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Retail Collider

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Strategizing Data Monetization for Retail Firms with a $1 Million Dollar Budget

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Introduction

Over the years, retail firms have collected terabytes of consumer data on consumer behaviors and shopping histories. The collection and analysis of data has allowed firms to drive their business decisions. However, today many retail firms face another challenge. How can they derive value from all the data that has been collected? After talking to a number of CIOs and data scientists at retail firms, our team has developed strategies for retail firms, based on their business model and challenges, to monetize their data. This report provides an overview of the most common pressing challenges retail firms face, our recommended solutions and research, and estimated budgets and expected ROIs.

In this report we address:

1. Personalizing Customer Experience
2. Determining which products to offer and suggest
3. Standardizing Data Across Multiple Channels
4. Store Operations Optimization

Personalizing Customer Experience

Problem

We asked the CIO of a successful luxury jewelry and specialty retailer how she would spend 1 million dollars on monetizing big data in a theoretical company.

"I would place my bets on the areas of sales and marketing. I would do as much as I could to arm my sales team with the information they needed about customers – likewise, provide my marketing team as much information so they can personalize the experience. I would also invest in predicting purchase behavior – it's one thing to segment appropriately and market/sell to a client base and another to predict the next purchase."

Firms are trying to learn more about their customers so they can personalize their shopping experience to increase sales and customer retention. They would also love to be able to predict purchasing behavior.

Solution

Loyalty Program

Sparks loyalty program, created by Marks and Spencers, a major British retailer, offers insights and future product offerings for customers that take the time to provide product feedback.

The executive director realized, "Data was not being leveraged properly for better connectivity and we were not able to give customers back a proper reward for engaging with us."

Marks and Spencers needed a way to optimize data gathering from loyalty programs by obtaining feedback from their most loyal customers. They wanted to make informed decisions when choosing future products or changing the rewards.

In Oct. 2015, they launched their new loyalty program. They gamified the system by rewarding customers who wrote product reviews with Spark points, which "unlock benefits". Spark points can be redeemed for personalized discounts and exclusive deals. Additionally, only Sparks card holders are invited to special store events.

The result was that more than 100,000 members had signed up for their trial program before the official release date. Since then, they've acquired 4 million users. The Sparks program has decreased their expected sales decline of 3.4% and 5.8% third quarter decline to

2.7% in its fourth quarter. Sparks has allowed M&S to gain better marketing and have more competitive pricing.

In the future, they plan to use "Sparks as a tool to reach out to our customers and to inform all of our new marketing campaigns. It will enable us to improve and have even deeper insight into how our customers are thinking and shopping."

Heat Mapping
Gordmans, a chain of off-price department stores, used 35 cameras to track the movement of their shoppers for three weeks. From the footage, they developed a heat map with RetailNext to understand which parts of the stores were visited more and which ones were ignored.
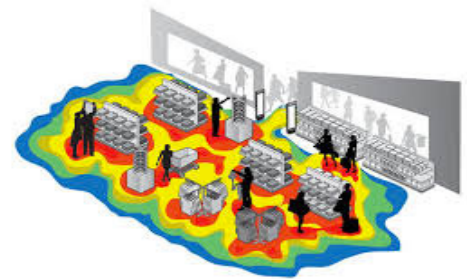
The result? They increased conversion rates by more than 3%.

Budgeting
According to our calculations, it would cost about $800,000 to implement a loyalty program, and $20,000 to utilize heat mapping in a medium-sized store. Total estimated cost: $820,000.

Loyalty Programs
Toys 'R Us, which is a retail firm we estimated to have about $1 million dollars to spend on monetizing data, has 1,800 locations. According to costowl.com, it would cost about $300 to implement a new loyalty program in a store, and you can lower the cost of physical loyalty card costs to five cents each. Assuming 5 million customers are interested, it would cost $790,000 to implement a new loyalty program, plus $500 for maintenance fees.

