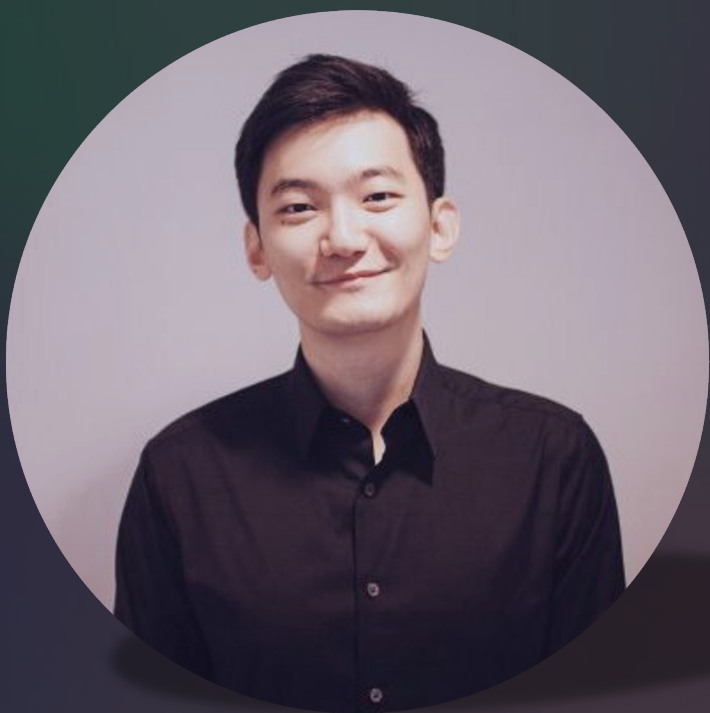


# THE EVOLUTION OF ECOMMERCE LOGISTICS





## 양수영 대표

- Techtaka - CEO
- Coupang - Principal Software Engineer
- Amazon.com - Software Engineer
- Cornell University - Computer Science
- University of Wisconsin - Electrical Engineering / Computer Science



A conceptual image for electronic commerce. In the foreground, a small metal shopping cart with red handles is filled with several brown cardboard boxes. The cart is positioned over a laptop keyboard. To the right of the cart, two credit cards are visible, one blue and one yellow, both with the word 'Credit Card' and a chip. The background is a dark, slightly blurred laptop keyboard.

# ELECTRONIC COMMERCE





TELEX

EMERGENCY OF  
ELECTRONIC ORDER



NO LOGISTICS



**HURRY!**

**HURRY!**

**HURRY!**

**TELESHOPPING**

**Order Now!!!!**

**Call 123456789**

**Buy 1 Get  
1 FREE!**

**Order Now**



**1234567890, 0987654321**

responsibility, you're fighting the court. Wajan Ghatayein varna paise wapis pay





CASH ON DELIEVERY



# B2B E-COMMERCE





A wide-angle photograph of a large industrial warehouse. The space is filled with tall, blue metal pallet racks that stretch into the distance. These racks are densely packed with stacks of brown cardboard boxes, which are organized in a way that suggests a systematic storage and retrieval process. The perspective is from a low angle, looking down a long aisle between the racks, which creates a sense of depth and scale. The floor is a smooth, light-colored concrete. In the foreground, there are several wooden pallets, some of which are stacked with boxes. A yellow pallet jack is visible on the right side of the aisle. The lighting is bright and even, highlighting the repetitive patterns of the boxes and the structural elements of the warehouse.

# PALLET BASED LOGISTICS





P2P E-COMMERCE

A photograph of two men shaking hands in front of a white Chevrolet pickup truck. The man on the left is older with grey hair, wearing a dark polo shirt and jeans. The man on the right is younger, wearing a white t-shirt with the 'GoShare' logo and dark pants. The truck is white with a yellow Chevrolet bowtie logo on the tailgate and 'GoShare' branding. The background shows a building and trees under a clear sky.

# P2P DELIEVERY



# B2C COMMERCE

A delivery person wearing a red polo shirt, a white face mask, and a red cap is handing a large brown paper grocery bag to a customer. The bag is filled with fresh produce, including a loaf of bread, a carrot, and a head of broccoli. The customer, whose back is to the camera, has long blonde hair and is wearing a grey jacket. The scene is set outdoors, likely in front of a delivery vehicle. The text "DIRECT DELIVERY" is overlaid in white capital letters on the center of the image.

