

# Retail Makeover

*Slide Show Presentation*

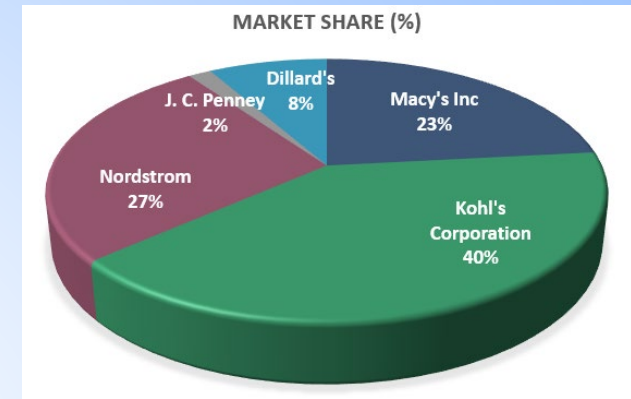
*Why “Digital” is the New Black!*



# US Department Stores Industry

Department stores in the United States are large retail establishments that offer a wide range of products in several different departments including but not limited to; apparel, accessories, home goods, electronics, cosmetics, and sporting goods.

The industry is comprised of 20 companies that operate about 3,250 stores with a combined annual revenue of \$29,597MM. Market share concentration for the industry is highly concentrated, with the three top companies accounting for 90% total industry revenue volume year-to-date.

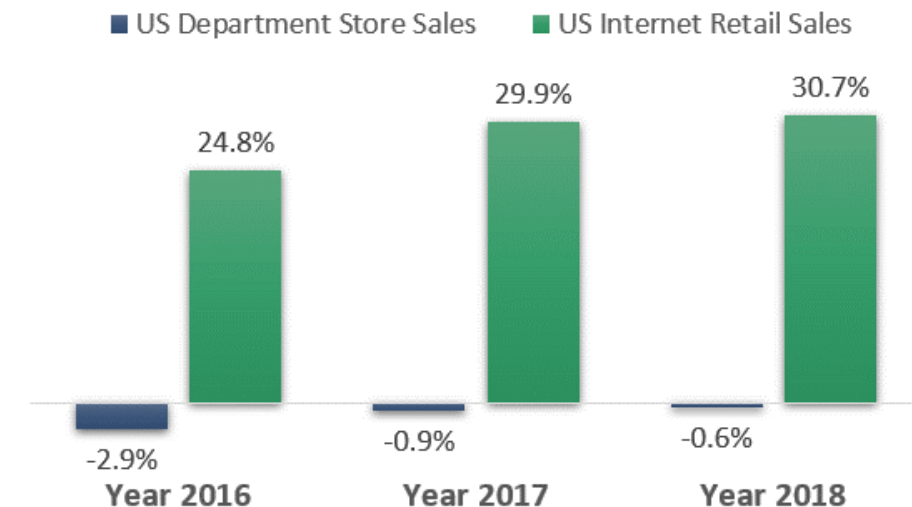
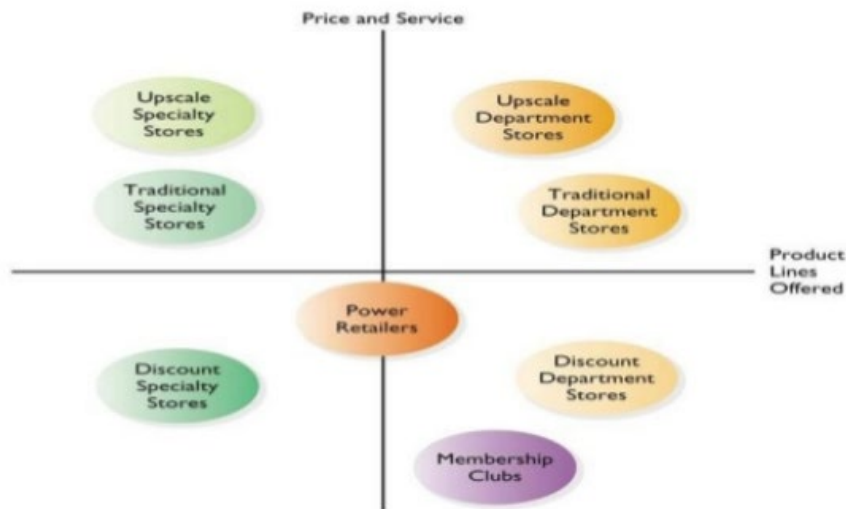


## Key Industry Players

Companies face intense competition from a wide variety of retailers, including Off-Price discount stores, mass merchandisers, specialty stores, warehouse clubs, specialty, and online venues.

## Industry Sales Growth

The National Retail Federation estimates that in 2018 US Department Store Sales declined by 0.6 percent, and e-commerce sales increased 30.7 percent in the same period.



# Clicks Vs. Bricks

Technology and changes to consumer behavior, particularly among younger consumers, are disrupting the retail industry. According to the Financial Times, Amazon is poised to overtake Macy's as the biggest US seller of apparel (a major category for department stores), Department stores also face competition from other digital retail platforms, such as Stitch-Fix, eBay, etsy, Zulily and Wayfair.

## Changes to Consumer Behavior

- Business model has shifted from fashion focused to consumer centric
- Consumers want greater personalization

## Reasons for Shopping Online

- ✓ 24/7 Availability
- ✓ Price Discrimination
- ✓ Convenience

Metric	Q1 2018	Q2 2018	Q3 2018	Q4 2018	Q1 2019
Average discount rate	19.54%	20.43%	22.00%	22.43%	21.17%
Free shipping order share	69.13%	70.08%	70.73%	76.39%	71.72%
Average order value	\$109.39	\$109.69	\$106.65	\$106.57	\$107.00
Average spend per visit	\$2.34	\$2.46	\$2.63	\$3.24	\$2.64
Average visit duration (minutes)	4.24	4.17	4.22	4.4	4.25
Order growth	11.91%	15.78%	28.19%	19.25%	16.67%
Sales growth	14.18%	16.60%	31.04%	17.78%	13.52%
Social traffic share	5.09%	5.65%	5.60%	6.41%	6.47%
Traffic growth	7.28%	3.73%	7.01%	2.83%	1.51%



# Why?

- Advances in technology innovation and shifts in consumer behavior has led consumers to shift spend from offline to online.
- In-store foot traffic continues to decline as shoppers look to time savings and price discounts by shopping online from the convenience of their home.
- As a result, department stores seen a steady decline in profitability, driven by poor inventory turnover and force price markdowns.
- Year-to-date, more than 10 multichannel retailers have closed their 8,600 stores and 68 retailers have filed for bankruptcies.
- Unless Department Stores evolves their business model that puts customer experience its top priority to meet the changing demands of NextGen consumers, the threat of the Retail Apocalypse is not so far fetched.



# Questions of Interest

- How can department stores leverage omnichannel capabilities to enhance customer experience and win back lost market-share?
- How can Department Stores optimize entire value chains to create innovative business model to reinforce competitive advantage by maximizing operational efficiency?

## Potential Impacts

- Customer journey experience
- Reinvigorating in-store shopping
- Nextgen online shopping
- Seamless, frictionless all in composing shopping

## Key Stakeholders

- Retail Companies CEOs / CTOs

Example

Macy's CEO – Jeffrey Gennette

Macy's CTO – Naveen Krishna





Questions of Interest will be examined through  
a Deep Dive Analysis of macy's

# Macy's 2<sup>nd</sup> Qtr. – At a glance!

## Business

- International business in **declined**
- Vendor Direct **increased online traffic**

## EPS

- Well **below** expectation
- **Inventory Markdowns** impacted margins
- Growth 150 at best in **silos and stages**

## Inventory

- **Elevated** post season inventory levels
- Heavy **price markdowns**
- **Missed opportunity** on **Women's sportswear**

## Mobile

- **Increase usage & conversion**
- **Fastest Growing**
- **New Feature Cadence**
  - My Wallet
  - My Style/Size

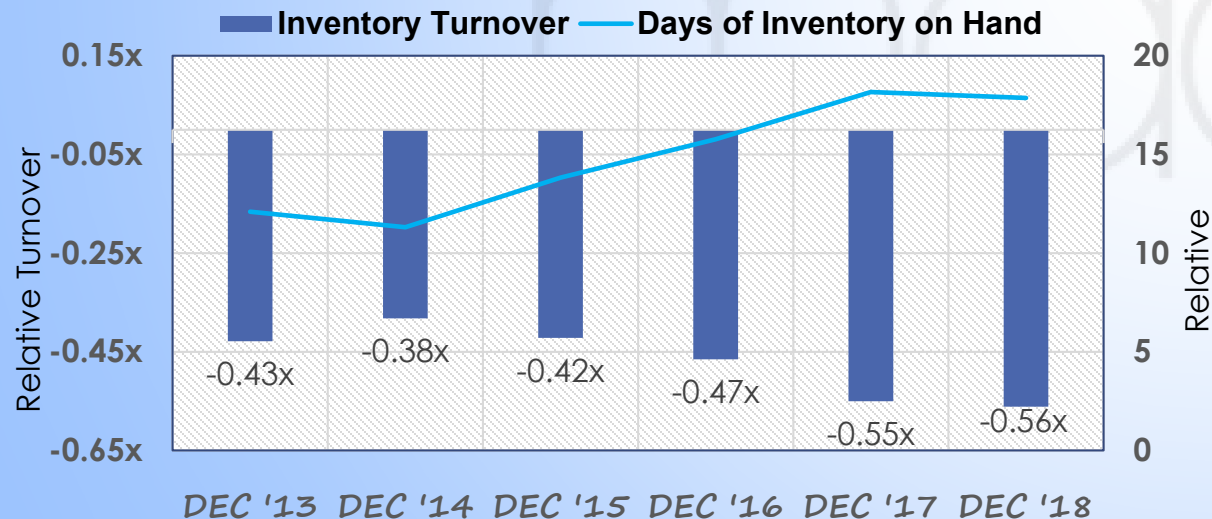
## In-Store

- Improve customer experience
- **Enhance quick pick-up**
- **Improve Destination business (40% of total sales)**

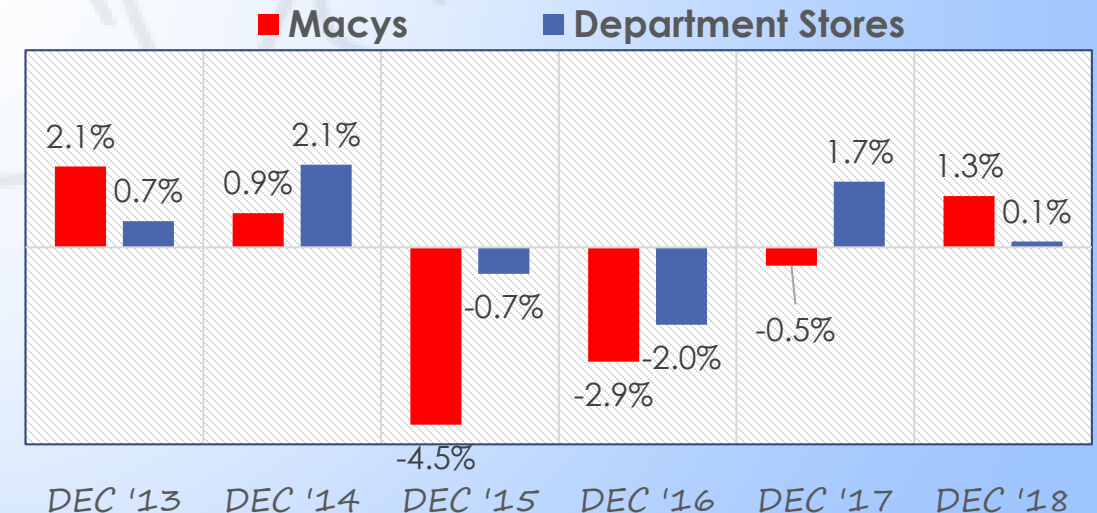
# Macys Performance

- Advances in technology innovation and shifts in consumer behavior has led consumers to shift spend from offline to online.
- In-store foot traffic continues to decline as shoppers look to time savings and price discounts by shopping online from the convenience of their home.
- As a result, Macys has seen a steady decline in profitability, driven by poor inventory turnover and force price markdowns.

