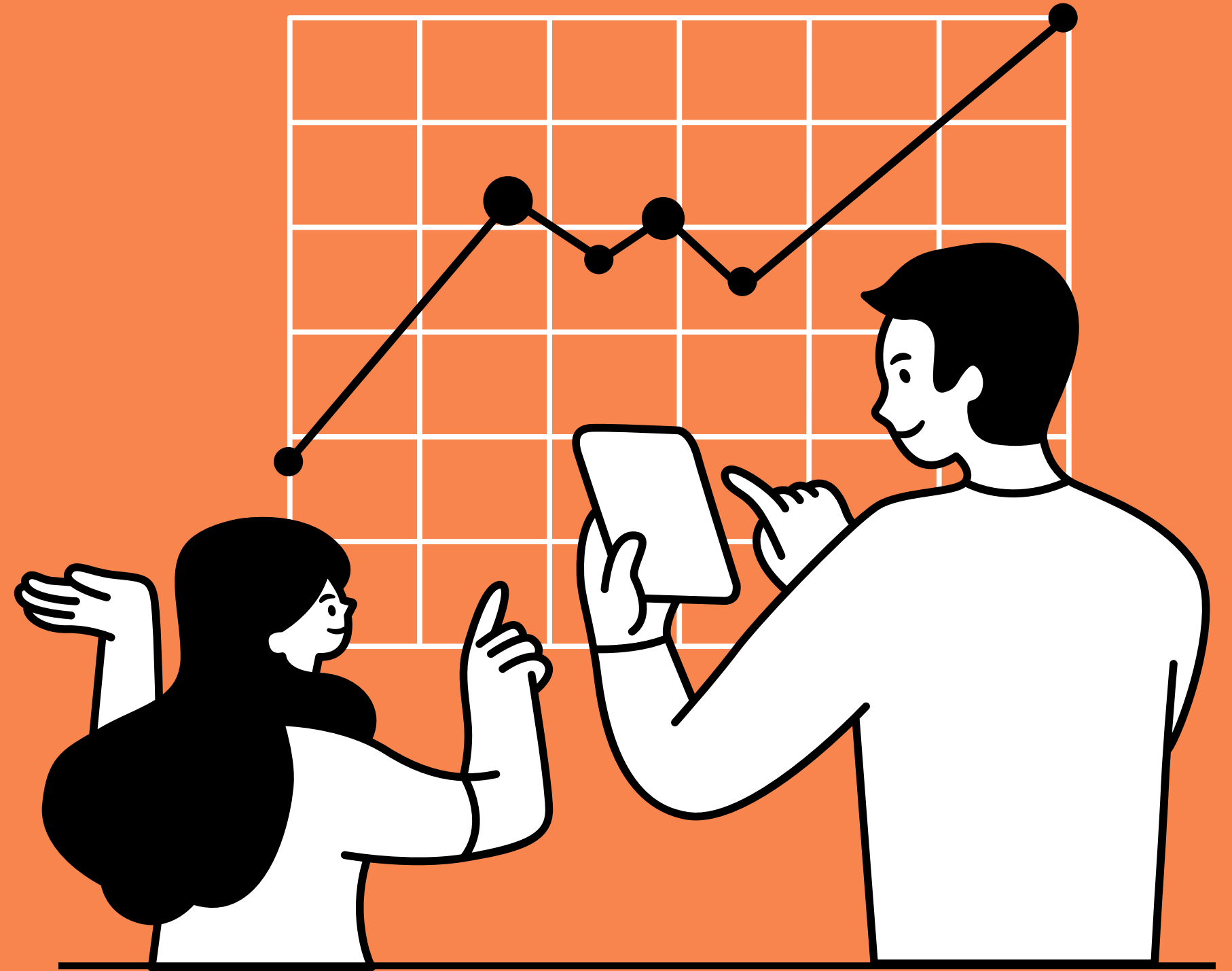


Marketing Metrics

| Analytics Avengers

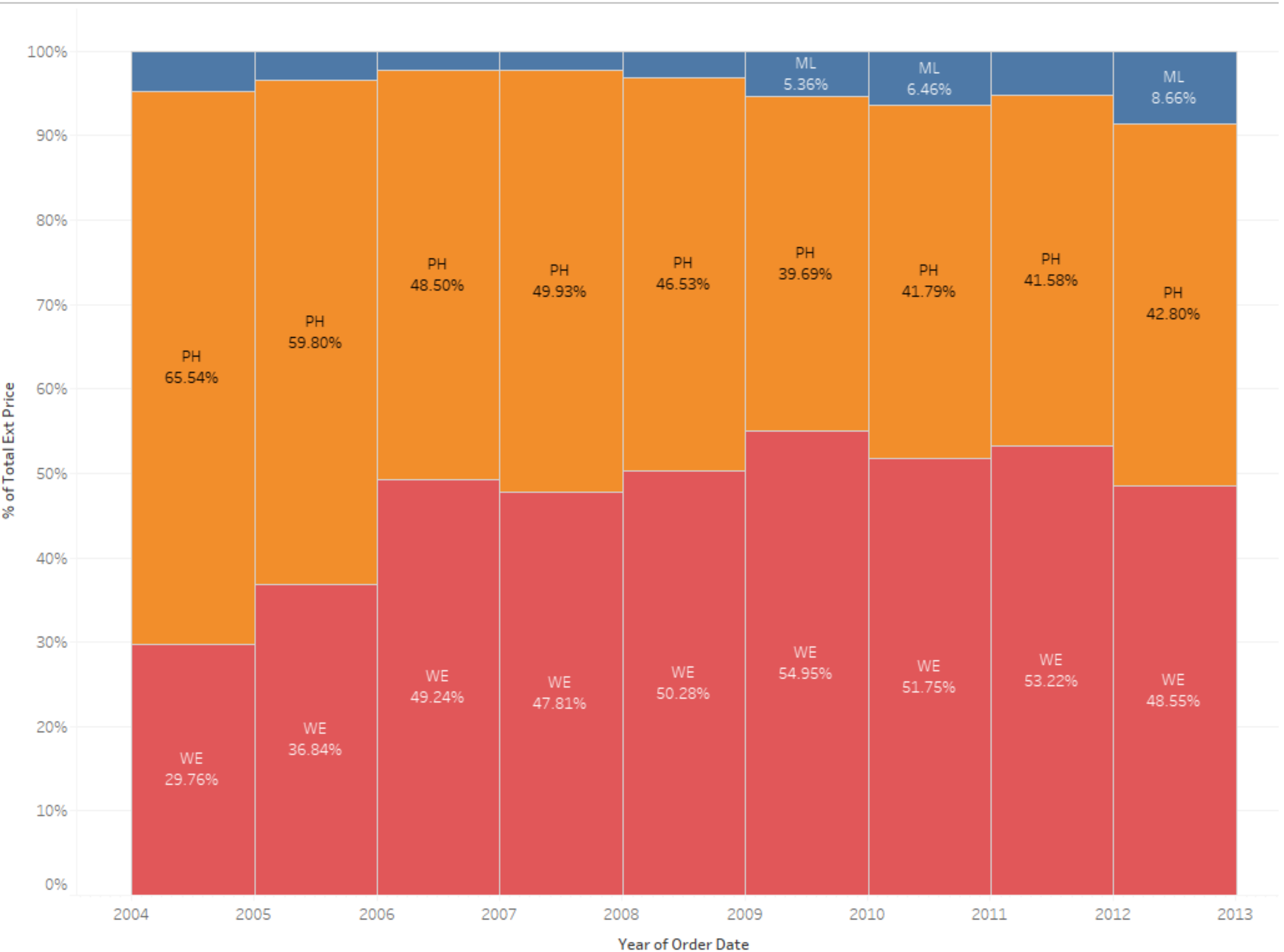


Ting-Yu Chen, Kexin Hu, Jnana Kundur Prakash, Xinxin Yang

Analysis 1:

Channel-buying patterns

Channel Importance



Overview: Time series data for channel importance by total sales

Mail: tiny share compared to other 2 channels; sort of stable with a small growth year over year

