

Omni-channel Distribution Strategies

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Dr. Eva Ponce



- 15+ years of experience:
 - Teaching and researching supply chain management
 - Quantitative modeling
- Current Research focus:
 - Omni-channel distribution strategies
 - Reverse logistics and Closed-Loop Supply Chains
- MITx MicroMasters in SCM:
 - Oversees 5 online courses
 - 150,000 students
 - 180 countries

Outline

- How technology is changing the way we do things...
- Omni-channel challenges
- Source of complexities
- Lessons learned



How technology is changing the way we...

Book accommodation



- Hotel Service
- Founded in 2008
- 20 Bn
- 34,000 cities
- 191 countries

Online sharing model, no real-estate owned

Take a taxi



- Taxi Service
- Founded 2009
- 50Bn



- Taxi Service
- Founded 2012
- 5.5Bn

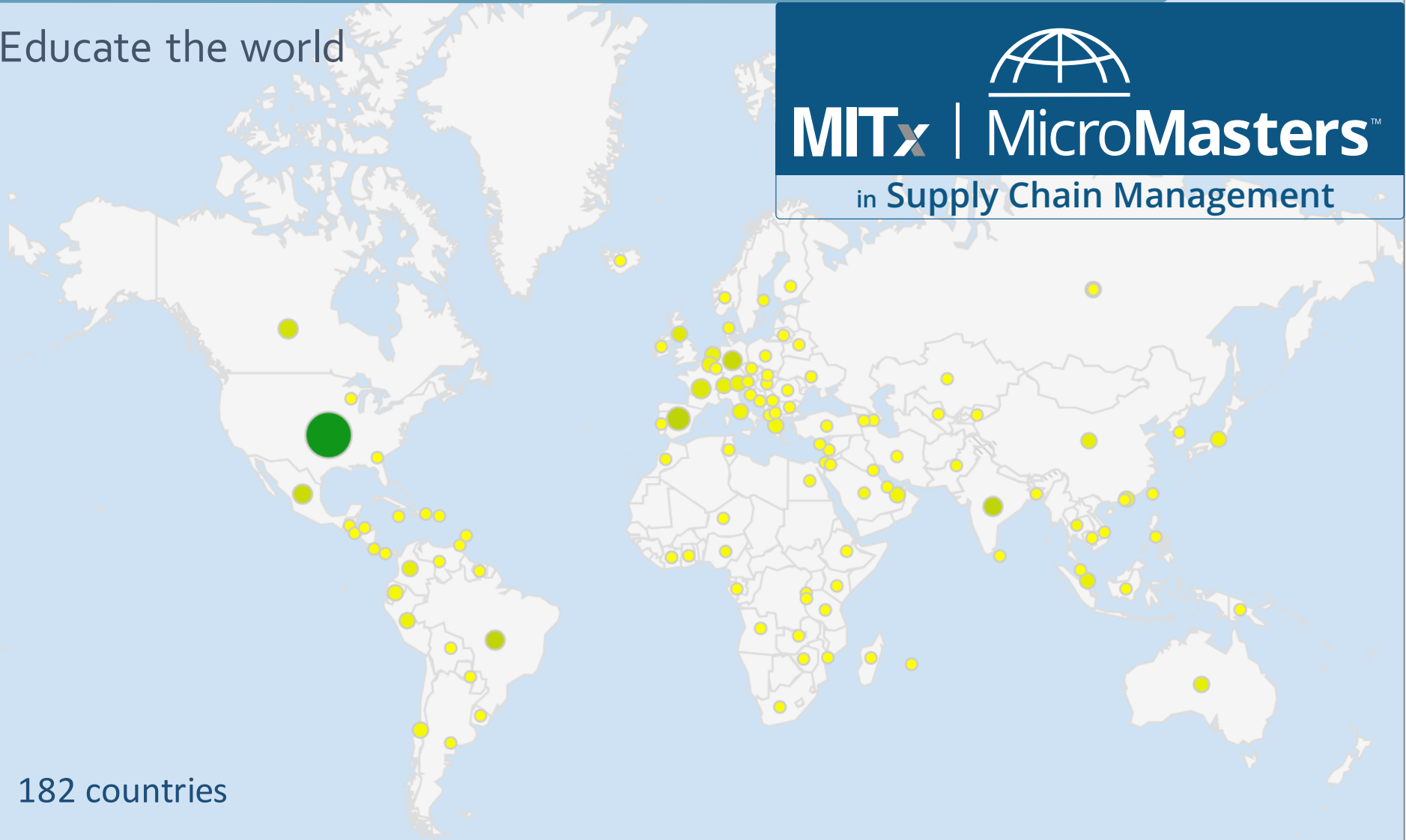
Online transportation networks, sharing model, no vehicles owned

How technology is changing the way we...



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182 countries



How technology is changing the way we...

