

Retail Analytics

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Project I - Retail Analytics
Section 1 - Retail Analytics Survey
Section 2 - The “why” and “what” of Retail Analytics
Section 3 - Analysis Framework
Section 4 - Examples based on spend level
Section 5 - Summary

Introduction: Pragmatic Retail Analytics

The leader of a retail merchant has many day to day, and long term challenges that must be managed at the same time. As IT technologies have matured, tremendous investments have been made solving both the tactical and strategic business operations problems. For the retailer recently considering the retail analytics landscape, it appears quite fragmented and difficult for to determine where to start and which solutions they should consider.

Our team took two approaches to the project. After building a categorization model to define the overall ecosystem, the team introduced scoring for those providers in the market covering all five categories. The second approach built the visual landscape and inventory of the retail analytics providers with a solution for any of the five defined categories.

Combining these and the categorization model enabled the team to survey the solutions and recommend choices appropriate. Four examples are used to illustrate the wide variety of retail analytics and the recommendations at four different budget levels, including free.

Section 1: Retail Analytics Survey

This report details the market survey and recommendation for choosing a retail analytics solution with a landscape analysis and four examples of budget and benefit analysis.

Research was conducted using in person interviews, internet research from the retail leader point of view using internet search engines, and a synthesis of findings within the team discussions. Time researching and compiling this report is estimated at 100 hours during April 2016. Budget levels for the examples were chosen ahead of the research phase.

Section 2: The “why” and “what” of Retail Analytics

Through applying business analytics to the retail market segment, the same benefits as seen in other segments can be achieved. The traditional retail model is a mashup of both forward looking forecast, ordering, stocking, and selling. Much of this has been based on managerial experience or empirical sales performance. The ability to have the right product in the right place for the right customer often required the retailer to specialize at the store level, stock much or all of the given choices, driving up the day to day operational costs.

The modern retailer has to do all of these traditional business operations, but must also optimize in each of the five categories of strategy and planning, store operations, marketing, supply chain management, and merchandising. Each can benefit from retail analytics, applying a combination in concert can both drive more top line revenue while also reducing operational expenses.

The big win for a retailer can be seen after adopting a retail analytics solution and implementing automation to perform one or all of the five categorized functions. This ability to create a repeatable data collection, analysis, and decision process enables the retailer productivity and efficiency to increase significantly. The automation enables the traditional retailer to measure in weeks, days, or even hours to evaluate retail performance and profit.

While not part of the classification and analysis we did, certain trends looked like they were gaining traction in the marketplace and are worth mentioning.

- More and more varied data requires more effective data governance
- Effective analytics requires both centralized and distributed data and analysis capabilities
- The need for platform capabilities that support owned, earned, and third-party data

- The emergence of machine learning

Data Governance:

It was observed that migration of massive amounts of data across applications and tools to cloud infrastructure makes data governance more complex. Therefore, technologies and processes are required to control who has access to source data and analytics results. There is a ramp in tools provided by the industry to limit proprietary data to need-to-know personnel.

Centralized vs Distributed Data and Analysis:

For retailers, effective data and analysis is a combination of both centralized and distributed data storage and analysis. Examples of distributed data are single store inventory management and cycle time to determine what products should be marked down according to local market demand. For corporate buyers, centralized data and analysis is required to purchase the right trends based on external data and data from all store locations and to insure that distribution centers can maintain enough stock to supply orders while minimizing inventory on hand.

Platform:

It's been reported that 80% of data was created in the last 2 years. The continuation of increased in volume, variety, and velocity of data from ever more data sources including retailers' owned, earned and third-party data, coupled with the need to accommodate centralized and decentralized analysis, is driving a need for retailers to look at analytics platforms rather than point solutions.

Machine Learning:

Machine learning techniques and technologies greatly simplify predictive analytics for the user, which allow retailers to make the right offers at the right times to the right customers on the right channel automatically every time. Machine learning embeds the expertise in SW, lowering the level of expertise needed to identify trends and make recommendations. It has the potential to be applied to a wide variety of retailer business goals such as revenue optimization, supplier management, inventory control, customer lifetime value, etc. For example, retailers can use machine learning to recommend the quantity, price, and market channel to reach the target consumers of outer wear based on analysis of vendors inventory and predicted weather conditions for next winter that will affect transportation and other supply chain variables.