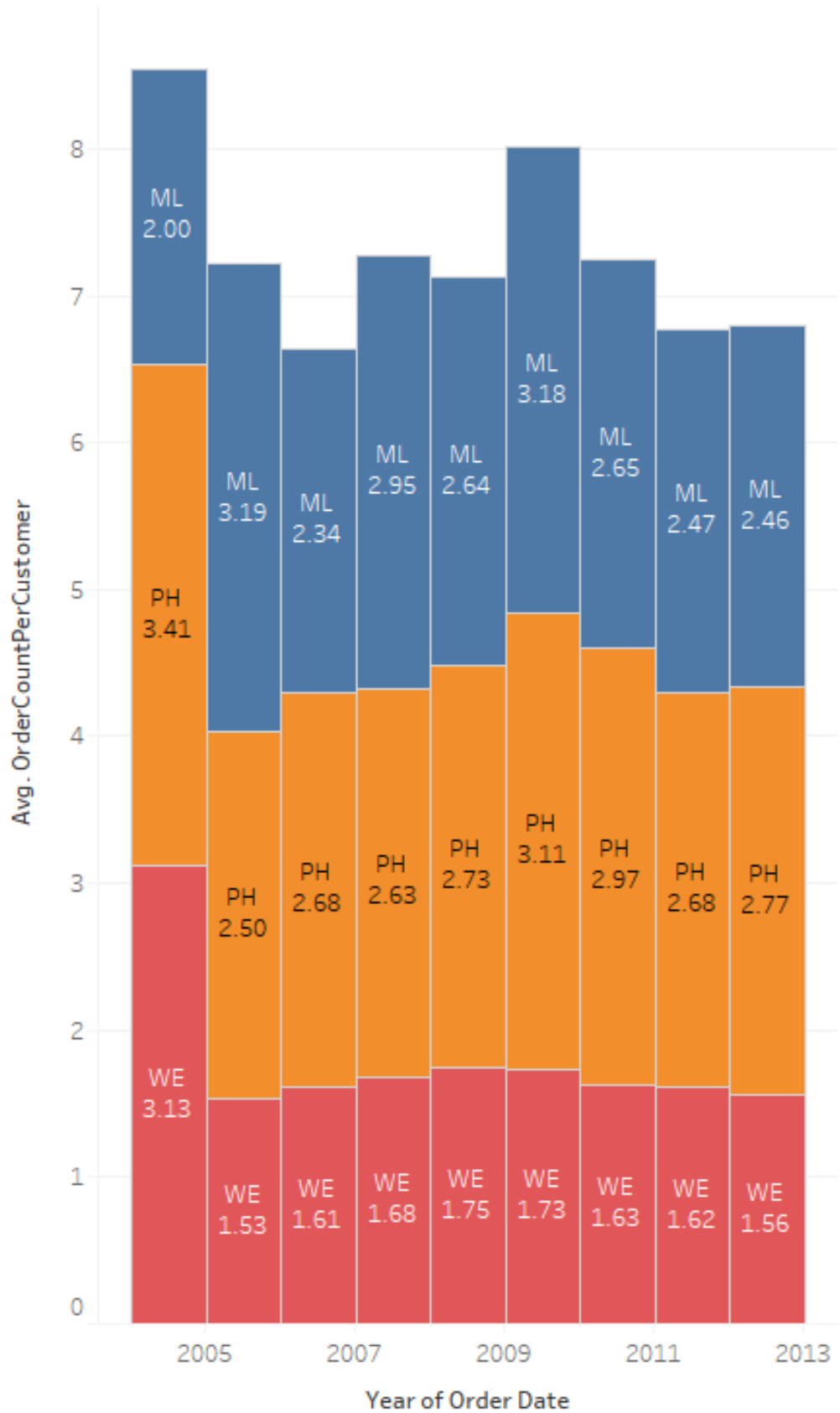
Phone: most share at the beginning, but declined afterward over the year
total sales 65.54% -> 42.90% from 2004 to 2013

Web: second share to Phone but steadily increase due to thriving of the internet
total sales 29.76 -> 48.55% from 2004 to 2013