	Quantity	Unit Price	Total Cost
Locations	1,800	$300.00	$540,000
Cards	5,000,000	$0.05	$250,000
Total Cost			**$790,000**

Heat Mapping
Implementing RetailNext for heat mapping in a relatively small store would cost $2,000 and an additional $2,000 a year. RetailNext has a competitor, Prism Skylabs, which costs $50 a month and allows its user to access the software from any part of the world, on the computer or through mobile.

ROI
The ROI for loyalty mapping can vary widely across firms, depending on the type of retailer and the conditions of the program. However, we can expect a 3% increase in conversion rates, which is significant because acquiring a customer costs up to 5 times more than it costs to keep one.

Determining which products to offer and suggest

Problem

Retail firms want to know what kinds of products they should suggest to their customers when they're browsing. Chico's is a women's clothing chain based in Florida, and with 1,450 outlets that were targeting women 30 years old and older, they needed to know how to make informed suggestions to their browsing customers. Previously, they used three-ringed binders to keep track of customers, limiting information sharing between stores.

Solution

Chico's created an in-house iPad app "The Customer Book" to display information gathered through SAS OnDemand Marketing Automation. The Customer Book shares with associates what brands and styles the customer has used in the past and how much she spent on them.

Budget

Assumptions: your store has 1800 locations, and each location has an iPad. It would cost $860,000 to build and implement an app. It would cost between $24,000 to $64,000 to use SAS, so we use an average of $44,000 (source: Minequest). Total estimated cost: $904,000.

	Quantity	Unit Cost	Total Cost
iPad	1,800	$200.00	$360,000
App	1	$500,000.00	$500,000
Total Cost			$860,000

ROI

Unfortunately, there was no data available on how the app had helped, but we assume that it increased customer retention and purchasing.

Standardizing Data Across Multiple Channels

Problem

There is always new sources of data, but there is no longer a "one-size fits all" technology for business analytics across sources. As more ecosystems of technologies are incorporated, there is a need to standardize data at the enterprise level. This is crucial for developing a fully representative business strategy for understanding best sellers and placing the right product in the right store at the right time. Strategy and planning may include opening new stores, tracking overall performance, expanding their market, tracking macro trends, and standardizing information across locations. We propose using localized point-of-sale systems and regional ERP systems.

Result

The development team discovered an initial decision to include product photographs into their app, which excited business users. Visual analytics (e.g. adding pictures instead of listing styles and making everything clear with visuals) were improved with the different technology platforms. With more insight prior to strategy and planning, the BA team of GUESS ported the North American data warehouse to a column oriented data warehouse appliance. The previous data warehouse took twenty to thirty minutes to run complex analyses (i.e. product affinity, market basket). With the improved system, the column-oriented appliance performed the same analyses in a matter of seconds. The BA and IT team implemented the PLM and ERP system across all three major regional data warehouses (Asia, Europe, and the U.S.), in which they all use the same data model with common attributes. This ensured the regional reporting is consistent and that data is integrated into a single global view for big-picture planning and decision-making.

Solution

GUESS used localized point-of-sale systems and regional ERP systems to match their local business models. The Product Lifecycle Management (PLM) system achieved data standardization and served as GUESS's system of record with all style information (i.e. fabric, trim, garment). The Enterprise Resource Planning (ERP) systems incorporated GMobile to run on top of the traditional data warehousing technology to address GUESS's specific needs. The PLM system is pushed into the ERP systems to achieve consistency with local execution.

How to use Business Analytics Tools (GMobile)

1. Business Analytics teams analyzed, explored, and discussed apps to better understand the app workflow. Important issues and points they tackled were the ways data could and should be delivered (e.g. how much and when), communicating instructions, and the effective use of graphics (e.g. importance of color, ease of use, and fun).
2. BA team shadowed his users before implementing initial strategy and design decisions.

The vision was to turn this platform into a "buyer's workbench" that would replace binders of reports and provide information for the knowledge workers responsible for product distribution across the locations (Asia, Europe, and the US).