Section 3: Analysis Framework

Thirty five companies were investigated for analytics capabilities useful to retail businesses and their offerings categorized according to where they contributed in the retail business model. A methodology was applied to identify the top 6 companies in this set from a capability standpoint. Then examples were explored for each of 4 annual spend levels - free, \$10K, \$100K, \$1M. The companies chosen for these examples were then classified for the maturity level of the offerings so the reader could get a sense of what could be achieved at each spend level. See the Appendix for the full list of companies considered.

Retail analytics is a subset of business analytics. The companies investigated all had an offering focused on retail analytics or could be obviously applied to putting together an analytics package for retail. Many of these companies support analytics for other industries and some have analytics as an add-on to another product such as point of sale. The companies analyzed are listed in the appendix.

Companies that offer retail analytics products cover many areas of the retail business model but for the most part, don't cover every area. A categorization was leveraged from Tickto in order understand what parts of the business each retail analytics product would be useful in. The offerings from each company were categorized accordingly with a few exceptions for companies that just provided data (such as Haver Analytics and Azure Datamarket).

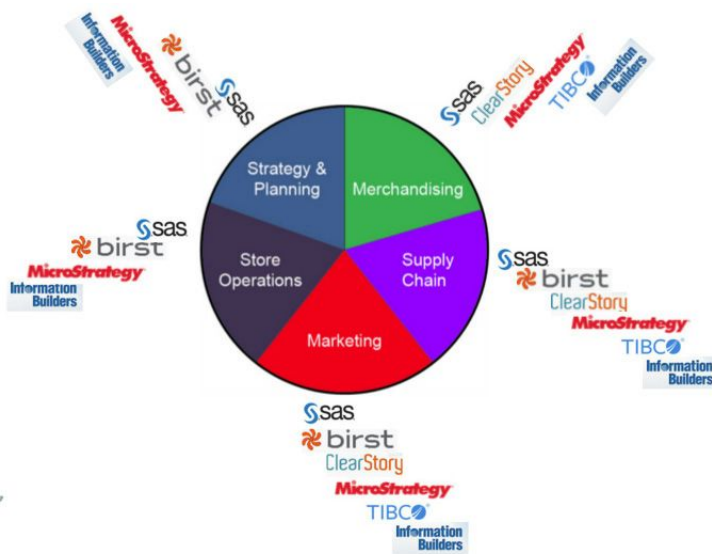
The Tickto model has 5 categories - strategy and planning, store operations, marketing, supply chain, and merchandising. Examples of analysis support for each category is listed in the table below.

Table 3.1 - Examples of Analytics Support in Each of the 5 Retail Business Model Categories

Strategy and Planning	Store Operations	Marketing	Supply Chain	Merchandising
<ul style="list-style-type: none"> ● Overall Performance ● Key Value Client Analysis ● Macro Trends 	<ul style="list-style-type: none"> ● Workforce Analytics ● Fraud Detection & Loss Prevention 	<ul style="list-style-type: none"> ● Market Basket Analysis ● Pricing Analysis ● Loyalty Analytics 	<ul style="list-style-type: none"> ● Sales Forecasting ● Inventory Management ● Vendor Management 	<ul style="list-style-type: none"> ● Assortment Optimization ● Shopper Path

In order to get a sense of who the capability leaders were, ratings for the top 6 companies were taken from the 2016 Gartner paper titled Critical Capabilities for Business Intelligence and Analytics Platforms. Although this paper covers the broad industry, we filtered to only include companies that had a retail analytics offering.

The Gartner paper rated capabilities for several classes but we chose two to rank retail offerings in our analysis because they reflected centralized control and department control over data usage and reporting - Centralized BI Provisioning and Decentralized Analytic. Scores were taken for the top 15 in each category and summed to get a composite score. The offerings from the top 6 companies of this



composite score were then categorized with the 5 business model categories and generally ranked according to their composite score as shown in the graphic. Closer proximity to the category wheel denotes higher ranking. SAS was the clear winner.

