

The 8th

Cello Conference 2021

차세대 디지털 플랫폼과 물류 비즈니스의 미래

2021.5.13 | THU | 14:00

SAMSUNG SDS

Digital Transformation:
International Trade Services

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✔ 주요 경력

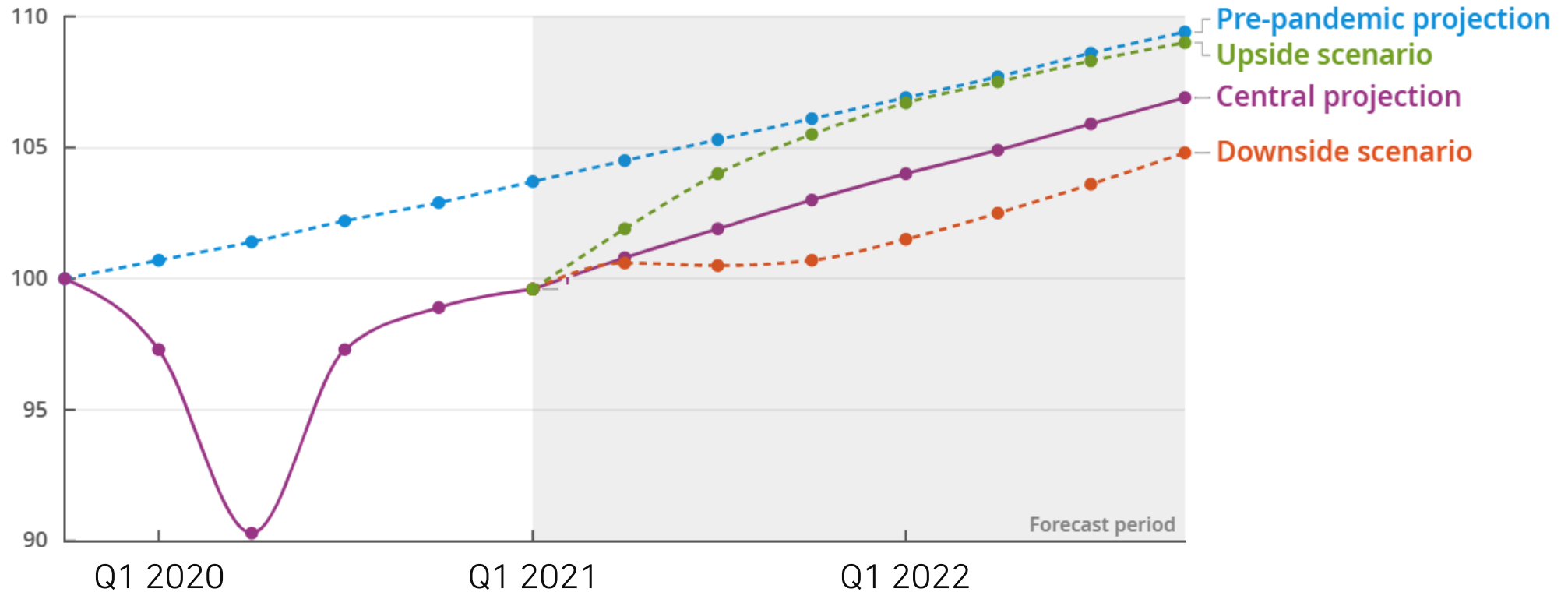
- 인천대학교 동북아물류대학원 교수 / 4단계 BK21 교육연구팀장 (인공지능 및 디지털 플랫폼 기반 크로스보더 국제물류-유통 리더 양성)
- 산업부 수출입물류 상생협약체 공동의장, 한국경영공학회 부회장 (산학협력)
- 前) IBM BCS Korea, Senior Consultant / Advisory Software Engineer

✔ 주요 연구 프로젝트

- 도심형 신재생에너지 열공급 **스마트 플랫폼** 개발, 예기평 (2017~2021)
- **스마트 인천항** 종합계획 수립, 인천항만공사 (2020)
- **디지털 트랜스포메이션(DT)** 전략 수립, 대한무역투자진흥공사 (2020)
- 전사적 **빅데이터·AI** 기술 적용 타당성 검토 및 **통합운영 플랫폼** 구축 방안 연구, 한국지역난방공사 (2019~2020)
- EX **공유 물류** 사업타당성 검토, 한국도로공사 (2019)
- **블록체인** 기반 분산형 물류 시스템 설계 및 활용방안, 한국물류산업진흥재단 (2019)
- **제4차 산업혁명** 시대에 대비한 수출입물류기반 개선방향 연구, 한국무역협회 (2018)
- 유럽 센터 **경로탐색 Pre-Processing 알고리즘** 개발, 현대엠엔소프트 (2018)

OECD Economy Outlook 2021

코로나 바이러스로 인한 경제 위기는 2020 Q2에 가장 큰 충격을 주고, 이후 사회적 거리두기 및 백신 접종과 함께 점진적으로 회복기로 접어들고 있음

