2015	XuẤT XÁ KIỂM
DO-544117	08/10/2015	MSWU4000690/6000003907
DO-544098	08/10/2015	SZLU2004693/6000003942
DO-544096	08/10/2015	57L1302/173315/CÁ MAU CÓ HỘP ĐEN+N
DO-544095	08/10/2015	59C133754/VITACO
DO-544087	08/10/2015	TEMU9342761/6000003880
DO-544085	08/10/2015	SZLU3639831/6000003932
DO-544083	08/10/2015	VPMP LẤU 8-ANH SANG:0983.737.534
DO-544082	08/10/2015	ANH NHẢ/SIAM
DO-544081	08/10/2015	SZLU3639831/6000003934

Page 1 of 4 (36 items) [1] 2 3 4

Truck - Containers

Number	Type	In	Out
50000002			
50000002-1			

Current Stocks

Enter text to search...

Product ID	Product Name	W/p	Qty	View
21002442	Màng Co SP75	17.07	270	***
21002442.1	Skin Vacuum Film (Màng Co SP75)	17.58	500	***
28000015	PH Adjuster Food Additives KS-APPU-2	20.00	58	***
28000017	Hoa Chat 512 (Cà Mau)	25.00	8,246	***
28000017	BRIFISOL 512 NEW(HG)	25.00	1,627	***
28000020	Hoa Chat MTR79 (Cà Mau)	20.00	4,497	***
28000020	Hoa Chat MTR79 (Hậu Giang)	20.00	301	***
28000020.1	Hoa Chat MTR79 (Cà Mau) 10kg	10.00	1	***
29000038	FCT1104OZ 113.4gx36Cup WIN.TY (OVAL-BLAC)	4.08	251	***
29000039	R006-Cocktail Sauce Home Style Cups 113.4gx36	4.08	400	***
29000070	BỘT PANKO TRẮNG TP449A01	20.00	575	***
29000081	PH ADJUSTER, FOOD ADDTIVES AB-EP3	16.00	109	***
29000144	FCT4104OZ-R0003 SAUCE AQ 7T030 113.40GX60 CUP	6.80	2,470	***
29000144	FCT4104OZ-R0003 SAUCE AQ 7T030 113.4GX60CUP	6.80	460	***
29000155	Bánh Tráng Filo P203	12.00	9	***
29000158	PH ADJUSTER, FOOD ADDTIVES H-66	16.00	28	***
29000200	Bột Tempura - BM2874C	20.00	1,500	***
29000200	Bột Tempura - BM2874C	20.00	1,009	***
29000218	FTC2608OZ-R0001 Sauce Private SEL (226.8g x 36)	8.16	400	***
29000325	FCT33080 OZ SAUCE 226.80GX36CUP.WIN.TY	8.17	35	***
29500121	BỘT PREDUST JP140343	25.00	9	***
29500122	BỘT HOT AND SPICY BATTER JB140111-4	25.00	92	***
29500149	BỘT DRY BREADCRUMB TF334A05	10.00	1,000	***
29500150	BỘT BATTERMIX TB21356E (RD15TB348501)	25.00	315	***
50000002	Đầu Tôm 6x1kgs	6.00	35	***
50000002-1	Đầu Tôm 6x1.8kg	10.80	1	***

Modern style of the Client Web portal, most important information on top





Thank you