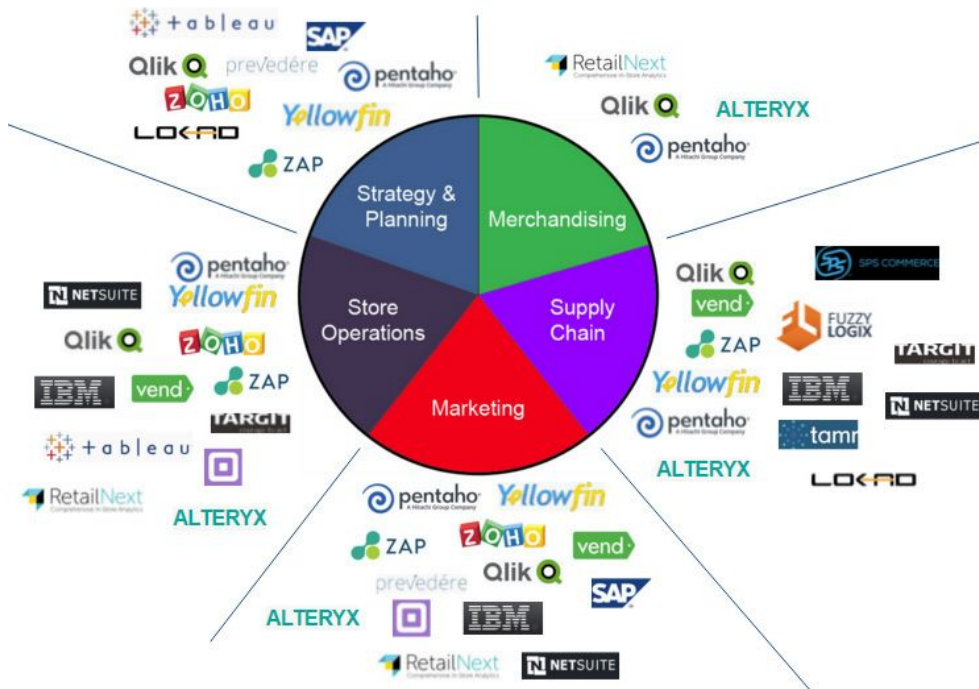
It is worth noting that the highest score was 3.8 on a 1-5 scoring with 5 being best. This is an indication that there is still room for additional capabilities. Also,

every company played in at least 3 categories and 3 played in all 5. Not surprisingly, there appears to be an advantage to having a presence in more than one category and being able to cross-tie data for analysis.

All the rest of the companies were analyzed for which business model categories they had offerings in. The following graphic in figure 3.2 depicts the results. Proximity to the business category wheel has no meaning in this case.

The number of offerings indicates early market and an opportunity for consolidation at some point. We tried to include companies that served brick and mortar as well as online retail. If we had allowed companies that served online retail only, there is a suspicion that the Merchandising category would have included more companies.

Figure 3.2 - Retail Analytics Landscape



Business analytics is on an increasing maturity path and retail analytics product offerings show up at different levels. The following model was used to classify companies presented in the examples. Most companies are at the Predictive level and below.

Figure 3.3 - Business Analytics Maturity Levels

Descriptive	Diagnostics	Predictive	Prescriptive
What happened?	Why did it happen?	What will happen?	How can I make it happen?
<ul style="list-style-type: none"> Standard reports Ad hoc reports OLAP analysis 	<ul style="list-style-type: none"> Drill-down analysis Data discovery 	Predictive modeling	Real-time automated predictive analysis

