Steering customers through multi-channel processes

Final Presentation of Research Pool Project

13th Annual Meeting of
Academic Council of GS1 Germany

Cologne, June 18th, 2015

Catholic University Eichstaett-Ingolstadt
Auf der Schanz 49
85049 Ingolstadt
Department of Operations
Prof. Dr. Heinrich Kuhn
Prof. Dr. Alexander Hübner
www.multichannellogistik.net

Multi-channel retailers can benefit from customer steering at the availability check, purchase, order processing, delivery and return

✓ Multi-channel retailers systematically **connect** their **sales, communications and logistics channels**. Questions arise regarding customer steering and control options through cross-channel activities.

✓ Retailers **apply rather indirect methods of steering than active customer control** to let customers choose their own preferred options.

✓ In this study **first approaches in direct customer control and order steering are identified** as well as advantages and potential application opportunities discussed:

    (1) Steering of customers in the store through **availability checks** online for store inventory and offering online channel instore for an **enlarged assortment**

    (2) Applying different methods for **cross-selling** through the channels

    (3) **Prioritization** of a specific channel, payment method, customer type or delivery velocity

    (4) Charging **different delivery cost**, e.g. free pick up at store but home delivery at a fee for steering into the store, and enabling different delivery **velocity** options

    (5) Setting up different **prevention** and escalation steps to **reduce return rates**

✓ These approaches not only offer an **additional value for customers** (e.g. pick up at no cost, prioritization) but also **differentiation- and cross-selling potentials for retailers**.

Agenda

Motivation, objectives and methodology

Options for steering customers

Mindsets & skills for steering customers

Approaches to implement MC steering

Multi-Channel (MC) retailing is becoming increasingly important for Non-Food retailers due to the rapid increase in online business

Germany, Non-Food retailing

■ 2009 ■ 2015f

Absolute annual sales
in bn. Euro

+16%

167

144

15 → 33

+115%

Total Non-Food   Online Non-Food
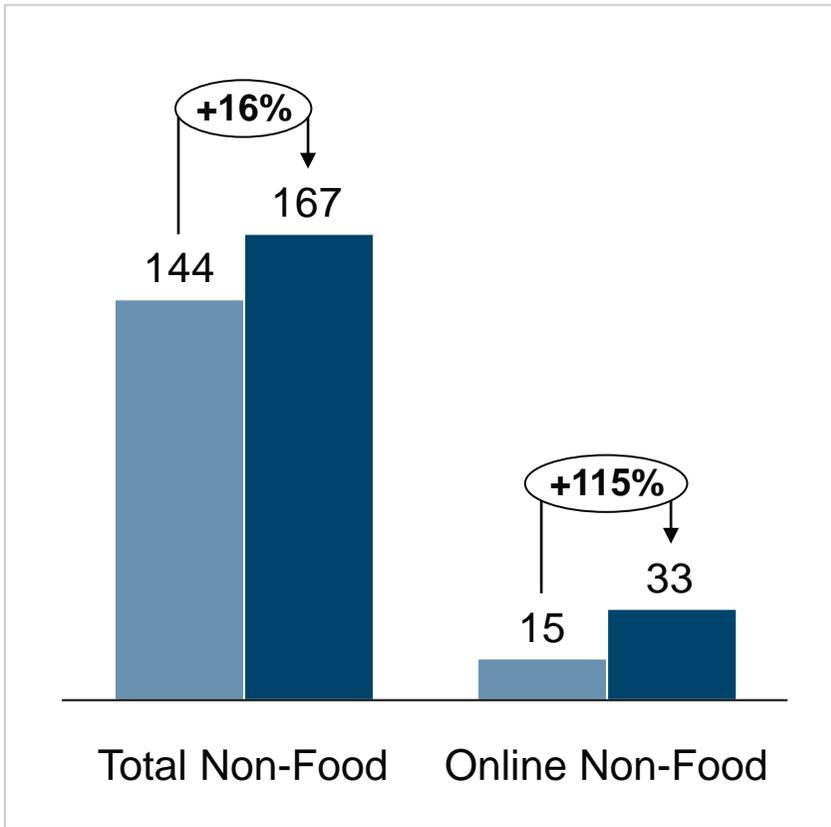
Share of sales by channel
in %

Pure Bricks & Mortar — 84% / 73%

Multi-Channel* — 10% / 17%   **+78%**

Pure online — 7% / 10%
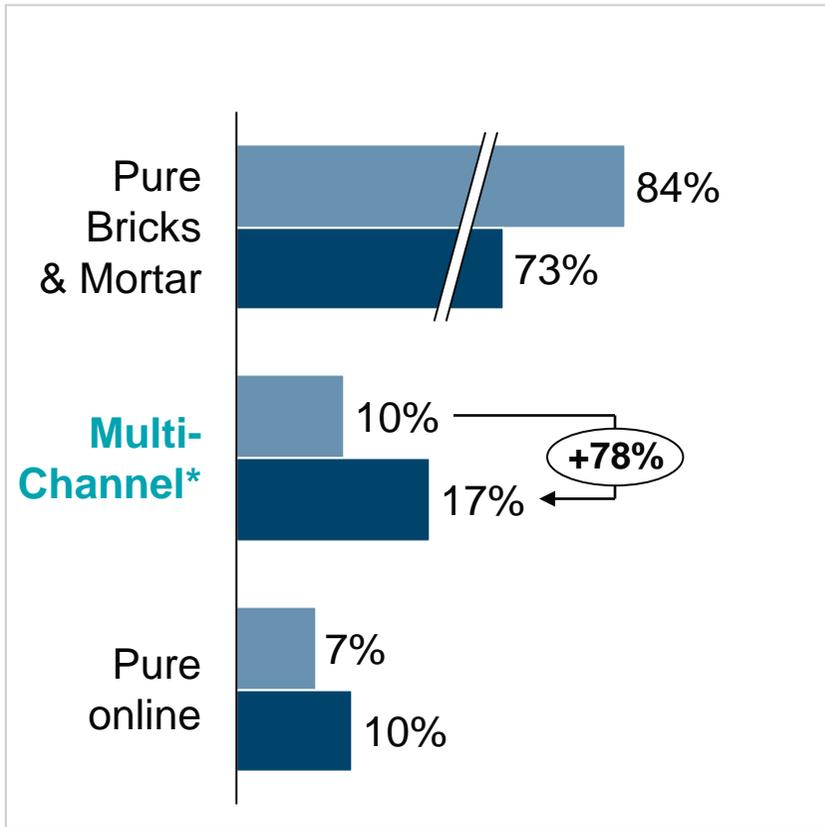
* Multi-channel defined as sales where one channel (i) initiates a sale (i.e. through information like description, availability) and (ii) the other completes it, i.e. payment and pick-up or delivery
Source: BVH (2014), Accenture & GfK (2015)

3

How do multi-channel retailers steer product-related processes and thus, their customers?

Objective of the study is to identify steering options for product-related processes in multi-channel retailing

Research questions to be addressed with data collection

- What are options to steer product-related processes at
  - (back-end) order fulfillment
  - (front-end) customer behavior?

- Why are these options advantageous? What are the trade-offs of the options? What are the pros and cons?

- Which options do companies currently use and plan to use? What are trends?

Approach and objectives

- **Exploratory study** to collect information for new research area

- **Face-to-face expert interviews** for exploration of structural design options, innovative topics and collection of primary information

- **Adaptable, semi-structured interview** plus **standardized questionnaire** to obtain structural data

Top non-food retailers from various industries participated

Number of companies

Participating retailers by sectors

Sector	Number
Participated	18*
Fashion	7
DIY	3
Special retailer	3
Consumer electronics	3
Department store	2
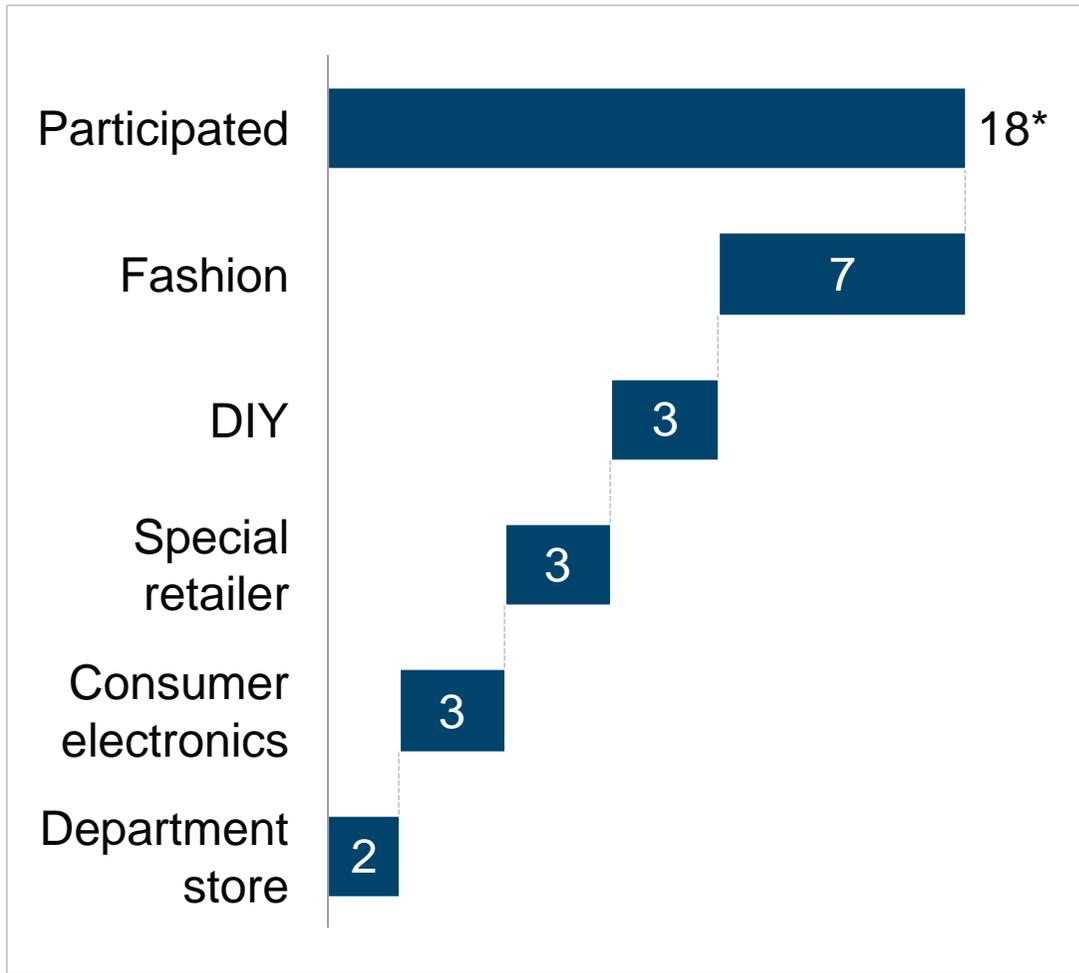
- **Large companies of non-food sectors with high online share** as main target group

- **18 retailers participated**

- **Criteria** for selection
  — Top retailer with a significant market coverage within their sector
  — Min. EUR 350 mn. sales p.a.
  — Multi-channel retailers, i.e., min. 1 year in online and with own outlets

* One additional retailer who does not fit into sample, but has an interesting business model was interviewed.