DIRECT DELIVERY



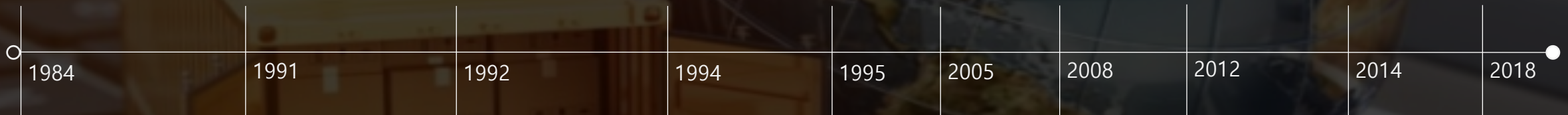
첫 B2C  
전자상거래의  
시작

Book Stacks  
Unlimited이라는  
회사를 통해 전자  
서점의 시작

아마존과  
이베이의 탄생

첫 모바일 주문  
발생  
소셜 커머스 그룹은  
시작

트위터 SNS 커머스  
시작



The National  
Science  
Foundation에  
서 이커머스  
밴 해제

상품 선택부터  
결제까지 모두  
전산으로  
이루어진 첫  
주문

아마존  
프라임의 시작

Instagart 탄생  
Quick  
Commerce의  
시작

Voice  
Commerce

# E-commerce share of total global retail sales from 2015 to 2021





## ECOMMERCE LOGISTICS ISSUE

### 상품 유형

- 이형
- 상온
- 신선
- 음식
- 고가

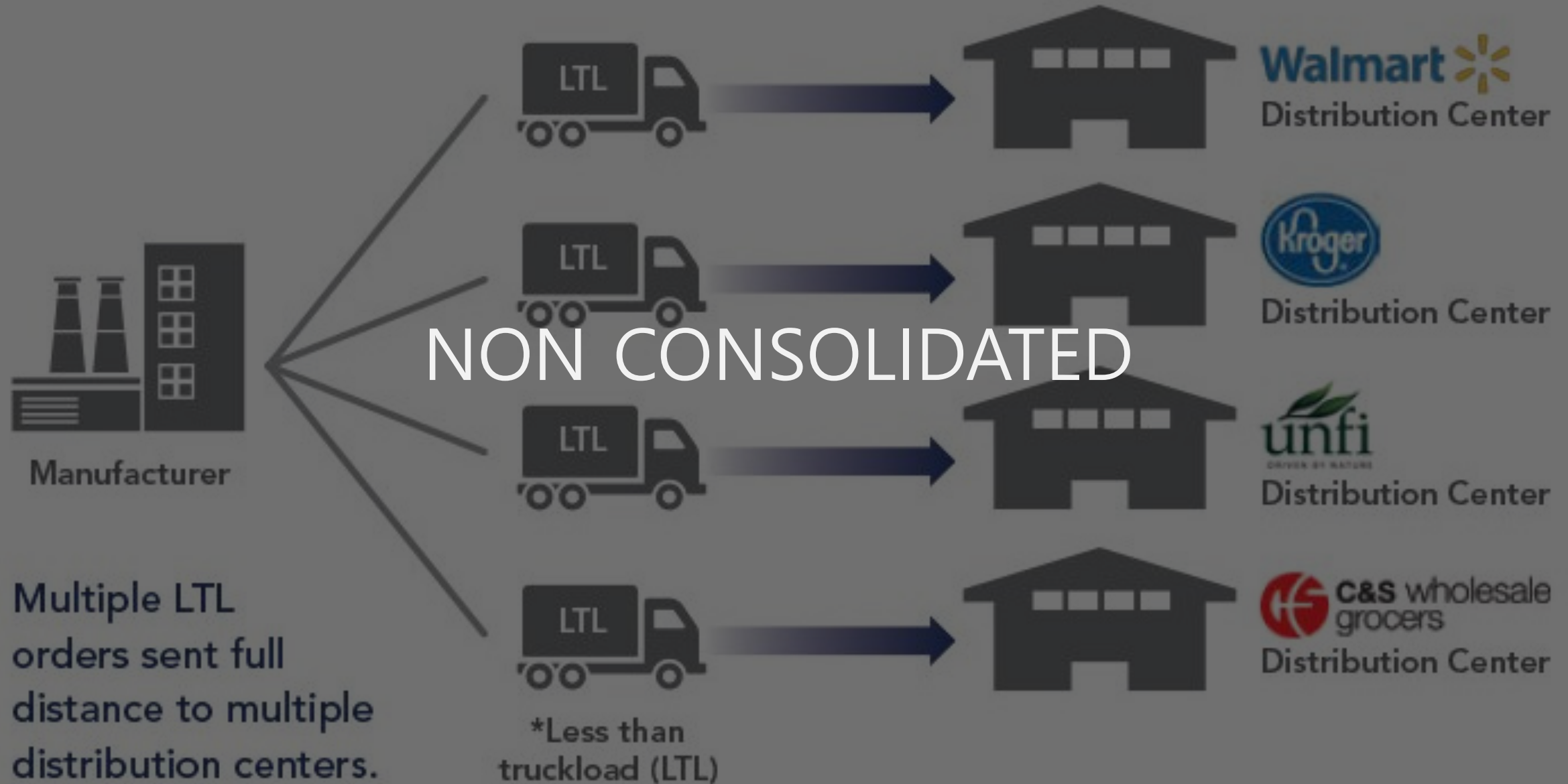
### 배송 유형

- 익일 배송
- 당일 배송
- 새벽 배송
- 2시간 배송
- 30분 배송

### 비용

- 인건비 상승
- 퀄리티 컨트롤
- 물량 문제
- 시간의 한계
- 운영 효율

# NON CONSOLIDATED





# ON-SITE CONSOLIDATED



Manufacturer 1

ON-SITE CONSOLIDATED



Multiple LTL orders consolidated onto one full truckload and delivered at reduced pricing to all retailer distribution centers.



**Walmart**  
Distribution Center



**Kroger**  
Distribution Center



**unfi**  
DRIVEN BY NATURE  
Distribution Center



**C&S wholesale grocers**  
Distribution Center

# OFF-SITE CONSOLIDATED



Manufacturer 1



Manufacturer 2



Manufacturer 3



Manufacturer 4



Multiple LTL orders sent shorter (cheaper) distance to central consolidation center. Remaining distance to distribution center discounted at full truckload price, consolidated with other customers.

## OFF-SITE CONSOLIDATED



**Walmart**  
Distribution Center



**Kroger**  
Distribution Center



**unfi**  
Distribution Center



**C&S wholesale grocers**  
Distribution Center

\*Truckload (TL)





# FIRST & MID-MILE EVOLUTION

미드마일의 진화



A photograph of a warehouse interior. On the left, there are several tall stacks of cardboard boxes on wooden pallets. On the right, a red shipping container is parked on a concrete floor. The background shows the interior structure of the warehouse with a high ceiling and metal beams. The text "ONE MILE LOGISTICS TO N-MILE LOGISTICS" is overlaid in the center in white capital letters.