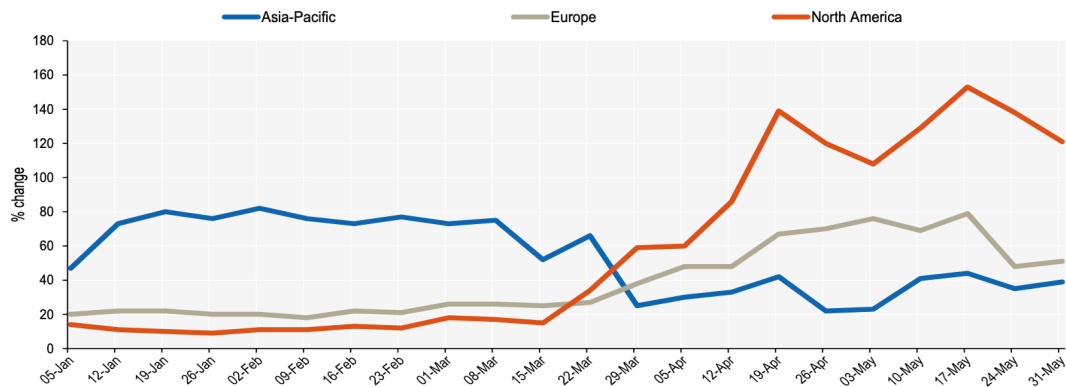


* Source : OECD Interim Economic Outlook, March 2021

Impact of COVID-19 crisis : Digital Transformation

코로나 19 위기로 비대면 서비스에 대한 수요가 증가하고, 새로운 시대에 적응하기 위해 모든 산업의 디지털 전환이 가속화되고 있음

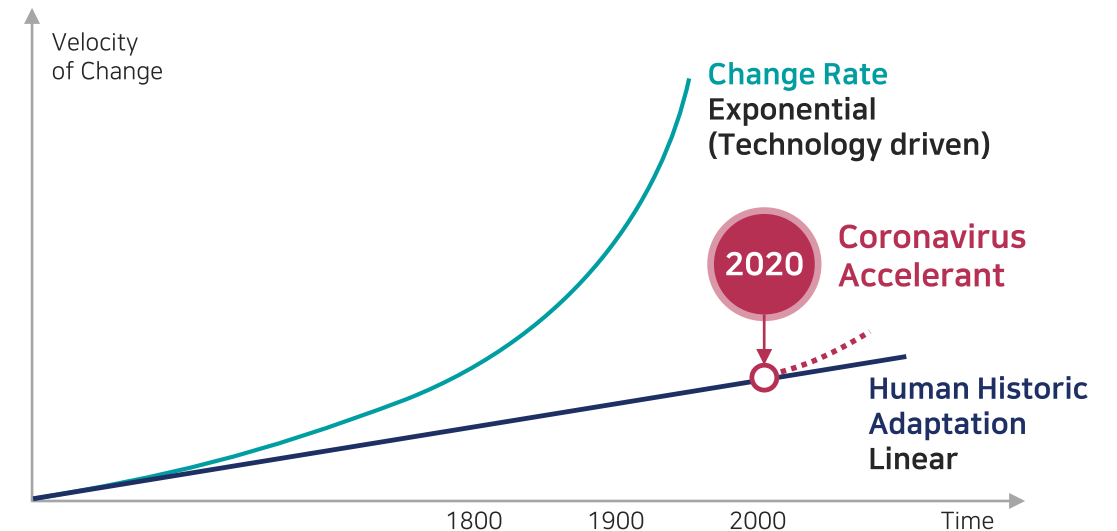
Growth in goods orders through e-commerce, May 2020



- E-commerce helps **consumers access the goods they need** in times of confinement and helps businesses, including smaller ones, maintain economic activity. By May 2020, online orders were up 50% year-on-year in Europe and 120% in North America, with part of this demand being met by cross-border trade in parcels.
- Ensuring that parcels get to where they are needed requires a range of policy actions, including logistics services liberalisation.

* Source: OECD (2020), Leveraging Digital Trade to Fight the Consequences of COVID-19

Digital Transformation and Change Management



- Technology acceptance is relatively low compared to development
- COVID-19 has increased technology acceptance.

* https://www.liquidtelecom.com/insights/innovation-blog/Did_Coronavirus_just_kick_start_the_digital_economy

New Opportunity : Digital Trade & Cross-border e-Commerce

Digital Trade is “digitally-enabled transactions of trade in goods and services that can either be digitally or physically delivered, and that involve consumers, firms, and governments”.

Characteristics, drivers and trade policy issues across the different waves of globalization

Type	Characteristics	Driver	Trade policy issues
“Traditional” trade	<ul style="list-style-type: none"> • Separation of production and consumption across international borders • <u>Trade in final goods</u> 	<ul style="list-style-type: none"> • Reductions in <u>transportation costs</u> 	<ul style="list-style-type: none"> • Market Access
GVC trade	<ul style="list-style-type: none"> • Unpacking of factories across international borders • <u>Trade in intermediate goods and services</u> • Changing role of services as tasks are outsourced 	<ul style="list-style-type: none"> • Reductions in transport and <u>coordination costs</u> 	<ul style="list-style-type: none"> • Trade-investment-service-knowledge nexus • Trade facilitation, domestic, behind-the-border NTMs
Digitally enabled trade	<ul style="list-style-type: none"> • Unpacking of production, logistics and consumption, more traditional and GVC trade: age of <u>hyperconnectivity</u> • <u>Trade in smaller quantities</u> of physical goods and digital services • <u>Changing tradable nature of services</u> • <u>Bundling</u> of goods and services 	<ul style="list-style-type: none"> • Reductions in transport, coordination and mainly <u>costs of sharing information</u> • Digitalisation 	<ul style="list-style-type: none"> • Data flows • Digital connectivity • Interoperability

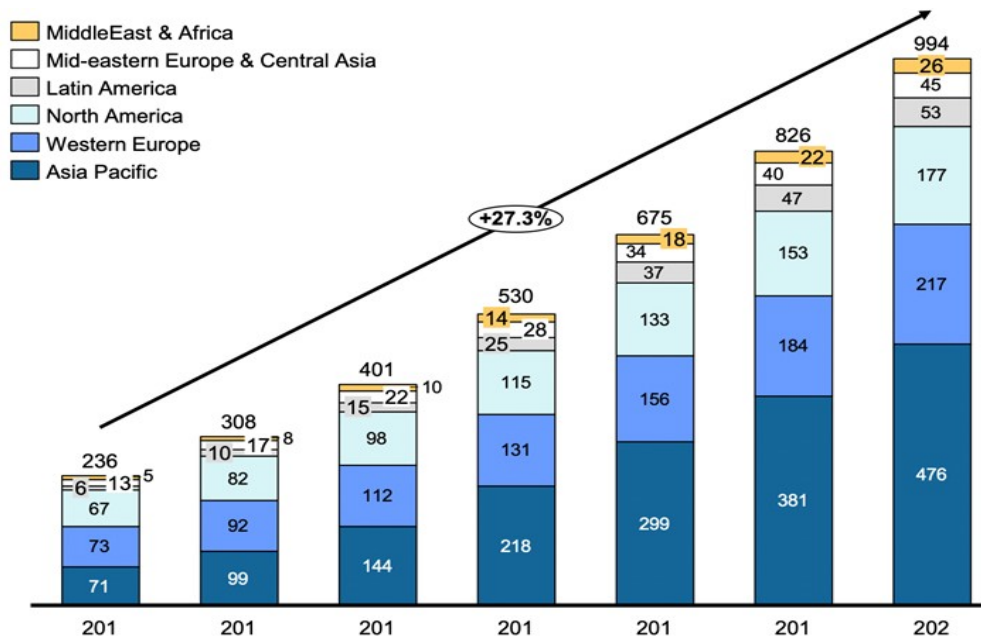
- B2C Cross-border e-Commerce
- B2B Cross-border e-Commerce
- Digital Transformation of Trade
- Platform Economy
- ...

* Source: Gonzalez and Jouanjean (2017) <http://dx.doi.org/10.1787/524c8c83-en>

New Opportunity : Cross-border e-Commerce (CBEC)

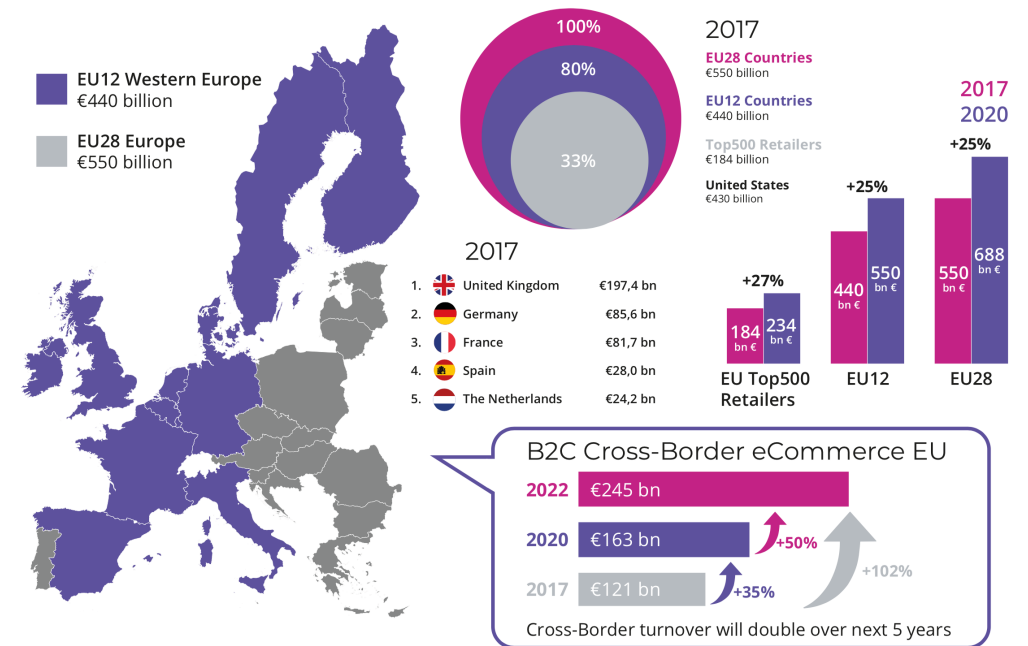
The global B2C CBEC market is expected to grow by an annual average of 27.3% in 2020 to \$94 billion, compared to 2014.