The majority of participating retailers belongs to top non-food retailers with revenues above EUR 500 million per year

Share of companies

Annual sales of participating retailers

Total = 18 retailers

|	
150 - 500 mn	28%
500 - 1.000 mn	6%
1.000 - 2.000 mn	28%
2.000 - 5.000 mn	22%
>5.000 mn	17%
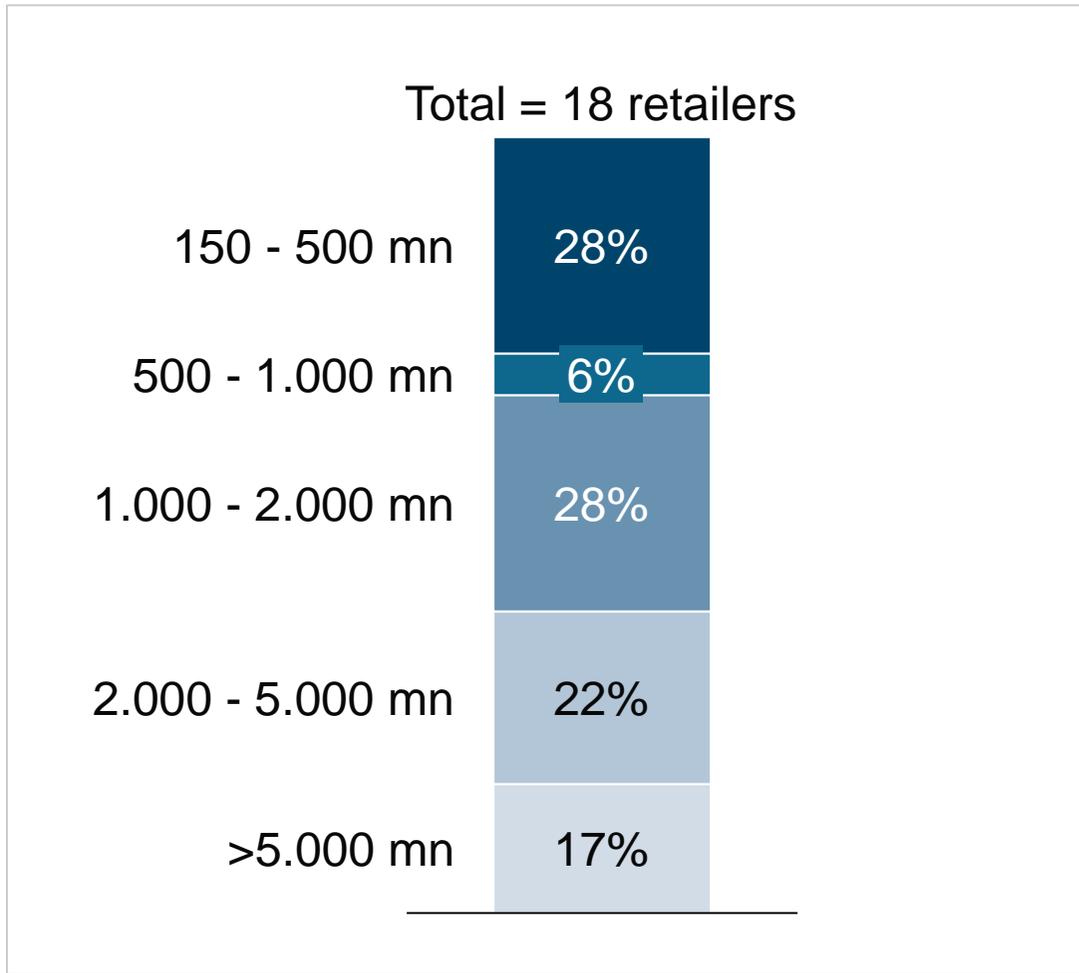
- Over **70 percent** of the companies have a **revenue higher** than **500 million**

- The **share of the distance channel revenue** is **under 5 percent** for half of the companies

Most participating retailers have significant experience in MC retailing

Number of companies

Multi-Channel experience of participating retailers
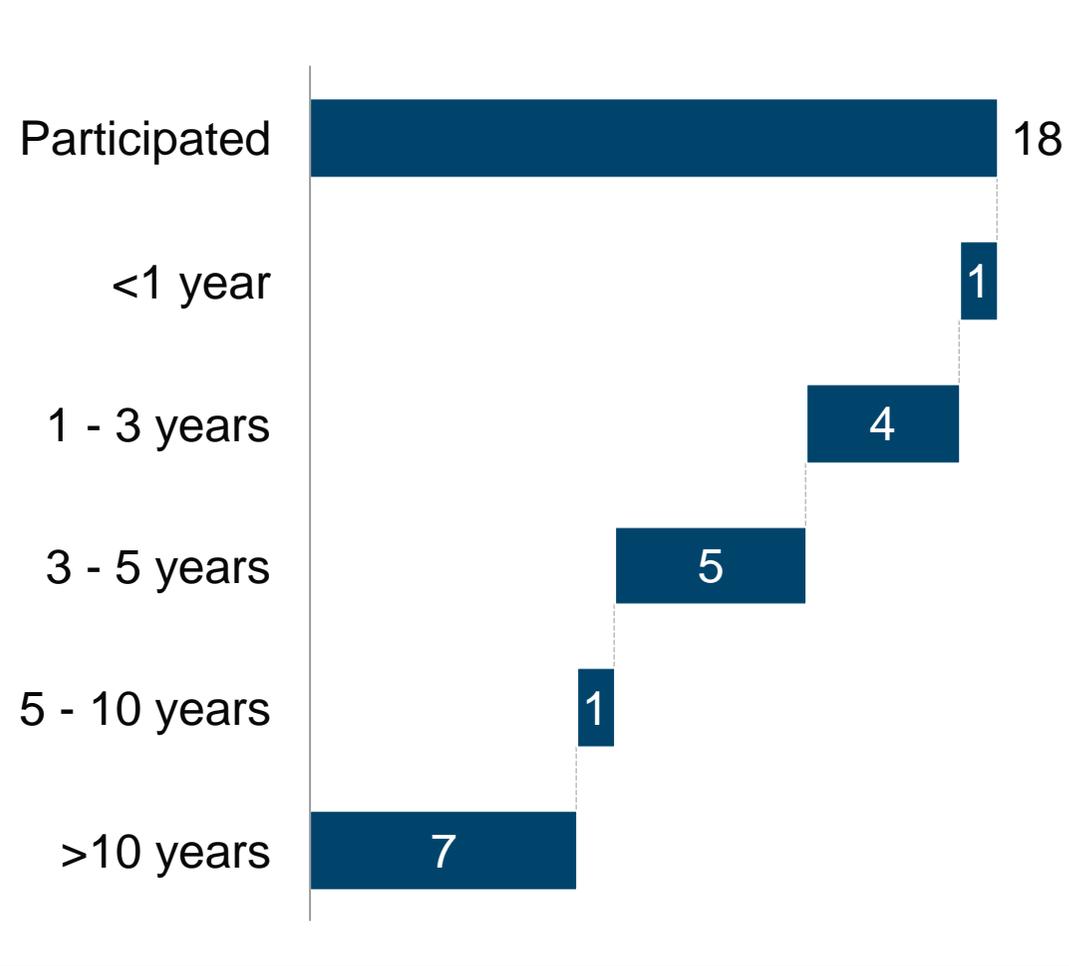
Almost half of the participants are active in **multi-channel retailing for more than 5 years**

