

Introducing

Target SmartCart

Leading the Future of In-store Analytics

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Stanford – Target Product Management Partnership, 2018



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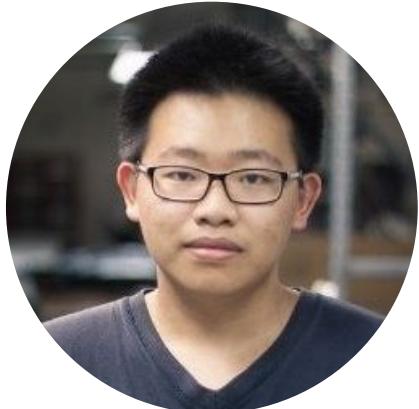
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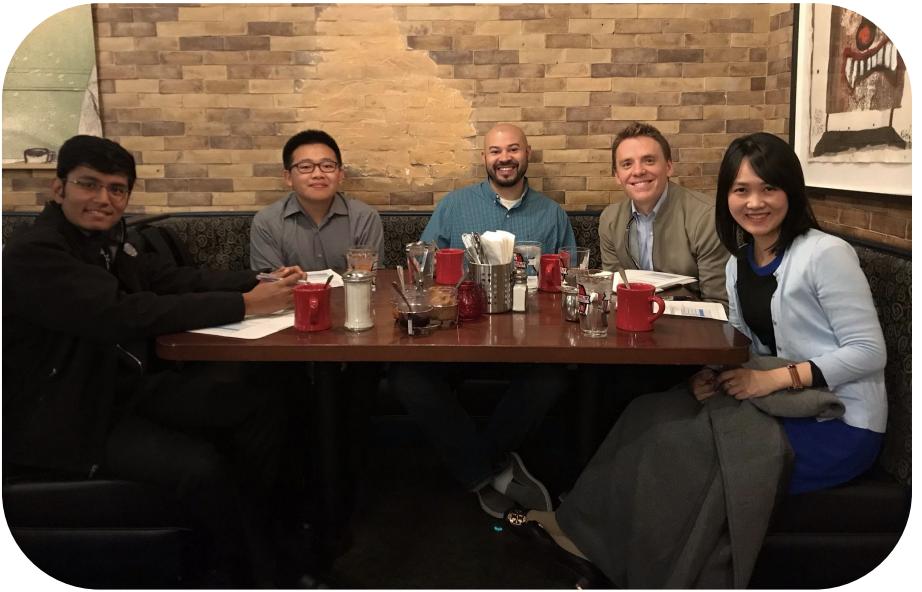
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Understanding Vendors

-
- Vendor Story
 - Customer Job To Be Done
 - Understanding Analysis



Understanding Shoppers

- Target shoppers
- Consumer trends in retail
- Understanding Analysis
- Walmart case study
- Amazon case study
- Lesson learned



State of Retail Analytics

- Available technology
- Deep dive on AVA
- Comparing in-store analytics capabilities
- Comparing retailer's capabilities



Product Proposal

- Basic package
- Upgraded package
- The full package

A photograph of a supermarket aisle filled with various personal care products like shampoo and conditioner.

Part I

UNDERSTANDING VENDORS

- Vendor Story
- Customer Job To Be Done
- Understanding Analysis

Vendor Stories

Vendors	% In-store sales	User Stories	Vendor Estimated Value Added to Marketing Budget
	97%	<ul style="list-style-type: none"> <input type="checkbox"/> Customer engagements with end-caps, signage, and other merchandising vehicles <input type="checkbox"/> Shopping path in-store 	10%
 Unilever	98.5%	<ul style="list-style-type: none"> <input type="checkbox"/> Target's beauty concierge program: do people go to the product in aisle after consultation? 	25%
	95%	<ul style="list-style-type: none"> <input type="checkbox"/> End-cap vs. in-line activity <input type="checkbox"/> Store audits for marketing campaign execution 	10%

Customer Job To Be Done: What do vendors want?

Value Proposition

- In-store customer insights
- Currently 7% of CPG's marketing budget spent on analytics
- expect to grow to 11%

Online Analytics

Product Capabilities of Interest

- Store traffic/heatmap analysis
- Dwell time analysis
- Link activity in-store to online**
- Personalized in-store marketing while observing Target's clean-store policy

In-store Analytics

Understanding Ecosystem

Customer Analytics Ecosystem

- Shopper Access
- Data Collection
- Analytics/Insights
- Sell to Vendor

Target's Unique Position

- 1800+ stores
- In-store bluetooth/RFID, HPC, Big Red
- TMN insights team
- Established relationship with major vendors

A photograph of a person's legs and feet walking on a cobblestone street. They are wearing dark trousers and black boots, and are carrying several colorful shopping bags. The background is blurred.