Buy



Online marketplace
Founded 1994
107Bn

Largest American online marketplace



Online marketplace
Founded 1999
15.7Bn

Largest Chinese online marketplace

And pick the orders up



Online marketplace
Founded 2007
1.5Bn

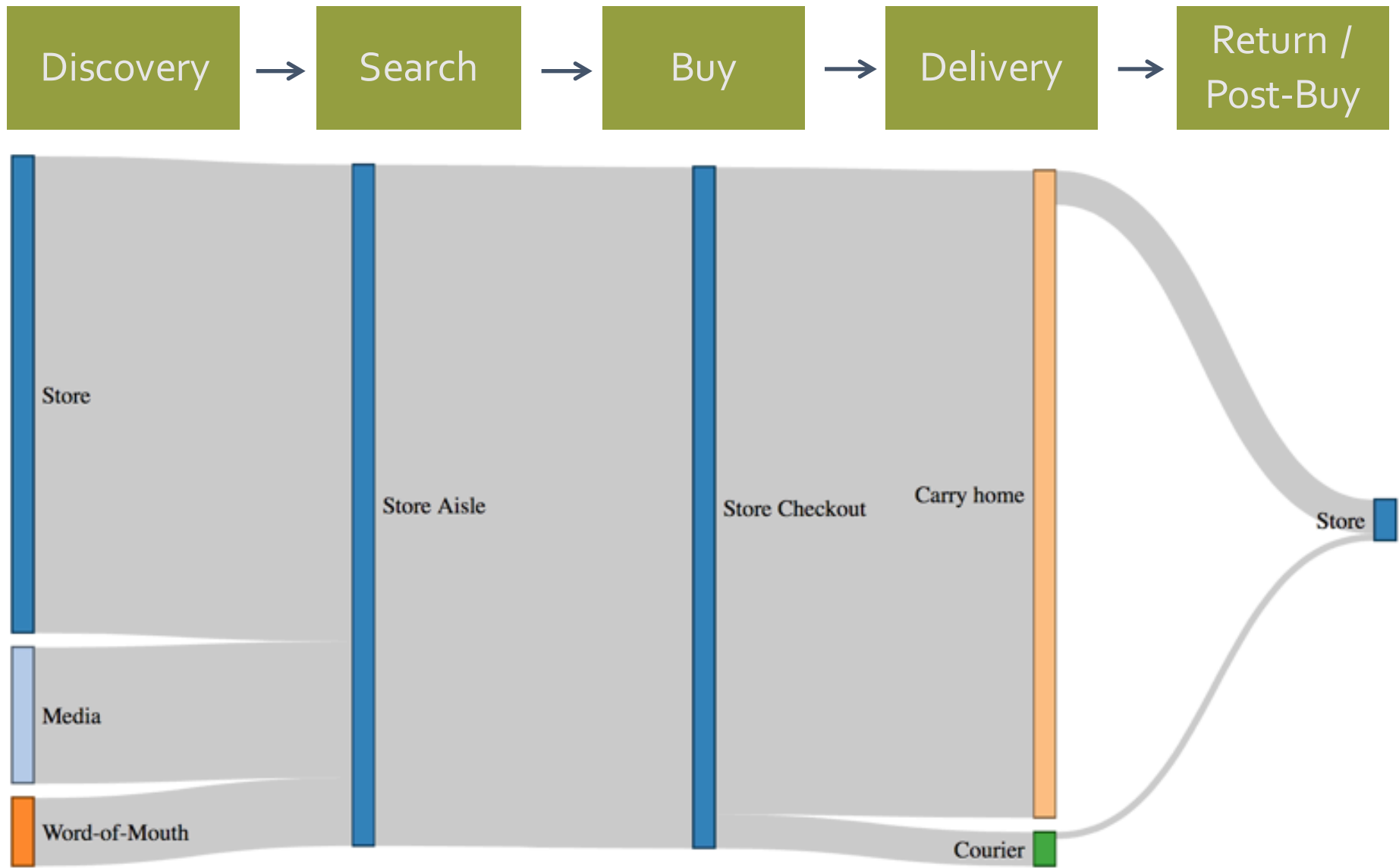
Largest Indian online marketplace

Challenges & Opportunities

Omni-channel



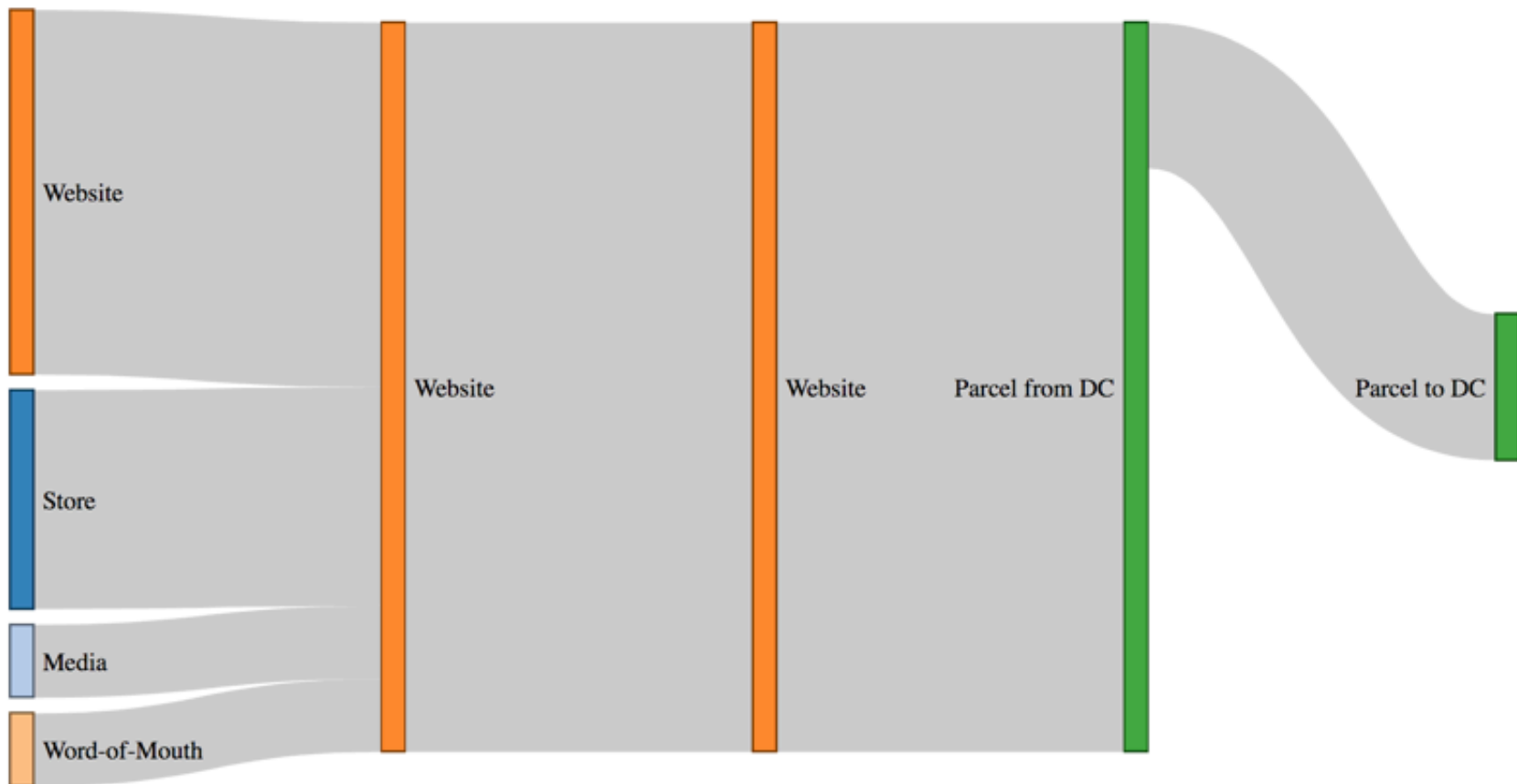
The traditional retail buying process



In 1995, “pure plays” started...