Participating retailers operate a large network of own stores

Number of companies, in Germany

Number of retail outlets of participating retailers

| Category	Value
Participated	18
<50 outlets	3
50-100 outlets	4
100-300 outlets	4
300-500 outlets	4
>500 outlets	3
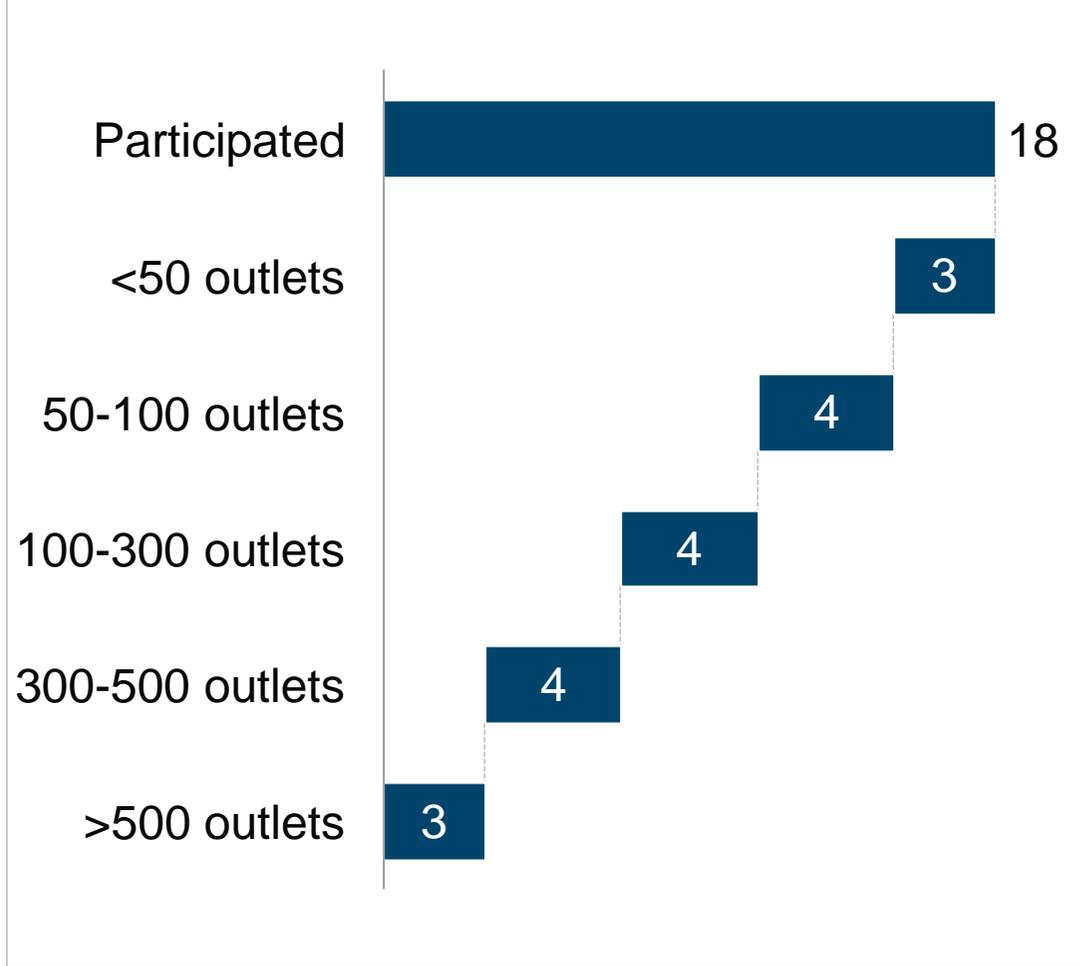
- **On average,** the participants have **327 retail outlets throughout Germany**
- **All participants have own outlets,** i.e., no franchising

Top managers took part in face-to-face interviews

Number of interviewees

Division Manager

Board Member / Managing Director

Interviewees by position
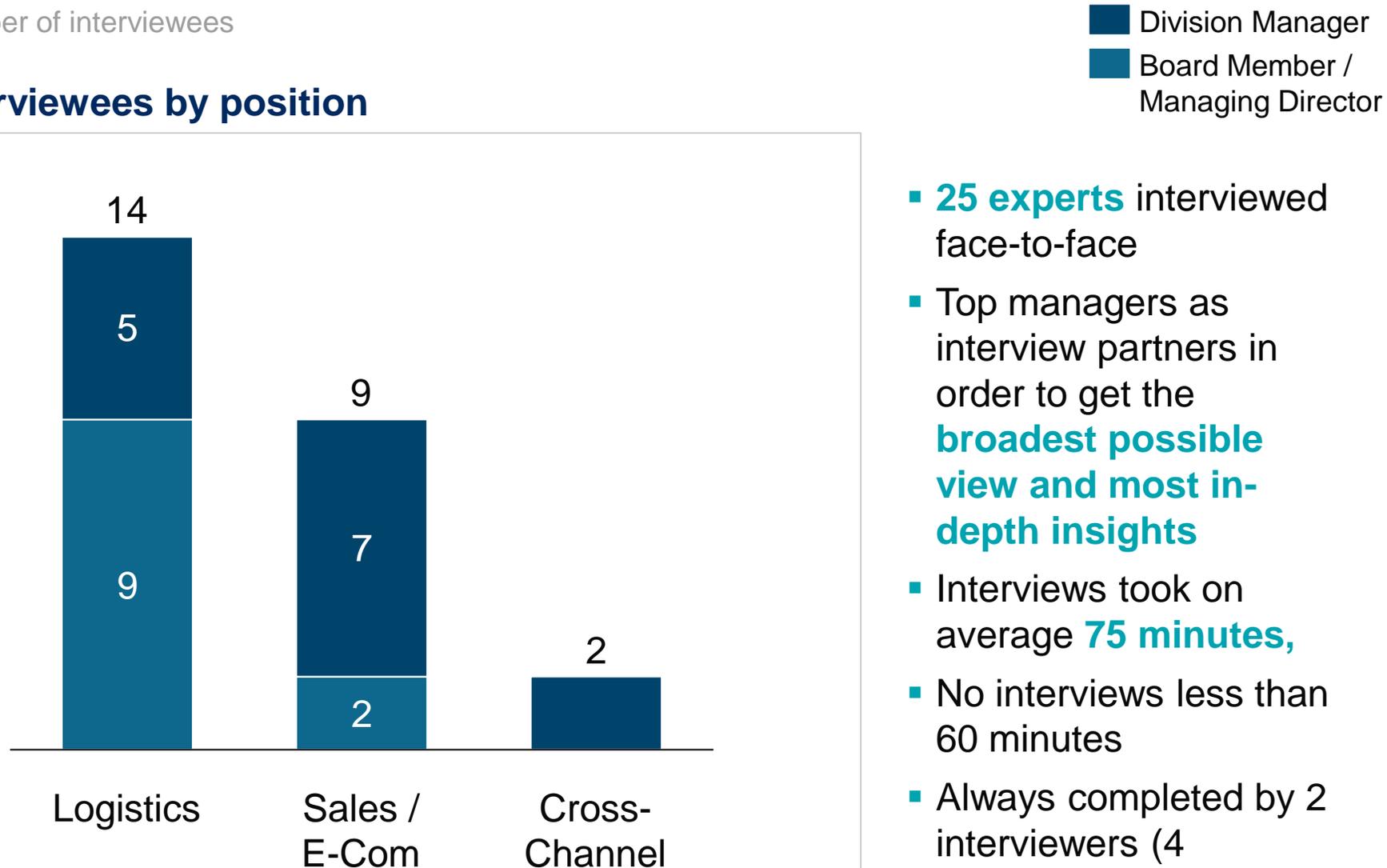
- **25 experts** interviewed face-to-face

- Top managers as interview partners in order to get the **broadest possible view and most in-depth insights**

- Interviews took on average **75 minutes,**

- No interviews less than 60 minutes

- Always completed by 2 interviewers (4 interviewers in total)

Agenda

Motivation, objectives and methodology

Options for steering customers

Mindsets & skills for steering customers

Approaches to implement MC steering

Multi-channel customers are more valuable than single-channel customers

Loyalty of different customer groups

- *"**MC customers** are the **most valuable** and **most loyal** […] Pure online customers are […] unloyal. Pure bricks-and-mortar customers are loyal, but with lower average revenue"*
  (Head of Logistics, Department Store)

- **Online customers easily migrate to competitors**

Sales growth/customer through MC shopping

Company example

100%   ─2%─   32%   134%

| Pure SC B&M | add. B&M | add. Online | Total MC |
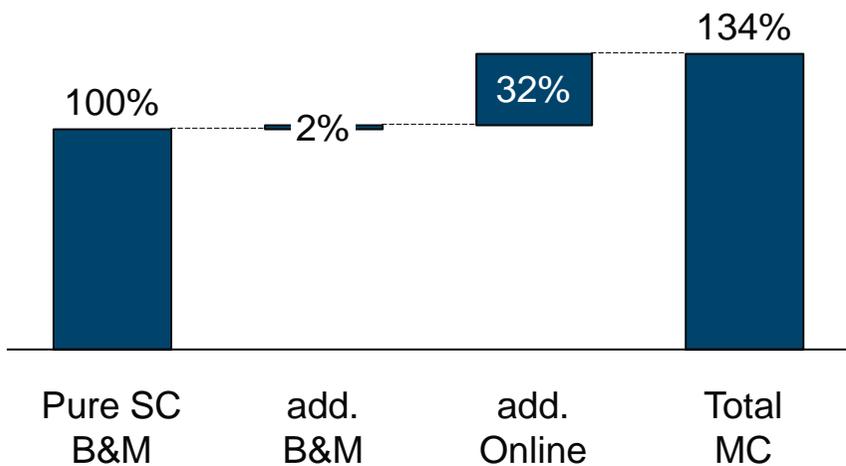
	Customer		
	Online	**Bricks& Mortar**	**MC**
Loyalty to retailer	Low	High	High
Value of shopping basket	Medium	Medium	High*

*Similar research shows that MC customers spend four times more annually than SC customers (McKinsey, 2013).

Customer steering is challenging and retailers avoid active control of customers, …

Careful consideration of active steering

- *"**Pick up the customers where they want** to shop without actively forcing them into a specific channel."* (Fashion Retailer)

- *"The **customer selects the best channel** himself, as customer power increases with additional touch points."* (Special Retailer)

- *"Customer **loyalty** is **more important** than **control**."* (Fashion Retailer)

- *"You **can't tell** the **customer what to do**."* (Fashion Retailer)

- *"Customer **satisfaction** is more **important** than **steering**."* (Department Store)

Summary

- **Control of customers** through different channels is **challenging**

- Customer **satisfaction and loyalty seems to be more important** than steering

- **First solutions exist** which should benefit both, retailer and customer

… however, multi-channel retailer can already apply various options to steer customers through MC shopping

● Implemented   ◐ In planning   ○ Not feasible

Process steps	Options for customer steering	Today's level of Implementation
1 **Availability check**	Providing **availability information** across channels to increase overall availability and enlarge assortments	●
2 **Purchase**	Applying different methods for **cross-selling** through the channels and moving **away from indirect payment**	◐
3 **Order processing**	**Prioritization** of a specific channel, payment method, customer type or delivery velocity	◔
4 **Delivery**	Charging **different delivery cost** and enabling different delivery **velocity** options	●
5 **Return**	Setting up different **prevention** and escalation steps to reduce return rates	◔