Part II

UNDERSTANDING SHOPPERS

- Target shoppers
- Consumer trends in retail
- Walmart case study
- Amazon case study
- Lessons learned

Our understanding of Target shoppers

Who shops at Target?

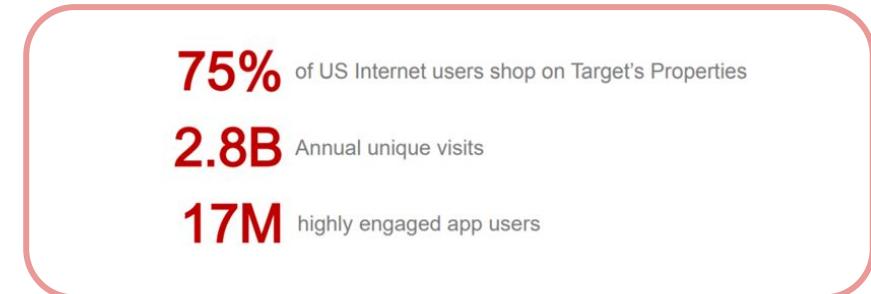
- ❑ Wealthier, middle-class (2nd to Amazon)
- ❑ Married and female
- ❑ Midwest and South

What do they like?

- ❑ Big box store benefits without cheap feel
- ❑ Home essentials, affordable “chic” clothing
- ❑ Better in-store experience than Walmart

How do they shop?

- ❑ Overwhelming majority of sales still in-store, but online growing fast
- ❑ 56% of purchases in-store influenced by online (TMN)
- ❑ Personalization through digitization is key



Consumer trends in retail



Online & App

- 41% increase in online sales, up from +32% last year
 - 80% of in-store sales influenced by online, 2016 estimate
-



Changing norms

- Contactless shopping voted one of the most desired trends*
 - 50% of shoppers no longer scared by smart cameras, nearly a third think the technology is “cool”
-



In-store

- Customers want more fulfillment, replenishment, and store-to-store shipping
- Still go to Target for physical interaction: trying on clothes, smelling perfumes, etc.

60%

of the \$4.1 trillion in U.S. retail sales are digitally influenced

44%

of non-Millennials used digital during a shopping trip (+27% to LY)

55%

of Millennials used digital

20%

increase in conversion rate among shoppers using digital while in store

37%

of sales influenced by mobile (up from 5% in 2013); this is the fastest growing digital influencer

*RichRelevance Retail Survey, 2017

Scan & Go (Walmart)



150 stores

- Dropped due to low participation



Mobile app

- Barcode scanner
- E-Payment



*"The basket size of a typical Walmart shopping trip made Scan & Go difficult to use for many customers, who found it **awkward to scan a large number of items**, causing most to head to traditional checkout counters."*

- Walmart spokesperson



Sam's Club Scan & Go 4+

Scan & shop in wholesale club

[Sam's Club](#)

#72 in Shopping

4.9, 25.9K Ratings

Free

iPhone Screenshots



Amazon Go



5 stores



Mobile app
In-store cameras
Weight sensors



No queues
No checkout counters



- Delayed Feedback**
- Update cart (10 min)
 - Generate bill (10 min)
- Installation cost**
- App setup (5 min)