B2C CBEC Market Forecast (1 billion USD)



* Source: AliResearch

2017-2022 B2C E-commerce Growth (1 billion EUR)



* Source: Cross-border Commerce Europe

New Opportunity : CBEC Platforms – Global Markets

B2C CBEC platforms has successfully connected small but competent sellers to global customers and now it's time to look at B2B digital trade opportunities.

Traditional Korean hoe is a surprise international success



Youngju_Daejangan, Premium Hand Plow Hoe - Korean Style Ho Mi with Handmade Production Method for Best Organic Gardening and Horticulture by Youngju_Daejangan

★★★★★
Amazon's Choice for "korean garden tool"

Price: \$14.95

- **HANDMADE PRODUCTION** - The Ho-Mi is a hand made product that has been processed several times in the traditional way by blacksmiths in the Korean forge.
- **STRONG TOOL** - The handle does not come off because the hoshi's iron part is made to penetrate under the hosiery so it is durable and can be used safely for any operation.
- **DURABLE AND STURDY** - Because it is made using the same material as the spring used for the car lower body, it has superior durability than other products.
- **HIGH QUALITY** - The durability of the product is excellent, so it is a product that is ordered directly by the experts who have high workload as well as general users.
- **PRACTICAL ITEM** - Our products have excellent durability for gardening in general households as well as for professionals working in gardening business.

Roll over image to zoom in



* https://news.chosun.com/site/data/html_dir/2019/02/17/2019021700588.html

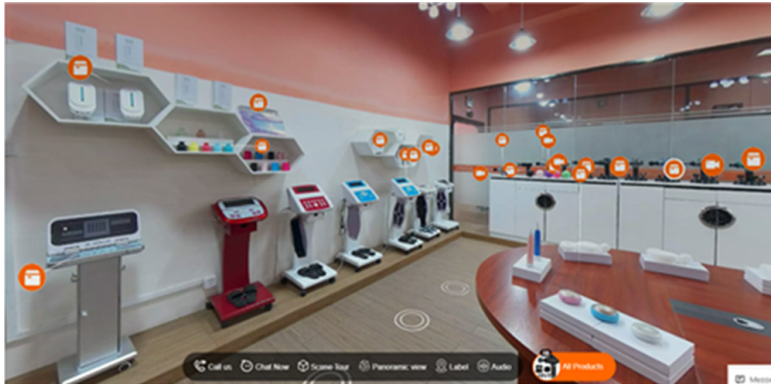
* <https://koreajoongangdaily.joins.com/2019/03/22/people/Traditional-Korean-hoe-is-a-surprise-international-success/3060921.html>

CASE

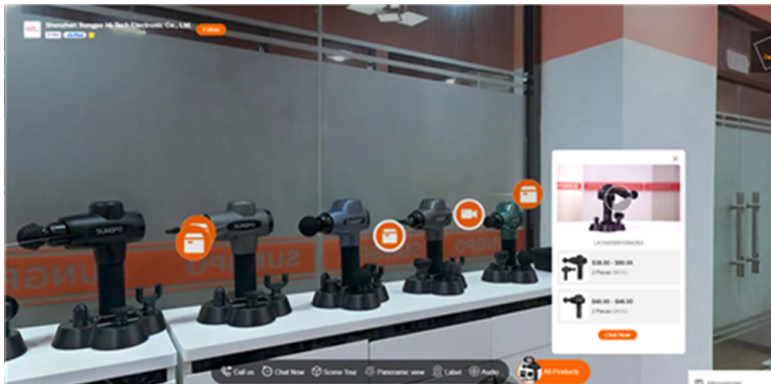
B2B e-commerce platform : Alibaba.com / 1688.com

알리바바닷컴의 '3D 리얼리티 쇼룸'

실제 공간을 3D 기술로 구현

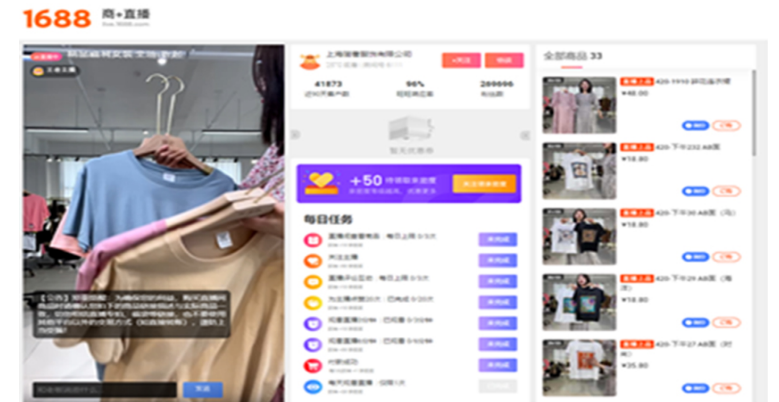


제품 정보의 확인 기능



온라인 쇼핑몰 '1688'