1   Product availability checks support steering customers across channels

% of MC retailers, n=19

Inventory availability check options for all channels

		store inventory	store & online inventory
in web-shop	online & store inventory	**Type 3: Cross-channel webshop** Steering to store	**Type 4: Omni-channel retailer** Steering through all channels
	online inventory	**Type 1: Basic** No Steering	**Type 2: Cross-channel store** Steering to online

in store

5% without clear type
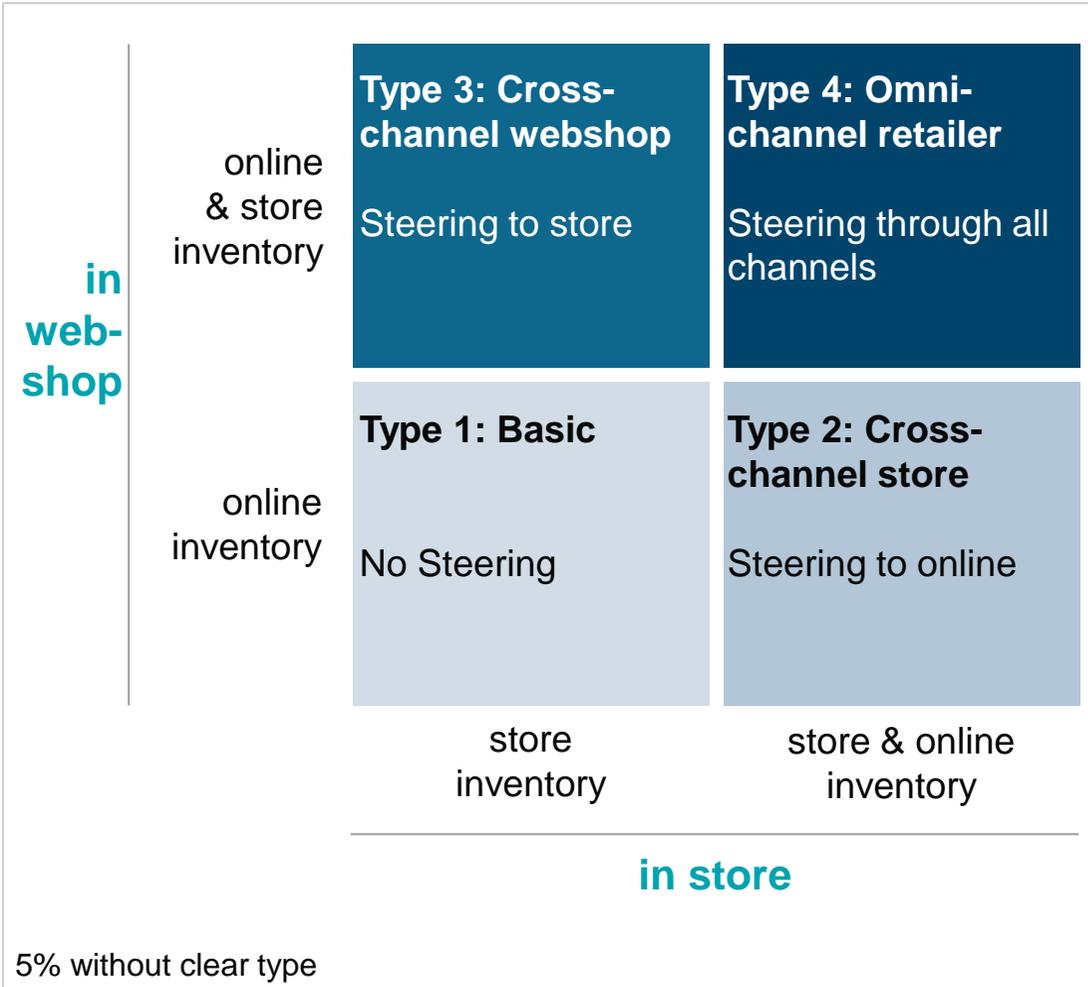
Options for steering customers through channels

- **Type 1 (32%):** Isolated channels with no steering

- **Type 2 (11%):** Enhancement of store offer through online assortment and inventory ("virtual shelf extension")

- **Type 3 (5%):** Offers the customer the opportunity to save delivery cost and the possibility to touch & feel products. For the retailer: opportunity for sales interaction and prevention of returns

- **Type 4 (47%):** Combination of 2 and 3

1 Tablets are the most applied technology to check the online assortment and availability in the brick-and-mortar stores

% of availability in the store for online availability checks, n=11

Preferred option

	Terminals 18%	**Tablets** 91%	**WLAN** 18%
Description	Customers use terminals by themselves in the store to enter online shop	Used by employees who guide customers through purchasing process	Customers use their own device for shopping in online store
Pros & cons	+ Represents "real" shelf extension and as marketing for webshop – Relatively expensive – Customers need to enter personal data in public – Often did not result in completing sale – Often used by employees and not by customers – Do not work as a steering mechanism but only for information	+ Moderately expensive + Low effort to train employees + Lead to a completion of sales through guided purchase process + Forces in customers and employees to sales conversations	+ Cheap and low installation effort + Keeps customers in store + Inside the store: • Navigation within store • Connection with other marketing activities • Combination with retailer app + Outside the store: Navigation of customers to the store by using location based services – Enables a direct price comparison and risk for migration

16

1 MC retailer show available store inventory in their web shops in different ways

% of availability information in the webshop about inventory at store, n=10

Preferred option
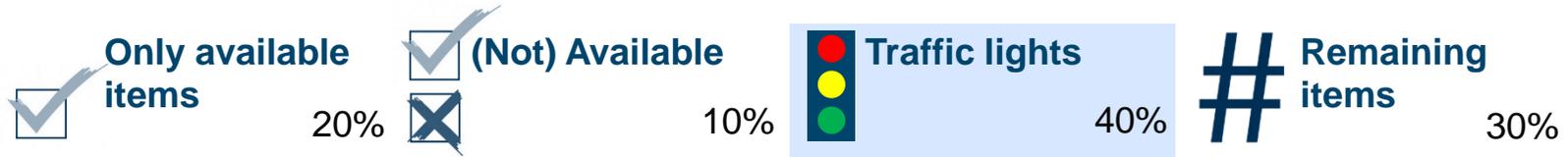
	Only available items 20%	(Not) Available 10%	Traffic lights 40%	Remaining items 30%
Implementation	Unavailable products are eliminated from website	Unavailable products are marked as not available (e.g. grey or marked red)	Shows direction of availability but not the precise items	Shows the exact number of items left in stock
Pros & cons	+ No migration and recommendation for substitution possible due to unavailability – No real availability check as everything is always available	+ Only provides information that customers really need, i.e. is this product available or not	+ Use scarcity in yellow as a method for steering customers towards a specific product or channel – (close to) real time data access is needed	– Hardly feasible for e.g. fashion retailers who may have items in fitting room and not on sales area – Real time data access is needed + Makes sense if customers typically buy more than one item of a product

1 A fashion retailer uses different flow of goods to increase availability and build agile logistics

Company example, fashion retailer

Network and flow of goods
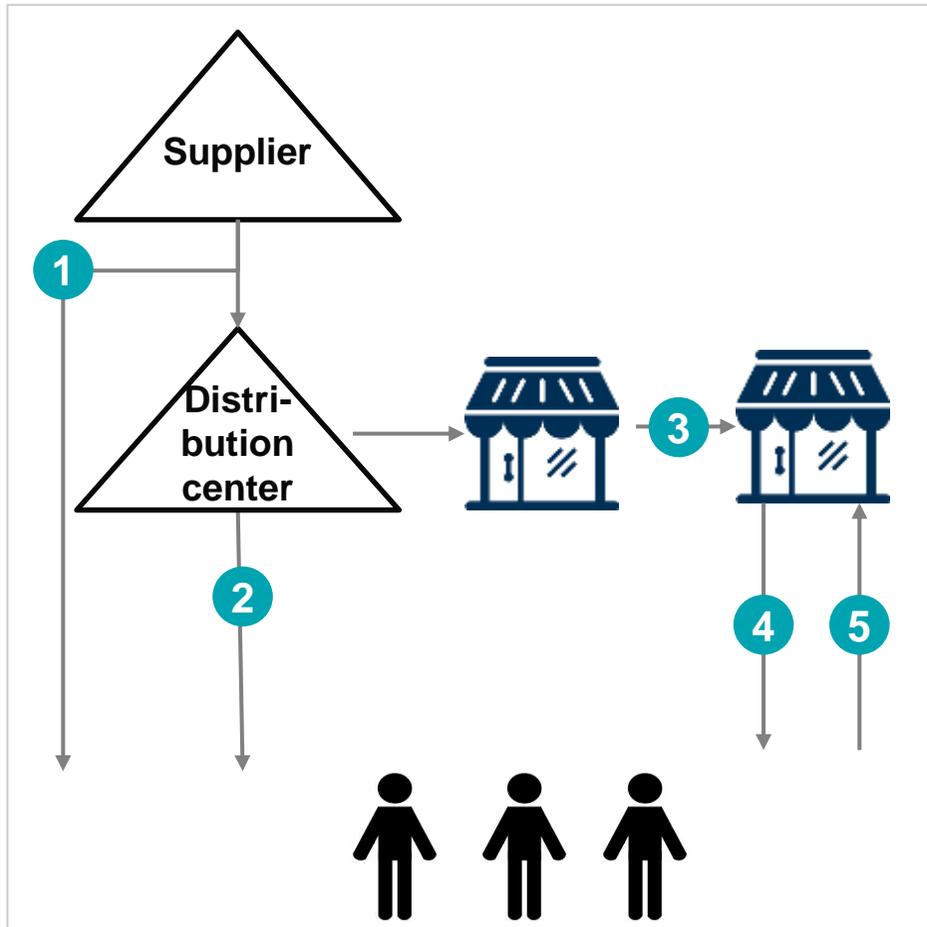
1 Drop shipment from supplier (planned)

2 Integration of inventories for store and webshop in one cross-channel warehouse

3 Transshipments between stores to exchange inventories

4 Direct shipment from outlets to customers (with one item per order)

5 Store pick-up and availability information in webshop

2 | # While purchasing an item customers can use different payment methods and cross-selling can stimulate further sales

Objectives

Objectives for cross-selling

I. Stimulate sales

II. Build up MC customers

Objectives for a specific payment methods

I. Stimulate direct cash flows

II. Pay minimum fees for purchase

III. Prepare and initiate a purchasing process as easy as possible to eliminate loss in conversion

Channel specific trade-offs in the purchasing process

Channel

	Cross-selling	Payment methods
Online	I. Add. sales by recommendation algorithms II. Cross-channel couponing	I. Possible indirect cash flow II. Possible fees III. Purchase difficult
Offline	I. Add. sales by sales talk II. Cross-channel couponing	I. Always direct cash flow II. Possible fees III. Purchase easy