Section 4: Examples based on spend level

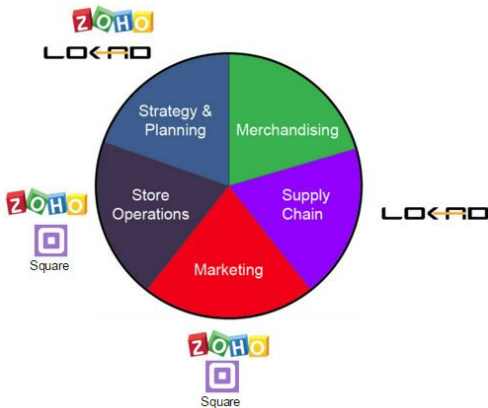
The original project scoping proposed three target spend levels for analysis - \$10K, \$100K, and \$1M. In the course of this investigation it was discovered that there were some companies that were positioning “free”. Typically, this was an entry path to paid services so a Freemium category was added.

Examples were found in each of the 4 spend level categories and described to provide a sense of what can be had at each spend level.

4.1 Freemium

The freemium space tends to be more restrictive and less feature rich than higher spend levels but this is not always the case as described below. Three companies are presented in this space - Square, Lokad, and Zoho.

Where they play in the retail business categories is shown in the graphic. Coverage tends to be narrow, covering a smaller number of categories. All products in these examples use a SaaS model. Analytics is an add-on to something else that they are offering for two of the three companies and enhances the value of their core product.



The main products for Square are Point of Sale electronic payment devices for capturing non-cash transactions. The capture of sale items along with a payment identification provide the basis for analytics opportunities. A dashboard (categorized as Store Ops) is offered for free that gives insight into sales trends, item and category sales, employee sales, and payment methods. A customer loyalty application (categorized as Marketing) can be added for \$20/mo that provides a customizable “digital punch-card program” for repeat customers. Tools track participation, redemption, and sales data.

Lokad provides advanced analytics engines in support of supply chain and strategy and planning. A description from their web site frames what they have to offer - “Know exactly when to reorder and how much to reorder. We provide an end-to-end solution that accounts for every demand pattern and every constraint.” To deliver of that description, they provide probabilistic forecasts and reorder quantity analytics that take into account ordering constraints and inventory performance. Mishimoto Automotive Performance used the sales forecasting

capabilities to lower their carrying inventory levels by 35%. Delivery is through SaaS.

The Lokad pricing model is quite interesting in that they claim all features are included in every plan. Plan pricing is based on revenue according to table 4.1.1. Support ranges from minimal at the free level up to consulting at the high spend levels. Other levels can be negotiated including inventory optimization as a service.

Table 4.1.1 - Lokad Plan Pricing

Plan Name	Express	Basic	Professional	Enterprise
Cost (\$/mo)	Free	\$150	\$450	\$1350
Revenue	Up to \$450K	Up to \$1.5M	Up to \$4.5M	Up to \$15M

The last example in this spend category is Zoho. They position themselves as an “operating system for business” and have a breadth of Business Intelligence tools that support sales and marketing, email collaboration, finance, and business process. Their Reports product is part of their business process product set and can be applied to Planning and Strategy, Store Ops, and Marketing portions of the retail business model. Analytics are not provided directly; reports are created that make it easier to pull insight out of the data through appropriate presentation. Southwestern States used Zoho reports to help them achieve an incremental growth of almost 20% on gross sales.

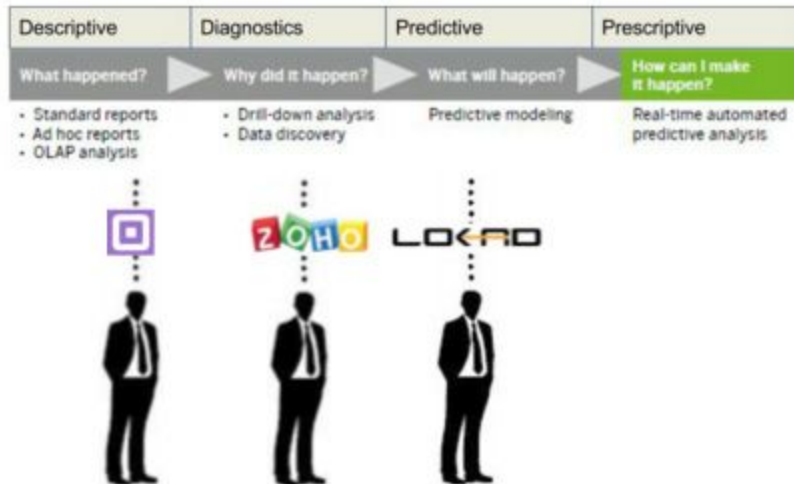
Zoho Reports pricing is generally based on aspects of the data set being presented (such as size) and the number of users. There are other constraints that define the plan levels so it would be best to get full pricing from their web site but the general price structure can be captured through table 4.1.2.