1688 라이브 커머스



판매자를 위한 판매관리 플랫폼



CASE

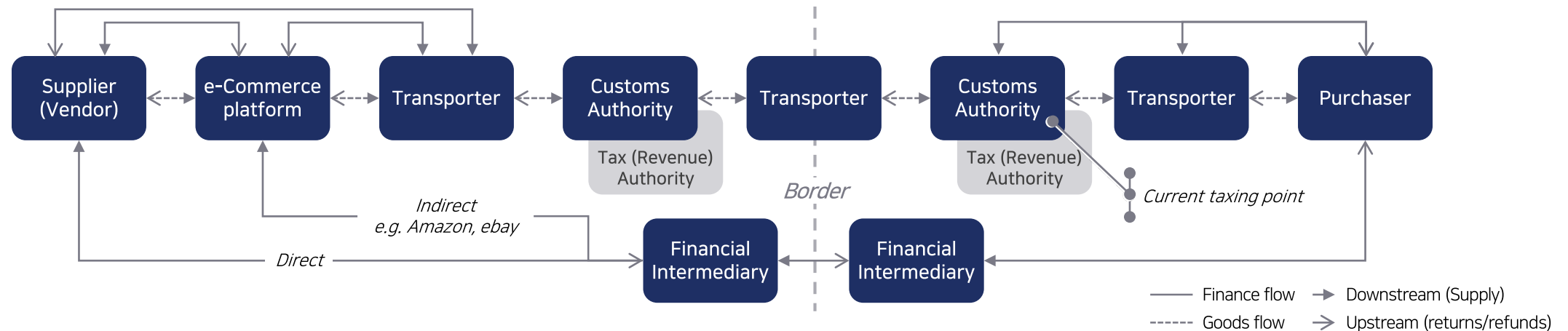
Digital KOTRA – 비대면 온라인 수출 지원 서비스

The screenshot displays the Digital KOTRA website interface. At the top, there is a navigation bar with logos for KOTRA 사이트, kotra (Korea Trade-Investment Promotion Agency), 해외시장뉴스, 수출지원기반활용사업 (EXPORT VOUCHER), FOREIGN INVESTMENT OMBUDSMAN, INVEST KOREA, GEP (Global Exhibition Portal), buyKOREA, 경제외교 활용포털, Contact KOTRA, Kodits (방산물자교역지원센터), and 북방경제협력 정보포털. Below the navigation bar is a main content area with a large banner for '2021 본글로벌 스타트업 스쿨' (2021 Global Startup School) and a grid of service icons including KOTRA 소개, 빅데이터포털, 해외시장뉴스, 해외물류네트워크, 내수기업의 수출기업화, 온라인상담, 해외시장조사, and 외국인투자유치플랫폼 (IKMP). A search bar is located below the grid. At the bottom, there is a menu with categories like 사업안내, 온라인신청, 예정사업, 완료사업, and 전체사업보기, and a list of featured events such as '2021 KOTRA-큐텐재팬 파워셀러' and '2021 중국 텐진 전자상거래 유통망 입점'.

Issues in Digital Trade : Overloaded, Complicated in the Back-end Process

The rapidly increasing digital trade transactions have caused **overloads and complications** in the customs administration, digital payment, global logistics and refunds/returns.

Digital Trade : Back-end Process



Multiple companies are involved

Smaller transaction volume

Huge number of transactions

De minimis and Tax (GST, Import Tax, ...)

Information Asymmetry

Risks (Fraud, Fake Product, Delay, Disruption, ...)

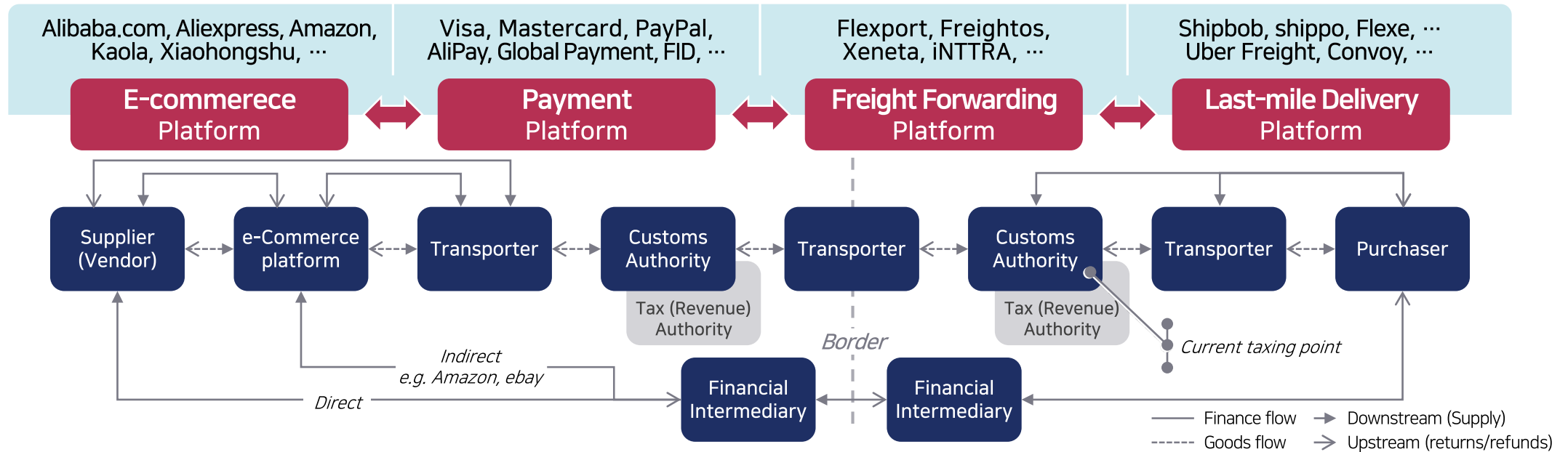
* OECD (2019), *The Role of Digital Platforms in the Collection of VAT/GST on Online Sales*, OECD, Paris.

Solution

Digital Platforms & Ecosystem for Back-end Processes

The fragmented and distributed global trade network can be effectively connected through digital platforms of each functional area and their role is expected to increase.

Platforms by function in global trade network



Data Sharing Efficient Transaction Consolidation Risk Mitigation ...

* OECD (2019), *The Role of Digital Platforms in the Collection of VAT/GST on Online Sales*, OECD, Paris.