## Macys Vs. Industry: Inventory Turnover



## Same Store Sales Growth YoY%





## ★macy's Performance Challenges

### Stagnant Sales Growth

Same Store Sales Growth (YTD):

-1.78%

### Operational Inefficiency

Operating Cycle:

★macy's  
168 Days

vs.

  
60 Days

### Low Shelf-Product Availability

Out of stock Inventory on Avg.

18.5%

### Poor Inventory Turnover

★macy's   
2.8x vs. 9.1x

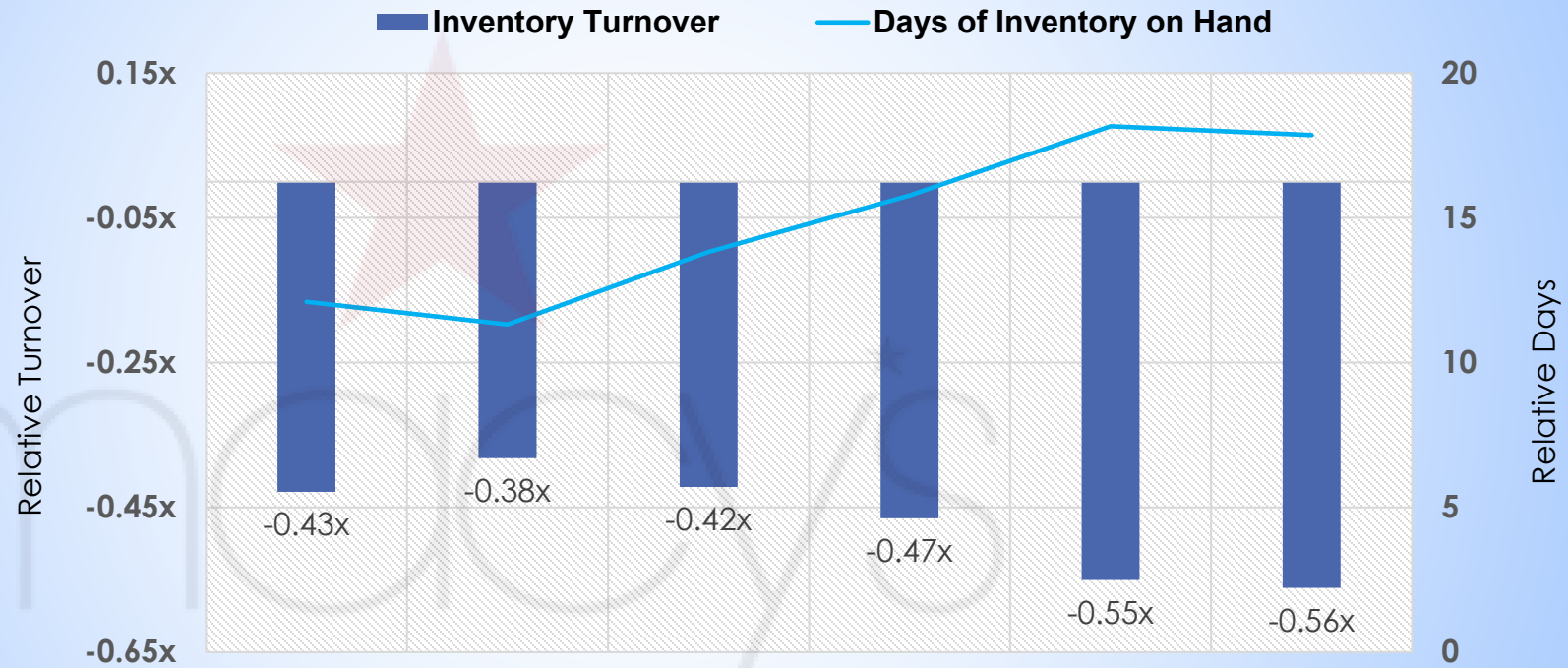
### Rising Delivery Costs

Increased on avg.  
90 bps  
per quarter

Calculations are YTD as of Q3 2019.

# Poor Inventory Management

## Macys Relative to Industry Average

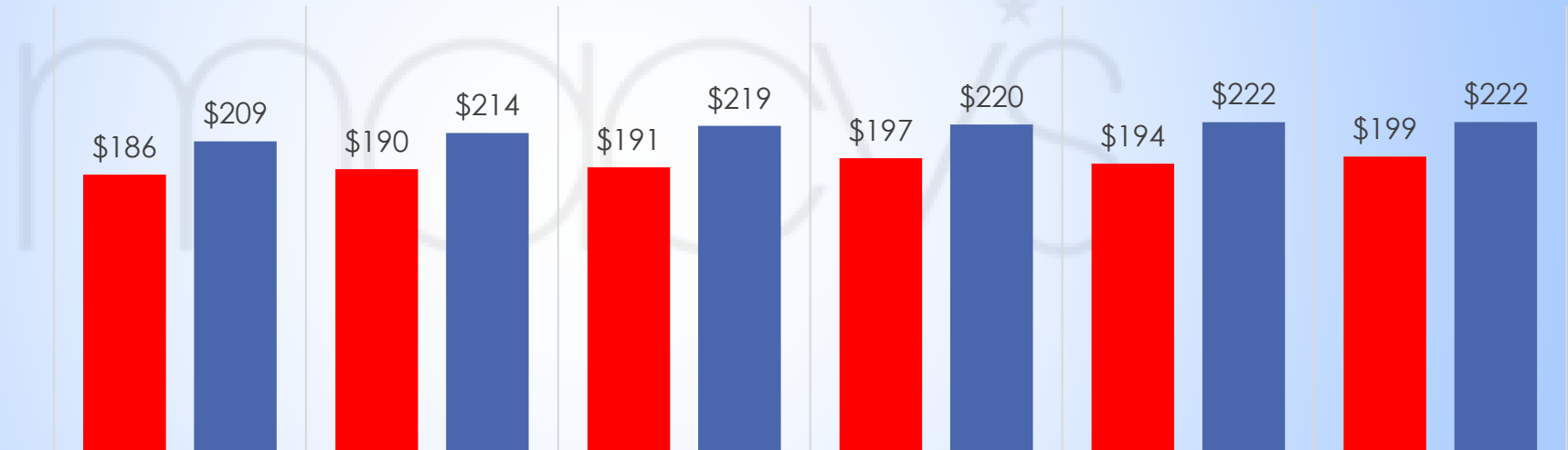


	DEC '13	DEC '14	DEC '15	DEC '16	DEC '17	DEC '18
Macys	2.91x	2.85x	2.78x	2.68x	2.70x	2.77x
Department Stores	3.34x	3.23x	3.20x	3.15x	3.25x	3.33x
Difference	-0.43x	-0.38x	-0.42x	-0.47x	-0.55x	-0.56x
Relative Performance	-12.8%	-11.8%	-13.2%	-14.8%	-16.9%	-16.8%

# Operational Inefficiency

## Same Store Sales Per Store Square Footage (ft<sup>2</sup>)

■ Macys ■ Department Stores



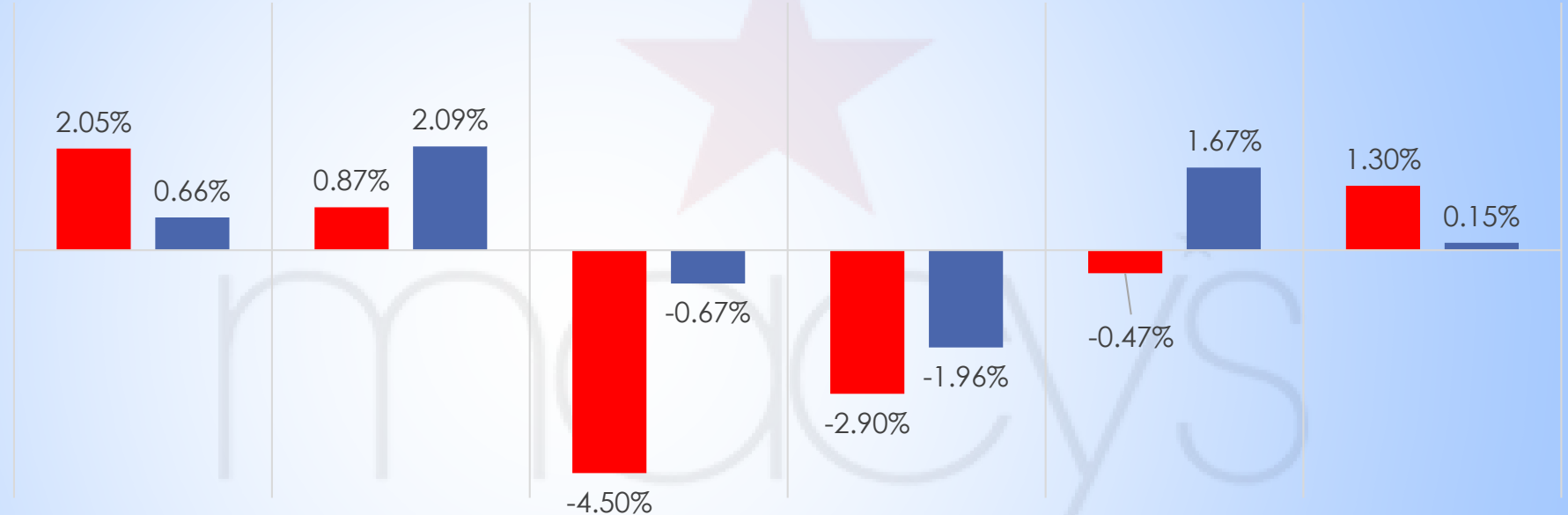
	DEC '13	DEC '14	DEC '15	DEC '16	DEC '17	DEC '18
Macys	\$186.36	\$190.02	\$191.38	\$197.42	\$193.78	\$198.53
Department Stores	\$208.81	\$214.40	\$219.22	\$220.12	\$221.76	\$221.86
Difference	-\$22.45	-\$24.38	-\$27.84	-\$22.70	-\$27.98	-\$23.34
Relative Difference	-10.8%	-11.4%	-12.7%	-10.3%	-12.6%	-10.5%



# Stagnant Sales Growth

## Same Store Sales Growth YoY%

■ Macys ■ Department Stores



	DEC '13	DEC '14	DEC '15	DEC '16	DEC '17	DEC '18
Macys	2.05%	0.87%	-4.50%	-2.90%	-0.47%	1.30%
Department Stores	0.66%	2.09%	-0.67%	-1.96%	1.67%	0.15%
Difference	1.39%	-1.23%	-3.83%	-0.94%	-2.13%	1.15%



*How can ★macy's compete with digital-first  
retailers moving at the speed of technology?*