The pure e-commerce buying process



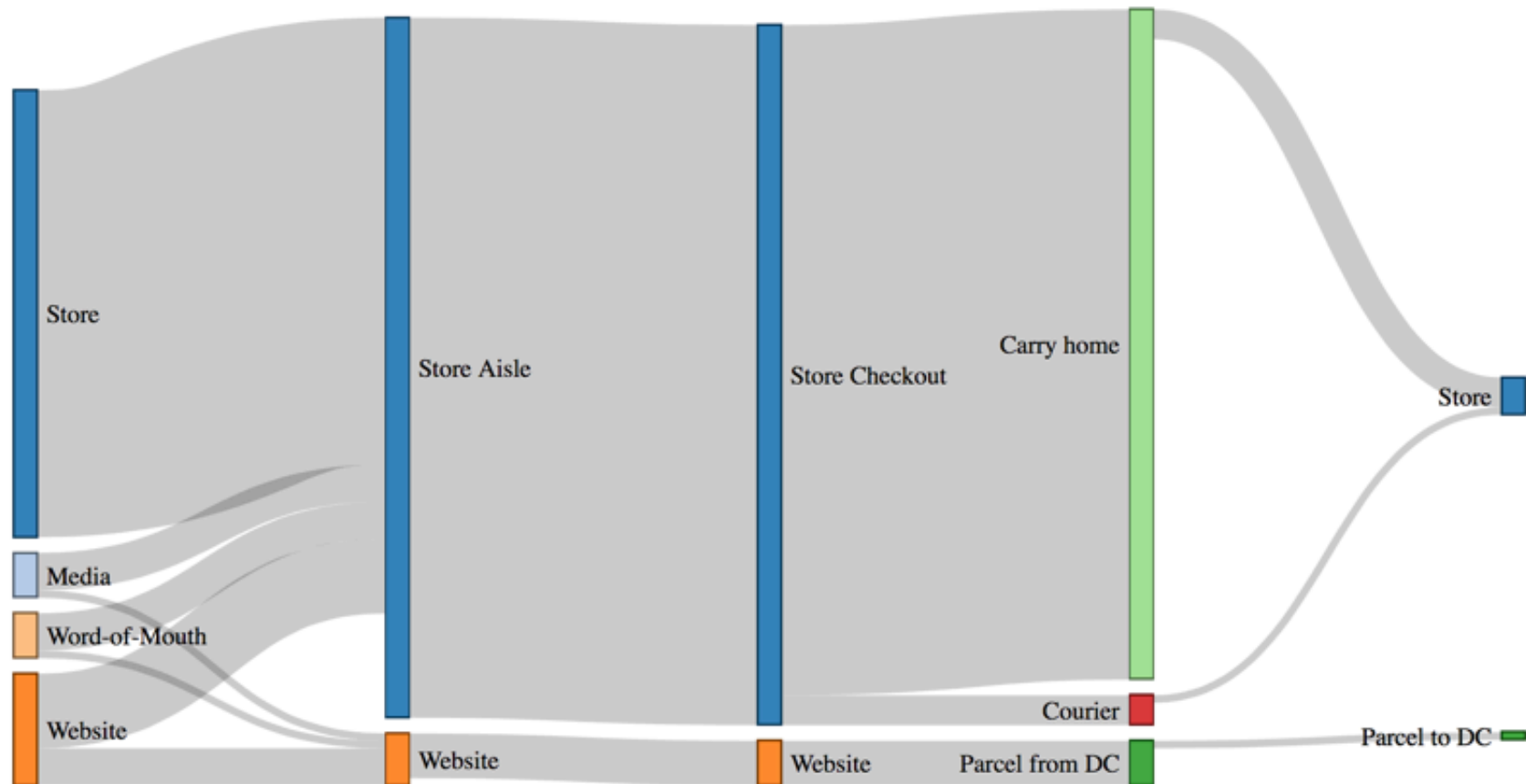
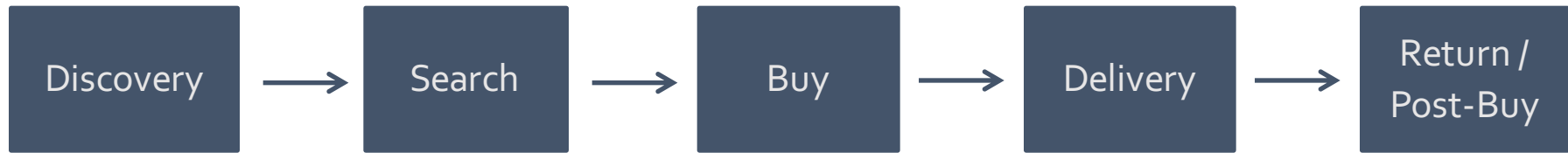
In 2000, multichannel...