CASE

Rise of Digital Freight Matching Platform

Uber Freight, Convoy rise as traditional load boards lose market share


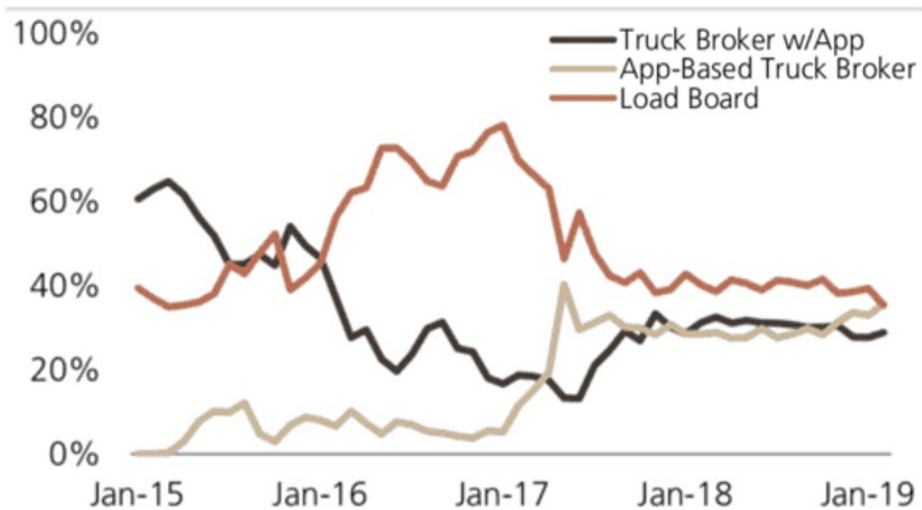
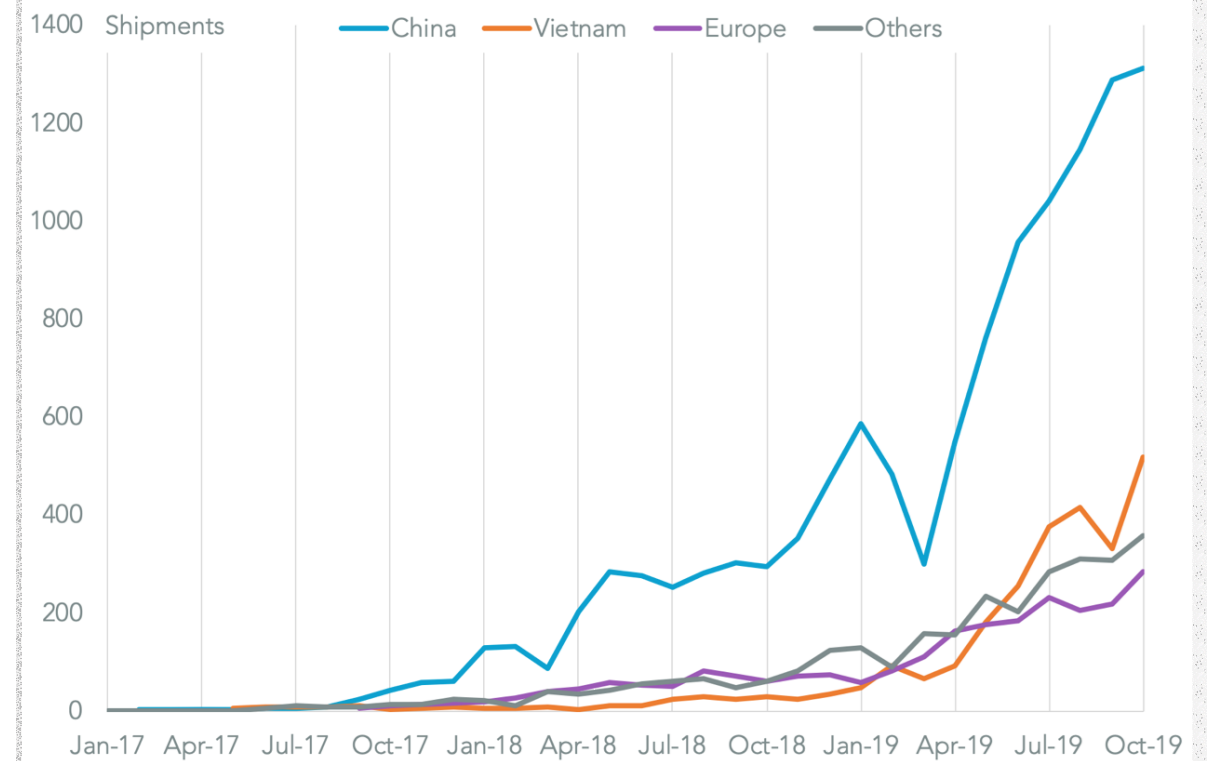
 John Paul Hampstead, Director, Passport Research · Monday, April 8, 2019

Figure 1: Shr. of Downloads – Type



* Note: Aggregate of iOS and Google Play
* Source: UBS Evidence Lab, Sensor Tower

Flexport traffic surges despite trade war US seaborne imports handled by Flexport, Jan. 1, 2017 - Oct. 31, 2019

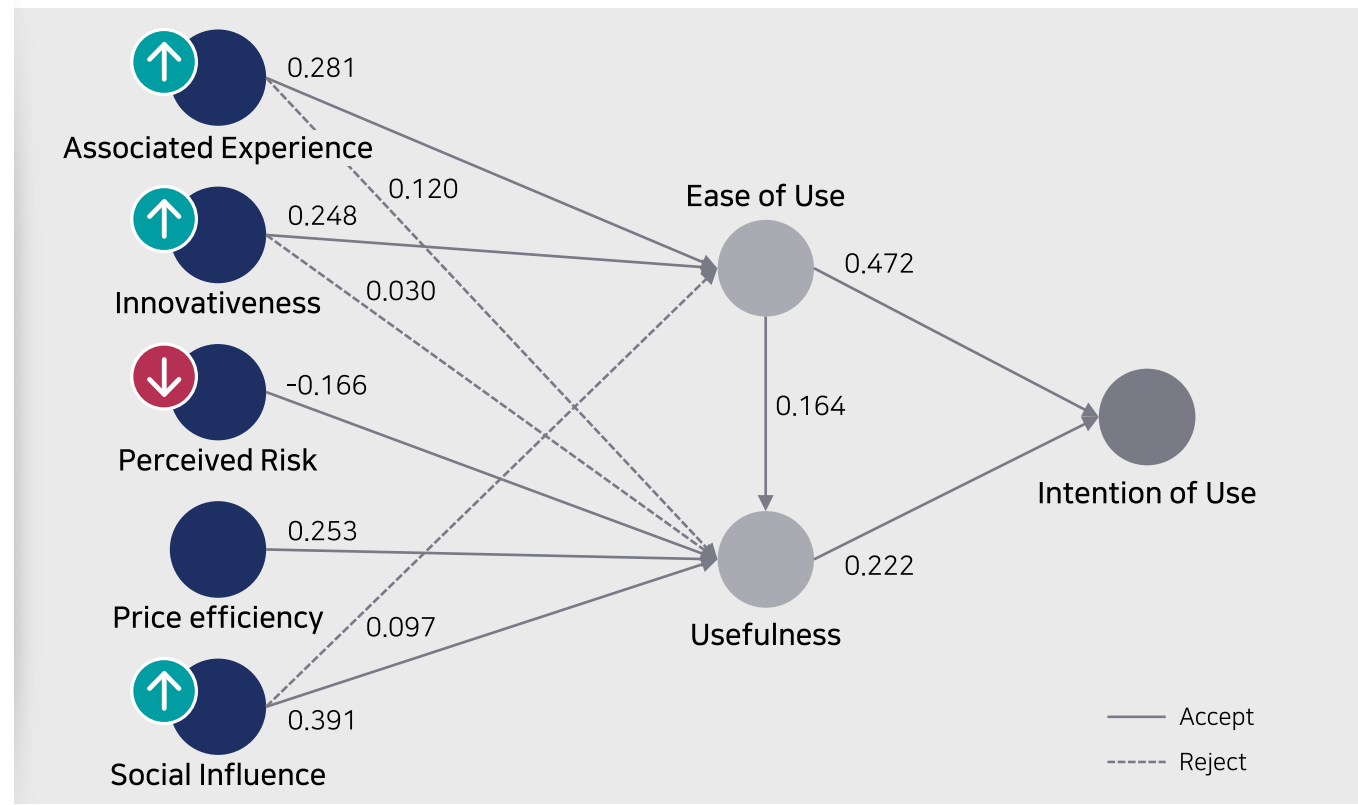


* Data segregated by port of lading country
* Source: Panjiva

Barriers for Technology Acceptance : B2B Digital Services

COVID-19 pandemic crisis has positive impacts on key drivers of B2B digital transformation.