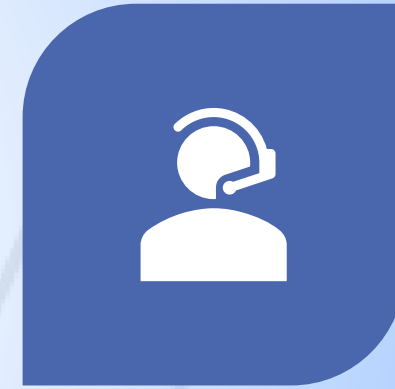
# *Proposed Solution*



*Modernize Legacy  
Technology*



*Optimize existing store  
operations*



*Enhance the customer  
experience*



# Modernize Legacy Technology

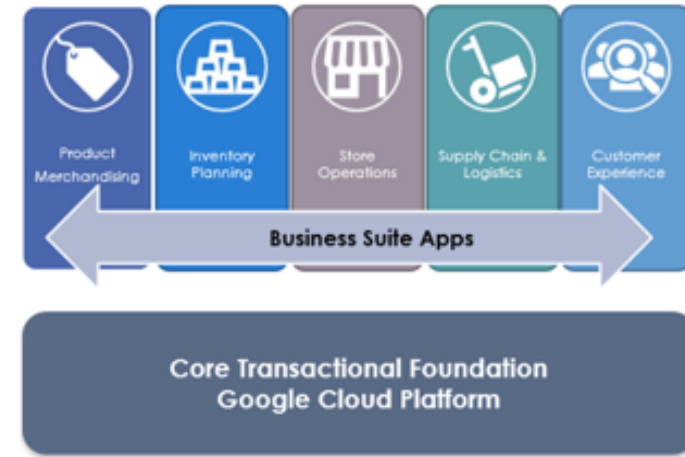
- Helps create a new unconstrained eco-structure that enables Macys to deliver the agility & speed necessary to stay competitive

## Legacy Architecture *Disparate & Unresponsive*



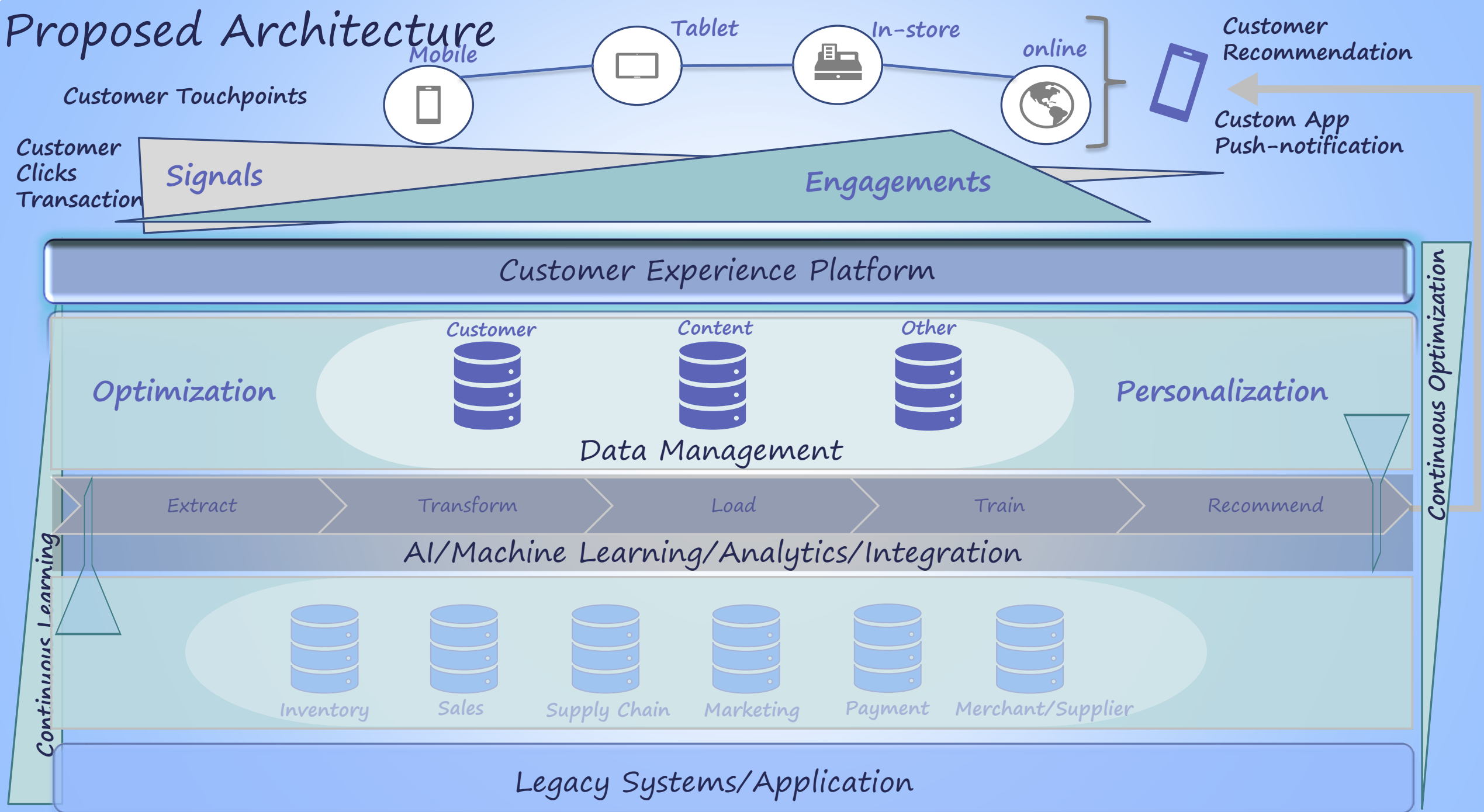
- Extremely customized systems built to support an obsolete (product focus) business model
- Lacks inventory visibility throughout company channels and supply chain process
- Operations not aligned to optimize cross-channel fulfillment options
- Relies on multiple versions of the truth
- Lacks features and functionality necessary to support growth and demand speed

## Transformed Architecture *Ready for Unified Commerce*

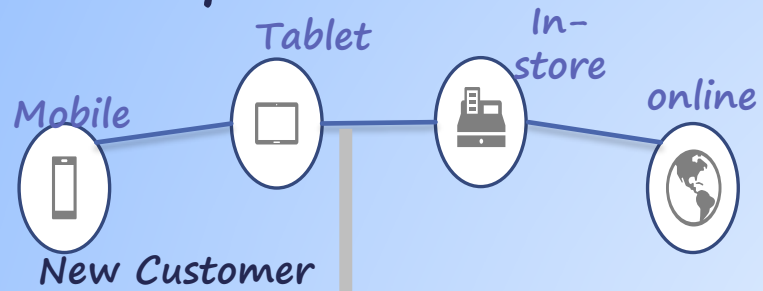


- Single core solution as a foundation with standardized technology across all business segments
- Complete end-to-end inventory & supply chain visibility
- Fully integrated cross channel operational and data processing
- Single version of the truth
- Manages real-time data at scale to build new capabilities necessary for growth & demand speed

# Proposed Architecture



# Example Use Case



## Customer Application

- Messages
- Personalized Promotions
- Order Confirmations
- Order pick-up



## Serverless Customer Messaging

/Users/{uid}/customers/{id}



Personalized Promotions



Win-Win



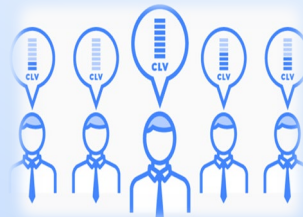
Increased foot-traffic



Low CLV:CAC



Increased loyalty



Most Profitable Customer



Higher Customer Savings



Intimate Customer Relationship

Technology Savings



event-driven scaling



No Servers to manage



Pay only for what you use



Quick deployment



# Optimize existing store operations

Elimination of silos enables Macys to increase overall productivity by utilizing each store as a fulfillment and customer interaction center.

Opportunities for maximizing operational efficiency:



## Product Merchandising

- Price reduction optimization
- Cross-channel analytics
- Point-of-Sale solutions
- Dynamic assortment planning



## Inventory Planning

- Demand forecasting
- Reduce inventory carryover
- Gain insight at SKU level
- Improve inventory accuracy and visibility



## Store Operations

- Frictionless checkout
- Instore replenishment optimization
- Store optimized planograms
- Reduced working capital



## Supply Chain & Logistics

- logistical scenario modeling
- Driver-based analysis
- Optimize carrier utilization
- Fulfillment Optimization
- Delivery Cost Reduction Model



## Customer Experience

- Customer acquisition & retention
- Personalized digital marketing/promotion
- Data-driven segmentation

- Harness AI and Machine Learning capabilities to improve inventory accuracy, tighten control of merchandise stock replenishment, and optimize fulfillment ordering
- By digitizing information-intensive processes, costs can be cut by up to 90 percent and turnaround times improved by several orders of magnitudes

# Enhance Customer Experience

Macys can offer consumers an experience surpassing that of online retailers by uniting traditional in-store advantages with key success elements of the digital experience

Strengthen relationships by using real-time consumer analytics to enhance personalization



Leverage nondigital "touch & feel" attributes to optimize product assortment



Remove consumer pain point by offering frictionless checkout





# Macy's place on Personalization Index!

Utilize retail solutions of Google Cloud Platform

2019 Sailthru® Retail Personalization Index

### Why the Retail Personalization Index

#### Top 10 Brands

Sephora

Nordstrom

Rent the Runway

The Home Depot

Best Buy

DSW

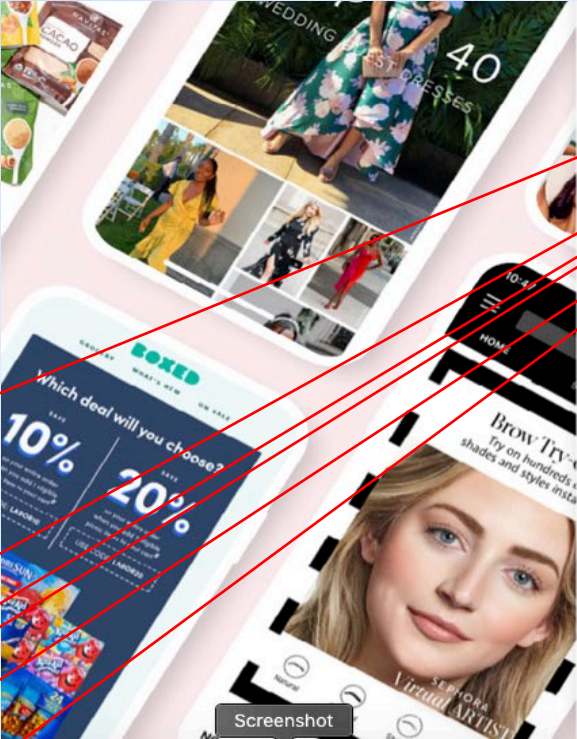
Ulta

Urban Outfitters

Adidas

Wayfair

Screenshot



RANK	BRAND	TOTAL	SITE	EMAIL	MOBILE	OFFLINE	OTHER
51	Brooks Brothers	48	14	11	9	7	7
51	The Body Shop	48	16	19	3	4	6
51	West Elm	48	15	16	1	9	7
56	Amazon	47	21	10	12	0	4
56	ASOS	47	20	6	13	5	3
56	Blueprint	47	14	14	13	2	4
56	Fashion Nova	47	13	12	16	1	5
56	Guess Jeans	47	8	20	10	7	2
56	Poshmark	47	11	16	13	1	6
56	UGG	47	15	21	0	6	5
63	Etsy	46	14	17	9	4	2
63	Gap	46	16	10	12	5	3
63	Petco	46	17	8	13	6	2
66	Ann Taylor (Ascena)	45	19	13	1	9	3
66	IKEA	45	11	13	7	7	7
66	Macy's	45	14	11	10	8	2