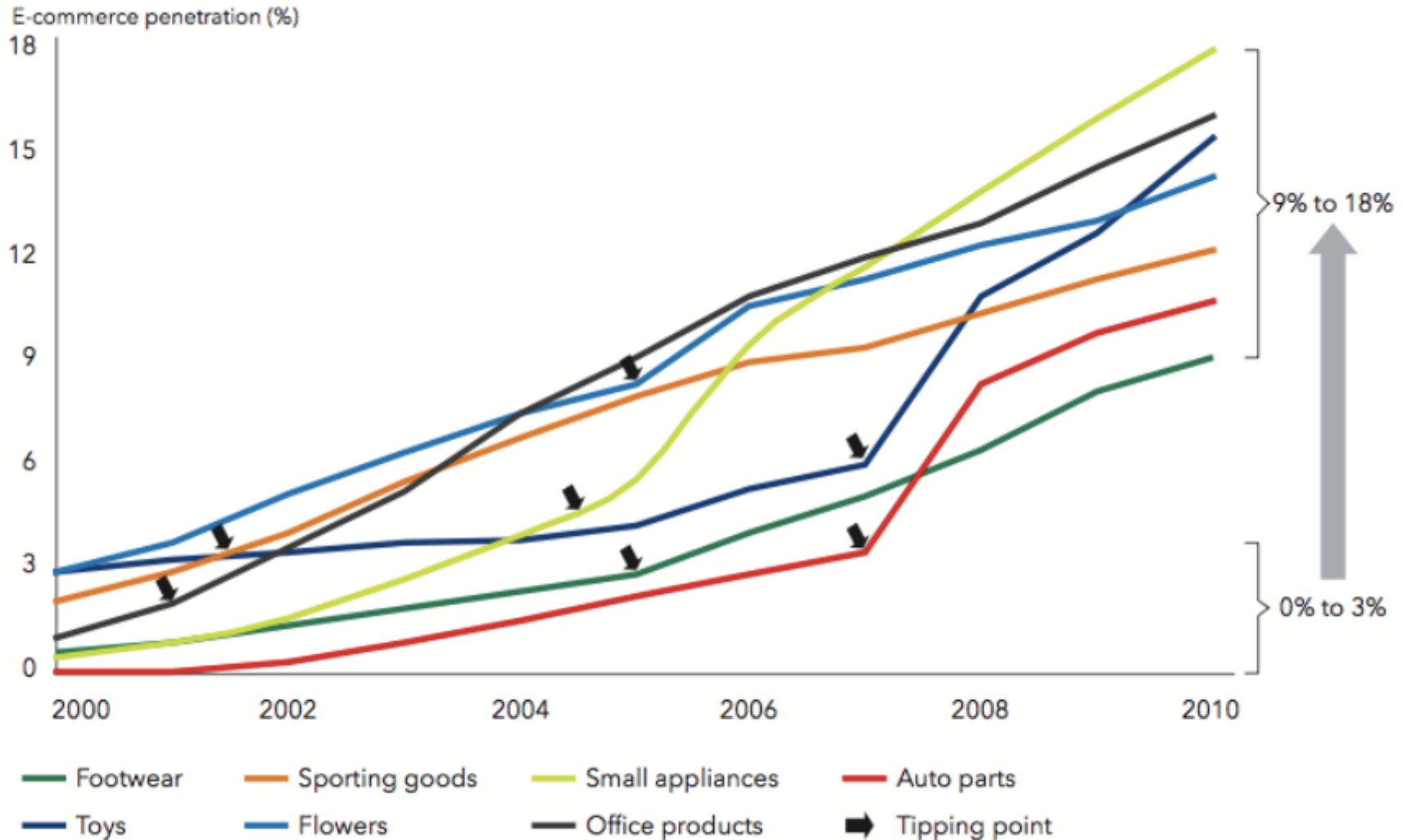
MARKS &
SPENCER

sears

The Multi-channel retail buying process



Growth of e-commerce



Sources: Forrester Research Online Retail Forecast, 2013 to 2018 (U.S); press search; BCG analysis.

Source: *The Digital Future A Game Plan For Consumer Packaged Goods*. Aug 2014. GMA, BCG, Google, IRI



What happened 10 years ago?



January 7, 2007



Growth of mobile devices

- Apple announce the first i-phone in Jan 07, 2007
- Since then, 50% of the world's population have smartphones
- 1.75 billion people with smartphones
- Around 40% of the world population has an Internet connection today

Discover / search / buy from:

- Home
- Work
- T (bus) stop
- Park
- Store
- Etc.

“Webrooming”

“Showrooming”



Showroom

Look at the product in-store
then buy online

BONOBOS

SIGN IN



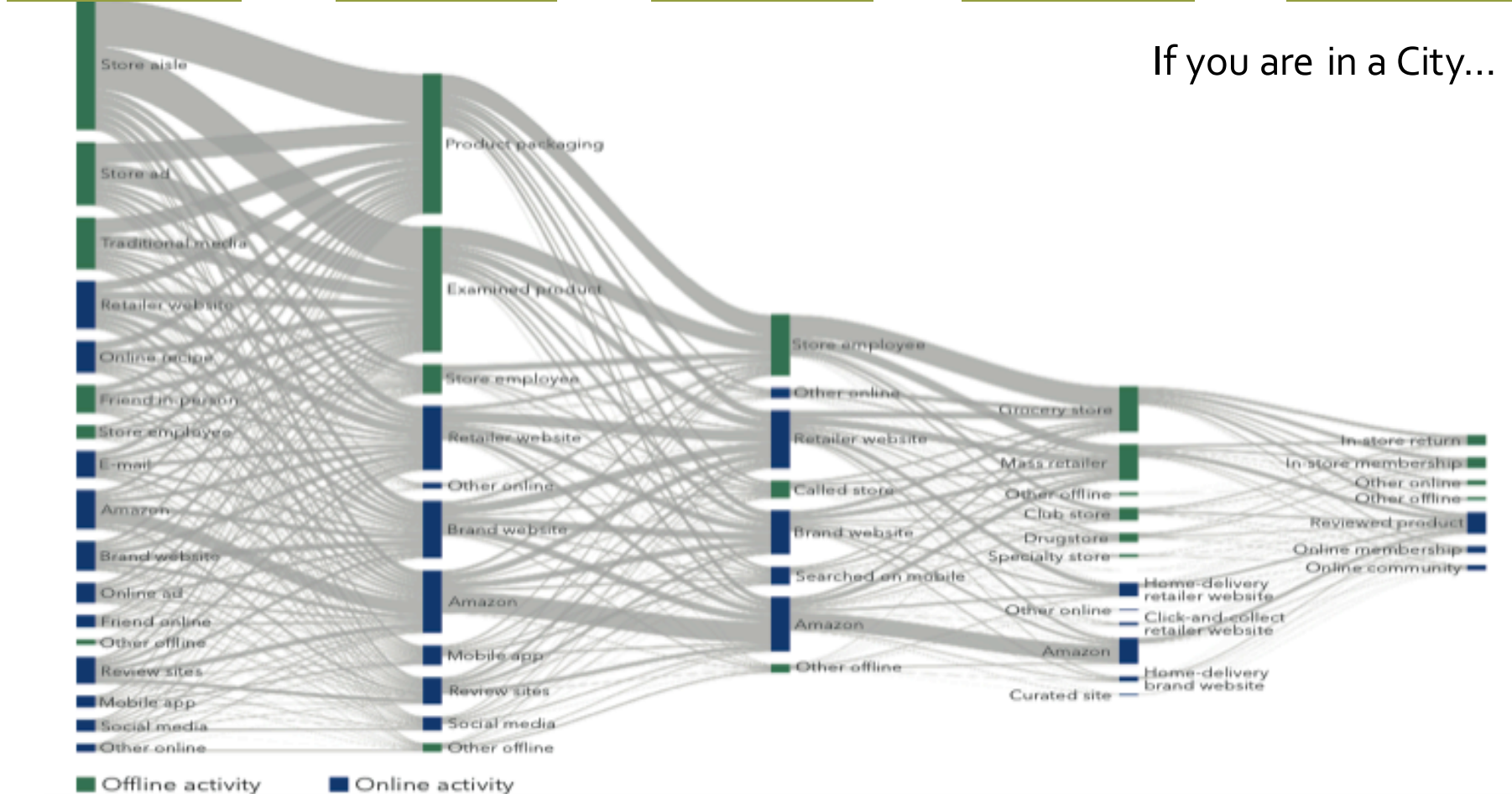
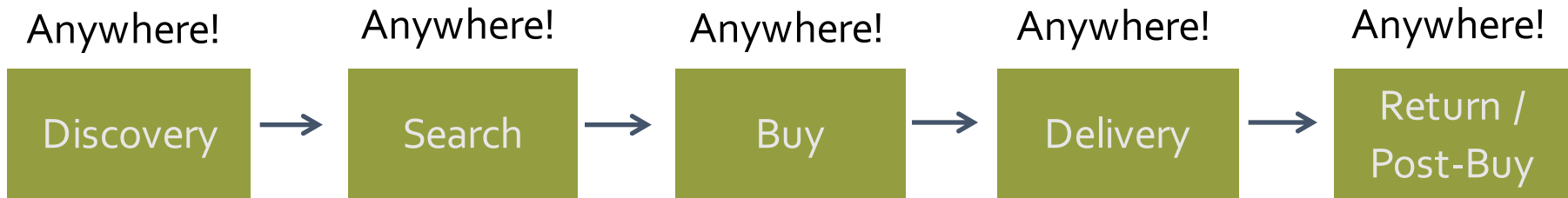
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Try it on before you buy at one of our Guideshops. No crowds. One-on-one service.
Exactly what you want, delivered right to your door.