Variable	Definition
Associated Experience	Past experience on logistics automation facilities such as logistics robots
Innovativeness	Interest in new technologies and their tendency to invest
Perceived Risk	Awareness of potential risks in the introduction of logistics robots
Price efficiency	Expectations of Benefits to Consumers when Using Logistics Robots
Social Influence	Level of Interest in the Introduction of Logistics Robot in the Industry



* Source: HC Hwang and SH Song (2019), "A Study on the Factors Affecting the Acceptance of Logistics Robot in the Fulfillment Center Using the Technology Acceptance Model," JKAICS

Challenge #1.

“Digital” Business Model : DO NOT copy analog models

Convoy (freight matching platform) utilizes data in the price quote service to suggest the most suitable freight rate instantly upon request, which previously took hours to process.

TRADITIONAL BROKERING

One shipment at a time

TENDERED

MATCHING

PRICING

ACCEPTANCE

Brokers manually Identify Available trucks.

Collect bids from available Carriers. Negotiate back And forth.



MEASURED IN HOURS

~10 calls or emails

CONVOY

Thousands of shipments simultaneously

TENDERED

AUTOMATED MATCHING & PRICING

ACCEPTANCE

Algorithms identify Available trucks.

Carriers accept or bid. Algorithm analyzes bids In seconds.



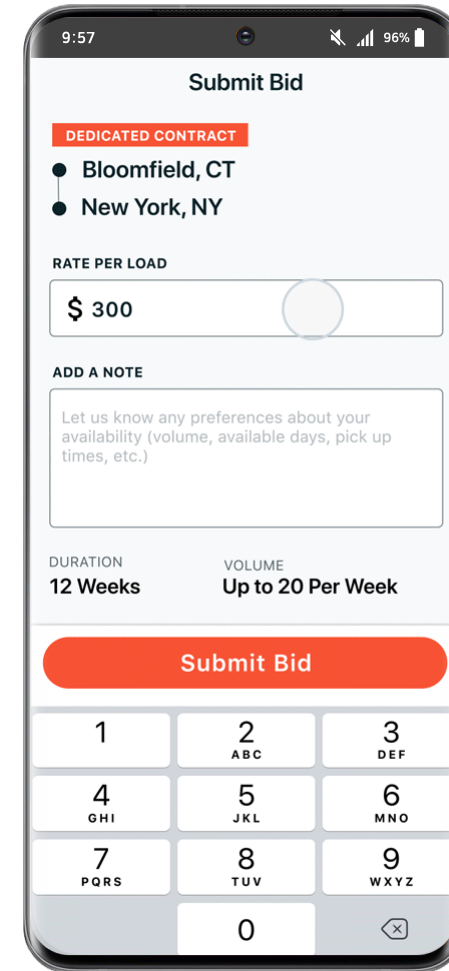
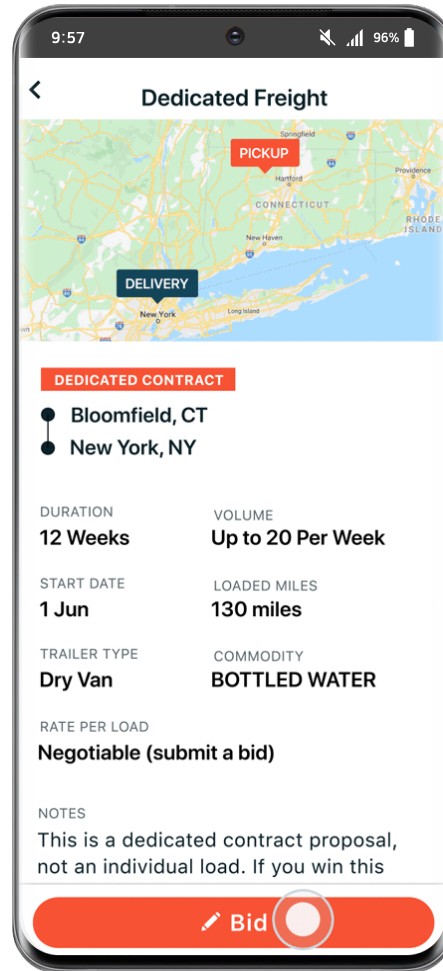
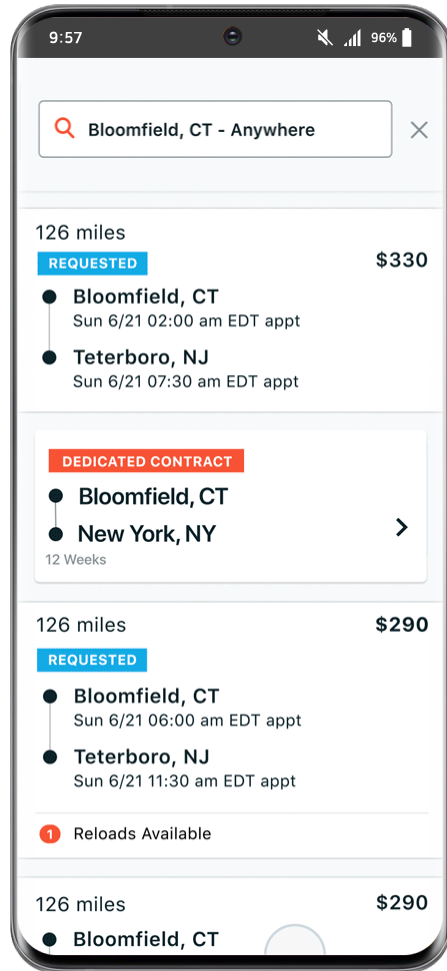
MEASURED IN MINUTES

0 Phone calls or emails

*Source : CONVOY

CASE

CONVOY – Dedicated Freight Service



* Source : CONVOY

Challenge #2.

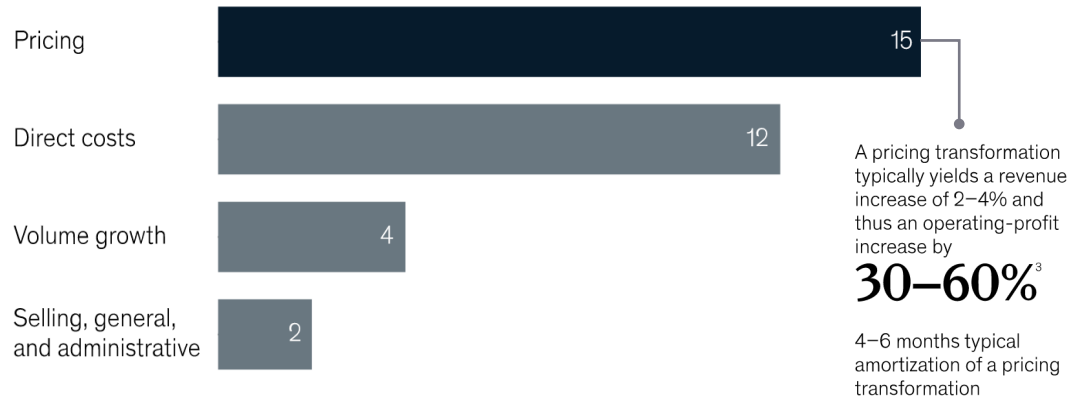
Supply & Demand Uncertainty : Surge Pricing & Contract

디지털 비즈니스 모델의 정착은 데이터에 기반한 의사결정이 가능하게 만들고, 이를 통해 수요와 공급의 불확실성을 줄이기 위한 계약 및 Pricing, Surcharge 구조 도입에 기여

Pricing is the lever with highest impact on profit

Logistics providers' EBIT¹ margin improvement following 1% improvement, %

Lever²



¹Earnings before interest and taxes.