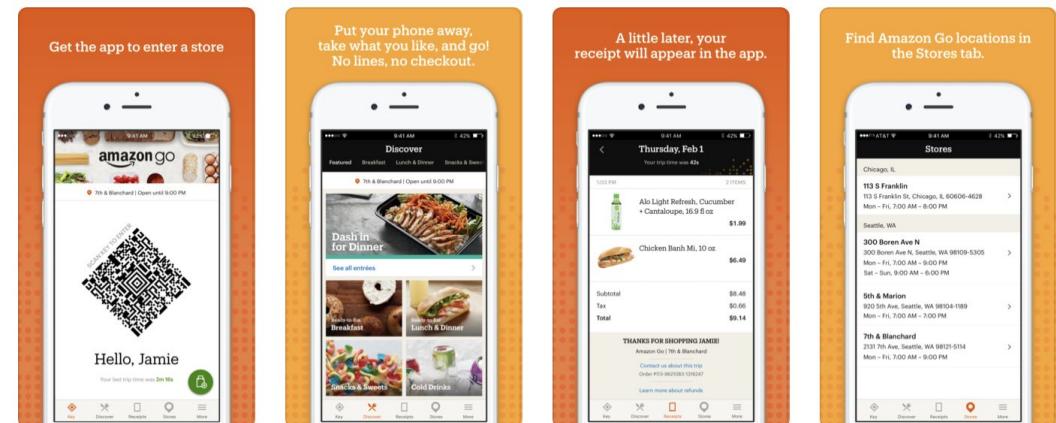
Amazon Go 4+

Get the app to enter the store
AMZN Mobile LLC

4.6, 144 Ratings

Free

iPhone Screenshots



Lessons Learned

Our solution should be **zero-cost** to shoppers or **add value** to offset any costs.



- Updated shopping e-cart



- In-app shopping list



- Alerts when passing items



- Coupons and promotions



- Map of product locations



- Knowledgeable employees

A **faster**, **smoother**, and more **convenient** shopping experience!

THE STATE OF IN-STORE ANALYTICS

Part III

- Available technology
- Deep dive on AVA
- Comparing in-store analytics capabilities
- Comparing retailer's capabilities

Technology is Available, but Underutilized

Retail Metric	Available Technologies	Estimated Penetration
<ul style="list-style-type: none"><input type="checkbox"/> Customer engagement, product interaction	<ul style="list-style-type: none"><input type="checkbox"/> Smart cameras, bluetooth, smart shelves	5%
<ul style="list-style-type: none"><input type="checkbox"/> Dwell time, granular store traffic, A/B testing of layout	<ul style="list-style-type: none"><input type="checkbox"/> Smart cameras, bluetooth and WiFi interaction, smart carts	10%
<ul style="list-style-type: none"><input type="checkbox"/> Cashier-free automatic checkout	<ul style="list-style-type: none"><input type="checkbox"/> Smart cameras and advanced computer visions	<1%
<ul style="list-style-type: none"><input type="checkbox"/> ID demographics of customers	<ul style="list-style-type: none"><input type="checkbox"/> Smart cameras, linking store data to customer profile	10%

Deep dive: AVA Retail, a Retail Analytics Provider



AVA retail



Microsoft

**Retail
Analytics
Expertise**

- Uses artificial intelligence, computer vision and internet of things to track customer purchases within the store.
- Has domain knowledge in retail space

**Technology
Provider**

- Aims to become a technology provider of cashier-less technology for grocery stores
- Has a strong cloud computing platform to crunch data and perform computer vision

Comparing In-Store Analytics Capabilities



#1 in size,
95% of Americans

- Experimented with smart carts ('17 patent)
- Eden: Computer vision produce freshness tracking
- Scan & Go (Dropped)



#2 in size

- Scan, Bag, & Go: App self-checkout; full launch by 2019
- Personalized product recommendations
- 2200 smart shelf trial



#8 in size,
84% of Americans

- High-Performance Computing center for advanced analytics
- Personalization and large customer data
- Well-equipped to lead in-store analytics revolution

Comparing Retailer's Capabilities

Retailers advancing their capabilities

Example, innovative uses of computer vision in:

- Walmart Eden: Computing produce freshness score to reduce waste (internally incubated)
- Automatic checkout (Amazon Go, 5 trial stores)

Other solutions from providers:

- Enhancing self-checkout theft prevention ([StopLift](#))
- Customer demographics identification (RetailNext)

The Retail Analytics Goal:

“Omnichannel” presence aims for integration of many data streams, online, in-store, and on social media, for full customer experience

Amazon does this best, with a strong online presence and growing physical footprint.