FIND THE NEAREST GUIDESHOP

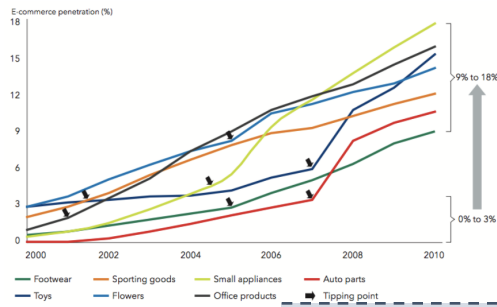


On the way towards an omni-channel



If you are in a City...

Omni-channel distribution strategies



We need new methods to design last-mile distribution networks



Growth of e-commerce

- Amazon
- Walmart
- Target
- Best Buy
- ...

Growth of mobile devices

- Home
- Work
- T (bus) stop
- Park
- Store

Flexible delivery options

Fast delivery

1.75 billion people with smartphones

By 2019, 90% of people with Internet con.

Multi-modal last-mile deliveries

Inventory visibility across channels

What companies are doing...



INDITEX, ZARA and ZARA online

INDITEX

- 6,683 stores
- 88 countries
- 18.1B revenue

ZARA

- Founded 1974
- 64% of INDITEX total sales
- Spain:
 - 1,896 INDITEX brand stores
 - 330 Zara stores

ZARA Online

- 2010
- 27 markets
- 3% of INDITEX total sales



How is Zara addressing the online orders?

Stores in Madrid:

- 21 Zara stores
- Downtown and malls

Shipping method

- Home delivery
 - Express: in 24-48 hours (working days). \$9.95
 - Standard: in 2-4 working days. \$4.95
 - Free orders over \$50
- Pickup In-store
 - In 3-5 working days. Free

Inventory visibility

- Item identification (alarms)
- Own app to register and identify items
- Visibility from the supplier to the store
- From the store, they have access via mobile device to the real time inventory in store, and in other stores

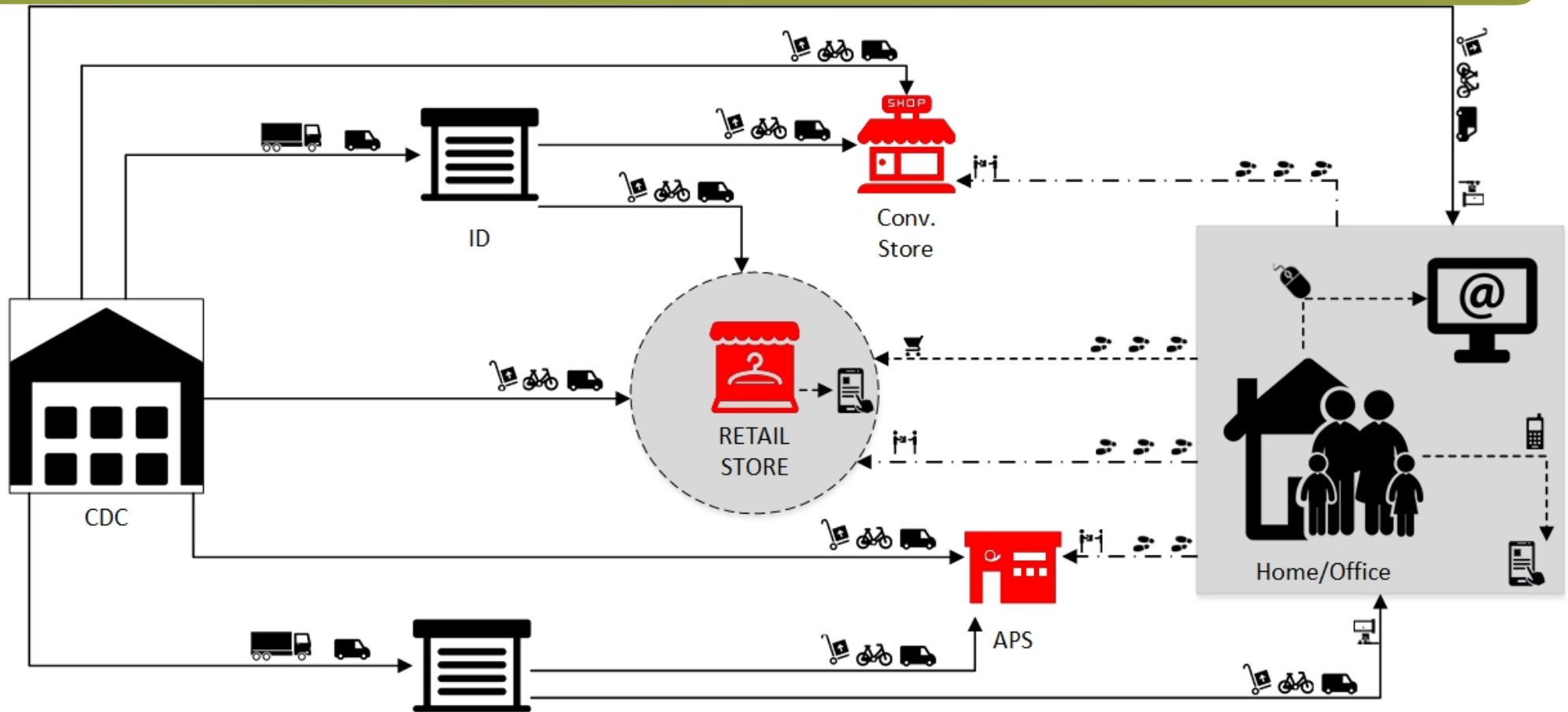


Where should the order meet the customer?