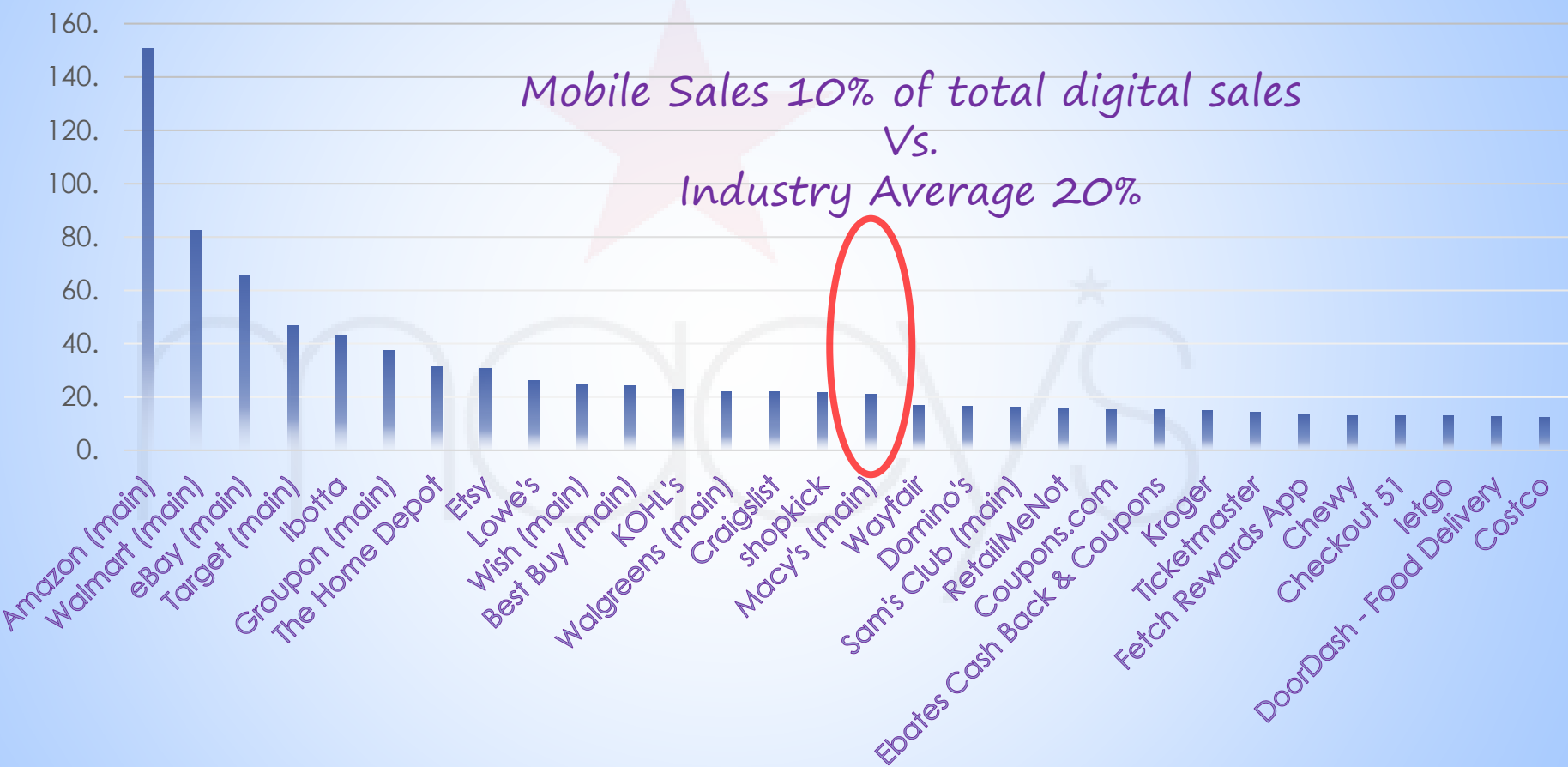
Total	Site	Email	Mobile	Offline	Other
45/100	14/26	11/25	10/20	8/10	2/19

Personalized marketing results in retailers' sales increasing by 6 to 10%, two to three times higher than their non-personalizing competitor.



# Mobile Experience

## MOST POPULAR RETAIL MOBILE APPLICATION



# Technology Runway

Stoppers

Starters

Can Macy's be a show stopper on Technology Runway?



Google Cloud Data warehousing /analytics

- Streamline retail operation across network for ship/rec. sorting, ticketing etc..

YReceipts

Google App Engine

- Access in-store data in 2.5 sec.
- Helps high-street retailers identify in-store customers.

Zulily

Real-time analytics

- Increased revenue
- Enhanced Customer Exp.



Cloud Native Arch.

- 10x faster deployment
- Same-day new service deploy. Vs 1-2 weeks!!

California Design Den®

SLEEP COMFORTABLY, LIVE BEAUTIFULLY™

Machine Learning

- Reduce inventory carryovers 50%
- Demand planning accuracy QoQ



FILOBLU shopping experience

Big-Data Query

- Black Friday turnover up 50%LY
- Aggregate data sources for improved analytics.

Hoff

Cloud Storg. & Analy

- 17% inc. ROI in online adv.
- Huge recourse savings in DevOps & IT

FIT ANALYTICS

TensorFlow & Kubernetes

- Processes data in minutes Vs hours!!
- 250M size reco./mo for top apparels boost conversion/reduce returns

laggard

leaders

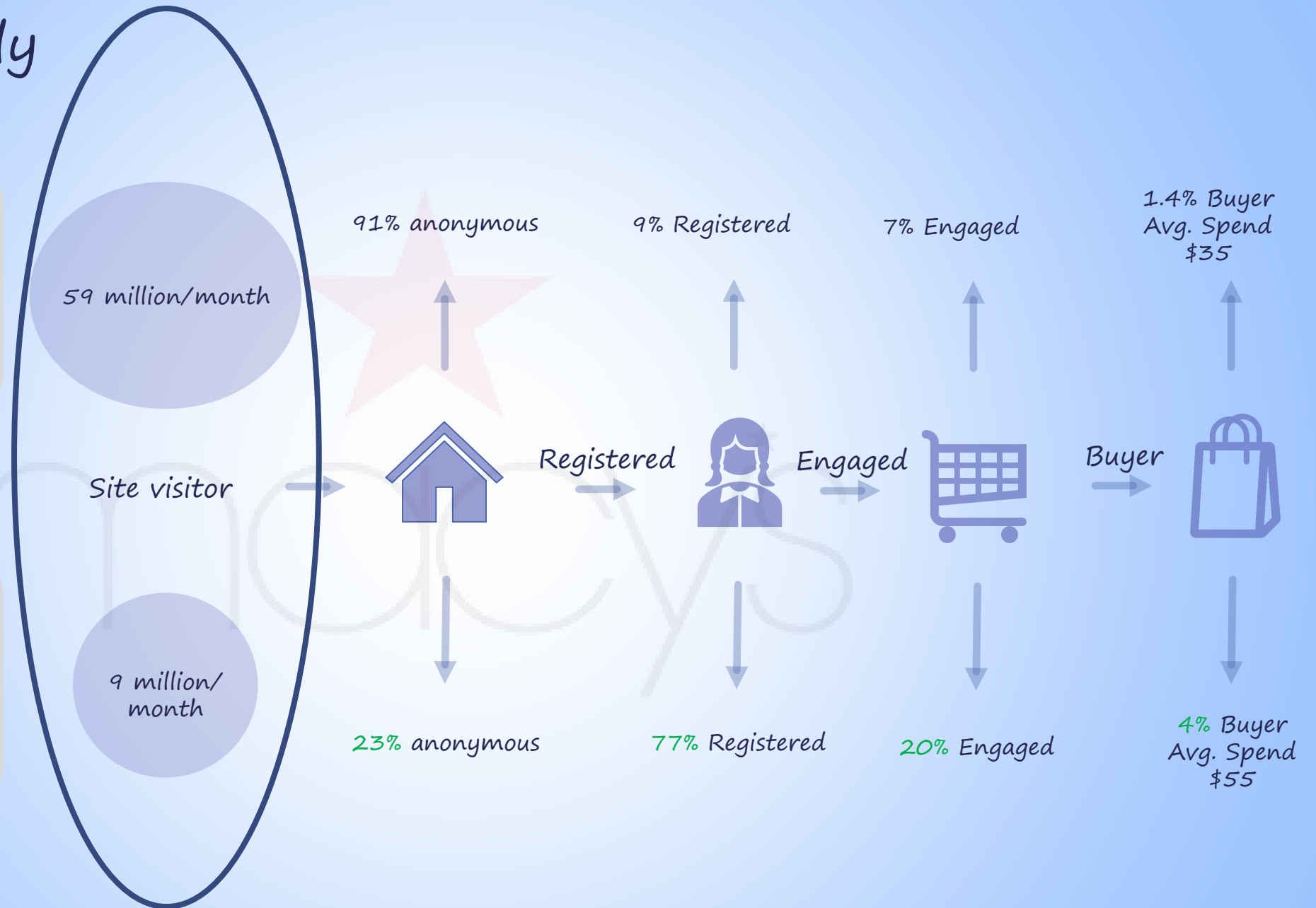
# Macy's Vs Zulily



- Founded in 1858
- ~\$25B rev. in 2017



- Founded in 2009
- \$365m rev. in 2016



Is data or customer really an issue for Macy's?