Purchasing

2 | **A penalty on indirect payment options does not lead to a loss of sales but only to fewer customers choosing this method**

Company example, fashion retailer

Extra charge for purchasing on invoice

Extra charge	*Impact on order rate*	*Impact on pur-chase method*
+1,50 €	+/- 0%	60% less pay-ments on invoice
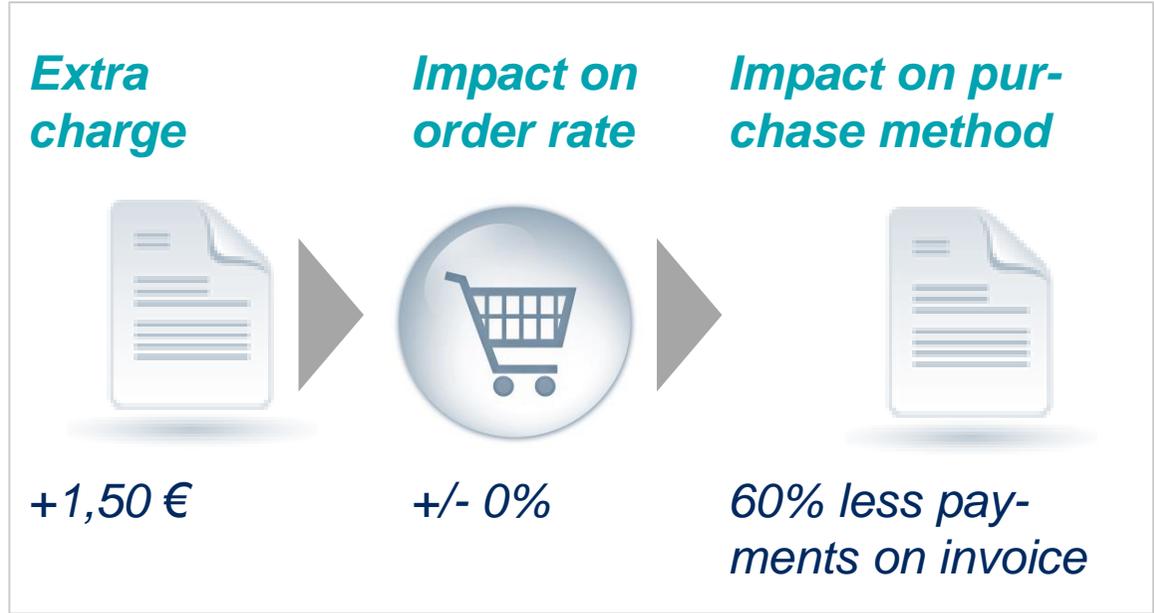
Advantages

- Customer switches to other payment methods with direct cash flow and less fees
- Stable conversion rate
- But, additionally also lower return rate

Through the introduction of a fee on purchase on invoice, the retailer can steer the customer to a payment method with direct cash flow without losing customer orders

2 Instore payment of online orders may reduce hurdles in online shopping

Company example, special retailer

Payment of online purchases in the store

Advantages

- Opportunity to pay an online order also in store, supports customers to get in touch with an omni-channel world and reduces "fear" of online payment

- May result in additional cross-selling opportunities

3 The order processing can be prioritized based on payment, customer type, channel and delivery velocity

Criteria	Priority order	Rationale	Customer steering options
By payment	**Paid before unpaid** (e.g. PayPal before invoice)	Direct cash flow is rewarded	Towards direct cash flow payment
By type of customer	**A-customers before C-customers** **Loyalty card owners** before others	A-customers and loyalty card owners contribute more to retailers revenue	Possibility for customer retention and new additional sales at next shopping
By channel	**Online before store** order	Online is already bought and online customers demand high velocity Store is only for replenishment	If items are not available at store, fast orders can support to buy online
By velocity	**Express before standard** delivery	Usually the customer pays the highest fee for express delivery	Possibility to gain money for express delivery and expanding services for online customers

3 Prioritization can be based on different criteria for assessing customer values like recency, frequency and monetary value

Prerequisite is a functioning CRM system

Sales and order related criteria

Recency
- Last purchase in channel
- Last purchase without return

Frequency
- Number of cross-channel orders in the last month/year
- Activity index on web page (e.g. use of recommendation engine)

Monetary value
- Channel specific revenue
- Average value of receipt
- Revenue after return
- Payment morale
- Margin of customer

Customer related criteria

Own data collection
- Age
- Sex
- Living area
- New or existing customer
- Willingness to pay for additional service

Collaboration with data service provider
- Marital status
- Living situation
- Education level
- Salary
- Creditworthiness through credit check

*Consolidation in CRM System for calculation of customer value and classification into A-, B-, and C-customers*

3 Prioritization of customer orders can be executed during the day and during the week

Schematic illustration

| ▮ Prioritized orders | ⧄ De-prioritized orders | ☐ Normal orders | ● Implemented | ○ Not used |

Scheduling during the day

Start of picking   *Cut-off online*   *End*

Late order windows

Reserved time slots
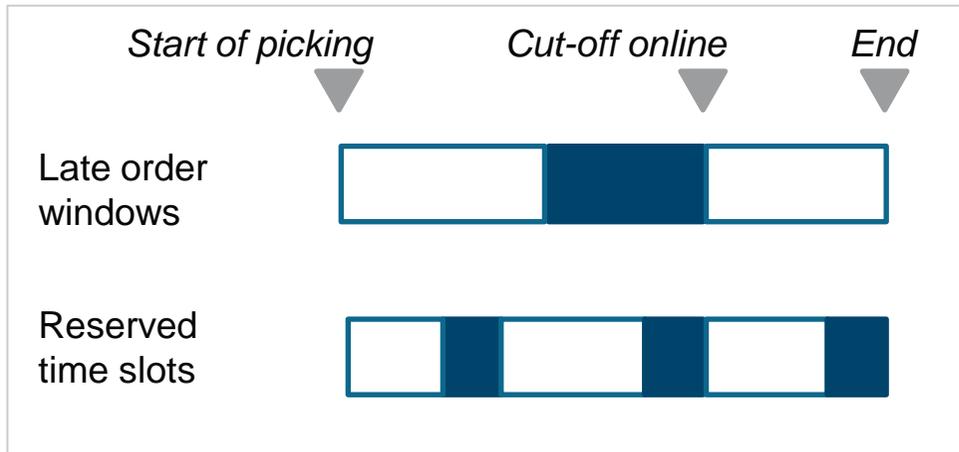
Description

Implementation

A time slot right before the cut-off for online orders is reserved for online orders

A-customers orders are immediately handled in a reserved time slot

Scheduling during the week

End of work

Mo   Tue   Wed   Thu
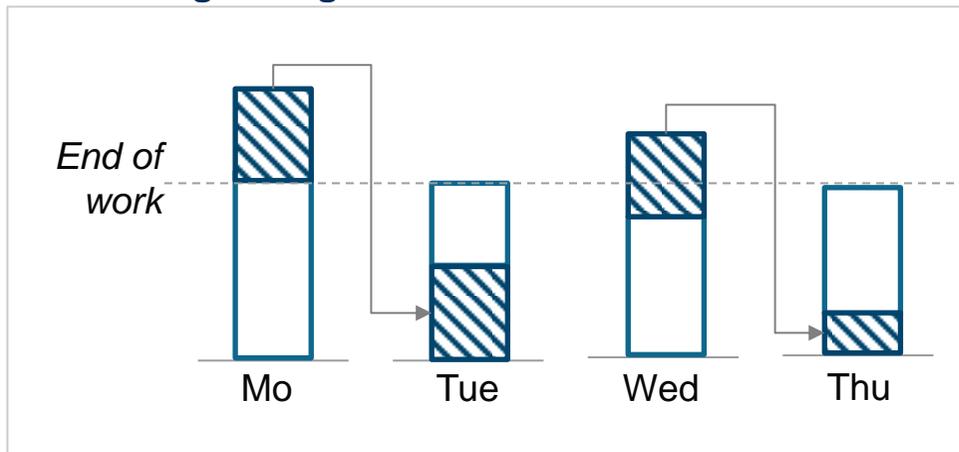
De-prioritized orders are postponed to a later timeslot / next day