Table 4.1.2 - Zoho Reports Pricing Overview

	Free	Standard	Professional	Professional+	Enterprise
Cost (\$/mo)	0	\$50	\$90	\$140	\$495
Users	2	5	10	20	50
Record/Rows	100K	500K	1M	2M	25M
Databases	5	Unlimited	Unlimited	Unlimited	Unlimited

The maturity level of Freemium examples ranged from descriptive to predictive. This is shown in the following figure

Figure 4.1.1 - Freemium Example Maturity Levels



4.2 \$10K - Qlik

In the next spend level we see a continuation of freemium models although these options scale larger and we start to see platform plays. The company being reviewed at this level is Qlik.

Qlik has a free cloud offering making it easy to get started. As needs grow there is a Cloud Plus offering that charges per user and increases the amount of data space available. For larger installations there is an enterprise option with on premise installation. For these larger installations Qlik has a number of partners and their own internal group that can provide services.

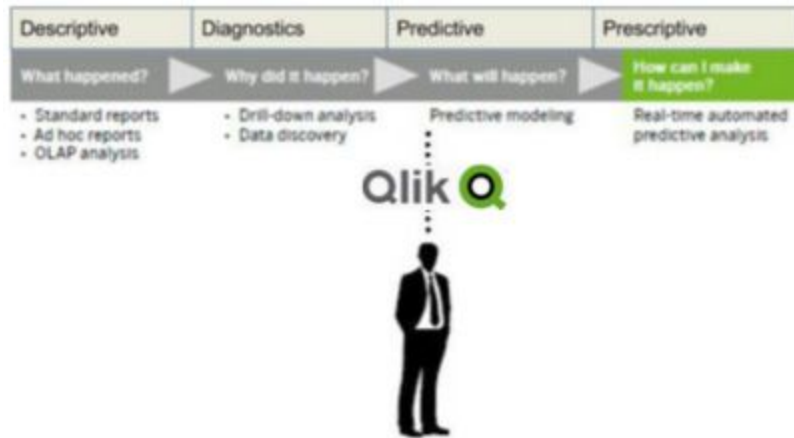
Connecting data into Qlik is easy in most cases. A feature of Qlik that seems to be emerging as a trend in the space is the data market. Some very basic datasets are available for free. Premium datasets are available with a per user pricing model and some are available via a salesperson. These are easily referenced within the app to create your views. Other ways of getting data include connectors, an example is the free Salesforce connector and the JDBC connector which can connect to a myriad of databases. These features are available in an App Store like marketplace which also seems to be emerging as a trend among analytic offerings.

A couple case studies we looked at from Qlik showed how their customers are using Qlik to make an impact on profits. Ted Baker was able to improve its marketing and

increased online sales in a sales event. Lush Cosmetics focused on store operations and was able to find considerable savings looking at internal staffing.

Overall our team was impressed with what Qlik was able to offer at a low cost for a small number of users. It also seems to be able to scale to needs of companies as they grow larger which allows Qlik to get a foothold into companies when they are smaller and it gives companies a way to improve their analytics without requiring retraining on a new platform. These aspects make it a good choice for the small to medium sized business.