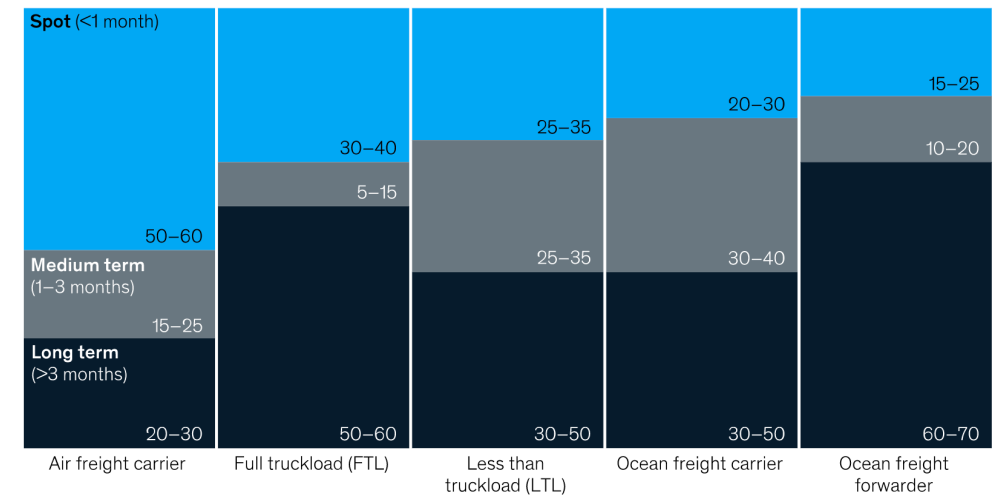
²Assuming all other conditions remain the same.

³Assuming an average profit margin in logistics of 5 to 6 percent.

* Source: McKinsey (2020), Getting the price right in logistics

Each logistics contract type requires a distinctive approach

Estimated contract mix,¹ % share by contract type²



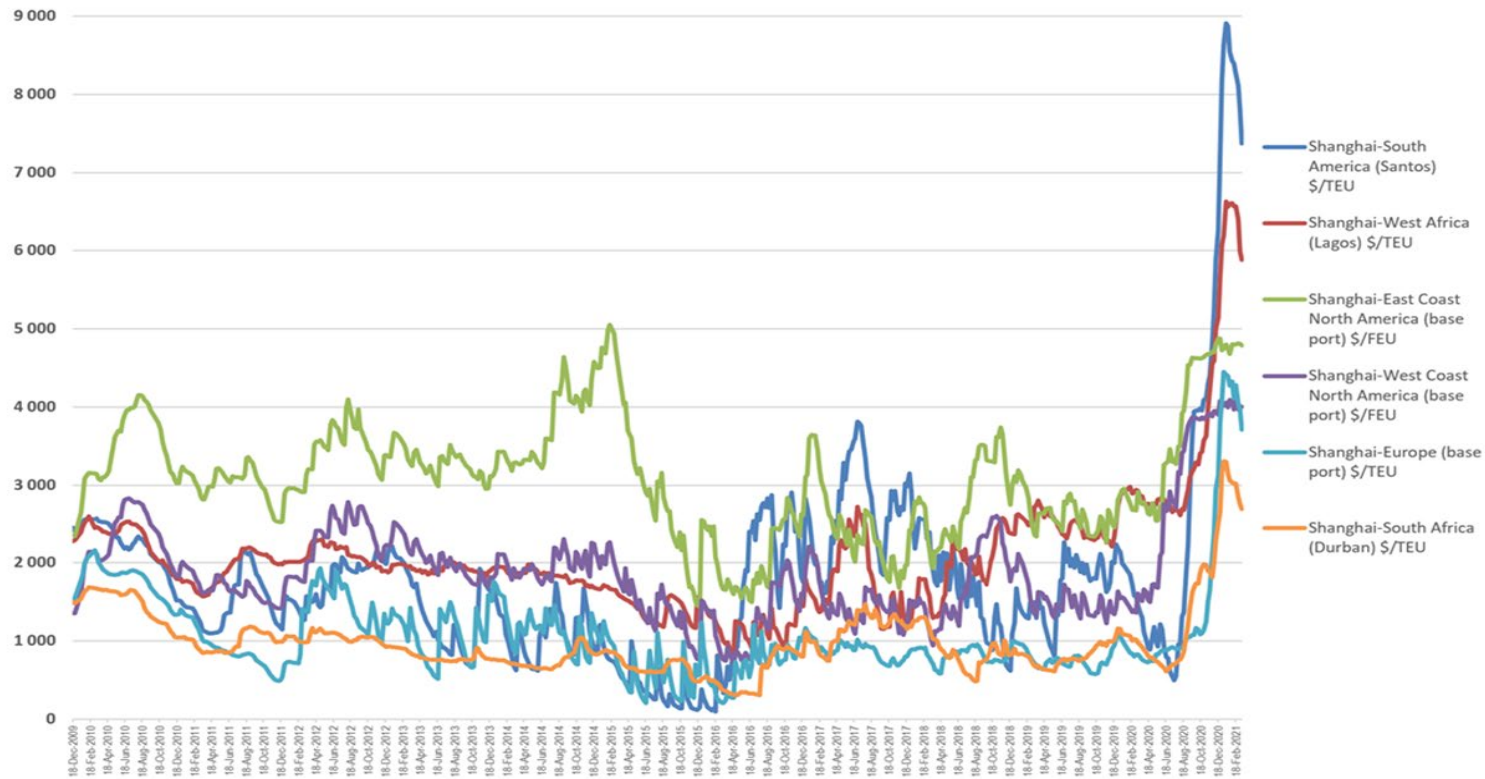
¹Varies by player and trade lane.

²Based on volumes; share of revenue likely to be even higher as spot prices are typically higher than long-term contracts.

* Source: McKinsey (2020), Getting the price right in logistics

Price Uncertainty

Shanghai Containerized Freight Index (SCFI), weekly spot rates. 18 December 2009 to 12 March 2021



* Source: UNCTAD, based on data provided by Clarksons Intelligence Network

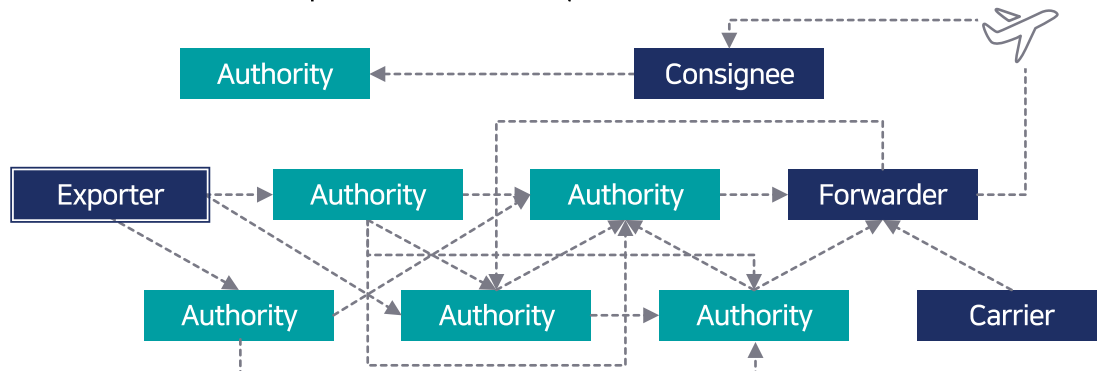
Challenge #3.