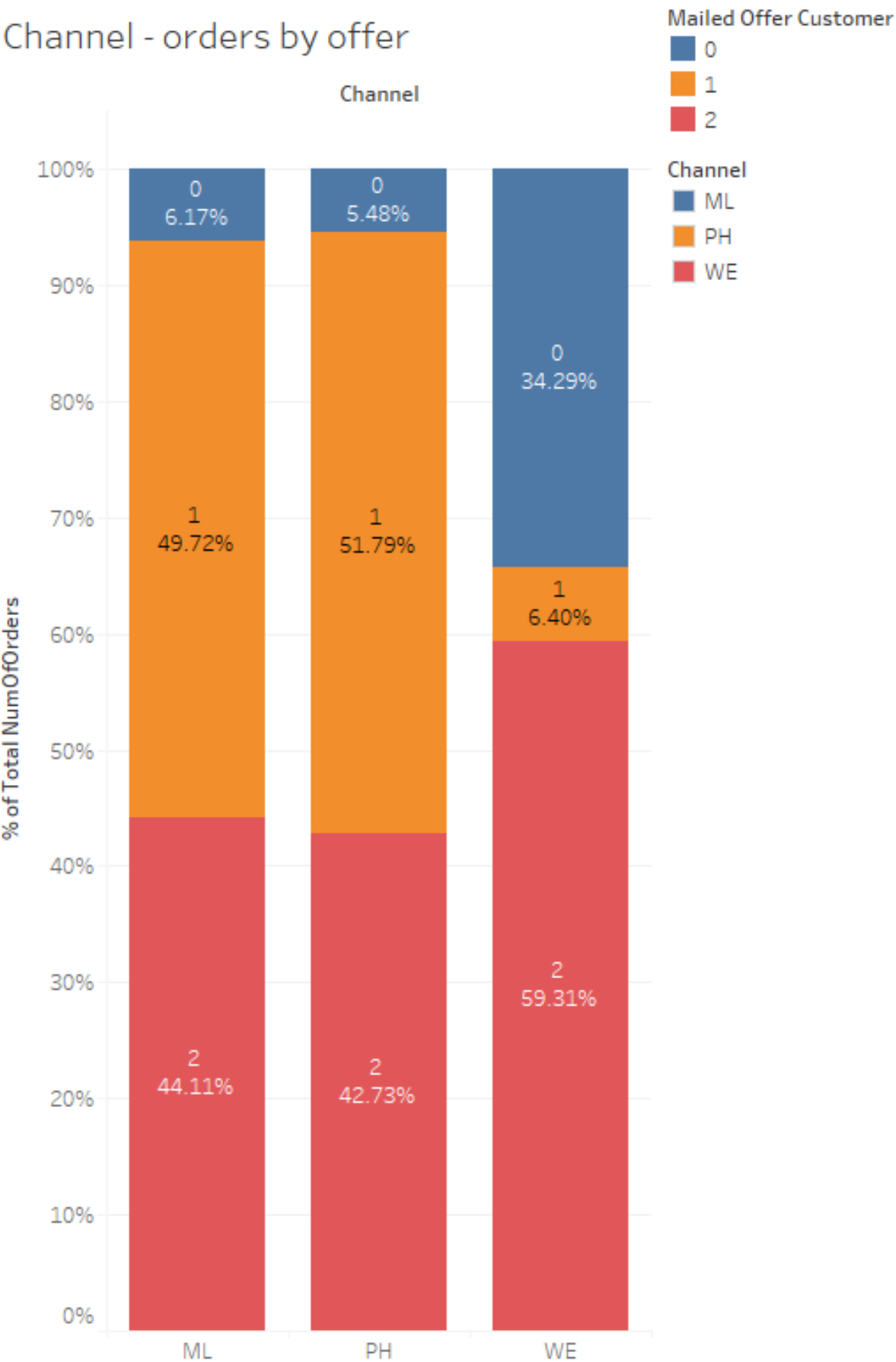
Analysis 1: continued

Channel-buying patterns

Avg # of orders per customer by channel



Channel - orders by offer



Left: average orders per customer by channel

Although Phone's total shares declined year over year, its customers purchased the most orders on average compared to other channels