# ONE MILE LOGISTICS TO N-MILE LOGISTICS





# TRUCK LOAD OPTMIZATION



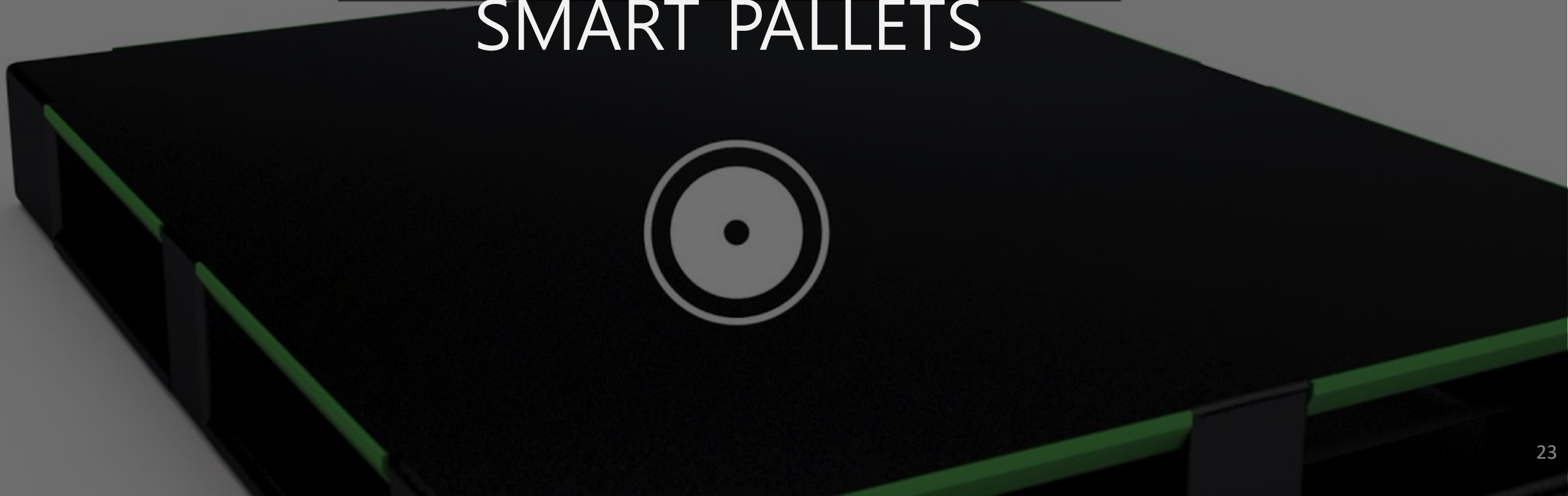
LOCATION



TEMPERATURE

**TRANSPONDER**

SMART PALLETS





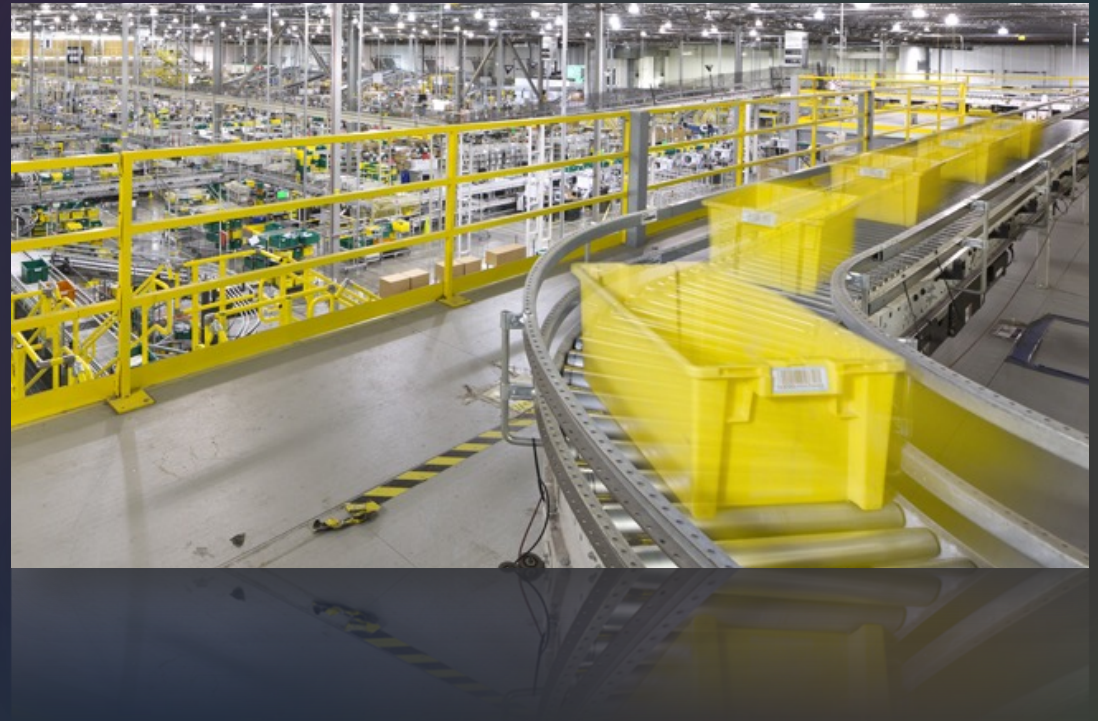


# WAREHOUSE EVOLUTION

물류센터의 진화



# AUTOMATION TECHNOLOGY





## 100% MANUAL PICKING



## PDA BASED PICKING





## AGV PICKING



## GOODS TO PERSON





# PICKING ROBOT



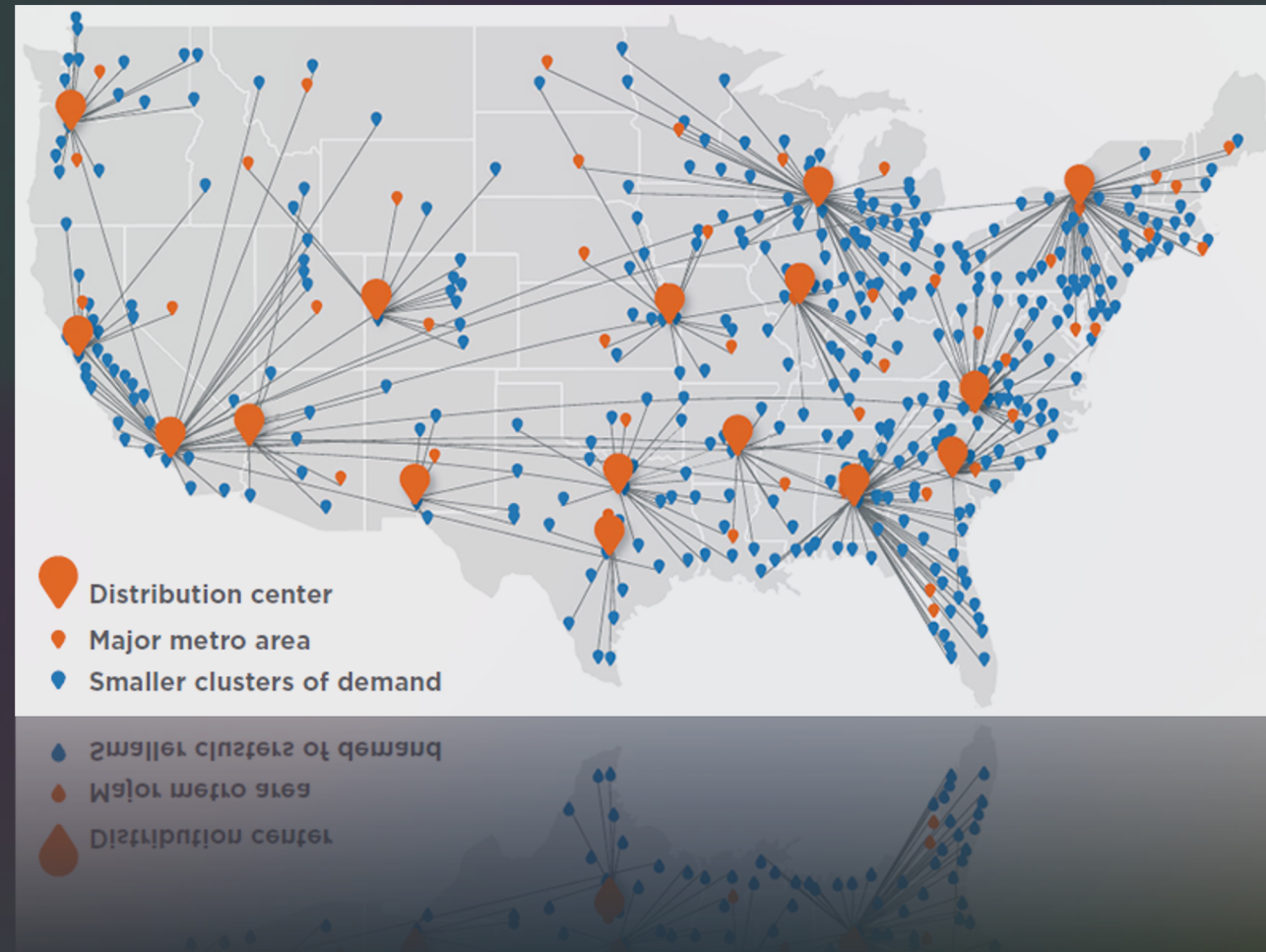


# SORTATION HUB EVOLUTION

소분센터의 진화



# SORTATION HUB



# AUTO-SORTER





## MERGE & SORT AUTOMATION



# SORTATION ROBOT





# SORTATION ROBOT





ISSUES 2

# DELIVERY EVOLUTION

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배송업무의 진화



# LAST MILE DELIVERY



# ON DEMAND DELIVERY





QUICK  
DELIVERY



QUICK  
DELIVERY





# DRONE DELIVERY



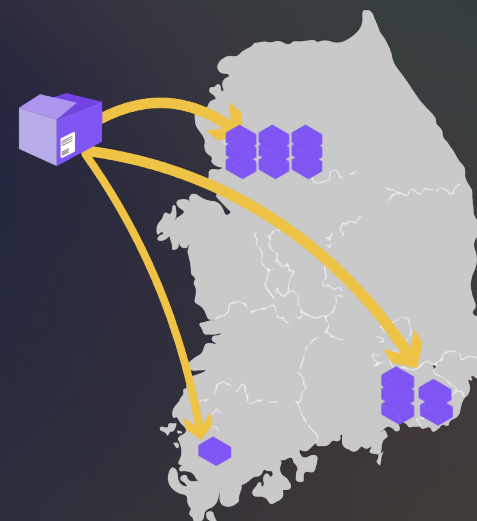
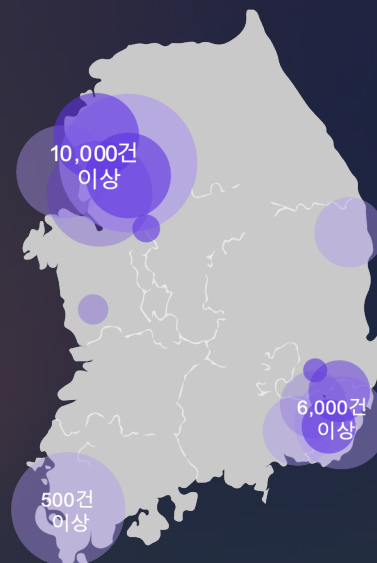
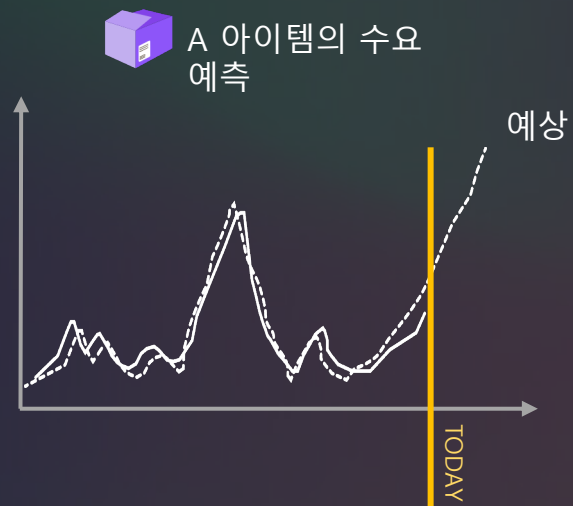
A conceptual image for a presentation on e-commerce logistics software evolution. It features a laptop in the center, its screen displaying lines of code and data charts. The laptop is surrounded by a network of glowing blue and orange icons connected by dotted lines, representing various digital services and connectivity. The background is a dark, textured blue. The title 'ECOMMERCE LOGISTICS SOFTWARE EVOLUTION' is written in large, white, sans-serif capital letters across the middle of the image. A thin white horizontal line is positioned below the title. In the bottom right corner, the Korean text '소프트웨어' is visible in a small, white font.

# ECOMMERCE LOGISTICS SOFTWARE EVOLUTION

소프트웨어



# WAREHOUSE DISTRIBUTION OPTIMIZATION



## EVOLUTION OF WAREHOUSE MANAGEMENT SYSTEM





## EVOLUTION OF WAREHOUSE MANAGEMENT SYSTEM



# EVOLUTION OF WAREHOUSE MANAGEMENT SYSTEM

Warehouse contents

Filters

Owner: LU No.: Product: Product Name: Batch: Exp. d.: Warehouse: Location: QS: Locked:

LU status: Load unit type: SA code: Area class: Location class: Reservation: Picking: Delivery no.: Product group: Product class:

Page 1 Quantity of rows on site 200 Displayed 1 - 96

	Owner	LU No.	Line	Product	Product Name	Batch	Exp. d.	Quantity	Unit	Warehouse	Location	QS	Locked	LU status	Load unit type	Location class	Reservation	Picking	Delivery no.
	Z1	020012340000000017	1	SUG001	Sugar1 kg, bundle 6 kg	2016/06	2017-05-26	240	KG	M1	RK 01-02-04-00	0	No	O.K.	Pallet	Rack 180	none	No	10
	Z1	020012340000000024	1	OJUI	Orange juice 1l	900/2016	2017-05-22	240	pcs	M1	W2 00-00-00-00	0	No	Edit	Pallet	Buffer in/out	none	No	11
	Z1	020012340000000031	1	OJUI	Orange juice 1l	900/2016	2017-05-22	240	pcs	M1	W2 00-00-00-00	0	No	Edit	Pallet	Buffer in/out	none	No	11
	Z1	020012340000000048	1	OJUI	Orange juice 1l	900/2016	2017-05-22	240	pcs	M1	W2 00-00-00-00	0	No	Edit	Pallet	Buffer in/out	none	No	11
	Z1	020012340000000055	1	OJUI	Orange juice 1l	900/2016	2017-05-22	240	pcs	M1	W2 00-00-00-00	0	No	Edit	Pallet	Buffer in/out	none	No	11
	Z1	020012340000000062	1	OJUI	Orange juice 1l	900/2016	2017-05-22	240	pcs	M1	W2 00-00-00-00	0	No	Edit	Pallet	Buffer in/out	none	No	11
	Z1	020012340000000079	1	BEER	Excellent beer bottle 0.5l	005/2016	2016-11-01	1296	BOT	M1	W1 00-00-00-00	0	No	Edit	Pallet	Buffer in/out	none	No	12
	Z1	020012340000000086	1	BEER	Excellent beer bottle 0.5l	005/2016	2016-11-10	432	BOT	M1	W1 00-00-00-00	0	No	Edit	Pallet	Buffer in/out	none	No	12
	Z1	020012340000000093	1	BEER	Excellent beer bottle 0.5l	005/2016	2016-11-10	432	BOT	M1	W1 00-00-00-00	0	No	Edit	Pallet	Buffer in/out	none	No	12
	Z1	020012340000000123	1	SUG001	Sugar1 kg, bundle 6 kg	2016/987	2017-05-18	240	KG	M1	RK 01-02-05-00	0	No	O.K.	Pallet	Rack 180	none	No	13
	Z1	020012340000000130	1	SUG001	Sugar1 kg, bundle 6 kg	2016/987	2017-05-18	240	KG	M1	RK 01-04-02-00	0	No	O.K.	Pallet	Rack 180	none	No	13
	Z1	020012340000000147	1	OJUI	Orange juice 1l	916/2016	2017-05-25	240	pcs	M1	RK 02-05-01-00	0	No	O.K.	Pallet	Rack 180	none	No	14
	Z1	020012340000000154	1	OJUI	Orange juice 1l	916/2016	2017-05-19	240	pcs	M1	RK 05-06-01-00	0	No	O.K.	Pallet	Rack 180	none	No	14
	Z1	020012340000000161	1	BEER	Excellent beer bottle 0.5l	006/2016	2016-11-04	432	BOT	M1	RK 08-06-01-00	0	No	O.K.	Pallet	Rack 180	none	No	15
	Z1	020012340000000178	1	BEER	Excellent beer bottle 0.5l	006/2016	2016-11-04	432	BOT	M1	RK 02-07-01-00	0	No	O.K.	Pallet	Rack 180	none	No	15
	Z1	020012340000000185	1	BEER	Excellent beer bottle 0.5l	006/2016	2016-11-04	432	BOT	M1	RK 03-07-01-00	0	No	O.K.	Pallet	Rack 180	none	No	15
	Z1	020012340000000192	1	BEER	Excellent beer bottle 0.5l	006/2016	2016-11-04	432	BOT	M1	W1 00-00-00-00	0	No	Transport	Pallet	Buffer in/out	all	No	15
	Z1	020012340000000208	1	BEER	Excellent beer bottle 0.5l	006/2016	2016-11-04	432	BOT	M1	W1 00-00-00-00	0	No	Transport	Pallet	Buffer in/out	all	No	15
	Z1	020012340000000222	1	SUG001	Sugar1 kg, bundle 6 kg	2016/987	2017-08-22	240	KG	M1	RK 01-04-03-00	0	No	O.K.	Pallet	Rack 180	none	No	13
	Z1	020012340000000239	1	SUG001	Sugar1 kg, bundle 6 kg	2016/987	2017-08-22	240	KG	M1	RK 01-04-04-00	0	No	O.K.	Pallet	Rack 180	none	No	13
	Z1	020012340000000246	1	SUG001	Sugar1 kg, bundle 6 kg	2016/987	2017-08-22	240	KG	M1	RK 01-04-05-00	0	No	O.K.	Pallet	Rack 180	none	No	13
	Z1	059012340000000031	2	SUG001	Sugar1 kg, bundle 6 kg	190/2013	2017-02-28	240	KG	M2	B2 00-00-00-00	0	No	O.K.	Pallet	Block no limit	none	No	0
	Z1	059012340000000048	1	SUG001	Sugar1 kg, bundle 6 kg	190/2013	2017-02-28	240	KG	M1	RK 02-03-01-00	0	No	Transport	Pallet	Rack 180	none	No	0
	Z1	059012340000000055	1	SUG001	Sugar1 kg, bundle 6 kg	190/2013	2017-02-28	26	KG	M1	RK 01-02-00-00	0	No	O.K.	Pallet	Picking	none	Yes	0
	Z1	059012340000000062	1	SUG001	Sugar1 kg, bundle 6 kg	190/2013	2017-02-28	237	KG	M1	RK 03-03-01-00	0	No	O.K.	Pallet	Rack 180	none	No	0
	Z1	059012340000000079	1	SUG001	Sugar1 kg, bundle 6 kg	190/2013	2017-02-28	228	KG	M2	B2 00-00-00-00	0	No	O.K.	Pallet	Block no limit	none	No	0
	Z1	059012340000000147	2	OJUI	Orange juice 1l	789/2013	2017-02-28	240	pcs	M2	B2 00-00-00-00	0	No	O.K.	Pallet	Block no limit	none	No	0
	Z1	059012340000000154	1	OJUI	Orange juice 1l	789/2013	2017-02-28	237	pcs	M1	RK 04-03-01-00	0	No	O.K.	Pallet	Rack 180	none	No	0
	Z1	059012340000000178	3	SUGJUI	Sugar + orange juice	12/2013	2017-02-28	2	pcs	M1	RK 04-01-00-00	0	No	O.K.	Pallet	Picking	none	Yes	0
	Z1	059012340000000208	1	OJUI	Orange juice 1l	791/2013	2017-02-28	240	pcs	M1	RK 05-02-01-00	0	No	O.K.	Pallet	Rack 180	none	No	0
	Z1	059012340000000215	1	OJUI	Orange juice 1l	791/2013	2017-02-28	240	pcs	M1	RK 07-02-01-00	0	No	O.K.	Pallet	Rack 180	none	No	0

Change Finish

Start Warehouse contents




ARGO WMS

물류센터 현황


A1 05 51 202

재고 상품 수량 42개  
사용 공간 137L / 75%  
여유 공간 46L / 25%  
사용 무게 26Kg / 27%  
여유 무게 74Kg / 73%

기본정보  
45x90x45 (WxDxH,cm)  
182L (피대 공간)  
100Kg (피대 무게)



8 857830 000115  
수입일월 (일)  
14 x 17 x 15 (W x D x H, cm)  
0.71 Kg / 8개  
유통기한 2020. 11. 20 00:00:00



물류센터 현황

상품명 / 바코드

Floor  
1층

Zone(0)

☐ 전체  
☒ A1- 공산품, 기타류  
☐ A2- 패션의류  
☐ B1- 가전 디지털  
☐ B2- 식료품

유통기한(0)

☐ 전체  
☐ 7일 이하  
☐ 8~15일  
☐ 16~30일  
☐ 31일 이상

피킹 예약(1)