 3. Guess? In. obtained a graphic designer to develop the GMobile platform. The design helped to implement a visually appealing app that incorporated a well-thought out theme with related graphics, colors, product photos, and geospatial mash-ups. The goal was to help draw people into using the application constantly and provide a variety of charts, graphs, and maps that depict best-sellers and store sales information.

 4. Advantages: provides a platform to specifically address the company's needs

Ad Hoc Queries, BlackBerry Reports, Web-based Dashboards
Traditional way of collecting essential data across the boards from different store locations.

Business Values

Transactional	Informational	Strategic
• Less paper • Time savings • Fewer meetings • Reduced headcount • Faster cycle time • Convenience	• Factual decisions • Real-time decisions • Single version of the truth • Business pattern discovery • More collaboration	• Speed to market • Improved business understanding • Reputation

Transactional Advantages
GMobile resulted in bottom-line cost savings as well as making several productivity improvements. For example, GUESS's meeting times are cut down significantly because the GMobile app communicates best-seller information very effectively. With this tool, the representatives do not need frequent bimonthly meetings to discuss the company's best selling items.

Informational Advantages
The IT group found ways to improve collaboration and communication with each other across the departments within the stores and across their regional stores. Overall, GMobile provides users with more and better information, leading to improved, more fact-based decisions.

Strategic Advantages
A benefit is that the users could develop a deeper understanding of the business. This understanding led to better purchasing and distribution decisions, and, ultimately, more sales of higher profitability items in her region. Another user applied BA to identify size profiles for stores, discovering that some stores tend to have customers who purchase smaller sizes and other stores tend to sell a greater number of large-sized clothing.

ROI

We expect the ROI on usage for data analytics for store operations to fall in line NUCLEUS Research's survey findings of $13.01 returned on average for every analytics dollar invested.

Store Operations Optimization

Overview

RetailNext's in-store analytics provides retailers insight on their retail operations and shopping behaviors. Retailers can use those insights to implement changes in their operations to improve commercial performance and the overall customer experience. RetailNext technology connects all of retail data sources into one platform, allowing retailers to establish, measure, and report on true omnichannel KPIs. This solution allows retailers to channel store and customer data into their personalization and marketing automation engines, providing retailers with a full 360º view of customer data.
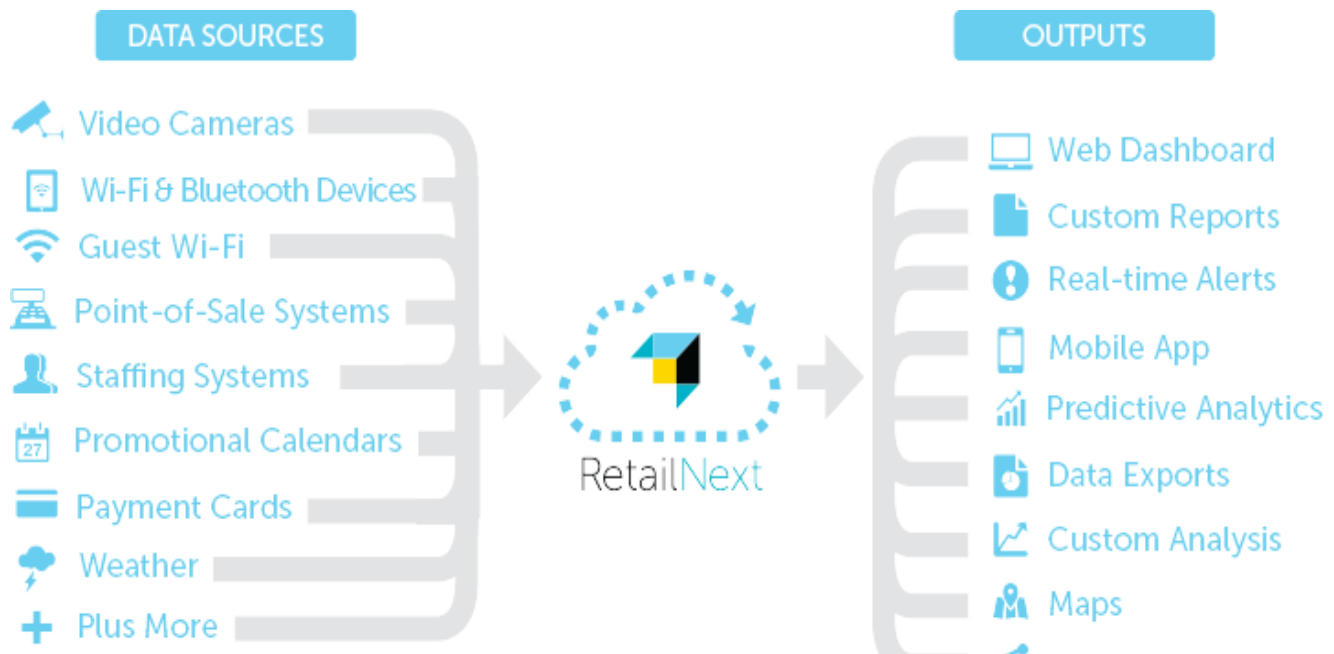
Problem