Right: 0 - no offer has been mailed

1 - Offer ID used in the transaction was mailed

2 - Offer ID used in the transaction was not mailed

When we examine how sent offers affect purchase behavior, we found out that Mail and Phone are similarly affected by offers (around 50% of mailed offers were used in transactions)

However, for the Web channel, 34% of orders did not use mailed offers at all (5 ~ 6% for Mail and Phone) only around 6% of orders use the mailed offers (50% in the other two channels)

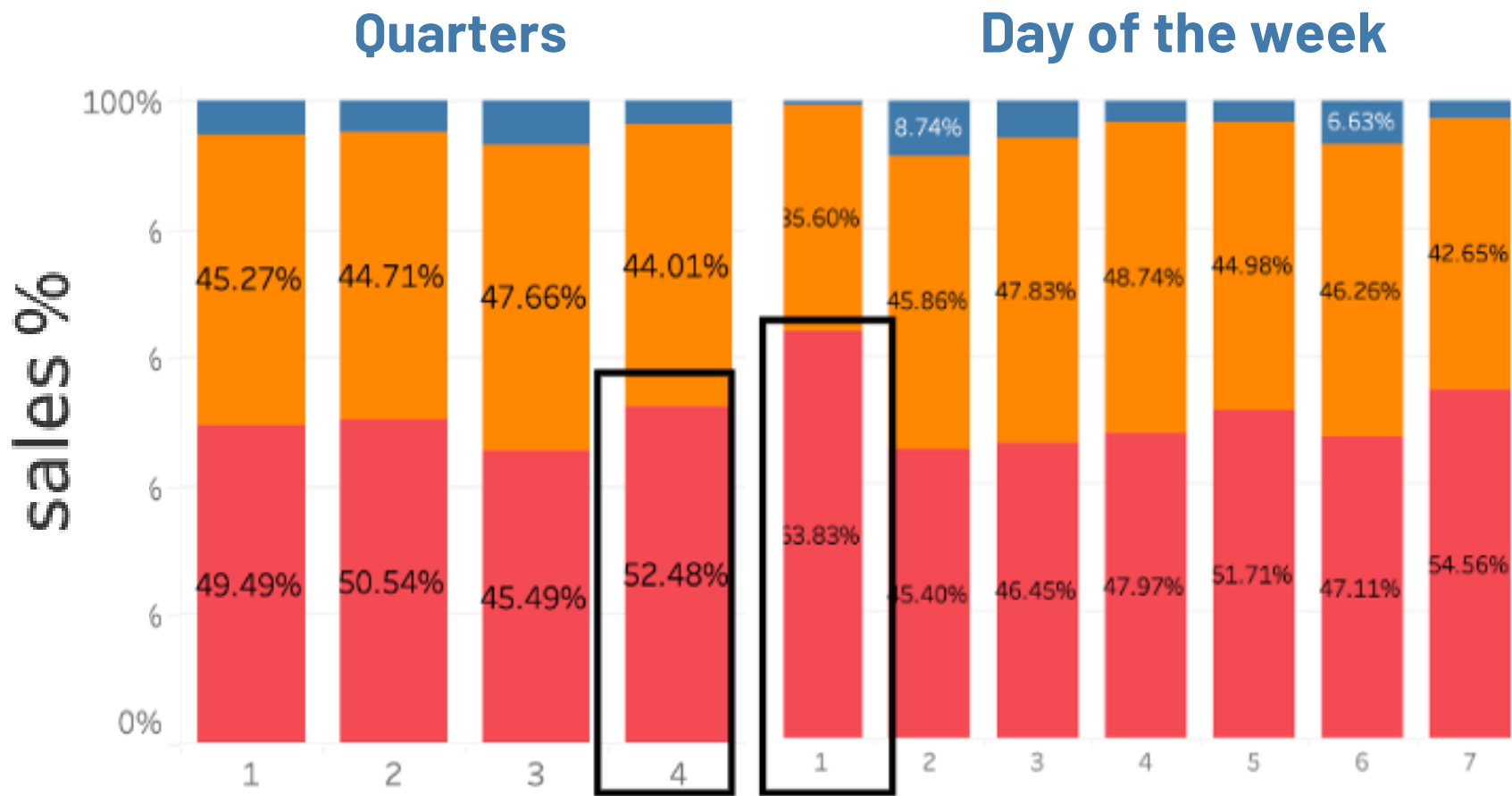
59% of orders use offers that were not mailed