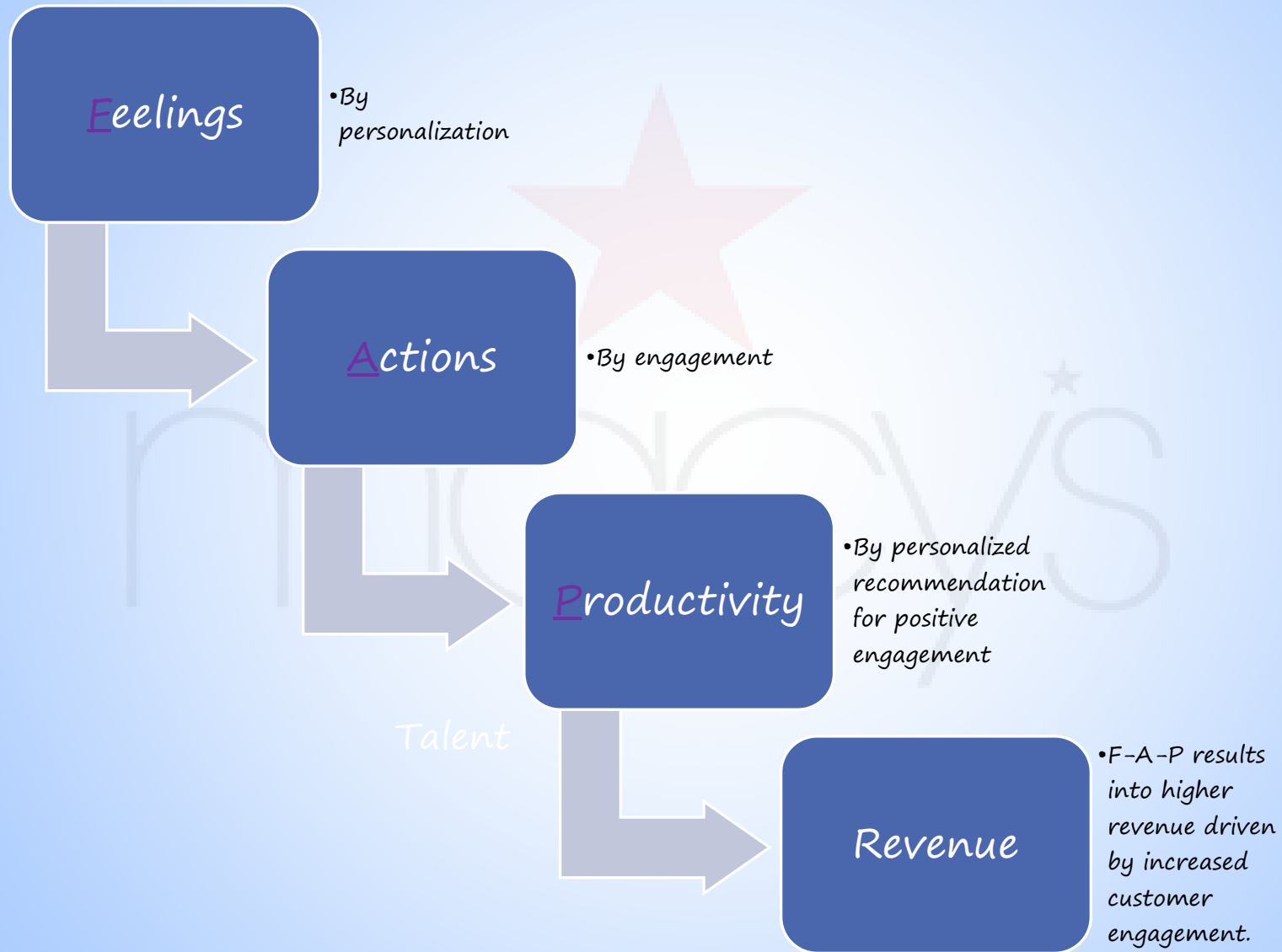


*How to be show stopper again?*

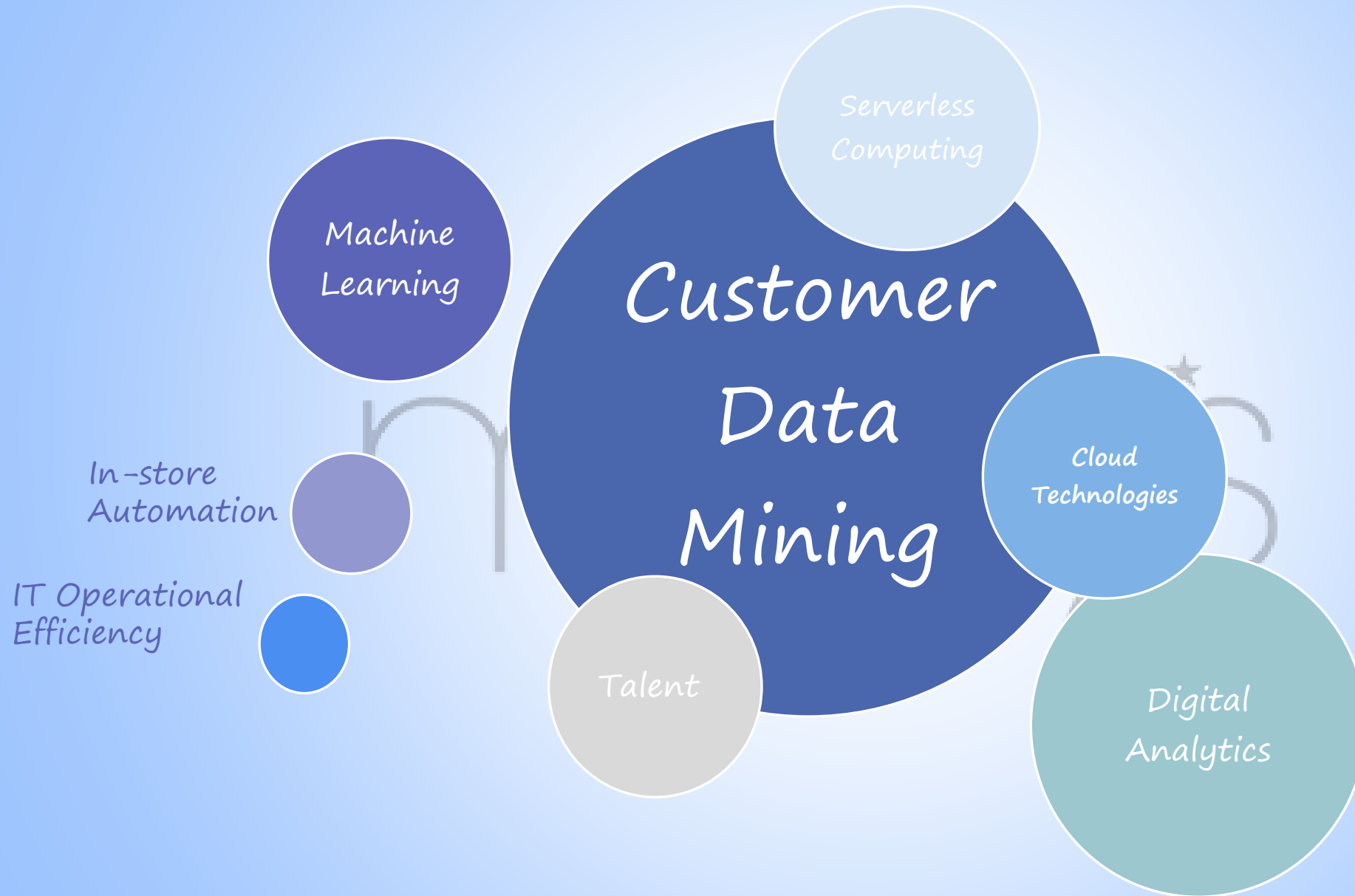
macy's



# Customer Intimation – Dr. Bailo's Law



# Key Focus Areas of Improvement



# Leverage GCP!!



# Opportunity!

Defination	Visitors	% of Retail Traffic	Total Signup	Total Engagement	Total Buyer		Average Spend
	Unique Monthly Visitors	Total % of US retail ecommerce	% of visitors who signedup to create profile	% of visitors actually browsed anything	% of visitors engaged	# of visitors engaged and bought	Avg. \$ spend by each customer
Macys.com	57,900,000	24.40%	9.00%	7.00%	1.40%	5,107	\$ 35.00