24

3 Picking frequently and in small batches allows for customer prioritization

Company example, fashion retailer

Store Order (SO) Priority: Regular 20; Priority 20-1
Online Order (OO) Priority : Regular 10; Priority 10-1
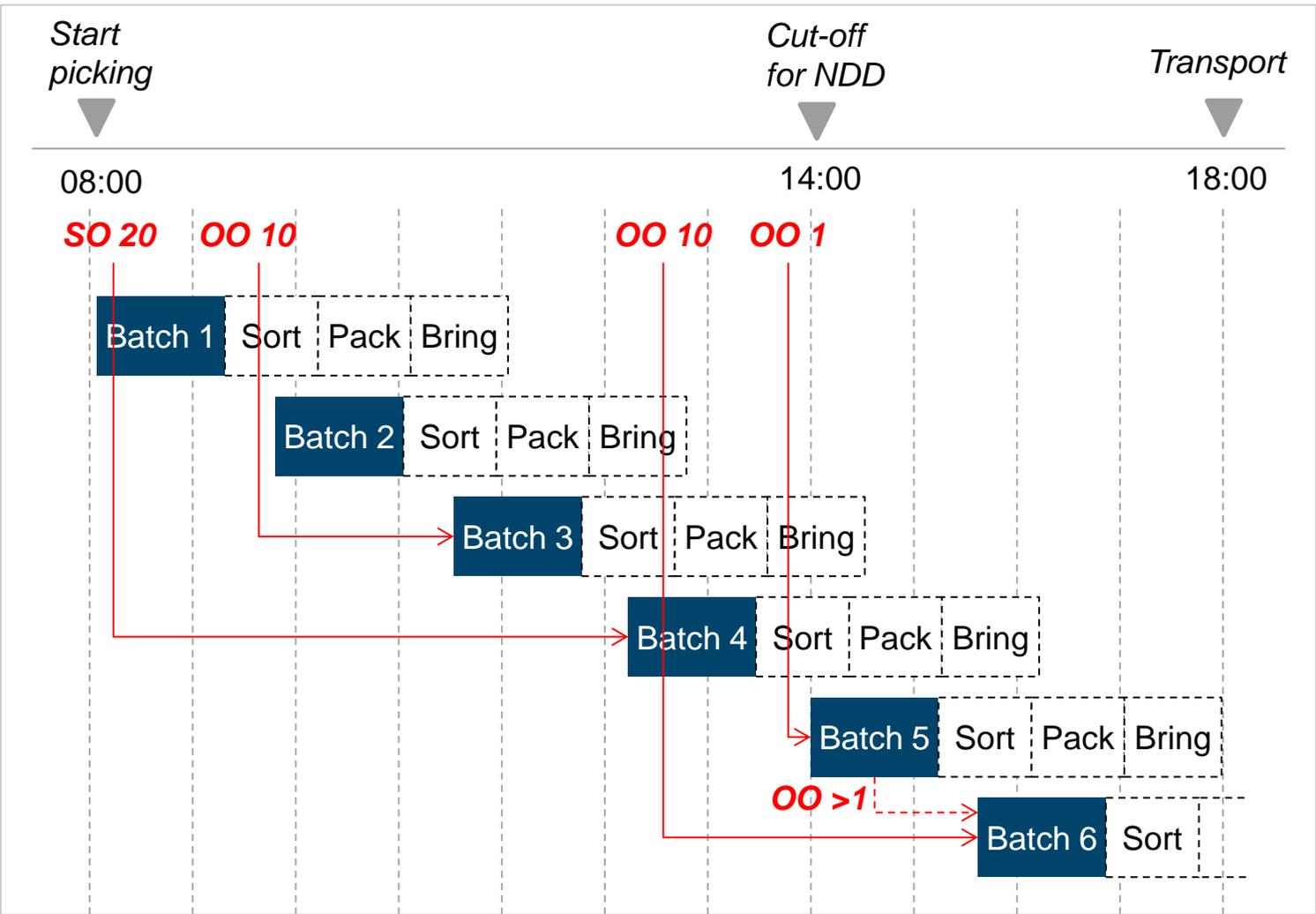
Trade-off

- **Small batches** in short intervals to **flexibly allocate priority orders**…

- …but at **higher picking cost** than bigger batches in large intervals

25

4 Retailers can leverage different types of delivery for customer steering

% of MC retailers interviewed, n=19

Mode	Velocity	Cost
HD **Home Delivery** 100%	**SDD** **Same Day Delivery** 11%	**F** **Free delivery** 11%
C&C **Click & Collect** (i.e. order online and pick-up in store) 80%	**≥NDD** **Next Day Delivery** (or longer) 100%	**C** **Cost for delivery** 89%*

8 different combinations of delivery mode, speed and cost enable a specific steering into a channel

*including conditional free delivery (e.g. for loyalty card owners, min. order value etc.)

4 Retailers can leverage different types of delivery for customer steering

Mode **Velocity** **Costs**

HD
- SDD
  - free
  - cost
- ≥NDD
  - free
  - cost

C&C
- SDD
  - free
  - cost
- ≥NDD
  - free
  - cost
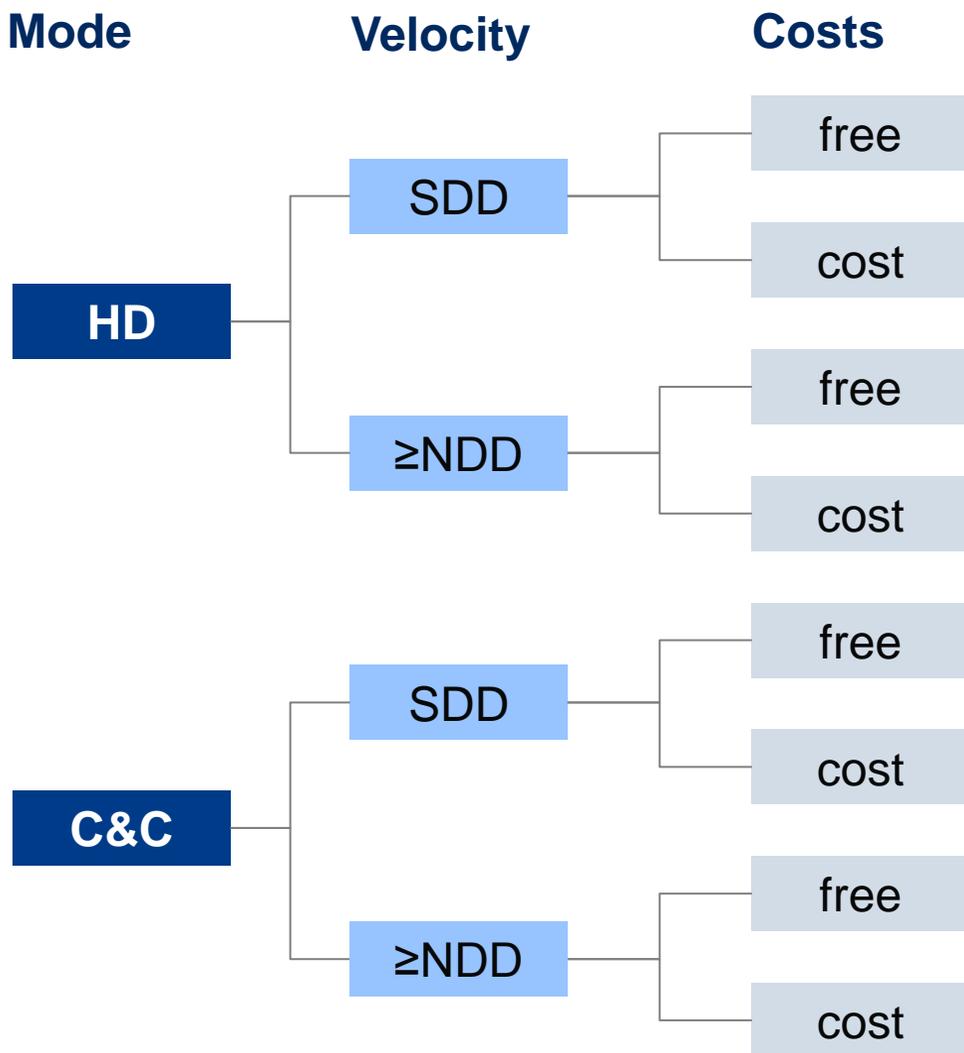
Further differentiation:

- C&C into *inventory from store* and *inventory from warehouse*

- ≥ NDD into *NDD* and *>NDD*

- Costs into *always charged* and *free of charge under conditions*

27

4 Multi-channel retailer differentiate delivery costs and velocity, mainly to attract customers to stores

● Implemented   ○ Not used

Direction	Mechanism	Typologies	Description	Implem.
into store	**costs**	4.1 *HD_NDD_**C*** *C&C_NDD_**F***	Charging costs for home delivery to customer, but no costs when delivered into store and picked up there	●
	velocity	4.2 *HD_**NDD**_F* *C&C_**SDD**_F***	Free home deliveries and free store pickup, but faster delivery through direct pickup at local store	◔
	costs	4.3 *HD_SDD_**C*** *C&C_SDD_**F***	Charging same-day home delivery, but free same day pick-up at store, if SDD structures not profitable for HD	◑
No active	**n.a.**	4.4 *HD_NDD_**F*** *C&C_NDD_**F***	Free deliveries for all modes and no differentiation in delivery velocity	◑
into web shop	**costs**	4.5 *HD_NDD_**F*** *C&C_NDD_**C***	Free home delivery, but charging for store pick up to charge for additional service option (only theoretical)	○

* Difficult to execute if items are not from store inventory

4.1 Free store pickups and charging home deliveries steers customers into the store

Steering by cost differentiation

Mode	Velocity	Costs
HD	SDD	free
		cost
	≥NDD	free
		cost
C&C	SDD	free
		cost
	≥NDD	**free**
		cost
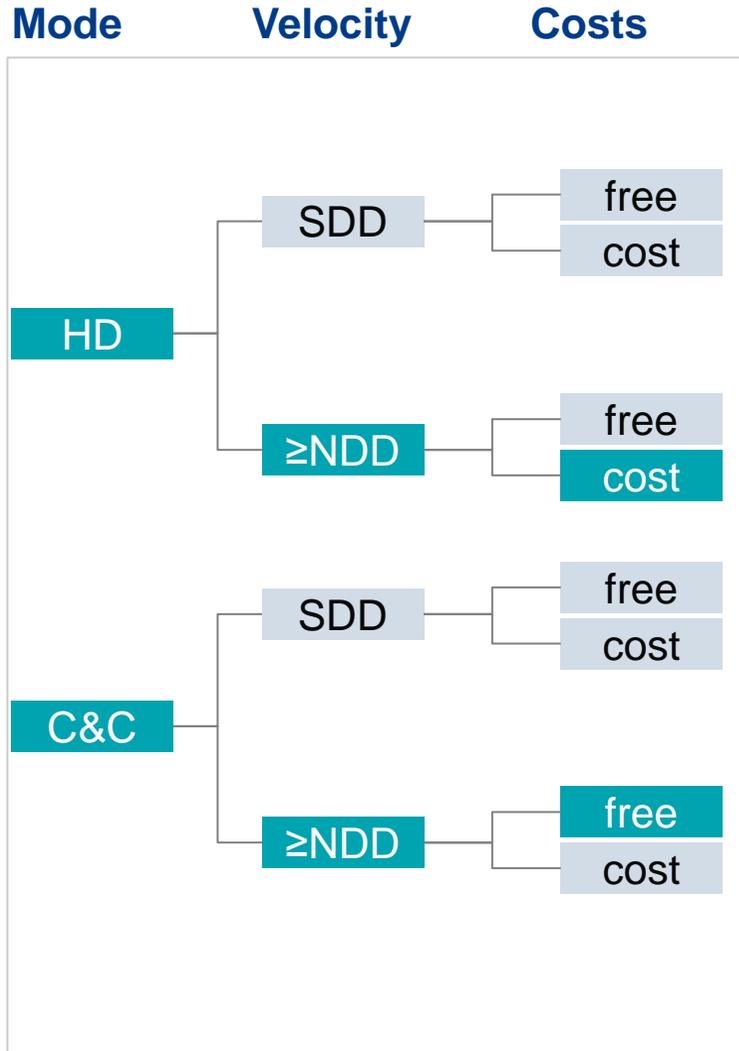
Description
Charging home delivery, but free store pickup