☐ 전체

전행 BATCH-20112300010734

☒ JOB-20112300003921  
☐ JOB-20112300003922  
☐ JOB-20112300003923  
☐ JOB-20112300003924

Last Update At: 2020. 11. 16 10:37:40

초기화

갱신

사용공간 0% 1%~20% 26%~50% 51%~75% 76%이상

Fit Canvas + -

01	01	03	05	07	09	11	13	15	17	19
02	02	04	06	08	10	12	14	16	18	20
03	21	23	25	27	29	31	33	35	37	39
04	22	24	26	28	30	32	34	36	38	40
05	41	43	45	47	49	51	53	55	57	59
06	42	44	46	48	50	52	54	56	58	60
13	01	03	05	07	09	11	13	15	17	19
14	02	04	06	08	10	12	14	16	18	20
15	21	23	25	27	29	31	33	35	37	39
16	22	24	26	28	30	32	34	36	38	40
17	41	43	45	47	49	51	53	55	57	59
18	42	44	46	48	50	52	54	56	58	60

07	01	03	05	07	09	11	13	15	17	19
08	02	04	06	08	10	12	14	16	18	20
09	21	23	25	27	29	31				
10	22	24	26	28	30	32				
11	41	43	45	47	49	51				
12	42	44	46	48	50	52				