RetailNext technology and insights help address the most important in-store problems for retailers:
 - Traffic Counting & Conversion
 - Staffing Optimization
 - Window & Display Effectiveness
 - Shopper Engagement
 - Shopper Path Analytics
 - Loss Prevention
 - Store Execution Compliance

How it Works

DATA SOURCES

- Video Cameras
- Wi-Fi & Bluetooth Devices
- Guest Wi-Fi
- Point-of-Sale Systems
- Staffing Systems
- Promotional Calendars
- Payment Cards
- Weather
- Plus More

RetailNext

OUTPUTS

- Web Dashboard
- Custom Reports
- Real-time Alerts
- Mobile App
- Predictive Analytics
- Data Exports
- Custom Analysis
- Maps

Data Collection

RetailNext integrates with many physical and digital data sources inside and around the store. RetailNext's technology uses existing infrastructure (such as analog and IP cameras or WLAN infrastructure from major providers), so installation and activation is a quick and easy process. Data collection features include:
 - Video Camera Feeds
 - Point of Sale Systems
 - Wi-Fi and Bluetooth-enabled Mobile Devices
 - Guest Wi-Fi connected Devices
 - Workforce Management Systems
 - Staffing Schedules
 - Promotional Calendars
 - Weather Systems
 - Third-party API applications

Data Analysis

RetailNext analytics engine is designed to organize, analyze, and visualize massive volumes of diverse retail data. The software accumulates information from all stores into a single place in real time, providing a uniform and instant view of all stores and shoppers. Data can be accessed in the cloud or on in-store. After collection, RetailNext can analyze and present the data through various techniques:
 - Integrates data from all locations worldwide
 - Preserves critical bandwidth
 - Provides real-time access to store results
 - Actively monitors input sources for data integrity
 - Is secure, highly available, and compliant with applicable industry standards
 - Offers on-cloud or on-premise deployment

Data Visualization

RetailNext presents collected and analyzed information in a variety of useful formats, allowing retailers to discover and implement changes to improve the customer experience and commercial performance. The set of analysis tools and reports allows retailers to visualize data, identify trends, and compare them across any time period. Retailers can access all their information through a variety of interfaces:
 - Web dashboard
 - Mobile application
 - Customizable scheduled reports
 - Analysis and data-mining tools
 - Real-time alerts
 - Raw data exports and comprehensive APIs