More random coupons are available online

Analysis 1: continued

Channel-buying patterns

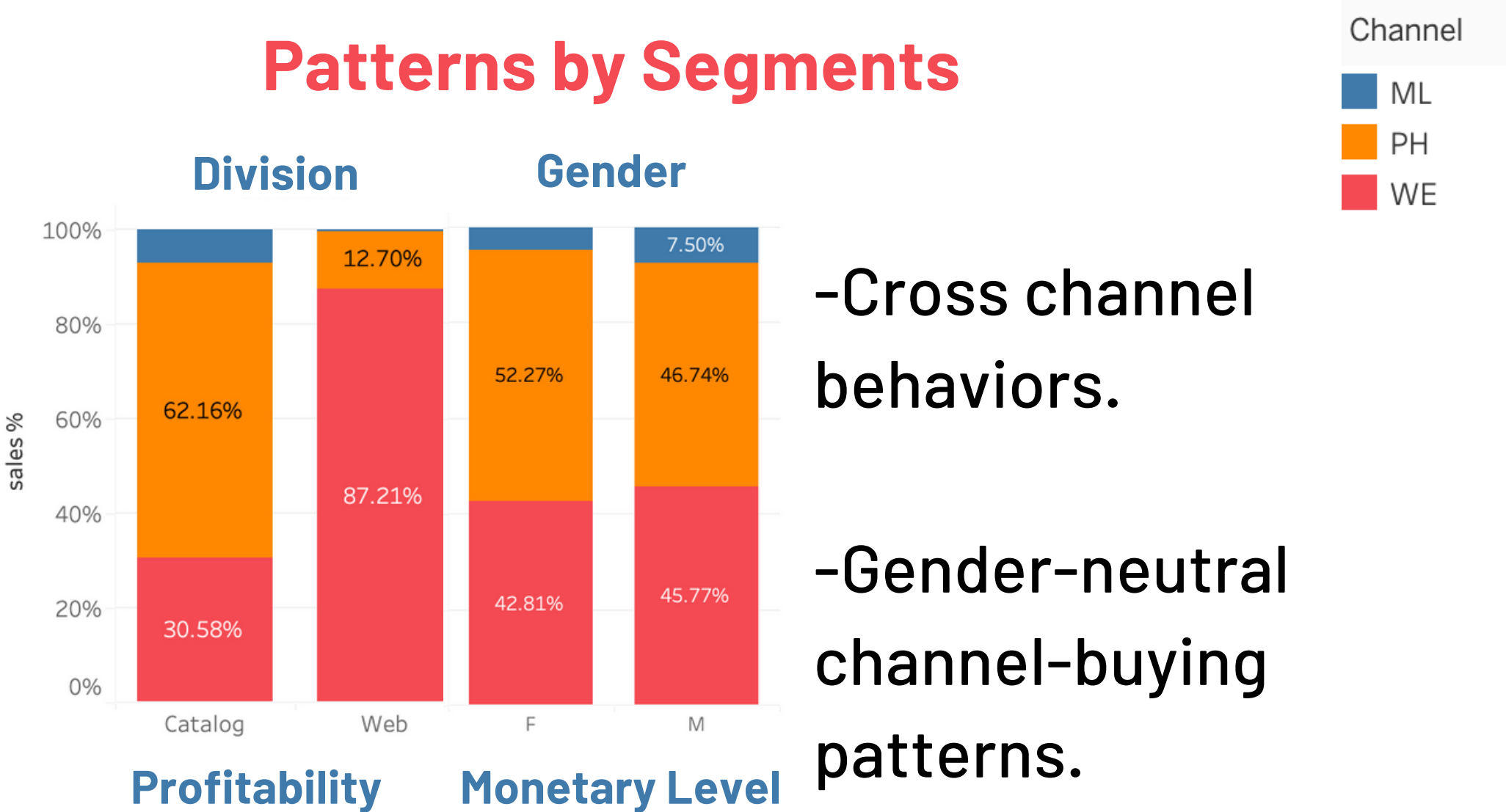
Patterns by Time



-Increased web channel importance during Q4 and weekend.