4% Increase in Conversion by 3Q 2020

3% CLV growth by 2Q 2020

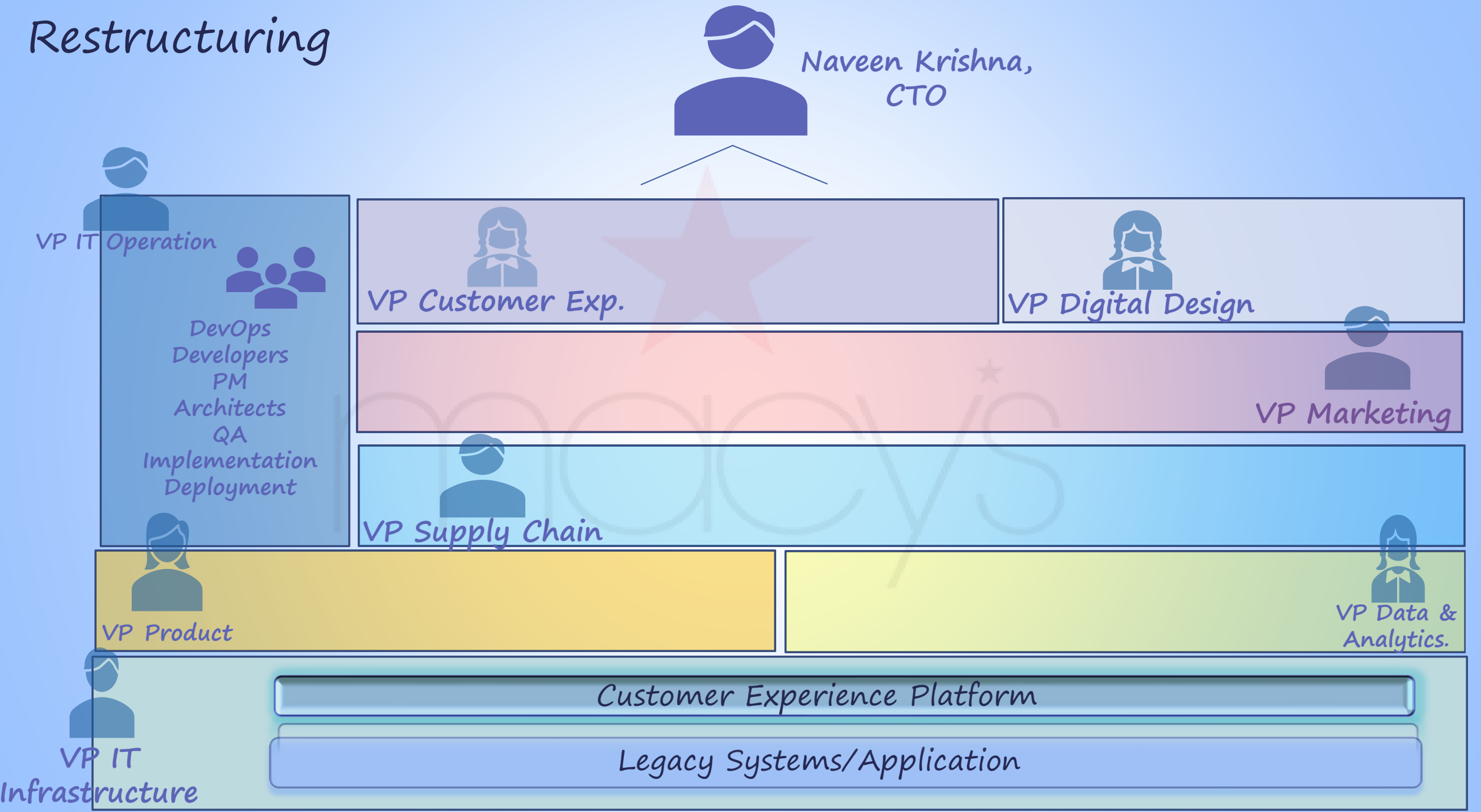
2.5% Revenue growth by 3Q 2020

2% increase in Op. Efficiency by 4Q 2020

2% increase Customer growth by 4Q 2020



# Restructuring





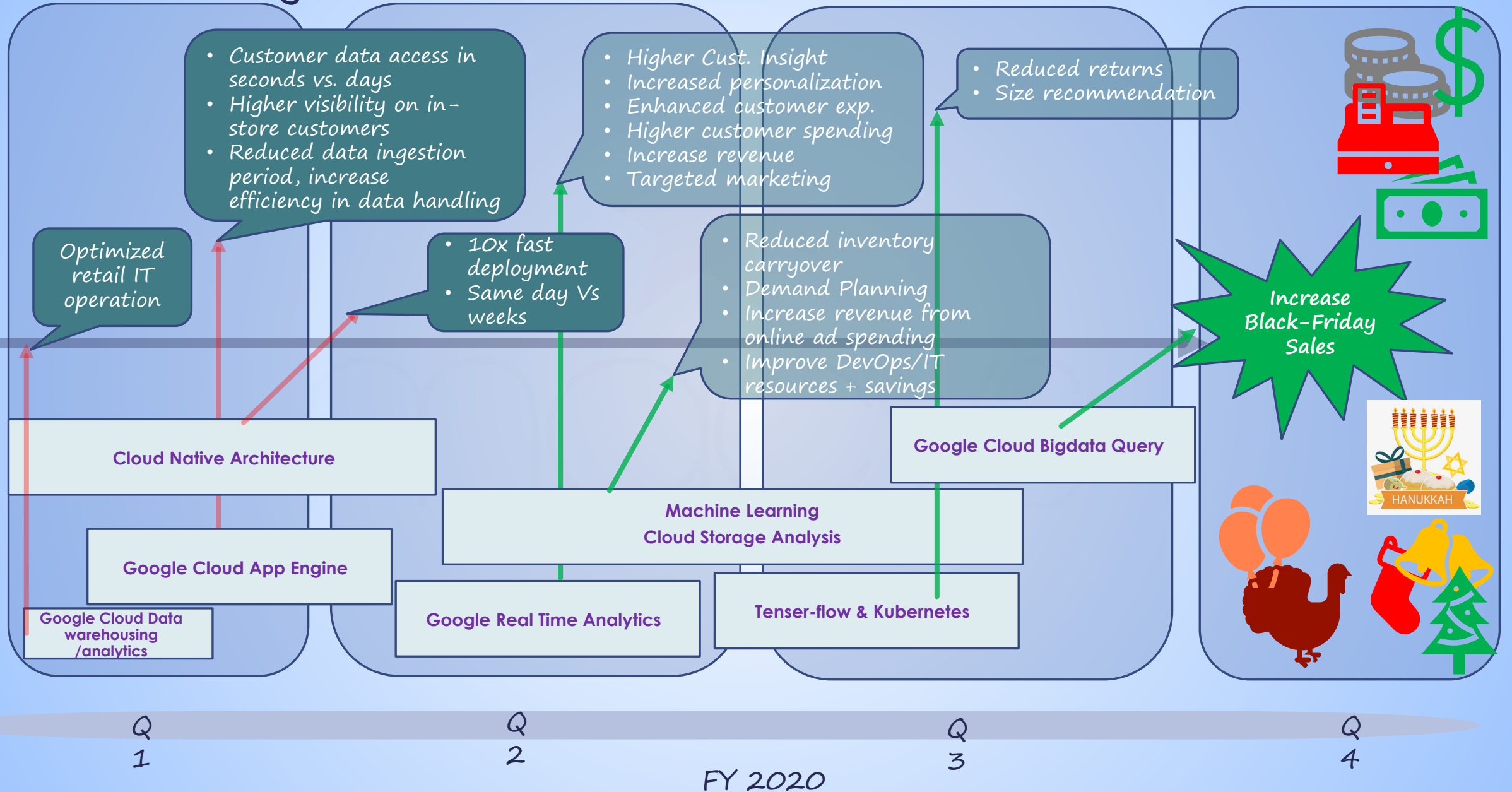
*What's in it for Macy's ?*

macy's

# W-I-I-F-Macy's?

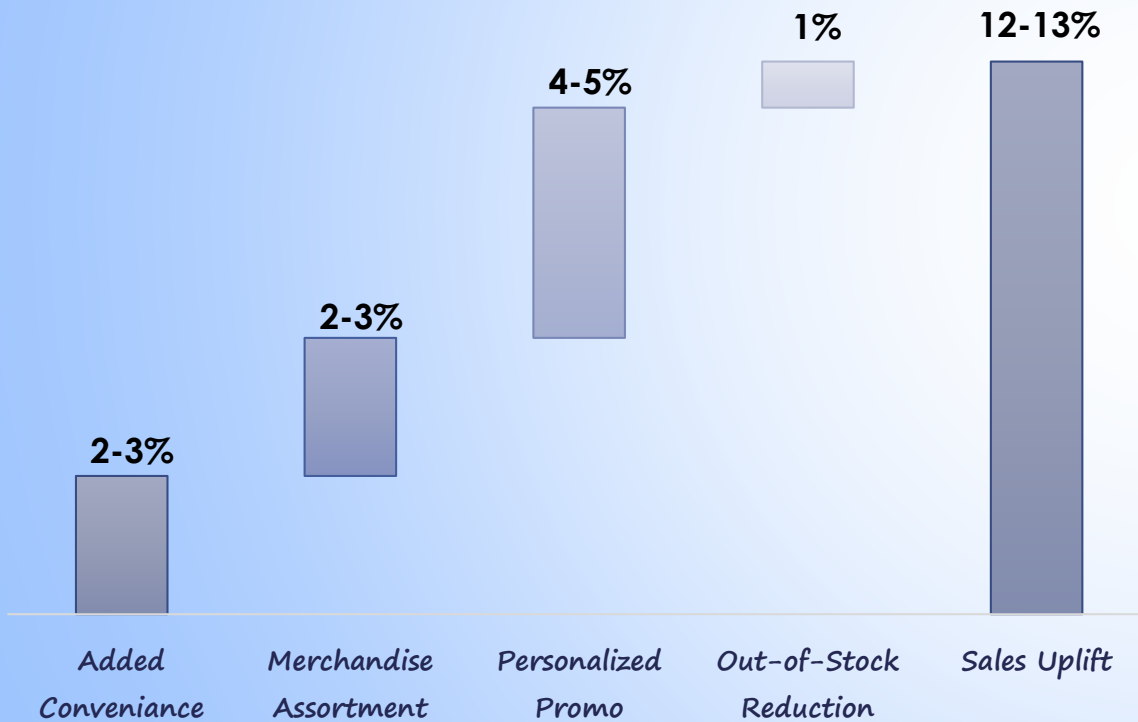
Revenue & Efficiency

Leverage Cloud

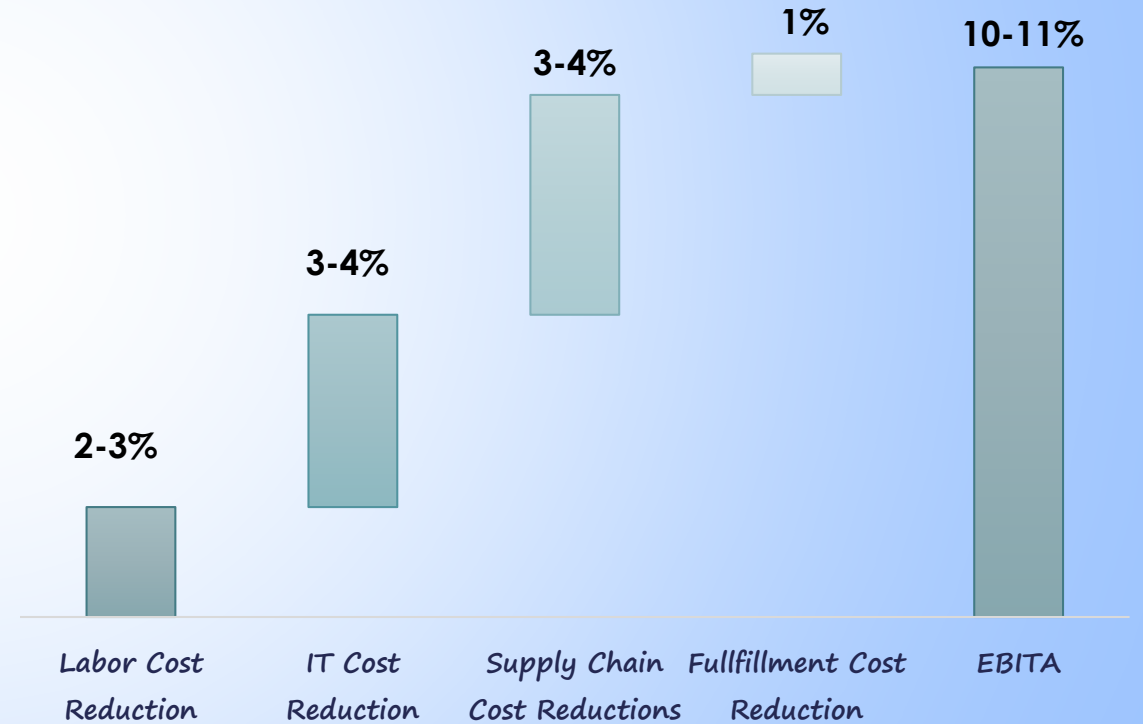


# Top-line and Bottom-line Benefits

Impact on top line (%)



Impact on Bottom line (%)