Insights

Retailers can benefit from a precise, fact-based understanding of how shoppers move around their stores. Retailers can optimize store layouts, fixtures, staffing, and product offerings based on insights collected. CPG manufacturers can use the insights to more thoroughly understand how packaging, merchandising, and marketing decisions affect the full path to purchase. With RetailNext data collection, analytics, and visualization tools, retailers are empowered with the data to answer the most important questions:

a. Who are my customers?
   i. What are their demographics (gender, age, etc.)?
   ii. Are they new to my store?
   iii. How often do they come back?
   iv. Where are they coming from?
   v. What are their interests?
b. How many people enter my stores?
   i. How many people did I capture from the overall passerby traffic?
   ii. How many were unique visitors?
   iii. Of the total store traffic, how many are shoppers versus staff?
   iv. How are my staffing levels compared to the traffic throughout the day?
c. How are shoppers behaving while in the store?
   i. How do they interact with my merchandise?
   ii. Where do they go (which departments, aisles, display, etc.)?
   iii. In which order do they visit these areas?
   iv. Where do they actually stop to engage?
   v. What captures their attention?
   vi. What do they end up buying?
   vii. How do layout changes or product location impact my store performance?
d. How does my staff contribute to store success?
   i. How are my staffing levels compared to my needs?
   ii. What is the productivity of my staff?
   iii. Where is my staff spending their time?
   iv. How is their interaction with the shoppers?
   v. How does it impact my store performance?
e. How are my stores performing against key performance indicators (KPIs)?
   i. How are my comparable sales, conversion, average ticket value, etc?
   ii. How do my staffing and my shopper base composition impact my KPI?
   iii. Are there other external factors I need to consider (weather, popular culture, etc.)?

Technologies Used and Hardware and Software Requirements
RetailNext uses existing infrastructure and industry standard technologies such as analog and IP cameras and WLAN infrastructure to set up sensors and other tracking devices.

ROI

RetailNext writes that retailers are not measuring customer behavior, especially in-store. For example, retailers overwhelmingly struggle to measure customer behavior, and surprisingly few reported the use of Key Performance Indicator (KPI) metrics in-store. This being said, RetailNext reported that only 33% of retailers report that they measure conversion rates. This is a problem because conversion rates are one of the retail industry's most important metrics. We expect the ROI on usage for data analytics for store operations to fall in line NUCLEUS Research's survey findings of $13.01 returned on average for every analytics dollar invested.

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The Team

Jeffrey Wong (UC Berkeley Class of 2016) is studied Business Administration at the Haas School of Business. He previously participated in an MBA experiential learning program, Social Sector Solutions in partnership with McKinsey & Company, and has previous internship experience at KKR and Kaiser Permanente.

Elly Lin (UC Berkeley Class of 2016) studied Environmental Earth Science. She served as the Leader of Cal Environmental Team, an environmental engineering design and build team that competes in the annual ASCE conference. Aside from being a water filter design expert, she worked under Professor Hermanowicz with Vivek Rao to study photocatalytic degradation of greywater. In her spare time, she enjoys product designing, working with laser cutters, Arduinos, and 3D printers, and hiking with friends.

Michelle Ko (UC Berkeley Class of 2019) is a first-year undergraduate studying Statistics and Business Administration. She enjoys approaching things in the quantitative sense whether that be working with data analytics or working with financial activities. Working with Professor Omri Even-Tov, she serves as a research assistant in exploring behavioral finance with credit ratings and investors. During her first year of college, she served as Finance Chair for Berkeley PBL, and is going on to serve as VP Finance. Other activities she partakes in are Residence Hall Assembly as a Finance Committee Member and Berkeley MUSA (Mathematics Undergraduate Student Association) as Social/Publicity Officer. Michelle highly values growth as an individual and for those around her and is always willing to take an extra step to keep learning!

Andrew Tan (UC Berkeley Class of 2019) is studying Computer Science and Business Administration. He's really passionate about startups and the applications of technology and data to improve human knowledge and welfare. He's been involved in a variety of projects, taking on roles in both software development and business development. Through these ventures, he discovered that his passion lies at the intersection of technology, business, and social entrepreneurship. Andrew founded REV and PeerEditr to help tackle problems he saw in education and peer-to-peer feedback. In summer of 2014, he attended MIT Launch, a startup incubator for students. Last summer, he was a data analytics and engineering intern at Branch Metrics, a high growth startup working on mobile deep linking and app discovery.

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