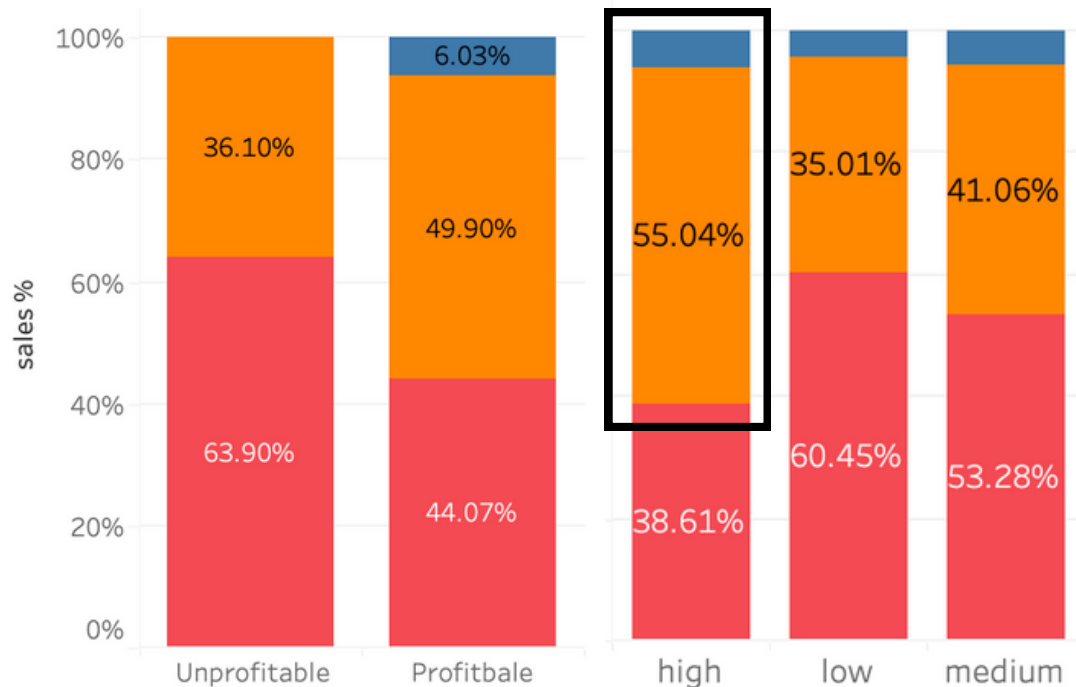
-Probably due to more time at home, intense promotions or exclusive online products.