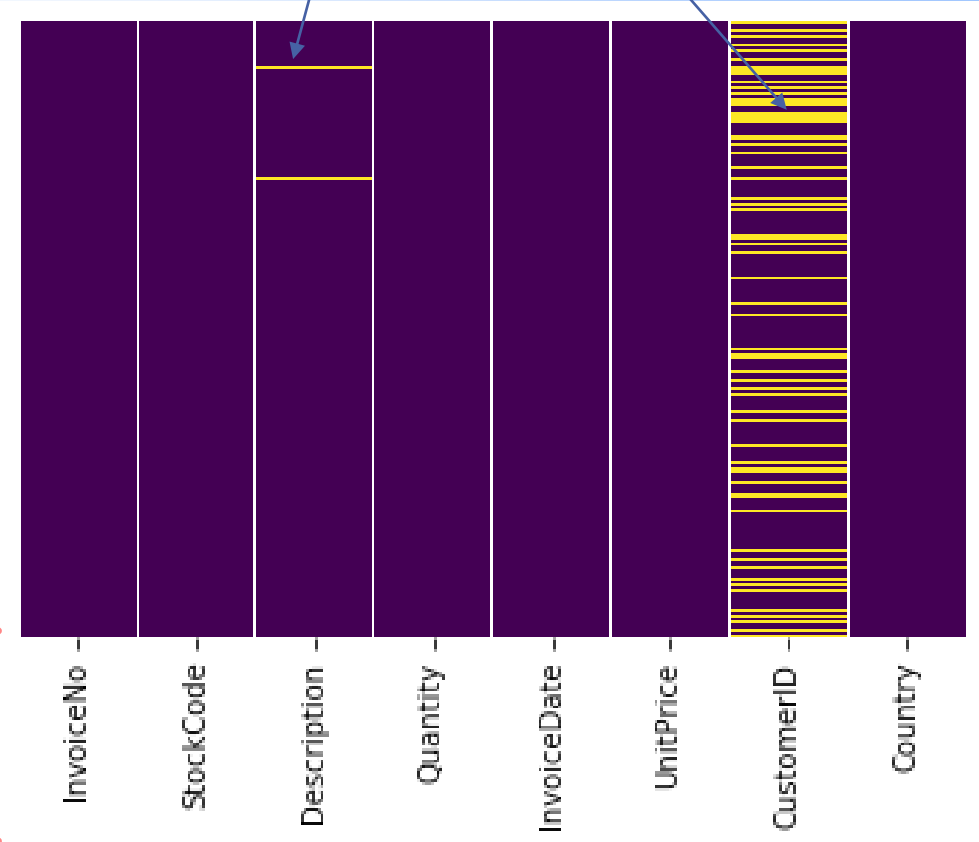
# *Data Analysis*

macy's

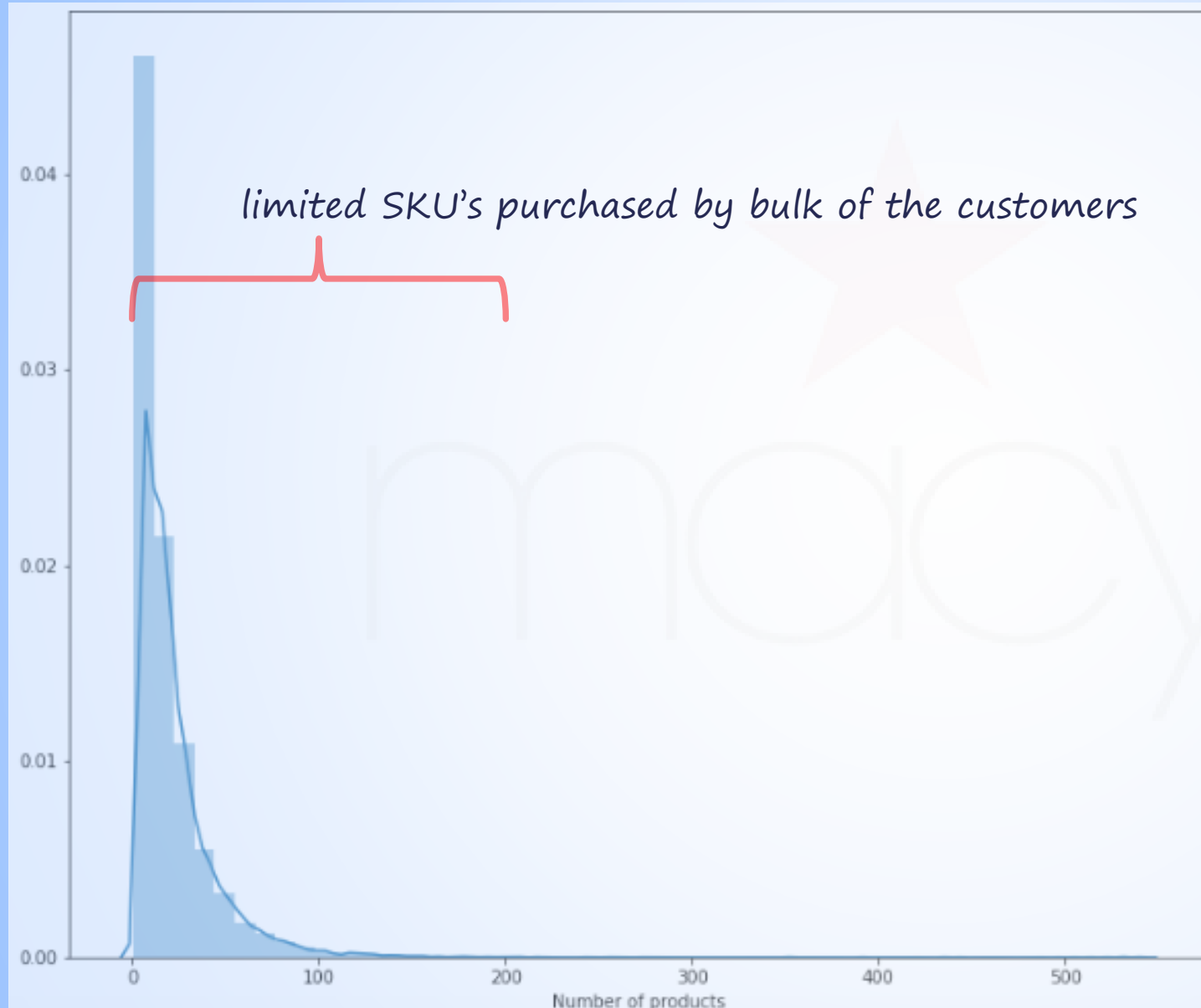
# Customer Data Description

	Quantity	UnitPrice	CustomerID
count	541909.0	541909.0	406829.0
mean	9.6	4.6	15287.7
std	218.1	96.8	1713.6
min	-80995.0	-11062.1	12346.0
25%	1.0	1.2	13953.0
50%	3.0	2.1	15152.0
75%	10.0	4.1	16791.0
max	80995.0	38970.0	18287.0

Attributes



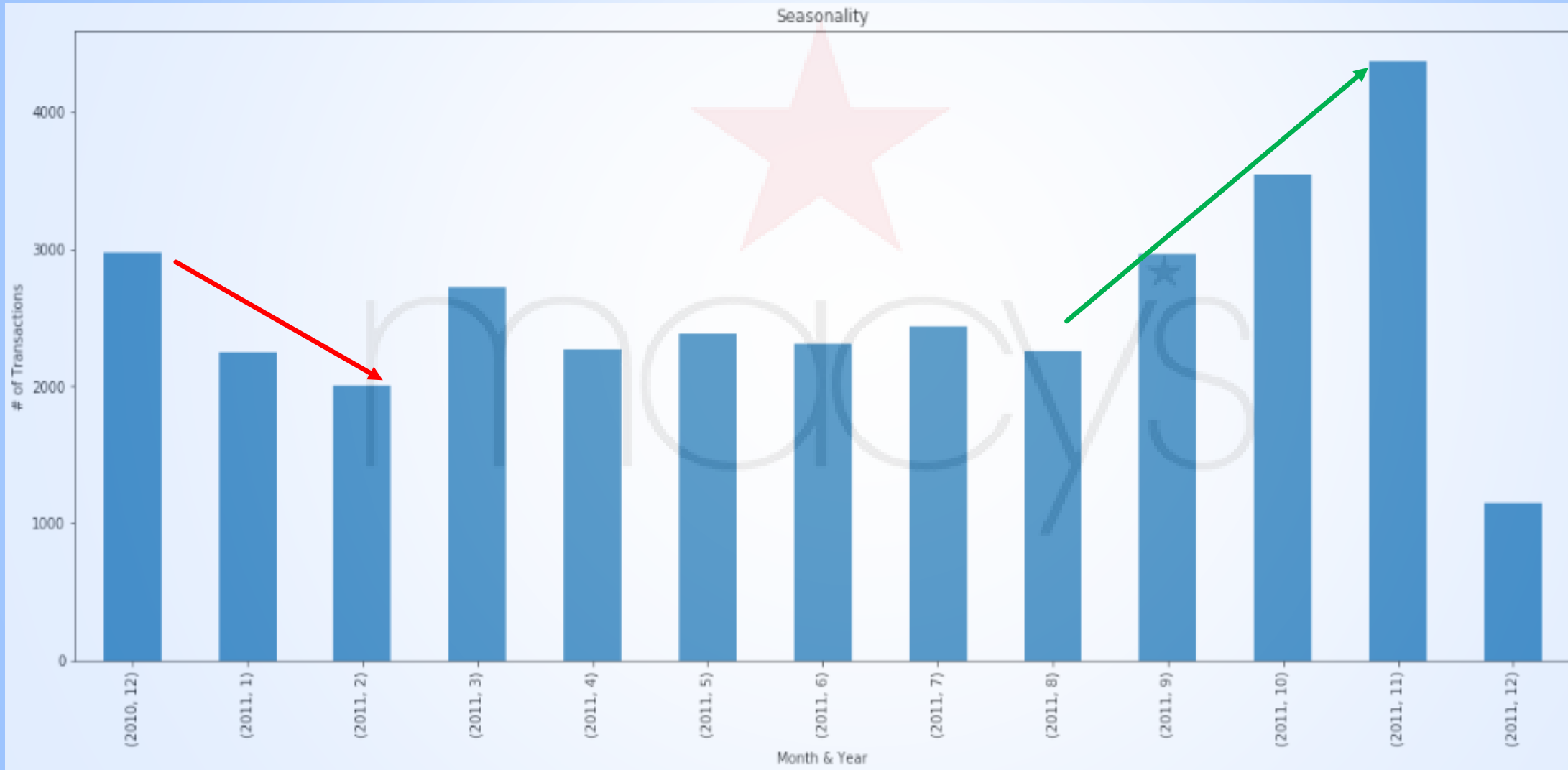
# Customer Buying Patterns



- Clearly excessive inventory appears to be an issue.
- It is reflective of unnecessary price markdown due to inventory.
- We believe that personalization at individual customer level can help somewhat alleviate excessive inventory!
- It also helps streamline inventory turnover cycle and perhaps reduced up to 50%

# Seasonality

*Clearly reflects the holiday purchase peak!*

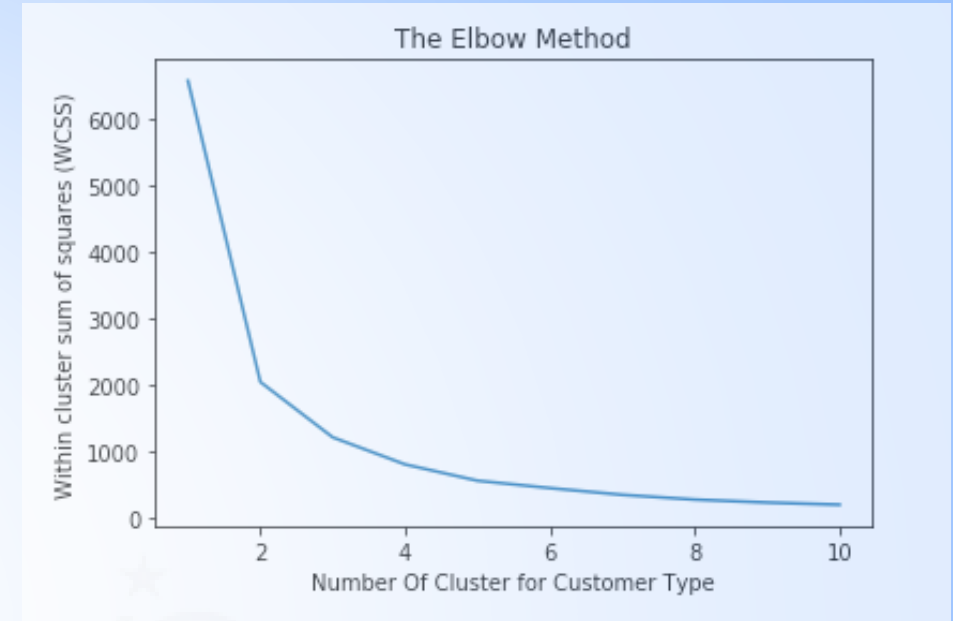
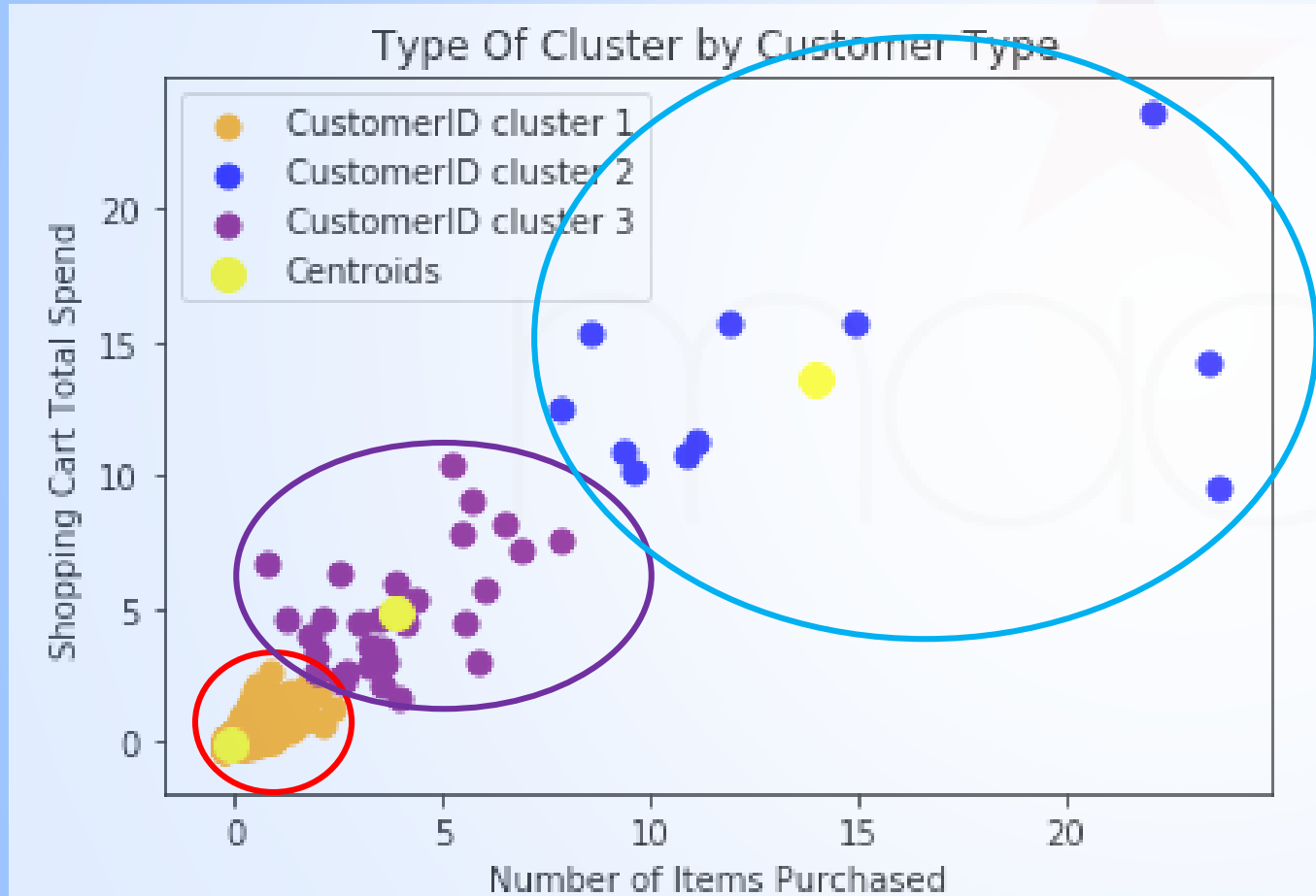