401	402	403	404
301	302	303	304
201	202	203	204
101	102	103	104

A2 08 16  
여유 공간 74%  
여유 무게 91%

48

## EVOLUTION OF TRANSPORTATION MANAGEMENT SYSTEM

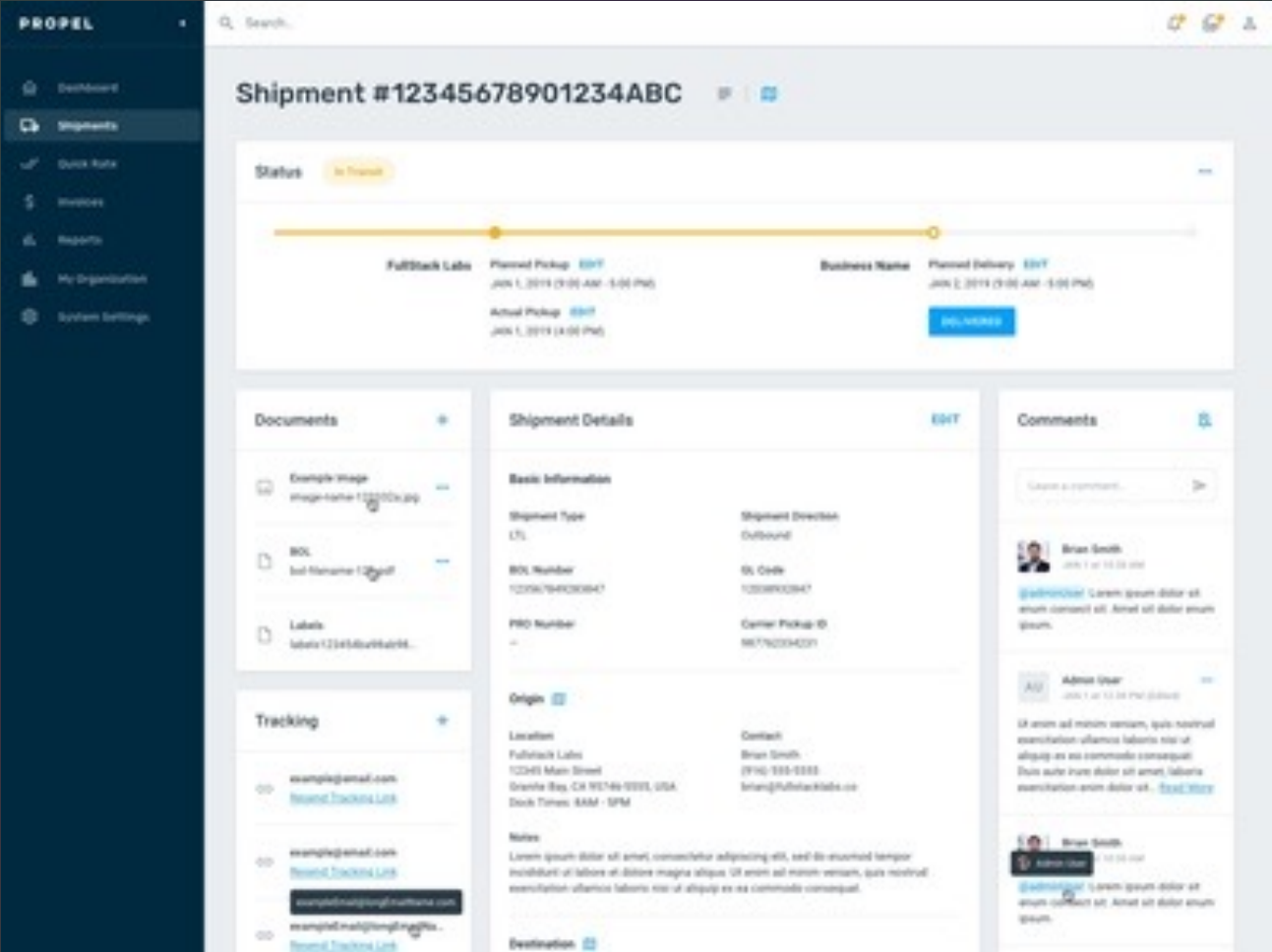




## EVOLUTION OF TRANSPORTATION MANAGEMENT SYSTEM

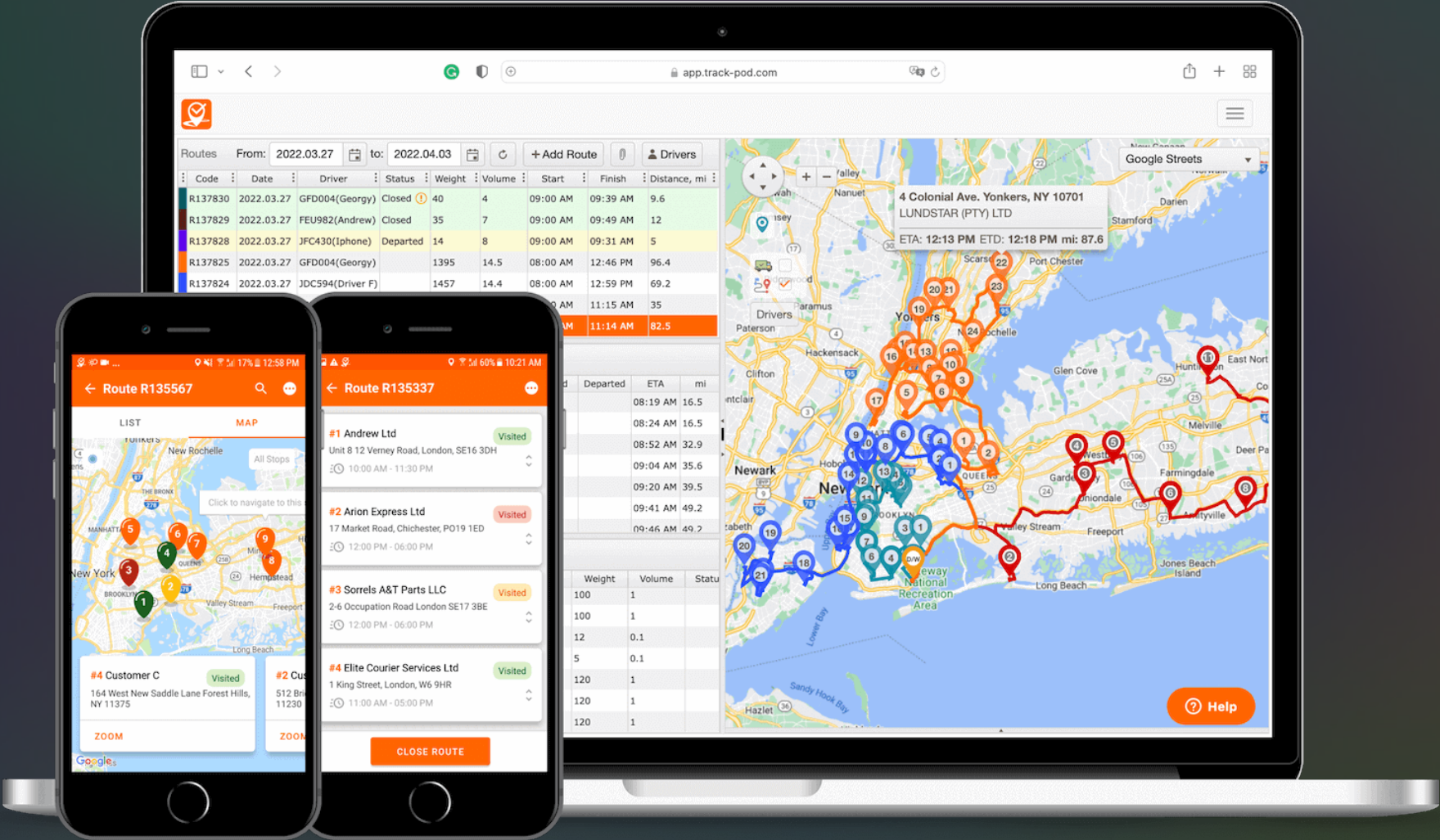


# EVOLUTION OF TRANSPORTATION MANAGEMENT SYSTEM





# EVOLUTION OF TRANSPORTATION MANAGEMENT SYSTEM





### OMS

Order  
Management  
Service

주문의 특징을  
분석하여 가장 적합한  
물류센터로 자동 연동

### WMS

Warehouse  
Management  
Service

자동화된 물류  
시스템을 통해 쉽고  
정확한 물류 관리

### CMS

e Commerce  
Management  
Service

다양한 판매채널의  
상품을 한곳에서 관리

### TMS

Transportation  