Steering mode
into store

Implementation
77% of participants with store pickup use this

Further pros and cons
+ Bundling effects for order delivery into store
+ Growing C&C rate
+ Customers choose increasingly C&C at no cost where guided cross-selling can take place in store
+ Cost for HD can cover (or at least contribute to) retailers logistics cost and sometimes even be a profit earner
− Customer might be dissatisfied with costly HD

4.2 Free same-day pickups and free home deliveries for the next day are a compromise to save logistics costs with fast deliveries

Steering by velocity differentiation

Mode	Velocity	Costs

- HD
  - SDD
    - free
    - cost
  - ≥NDD
    - free
    - cost
- C&C
  - SDD
    - free
    - cost
  - ≥NDD
    - free
    - cost
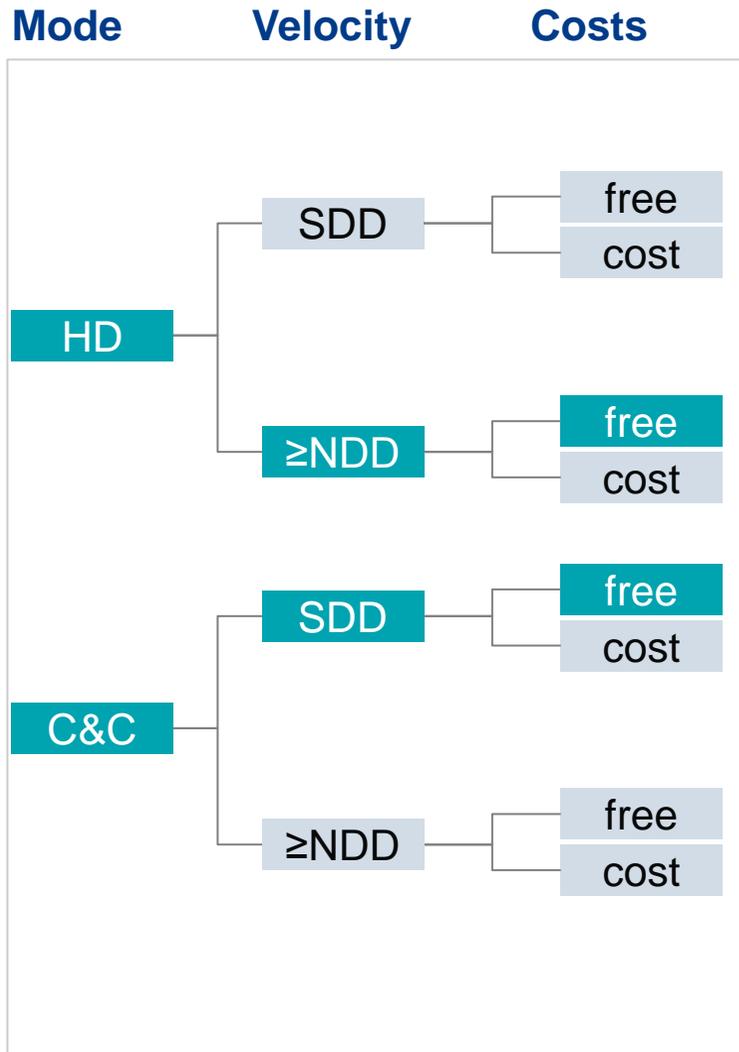
Description
Even though HD and C&R are at no cost, HD takes longer than a direct pickup of a reserved item

Steering mode
into store (for rush orders)

Implementation
6 of 19 retailers offer a free pick up service at no cost. But only at two retailers the HD is free.

Further pros and cons
+ Possibility to offer customer a direct receival of an order without causing severe cost.
+ At HD_NC: Order volume ↑, Conversion ↑, but also Cost ↑
− Only feasible when ordered item is available in store inventory. Otherwise cost would be severe to send from warehouse to store
− Steering into store only works for urgent orders, as otherwise customers will also order via HD

30

4.3 Charging same-day home deliveries, but free same-day pick-ups are an option if SDD structures are not available or profitable for HD

Steering by cost differentiation

Mode	Velocity	Costs

HD
- **SDD**
  - free
  - cost
- **≥NDD**
  - free
  - cost

C&C
- **SDD**
  - free
  - cost
- **≥NDD**
  - free
  - cost
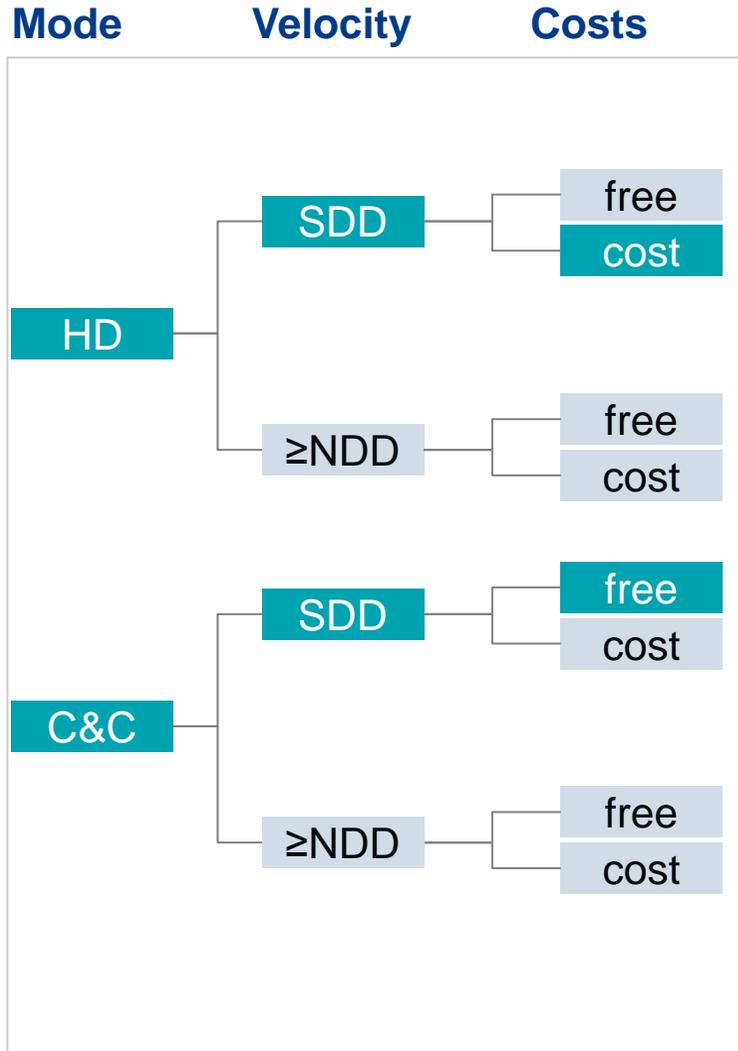
Description
SDD for HD is costly, whereas the item can be picked up the same day at no cost at a local store

Steering mode
into store

Implementation
2 of 19 offer same day home delivery at a cost, but also free pick up service at the day of order

Further pros and cons
+ Cost sensitive customers can use a same day service for their order as well
– Same day home delivery leads to high expectation of customers towards delivery speed
– Cost for same day delivery to customers home has to be high in order for the retailer to suffer no losses

31

4.4 Completely free deliveries and pickups across all next-day delivery modes do not allow any customer steering

No active steering

Mode	Velocity	Costs
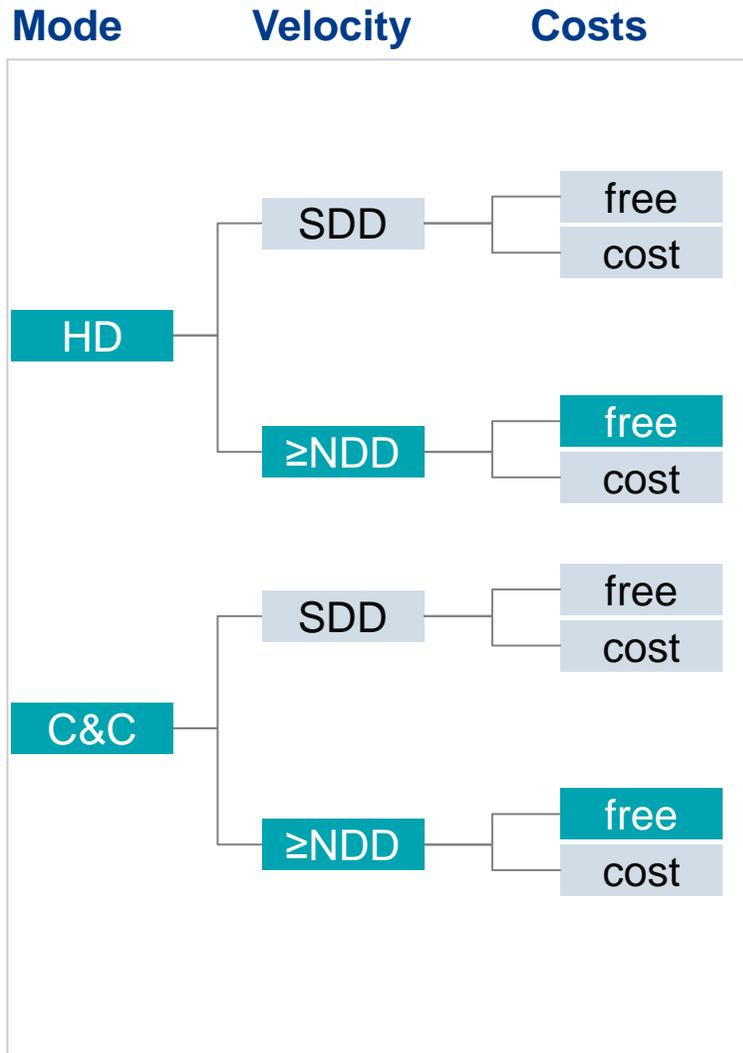
Description
HD and C&C are at no cost. The item is delivered or can be picked up the next day.