Challenge #1



Different pickup options in an omni-channel strategy



CDC: City Distribution Center
 ID: Intermediate Depot
 POD: Point of Deliveries
 CPs: Collection Points

→ Material flow from CDC to POD
 ← - - - Customer shopping options
 ← · · · Customer pickup options
 [Gray Box] Purchase location
 [Red Box] CPs

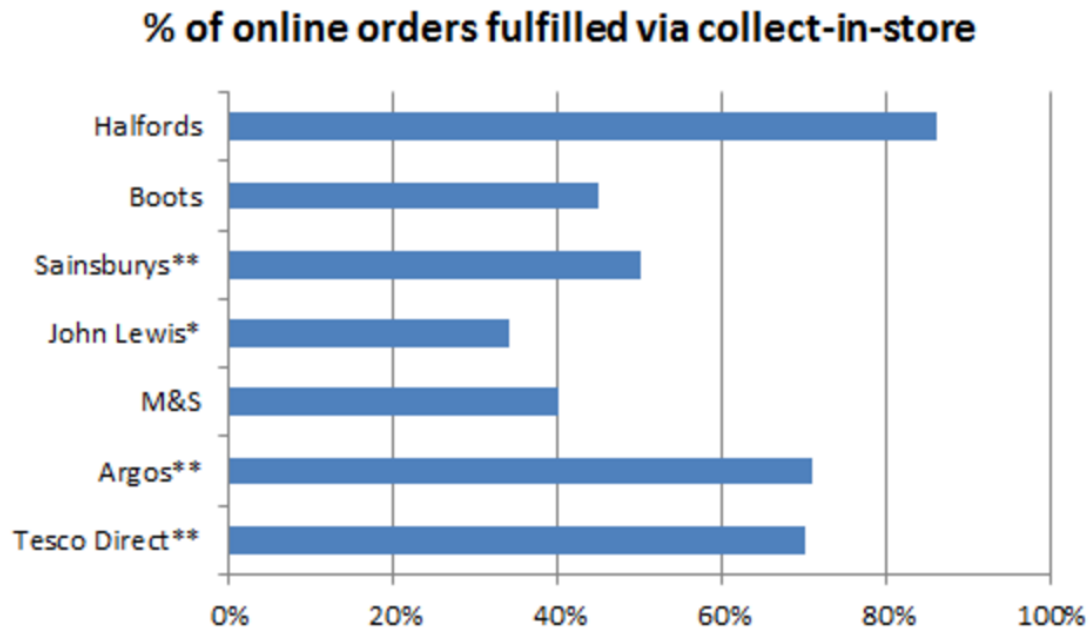


John Lewis: Click & Collect

First introduced click & collect:

- In 2008
- Covers 300 stores
- 25% of online orders

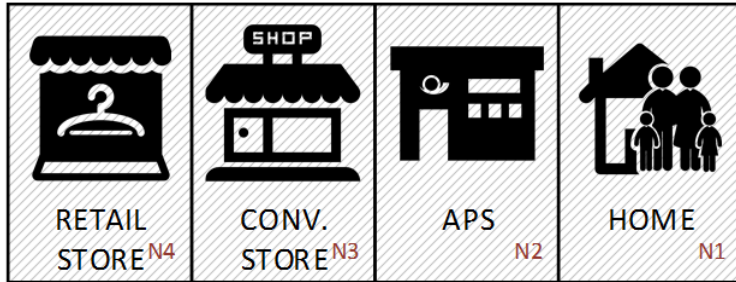
John Lewis
in store | online | mobile



New ways of unattended delivery and customer pick-up are emerging



A quantitative model to design omni-channel distribution strategies



network configuration a



network configuration b



network configuration c



network configuration d

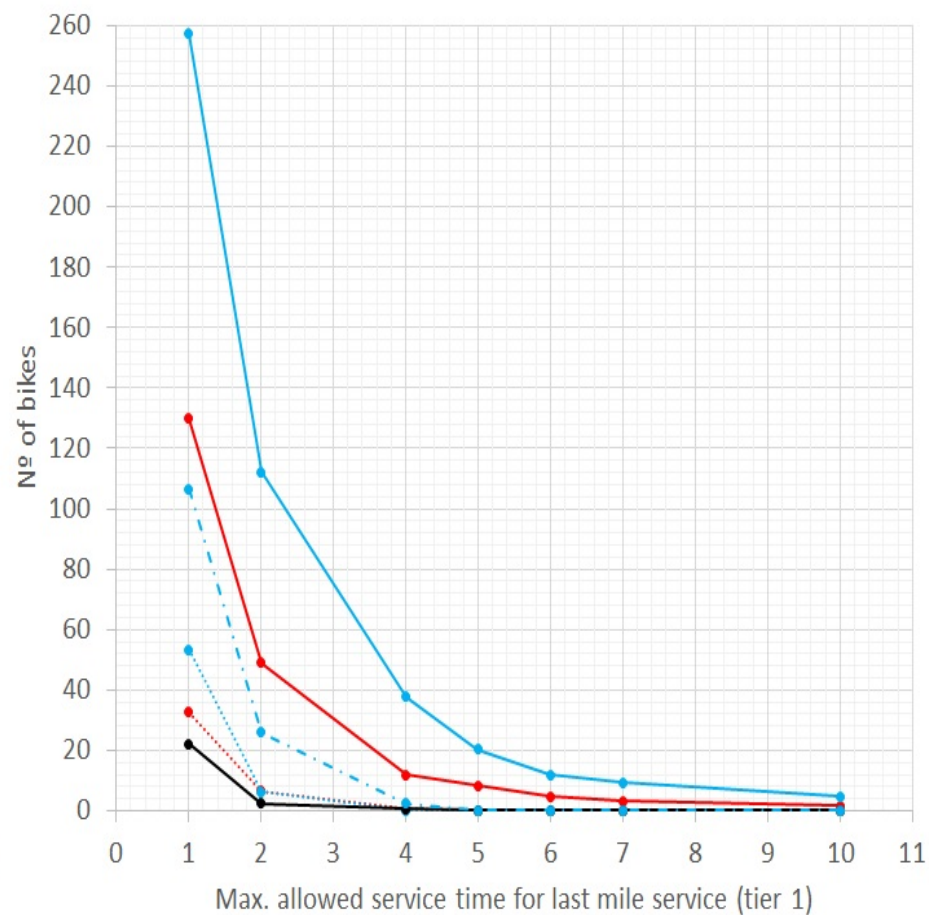
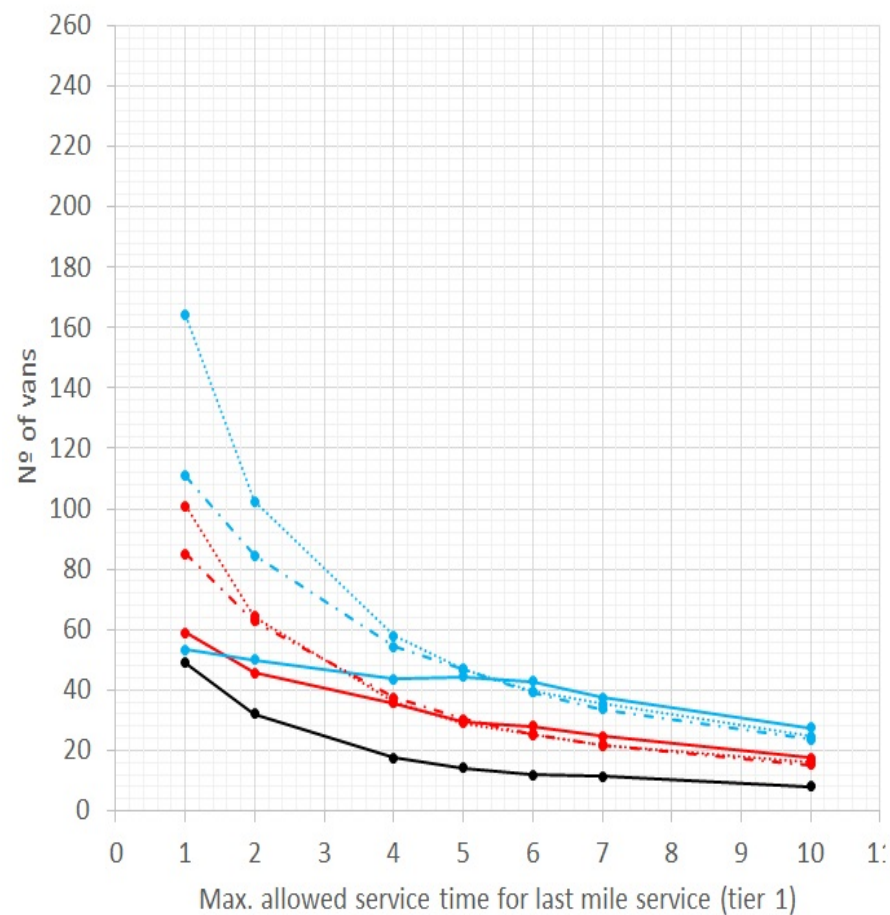
Fast-fashion retail industry



Results

- Reduce the cost of network operation by some 50%.
- 33% more cargo-bikes for last-mile deliveries

Network design and fleet composition are sensitive to the desired service level



- Stop density x5
- -●- (items per stop and stops density) x5
- ...●... Items per stop x5
- Stop density x10
- -●- (items per stop and stops density) x10
- ...●... Items per stop x10
- Base

Where to prepare the order?

Challenge #2



Most common choices



Distribution
Center



Fulfillment
Center



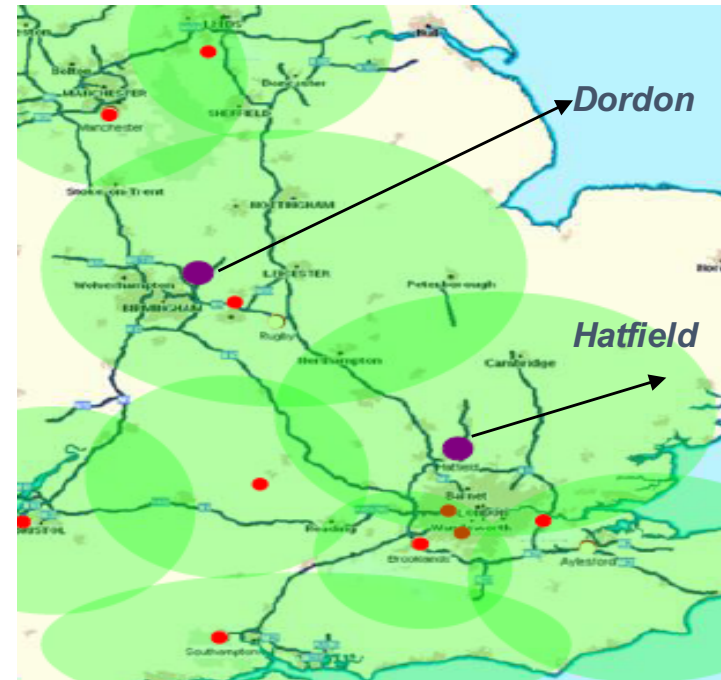
Store

- Key issues included tradeoffs in:
 - distance versus scale of efficiency,
 - packaging for retail versus shipping, and
 - the difference between fulfillment for wholesale versus for consumers (picking cases versus picking “eaches”).

Ocado

Online supermarket

- Founded 2000
- 20,000 SKUs
- Sales: 892.9 M€
- Revenue: \$1,400 million
- 4% supermarket share in the UK



Distribution Network

- 2 DC in Hatfield and Dordon
- 80% direct replenishment
- 20% from DC in Waitrose
- High level of automatization
- 10 cross docking centers (for deliveries that are more than 120 km from DC)



Tesco.com

Online channel

- Since 2000
- > 30,000 SKUs
- Sales: 2,806 M€
- Revenue: 6.6 M€
- 48 % online share (Halliwell, 2013)



Distribution Network

- > 300 stores
- Click & collect
- 6 dark stores



How to deliver?

Challenge #3



Amazon and crowdsourcing

- Transportation options
 - Carriers (UPS, FedEx, etc.)
 - Crowdsourcing
 - Own fleet
 - ...

Crowdsourced logistics systems

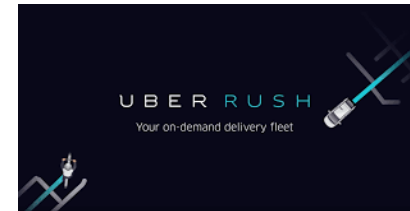
Long-Haul delivery



Short-Haul delivery



Last-Mile delivery




Package-delivery drones, dream or reality?