Management  
Service

고객보다 빠른 실시간  
배송정보 확인  
이슈 실시간 알림

### SCM

Supply Chain  
Management  
Service

인공지능을 통한  
수요예측기반의  
효율적인 재고관리





## 효율적인 물류가 성장의 Key입니다

앞으로의 이커머스 시장은 얼마나 더 빠르게, 정확하게, 효율적으로 물류를 처리하느냐가 사업의 승패를 좌우하게 됩니다

물류는 매우 큰 비용을 발생시키기에 물류를 잡아야 비즈니스의 지속적인 성장이 이루어집니다

쿠팡, 이베이, 네이버 등 대형 온라인 판매사들은 이를 직시하고 자체적인 물류 인프라를 구축하고 있습니다

## ARGO가 여러분의 성장 Booster가 되겠습니다

ARGO에서 추구하는 5PL은 판매부터 물류, 배송까지 모든 서비스를 하나의 네트워크로 묶는 것입니다

여기서 발생하는 비용감축과 속도는 큰 경쟁력이 될 것입니다

# “ARGO가 여러분의 성장을 돕겠습니다”





# Thank you

주식회사 테크타카

서울특별시 강남구 테헤란로 26길 14 9층

Tel. 02-543-0515 | Email. [contact@techtaka.com](mailto:contact@techtaka.com)