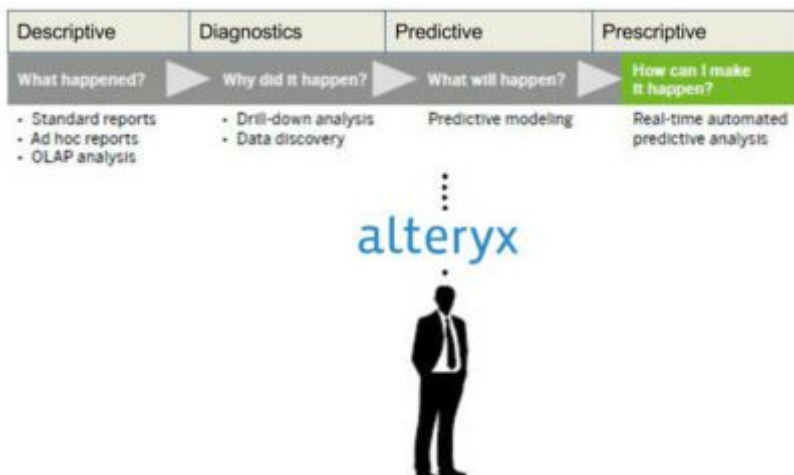


4.3 \$100K - Alteryx

In the \$100K and higher category, analytics companies tend to provide solutions that can be customized for the specific needs of the target customers. This also means, companies must employ skilled data analysts, analytics visualization designers.

Alteryx is an example company in this category. It provides a data-blending and advanced analytics platform that enables analysts to integrate internal, third-party and cloud data, and then to analyze it using spatial and predictive tools in a single workflow.

“Data blending differs from data integration and data warehousing in that its primary use is not to create a single unified version of the truth that’s stored in data, but rather



to build an analytic dataset that helps business analysts answer specific business questions” - Harvard Business Review

Alteryx lacks strong data exploration and visualization tools, which can be implemented by the customers through Tableau, Qlik,

Microsoft, and other partnered products.

Alteryx targets customers in diverse industry verticals from retail to hospitality to transportation to manufacturing. This is a common theme for analytics companies in general.

In terms of the analytics maturity, Alteryx is somewhere in the middle of the “predictive analytics” level. Most of the heavy lifting in terms of data blending and forecasting will need to be done by the analysts at the customer, based on reports generated by the Alteryx tool.

Alteryx offers a server (cost is about \$58K per year) that hosts all of the analytics tools and databases. There is a per-user cost of about \$2K per year to access the Alteryx Gallery. The gallery contains all of the analytics charts and reports custom designed by the customer, using Alteryx Designer tool. The designer tool costs about \$5K per user per year, and allows expert analysts to design custom charts by blending data from multiple sources. Accessing external data sources costs extra, and is about \$40K per year.

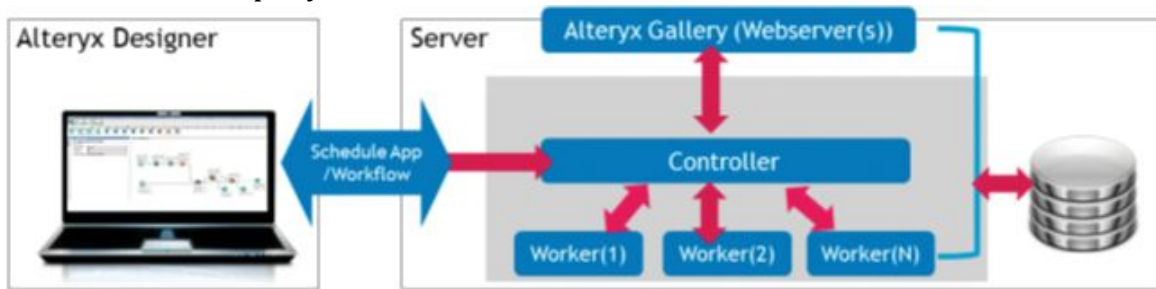


Figure 4.3.1 - Alteryx product structure

Customer generated analytics charts are presented in the Alteryx Gallery in the form of application in an App Store. Figure 4.3.2 depicts a sample collection of retail oriented charts.