← POS and inventory analytics



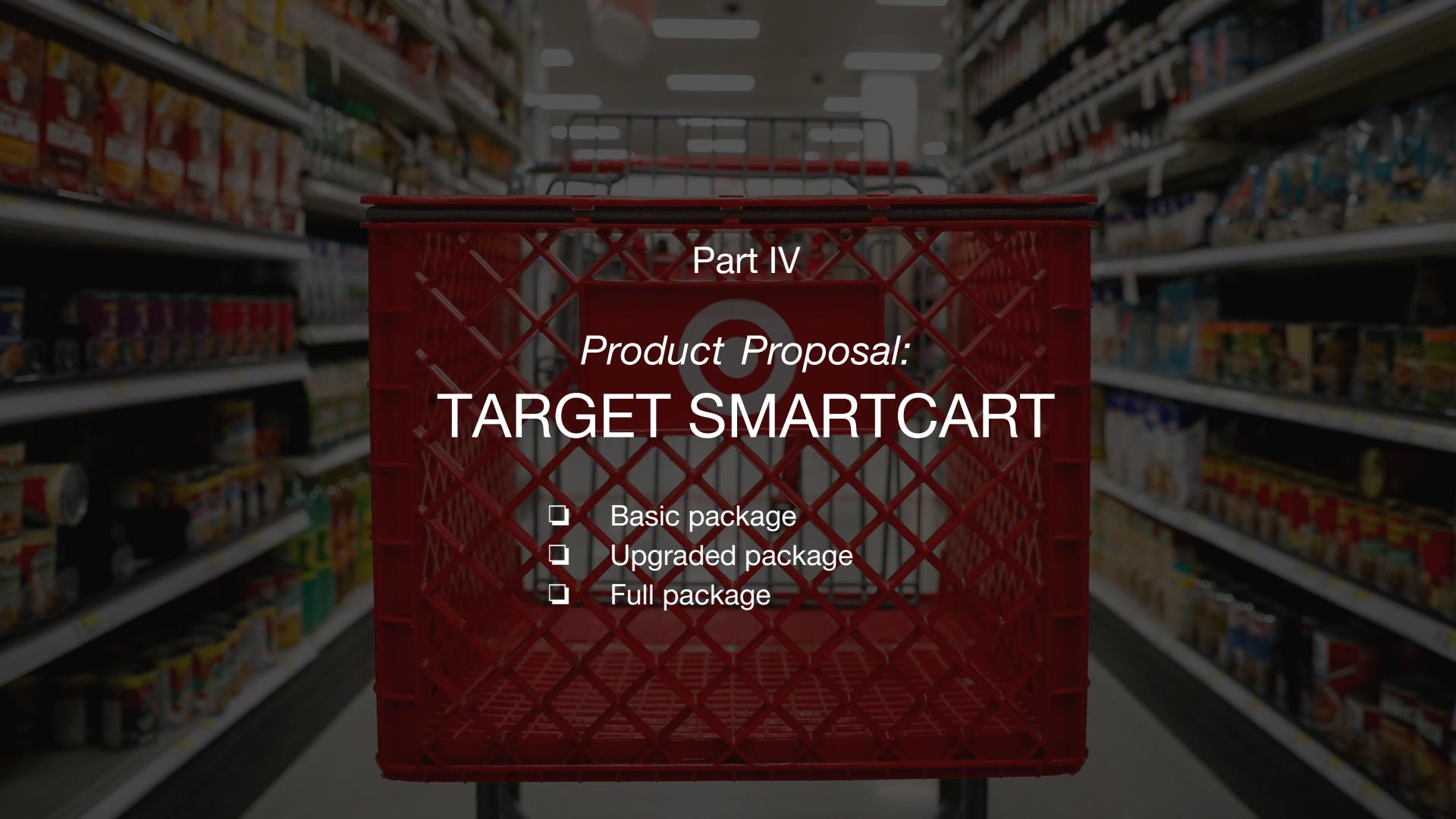
Near real-time omnichannel →



Stanford University 20



“The majority of US respondents (63%) said they would allow retailers to collect more customer data to improve the customer experience.” - 2017 survey from RichRelevance, global leader in omnichannel personalization

A red shopping cart is positioned in the center of a grocery store aisle. The cart is facing towards the camera, with its front panel removed, revealing a white background. The text is overlaid on this white area. The background shows shelves filled with various grocery items like canned goods and boxes.

Part IV

Product Proposal:

TARGET SMARTCART

- Basic package
- Upgraded package
- Full package

Basic Package: In-store shopping cart tracking



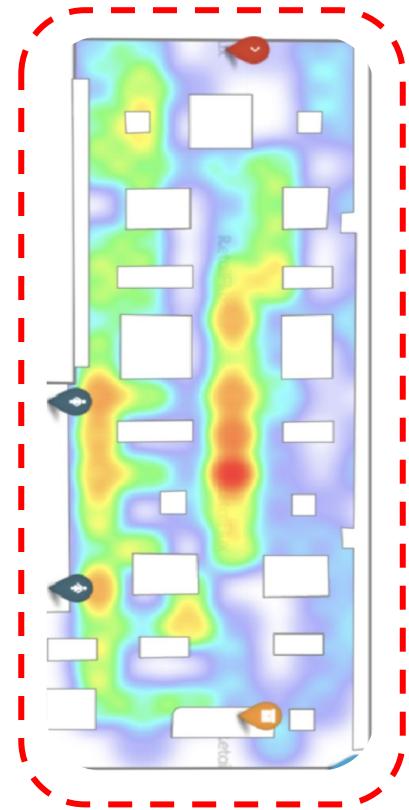
- Track shopping cart path through store and link data to online guest ID at POS by tying to purchases
-