Interoperability, Connectivity and Governance : OPEN

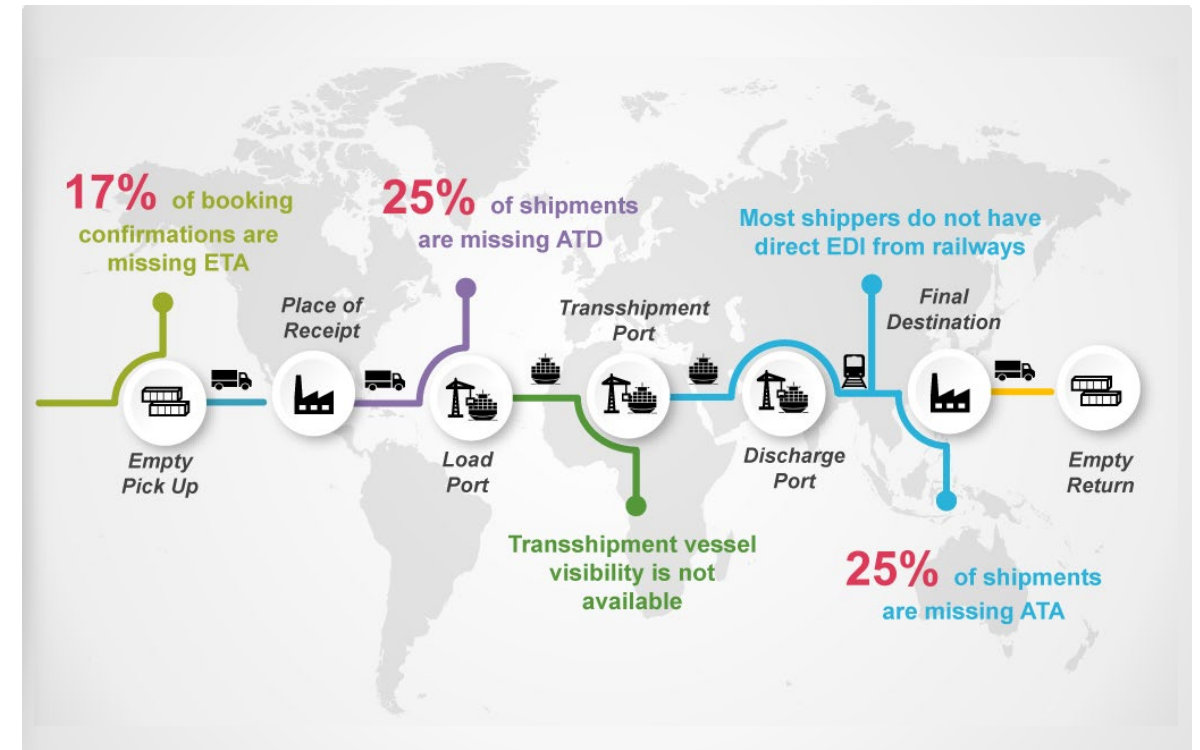
Inconsistent information across organizational boundaries and blind spots throughout the supply chain hinder the efficient flow of goods in global digital trade.

“A single shipment of avocados from Mombasa to Rotterdam involves 30 actors, 100+ people, and 200 information exchanges”

- Manual, paper-based processes
- Humans must carry documents to authorities for stamps
- Air Courier expense and delays



* Source: TradeLens (2019), TradeLens Overview / IBM Blockchain Report



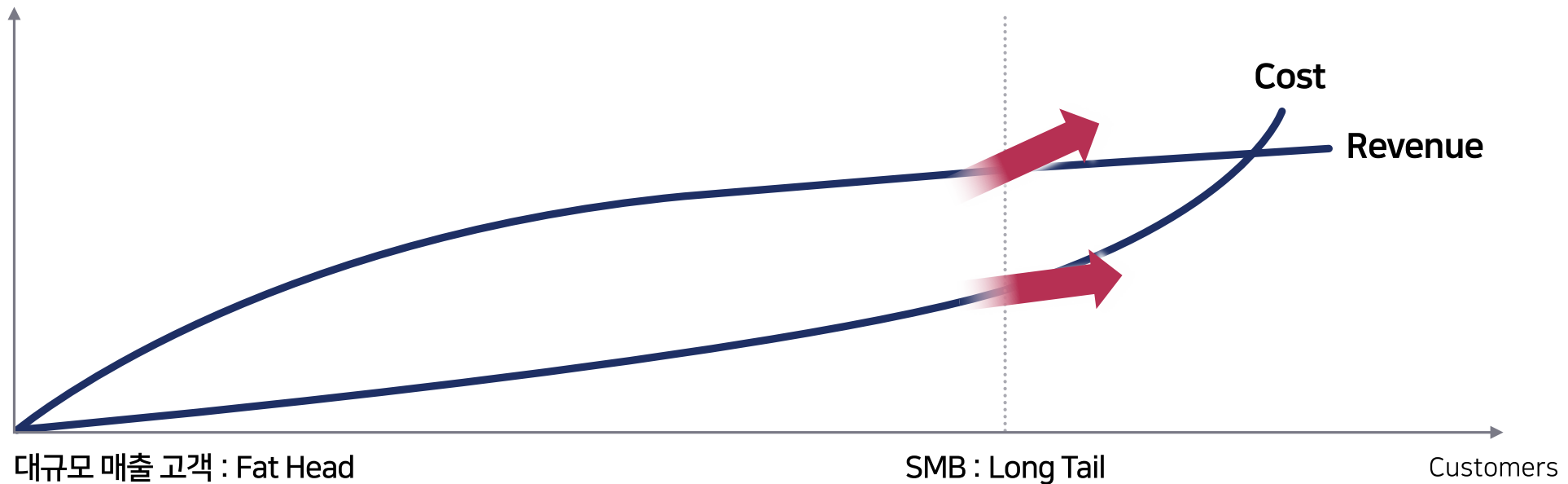
* <https://www.cargosmart.ai/en/solutions/global-shipping-business-network/>

Challenge #4.

Dealing with Long-tail Customers : Low Transaction Cost

대규모 고객 중심 & 고객 확장에 부정적인 기존의 아날로그 방식 비즈니스 모델 (Fat Head) 을 고객 다변화에 용이한 디지털 비즈니스 모델 (Long-tail)로 전환할 경우 수익 확대 가능

"Cloud First" Strategy



* Source : Doug J. Chung, "Commercial Sales Transformation at Microsoft," HBS No. 9-519-054 (Boston: Harvard Business School Publishing, 2019)

Thank you

Q&A

SAMSUNG SDS