Patterns by Segments



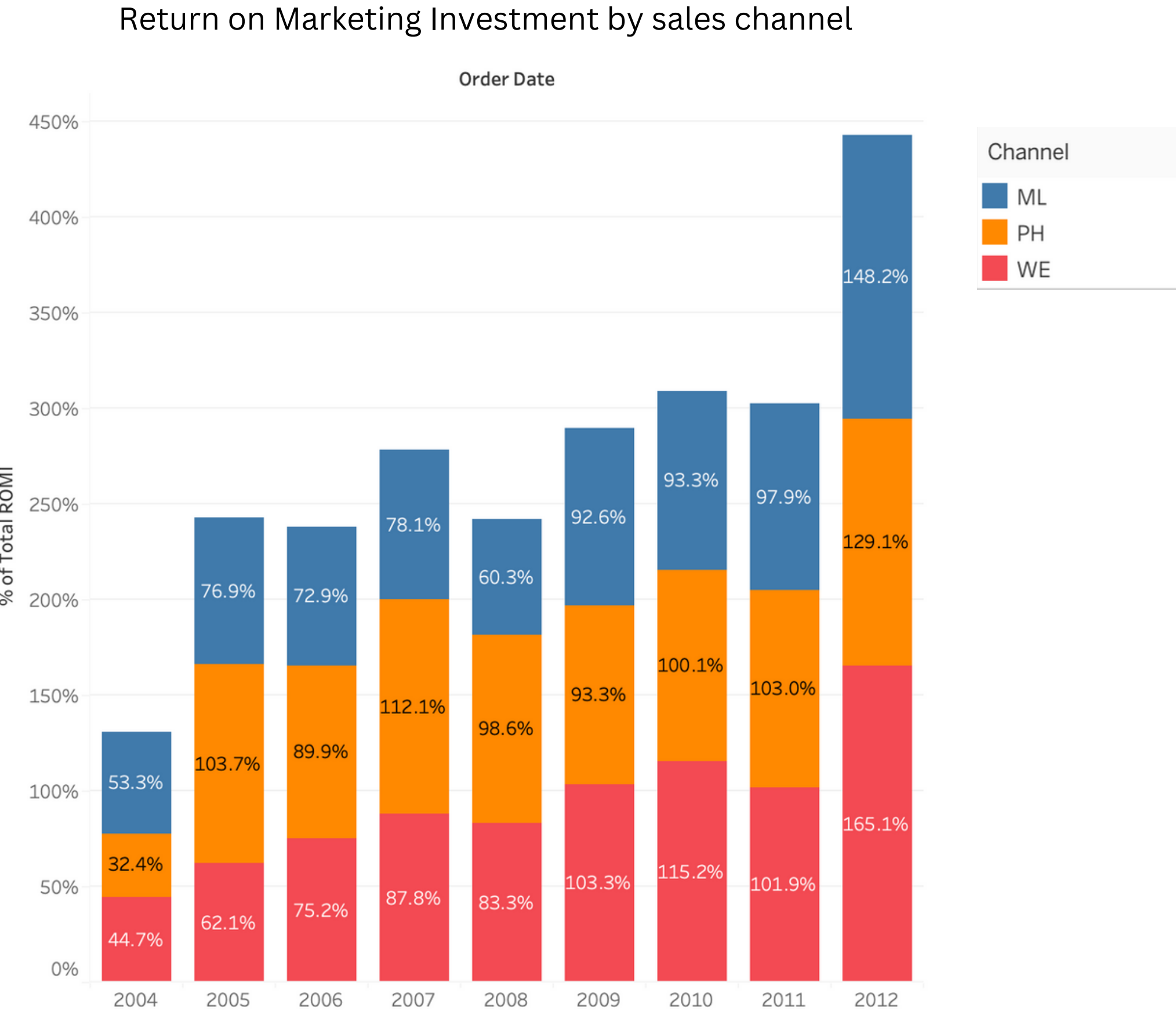
-Cross channel behaviors.

-Gender-neutral channel-buying patterns.



-High quality of Phone channel in terms of profitability and high-value customers.

Analysis 2: Measure Performance / ROI



Marketing Investment: Sum of mailed offers times fixed cost (\$5 each).

Gross Profit: Total revenue minus total cost.

ROMI: Ratio of net profit from marketing to the cost of marketing.

Mail (ML): Consistent yet modest role in ROI; slight growth over time.

Phone (PH): Declining ROI share suggests re-evaluation of phone marketing.

Web (WE): Increase in ROI post-2010 highlights digital channel effectiveness.

Analysis 2: Measure Performance / RFM

RFM Customer Segmentation



Statistics for Recency

Upper Whisker:	2,819
Upper Hinge:	1,812
Median:	1,267
Lower Hinge:	638
Lower Whisker:	0

RecencyScore

1
2
3
4
5

RFM Score =
Recency Score (1~5)
× Frequency Score (1~5)
× Monetary Score (1~5)

RFM by Channel Category P

Channel	RFMRank				
	Low	Medium Low	Medium	High	Super High
ML	56	134	103	180	599
PH	633	1,244	1,034	1,243	4,760
WE	1,306	2,626	2,189	2,965	3,631

- Big portion (50% ↑) of customers have not purchased for more than 3 years
- **High correlation** between **(Monetary + Frequency) Score** and **Recency Score**
- **Phone** Channel has the **highest percentage** of **Super High** RFM customers