- What did they deliver?
- Where?

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Amazon Conducts First Commercial Drone Delivery

Online retailer launches private customer trials around Cambridge, U.K.



On Dec. 7, Amazon Prime delivered an Amazon Fire TV and a bag of popcorn by drone to a man in the English countryside. Photo: Amazon

By [GEORGIA WELLS](#) and [LAURA STEVENS](#)

Updated Dec. 14, 2016 4:57 p.m. ET

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THE CLOUD ALONE ISN'T "SMART."

 The Skills Gap I Laughing Matte

Credits: photo Brian Snyder, Reuters. WSJ, Sept. 29, 2016



End-to-end synchronization

Challenge #4



Marks & Spencer



- Started in 2011 offering a multichannel experience
- Challenge:
 - Offer customer access to their massive inventory!
 - Via mobile technology

- Solution:
 - Usablenet platform
 - Support back-end functionality
 - Virtual basket

Macys

- How Macys is facing omni-channel distribution strategies
- <https://www.youtube.com/watch?v=L62N0XOsmgU>
- Combining different channels
- Increase the number of customers
- Provide a great customer experience



Wall-Mart

- Online shoppers have different expectations for customer service
 - More flexible distribution systems are needed
 - Less inventory
 - A better understanding of inventory level and replenishment policies... that combine requirements from both the store and the online business
- Big push into the online grocery business
 - Buy online: website and mob app
 - Pickup at nearby stores
- Better manage:
 - Backend operations
 - Frontend customer service systems



Managing the commercial returns

Challenge #5

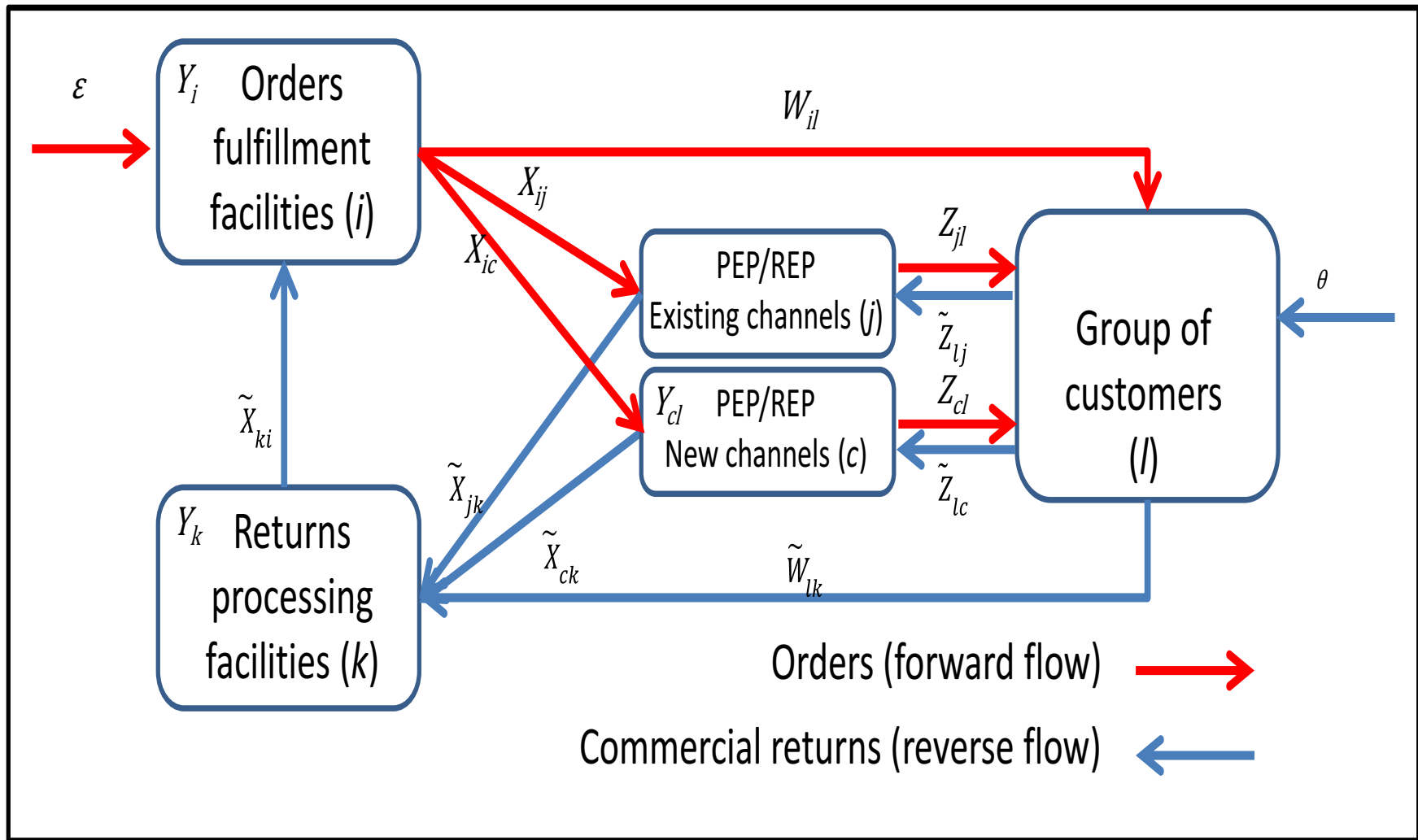


Many returns

- Commercial returns
 - In Europe, return rates can be 35% to 40%
 - Multiple modes of return in omni-channel:
 - home pick-up
 - in-store return
 - parcel service
 - postal service, and
 - even crowdsourced services.
- Expectations of instant returns
- Returns as opportunities for new sales



Closing the loop...



- Integrating forward and reverse flows
- Commercial returns increase with e-commerce (e.g. 30% in fast-fashion retail industry)

Lessons learned

- We need to understand customer operations!
 - What do your consumers want?
 - Retailers are learning from online data
 - Should the manufacturer learn from the store, but also from online data?
- Succeeding amidst the chaos!
 - Disrupt or be disrupted
- End-to-end SC solutions
 - Match supply and actual demand
 - Inventory visibility (across the channels)
- Technological trends that affects deliveries and distribution strategies: drones, autonomous vehicles, augmented reality, etc.
- Supply chain can be and needs to be taking more of a leadership role.



Thank you

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