# Average Transaction Value



# Customer Clustering



# Summary of Analysis

- We employed all our learnings from the MSDS program for the Retail Customer Spending data.
- Our analysis were limited to given data constraint.
- We like to have more data to continue our analysis
  - More granular customer behavior data
  - Most recent data at least 3 years
- We were able to analyze transaction/yr., # of orders/customer
- Highest spending customer
- The observation of 'per customer baskets' and their value enabled customer clustering.



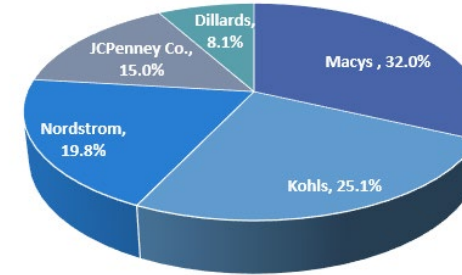
macys<sup>★</sup>



# Appendix: Financial Growth Measures

**Department Store Market Share**

	DEC '18	DEC '17	DEC '16	DEC '15	DEC '14	DEC '13
<b>Macys</b>	<b>32.0%</b>	<b>31.8%</b>	<b>33.0%</b>	<b>34.0%</b>	<b>35.4%</b>	<b>35.8%</b>
Kohls	25.1%	24.3%	23.9%	23.9%	23.9%	24.5%
Nordstrom	19.8%	19.7%	18.8%	17.9%	16.9%	16.0%
JCPenney Co.	15.0%	16.0%	16.0%	15.7%	15.4%	15.2%
Dillards	8.1%	8.2%	8.2%	8.4%	8.4%	8.4%



**Department Stores Sales (\$MM USD)**

	DEC '18	DEC '17	DEC '16	DEC '15	DEC '14	DEC '13
<b>Department Store Average</b>	<b>\$80,497</b>	<b>\$77,904</b>	<b>\$78,381</b>	<b>\$80,185</b>	<b>\$79,242</b>	<b>\$78,124</b>
<b>Macys Sales</b>	<b>\$25,730</b>	<b>\$24,787</b>	<b>\$25,896</b>	<b>\$27,244</b>	<b>\$28,051</b>	<b>\$27,980</b>
Kohls Sales	\$20,213	\$18,905	\$18,747	\$19,187	\$18,944	\$19,112
Nordstrom Sales	\$15,933	\$15,349	\$14,717	\$14,388	\$13,395	\$12,537
JCPenney Co. Sales	\$12,101	\$12,483	\$12,559	\$12,591	\$12,220	\$11,893
Dillards Sales	\$6,520	\$6,381	\$6,462	\$6,775	\$6,632	\$6,601

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# Appendix: Efficiency Financial Metrics

## Gross Margin ROI (%)

	DEC '18	DEC '17	DEC '16	DEC '15	DEC '14	DEC '13
<b>Department Store Average</b>	<b>1.53%</b>	<b>1.50%</b>	<b>1.50%</b>	<b>1.51%</b>	<b>1.52%</b>	<b>1.51%</b>
<b>Macys</b>	<b>1.59%</b>	<b>1.54%</b>	<b>1.54%</b>	<b>1.55%</b>	<b>1.57%</b>	<b>1.57%</b>
Kohls	1.53%	1.45%	1.45%	1.46%	1.47%	1.47%
Nordstrom	1.56%	1.57%	1.56%	1.58%	1.61%	1.62%
JCPenney Co.	1.43%	1.43%	1.45%	1.45%	1.41%	1.31%
Dillards	1.44%	1.45%	1.45%	1.48%	1.47%	1.47%

## Inventory Turnover

	DEC '18	DEC '17	DEC '16	DEC '15	DEC '14	DEC '13
<b>Department Store Average</b>	<b>3.33x</b>	<b>3.25x</b>	<b>3.15x</b>	<b>3.20x</b>	<b>3.23x</b>	<b>3.34x</b>
<b>Macys</b>	<b>2.77x</b>	<b>2.70x</b>	<b>2.68x</b>	<b>2.78x</b>	<b>2.85x</b>	<b>2.91x</b>
Kohls	3.37x	3.26x	3.03x	3.05x	3.07x	3.13x
Nordstrom	4.69x	4.64x	4.53x	4.55x	4.74x	5.02x
JCPenney Co.	3.00x	2.87x	2.81x	2.93x	2.85x	3.07x
Dillards	2.72x	2.76x	2.84x	2.97x	2.97x	3.05x

## Sales Per Store (\$MM)

	DEC '18	DEC '17	DEC '16	DEC '15	DEC '14	DEC '13
<b>Department Store Average</b>	<b>\$22.80</b>	<b>\$23.21</b>	<b>\$23.73</b>	<b>\$24.39</b>	<b>\$25.49</b>	<b>\$25.47</b>
<b>Macys</b>	<b>\$28.85</b>	<b>\$29.00</b>	<b>\$30.61</b>	<b>\$30.96</b>	<b>\$33.85</b>	<b>\$33.31</b>
Kohls	\$16.38	\$16.11	\$16.03	\$16.47	\$16.09	\$15.07
Nordstrom	\$28.85	\$30.89	\$32.36	\$34.54	\$36.96	\$40.63
JCPenney Co.	\$13.64	\$14.30	\$12.39	\$12.19	\$10.34	\$9.81
Dillards	\$21.08	\$20.75	\$20.86	\$21.56	\$21.77	\$21.76

## Department Store Merchandise Margin (%)

	DEC '18	DEC '17	DEC '16	DEC '15	DEC '14	DEC '13
<b>Department Store Average</b>	<b>35.6%</b>	<b>36.0%</b>	<b>36.1%</b>	<b>35.9%</b>	<b>37.0%</b>	<b>36.1%</b>
<b>Macys</b>	<b>38.4%</b>	<b>38.8%</b>	<b>38.8%</b>	<b>38.2%</b>	<b>39.9%</b>	<b>40.1%</b>
Kohls	34.7%	34.8%	34.6%	34.4%	35.0%	35.2%
Nordstrom	34.5%	35.2%	35.5%	34.5%	36.3%	36.8%
JCPenney Co.*	34.5%	34.5%	34.5%	35.2%	34.7%	28.8%
Dillards	31.7%	33.7%	34.4%	35.1%	36.1%	34.1%

\*2016 proxied for 2018 & 2017

## Day of Inventory on Hand

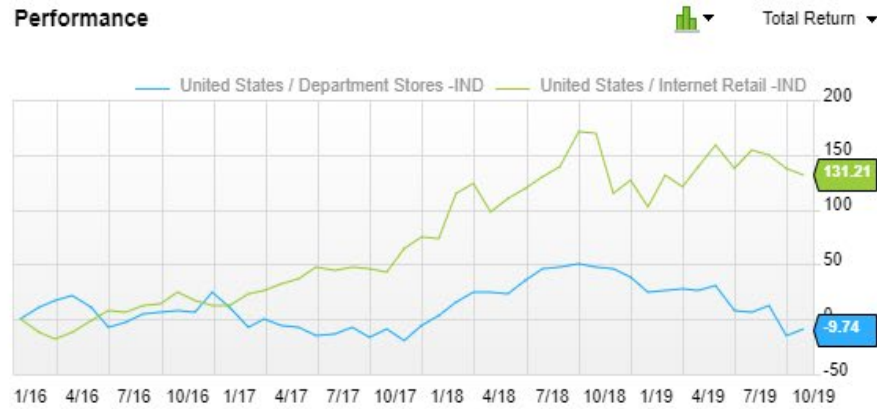
	DEC '18	DEC '17	DEC '16	DEC '15	DEC '14	DEC '13
<b>Department Store Average</b>	<b>114</b>	<b>117</b>	<b>120</b>	<b>118</b>	<b>117</b>	<b>113</b>
<b>Macys</b>	<b>132</b>	<b>135</b>	<b>136</b>	<b>132</b>	<b>128</b>	<b>125</b>
Kohls	108	112	121	120	119	117
Nordstrom	78	79	81	80	77	73
JCPenney Co.	122	127	130	125	128	119
Dillards	134	132	129	123	123	120

## Sales Per Square Foot

	DEC '18	DEC '17	DEC '16	DEC '15	DEC '14	DEC '13
<b>Department Store Average</b>	<b>\$221.86</b>	<b>\$221.76</b>	<b>\$220.12</b>	<b>\$219.22</b>	<b>\$214.40</b>	<b>\$208.81</b>
<b>Macys</b>	<b>\$198.53</b>	<b>\$193.78</b>	<b>\$197.42</b>	<b>\$191.38</b>	<b>\$190.02</b>	<b>\$186.36</b>
Kohls	\$232.92	\$228.32	\$226.29	\$228.95	\$223.31	\$208.64
Nordstrom	\$359.35	\$374.08	\$378.78	\$389.90	\$398.25	\$407.17
JCPenney Co.	\$124.06	\$130.39	\$121.30	\$118.78	\$102.01	\$97.81
Dillards	\$125.24	\$123.36	\$123.91	\$127.84	\$127.83	\$127.75

# Appendix: Industry Performance

Performance



Valuation



Growth



Profitability