- Dwell time, shopping paths, heatmaps, engagement within aisles
-

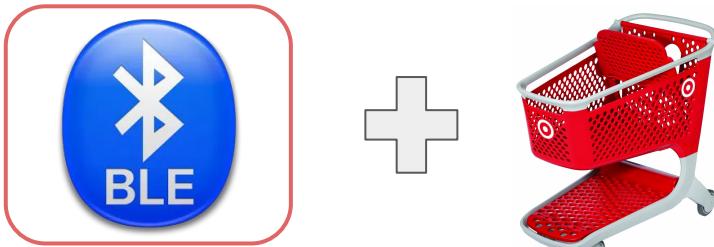


- For vendors: new **in-store metrics** for vendors, ability to attribute incremental sales increases to metrics
- For shoppers: None
- Adoption cost for shoppers: None



Basic Package: technology, issues and risks

Technology



- works with existing BLE setup in store
- at POS, tie cart's location/timestamp and path data with customer purchases and online guest ID

Issues and Risks

- Charging of beacons
- Modification of each cart
- Tying POS with cart position (ecosystem)

Estimated costs

- \$10 (8%) additional cost to cart

Potential solutions

- Charge using docking stations
- Plastic replaceable carts already

Upgraded Package: RFID enabled carts



- ❑ Incentivize Target app usage in-store and track hands-on product engagement through e-cart in-app
-



- ❑ Cart abandonment
 - ❑ new purchases based on in-app shopping lists
 - ❑ all existing online/app data
-



- ❑ For vendors: Targeted ads + Cart abandonment KPI
- ❑ For shoppers: partial e-cart, product information and coupons, targeted ads based on past purchases, location of products
- ❑ Adoption cost to shoppers: one-time app installation



Upgraded Package: technology, issues and risks

Technology



- ❑ Connect to app by scanning QR code on cart. Product added to cart will be display on app

Issues and Risks

- ❑ RFID tags needed to be added
- ❑ Lag in updating app
- ❑ Need app to be used

Estimated costs

- ❑ \$45-\$60 per cart
- ❑ 3 cents for every tag

Potential solutions

- ❑ Creating a platform where self check out may become possible

EasyCheck Out: SmartCart Plus



- Updated virtual cart while shopping in-store with fast payment and purchase confirmation
 - Walk out store with cart and payment billed to app directly - no queues.
-

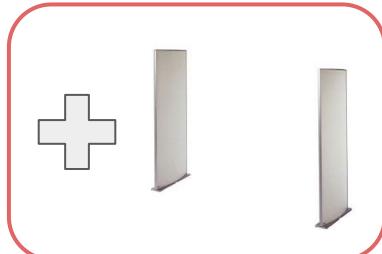


- For vendors: real-time POS sales data
- For shoppers: Tracking items in virtual cart while shopping, faster and more convenient check-out, more employee availability
- Adoption cost to shoppers: existing e-payment method



SmartCart Plus: technology, issues and risks

Technology



- ❑ At exit, all items scanned again and charged to customer directly

Issues and Risks

- ❑ Theft and cheating
- ❑ Failure to recognize RFID tags
- ❑ Re-working ecosystem

Estimated costs

- ❑ \$45-\$60 per cart
- ❑ 3 cents per tag
- ❑ \$2000 secondary RFID scanner

Side benefit

- ❑ Accurate track of inventory real time

Summary

- ❑ In-store retail metrics are an unmet need
- ❑ Vendors want in-store KPI besides POS
- ❑ Target has existing technology in store ideal for tracking
- ❑ SmartCart is an incremental advance in but can deliver multiple KPIs
- ❑ Potential for easy checkout solutions

*“Our ability to create a **personalized guest experience** through the **collection and use of accurate and relevant guest data** is important to our ability to differentiate from other retailers”.*

- Target 2017 Annual Report





Thank you!
Questions?

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