Steering mode
No active steering

Implementation
2 of 19 offer free next day HD and 6 of 19 offer conditional free HD combined with free next day C&C

Further pros and cons
+ Customer is free in his decision and active steering doesn't prohibit conversion
+ Customer chooses best way for himself
− When HD is at no cost the C&C rate decreases and customers use increasingly the (possibly) more expensive home delivery

4.5 Charging store pickups could potentially be used for steering customers from stores to the webshop and to home deliveries

Steering by cost differentiation

Mode	Velocity	Costs
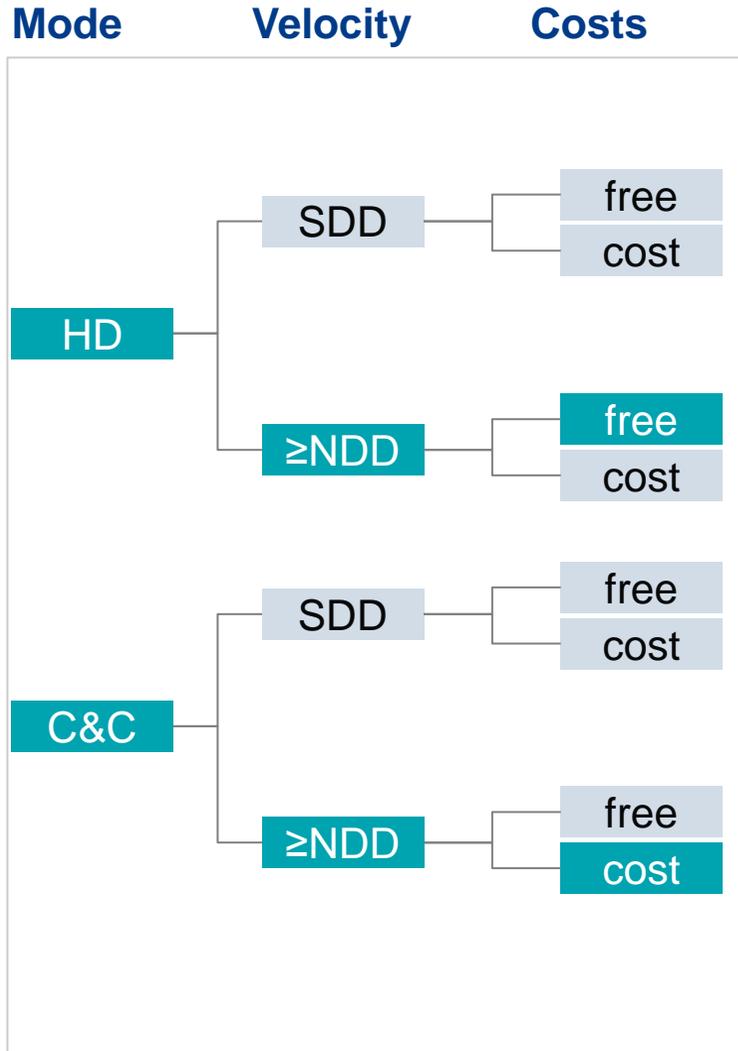
Description
HD is free for NDD, but at a cost if picked up in a store

Steering mode
Steering into web shop

Implementation
A cost for store pickup to keep customers in the online channel and hereby cutting the connection of store and web shop is not used by retailers

Further pros and cons
+ If a retailer wants to shift customers away from the store, this is an approach
+ Free HD will increase the frequent use of the web shop
- Customers will not understand that pick up at store is at cost
- Will prohibit customers coming to the store, leaving the company with additional cost for HD

5 Retailer can apply different escalation steps to reduce return quota

See example on next slide

Return policy and quota	Limited prevention <5%	Little prevention ~5 – 20%	Strong prevention >20%
Cate-gories	• Electronics • DIY	• Special retailers • Department Stores	• Fashion
Escalation steps and methods for prevention	• Meaningful description and pictures or items • Benchmark items • Measurement charts	• Autonomous printing of return label • Registration of return necessary • Reward for "no-return"	• Prevention of checkout at too many different sizes • Charging customers for return shipments, free for instore return • Limit use of "purchase on invoice" • Badge on items preventing onetime use and return • Delivery fee on all deliveries, no min. order value for free delivery
Actions at return center	• All items are accepted	• Items are mostly accepted	• Items are inspected and checked

34

5 **Influence of shipping fee on return quota: Steering customers' return behavior over delivery cost**

Company example, fashion retailer

FREE 🚚 **Before**   **$$$** 🚚 **After**

Situation

- Minimum order value for free delivery: 50 Euro
- Otherwise delivery fee: 3,95 Euro

- No minimum order value for free delivery
- Fee for every delivery: 1,95 Euro

With the **introduction of a delivery fee for all deliveries** instead of a minimum order value for free delivery,

(i) delivery costs can be balanced and

Result

- Many Fill-up-orders
- Return quota >20%

- Sales stayed the same
- Retailer cost for delivery decreased by a double digit percentage
- Return quota decreased by 2%

(ii) the **return quota reduced** while

(iii) sales volume stays the same.

5 Allowing returns of home deliveries at store expands the options for replacement and additional sales

Case example of participants

Return handling

Description	The retailer has to decide whether to offer his customer cross-channel returns of items
Direction	Steering into store
Rationale	A return in store in combination with sales talk enables replacement of item instead of money back Possibility to directly add into store inventory
Means	▪ Flyer in delivery box ▪ Reward for return in store (e.g. coupons)
Execution	Over 70% of participating retailers offer return of items in store

Agenda

Motivation, objectives and methodology

Options for steering customers

Mindsets & skills for steering customers

Approaches to implement MC steering

Integrated on- and offline customer database is a prerequisite to steer customers through the different channels

Conceptual requirement for MC-Data

	Online	**Store**
Data source	Online data of customer	Store transactions
Data collection	Online account	Loyalty card, Beacon in store

Integration of data
- One CRM system for all customers over all channels
- One account per customer including all online and offline transactions, movements etc.

Current practical challenges

- If data is available then the analysis, use and integration is too difficult
- Setup of a CRM system to track customers (majority of participating retailers do not have one)
- Consequent use of loyalty cards for tracking customers offline
- Matching of sales to individual customers and not only to items

Recommendations

- No "guest checkout" for online orders
- Place right incentives for permanent use of cards (e.g. points) to avoid use only for promotions
- If competence is not existent, outsource CRM system and data analysis (e.g. Payback)

A top down integration of a joint corporate culture and mindset is leading to further customer control options

Steps for implementing a joint corporate culture and mindset

Top Management

- Commitment of Top Management (e.g. through Cross-Channel-VP)*

"The commitment must be present in top management. [...] A Cross-channel manager should be above the managers for individual channels to implement properly the decisions" (DM Cross-Channel, Special Dealer)

Middle Management

- Interaction of Marketing- as „planner" and Logistics -Division as „cost-efficient-executer"
- Multi-Channel ambassador who mediates between HQ and stores

"Steering and control of customers is seen as a marketing activity. Then, the processes have to be implemented by logistics at a reasonable cost, of course" (MD Logistics, DIY)

Lower Management

- Training for store personnel: online store as info-channel and sales preparer, myth of cannibalization, communication of sales leads to increase of MC customers
- Touch and feel of online shop at direct selling in store through tablet etc.
- Share of online sales for store that offers the pick-up possibility

"Omni-Channel only takes off when employees are incentivized based on revenues of Click & Collect, instore ordering and shipping to stores." (DM Logistics, Dep. Store)

"[…] online-shop as colleague who sells during nights and sundays and who helps to make conversation with the customer." (MD Logistics, DIY)

*Senior managements absence of interest is the factor that contributes most often to an initiative's failure (McKinsey, 2013)

Agenda

Motivation, objectives and methodology

Options for steering customers

Mindsets & skills for steering customers

Approaches to implement MC steering

Multi-channel retailers can benefit from customer steering when implementing different steps across sales, logistics and management

	Approach	**Rationale**	**Required actions**
	Develop a single to a multi-channel customer	▪ Higher average basket value ▪ Higher loyalty	▪ Train customers across channels ▪ Make customer instore familiar with online shop and store pickup solutions
	Steer customers also into the store	▪ Increased cross-selling opportunities ▪ Enable replacement of item instead of return	▪ Ensure availability checks online for the store ▪ Implement costly home delivery, but free C&C – and same for returns
	Develop analytics competence and joint omni-channel culture	▪ Customer insight important in online business ▪ Stores fear cannibalization through online sales	▪ Integrate CRM system and ensure data collection ▪ Create omni-channel culture, i.e., enable channel staff to work together, not against each other

For more information on multi-channel logistics please visit www.multichannellogistik.net
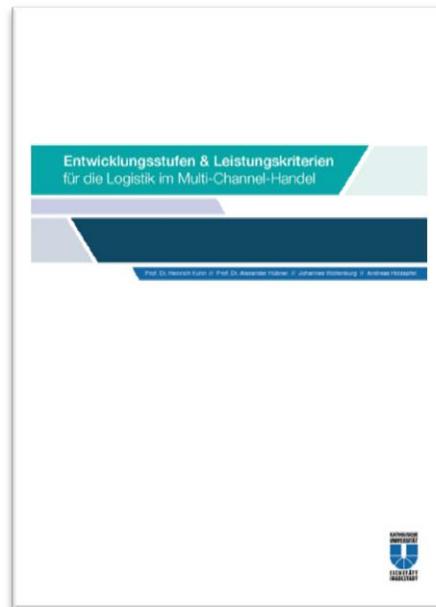
The recently published study

"Logistics in Multi-Channel Retailing"

and its succeeding study

"Development Stages and Performance Criteria in Multi-Channel Logistics"

show current structures, processes and challenges in the online and bricks-and-mortar business from a logistical perspective.

The two studies can be ordered at:

handelslogistik@ku.de
(+49) 0841 937 21823

www.multichannellogistik.net

Many thanks for your attention!

Catholic University of Eichstaett-Ingolstadt
Department of Operations
Prof. Dr. Heinrich Kuhn
Prof. Dr. Alexander Hübner
Auf der Schanz 49
85049 Ingolstadt
Tel. 0841 937 21823
www.multichannellogistik.net