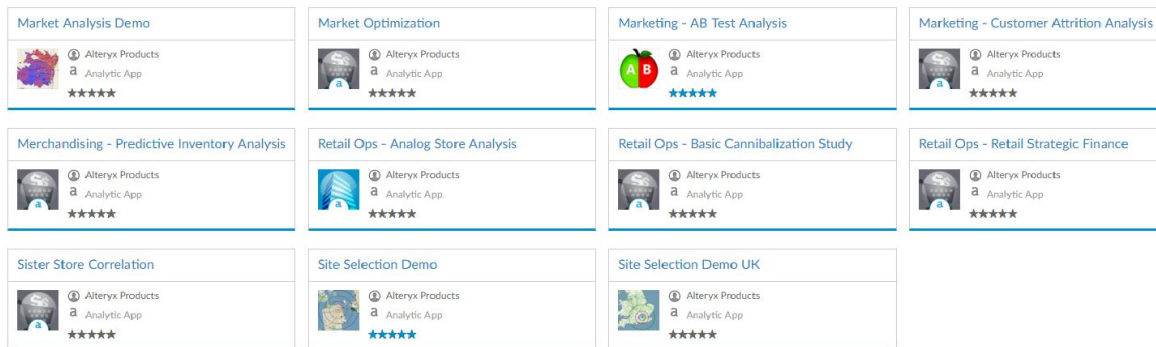


Figure 4.3.2 - Alteryx Gallery example.

With Alteryx, a retail customer can get predictive analytics in most of the retail analytics spectrum. Based on Alteryx Web site, following features are available to retail customers:

Marketing:

Deepen customer insight: Blend all of your data, structured and unstructured, from internal and external



sources — across all channels — to get one view of your customer

Optimize multi-channel performance: Analyze customers' browsing history, spend patterns, and shopping behavior across channels to align product mix, promotions, messaging and media choices with customer preferences

Improve marketing effectiveness: Profile and segment customers, model scenarios, forecast promotional lift, track actuals against target and optimize channel and media mix to improve campaign response rates and promotional performance

Enhance social media presence: Blend and analyze social data and product/service review data to understand and respond to customer sentiments and brand perceptions.

Merchandising:

Accurate Demand Forecasting: Combine all customer demand data –store level POS data, mobile and e-commerce, with competitive activity, trade area information, economic factors, and seasonality to predict customer demand

Hyper-local Assortment Planning: Enrich transaction history with demographic data, population trends, ethnicity mix and more to optimize assortment mix by trade area, or store location

Improving Space Allocation: Model impact of changes in product category mix and product placement decisions on revenue to optimize inter-departmental mix and in-store space allocation

Promotional Planning: Model demand lift from different promotions, analyze the cannibalization impact of concurrent promotions and model revenue impact of a promotion to optimize promotional plans

Supply Chain:

Accurately Forecast Demand: Access and combine all relevant data — sales,

marketing, seasonality, economic and more — to generate reliable demand forecasts

Manage Inventory: Access and combine all your inventory data — in stores, DCs and shipments, and segment inventory by turns, seasonality and cost etc. for complete inventory visibility and optimal threshold levels and replenishment plans

Optimize Distribution Network: Forecast trade area demand, geocode store and customer locations, calculate distance, drive times, and perform what if analysis to understand impact of store closings/openings on transportation & facility costs, SLAs and lead times

Improve Supplier Performance: Rank and segment suppliers based on price, on-time delivery, quality and performance to consolidate spend and rationalize supplier base

Retail Operation:

Improve Site Selection: Forecast sales by location, analyze impact of existing stores — both sister and competitive — on new store sales, determine market potential by drive time, trade area demographics, and population trends to identify most profitable locations and optimize trade area expansion

Optimize Labor Scheduling: Accurately forecast in-store labor demand based on planned promotions, seasonality, local events and competitive activity, measure and track impact of labor changes on performance, inventory turns and sales volume to adjust and optimize labor schedules and costs

Manage Store Performance: Track and monitor standard performance metrics, determine impact of promotions, refurbishments, competitive activities etc. on store performance, compare results with other sister and competitive stores in local area, and share results via easily consumable graphics

4.4 \$1M - SAS

At the very high end, companies such as SAS and SAP are offering solutions that cover all aspects of business (in this case retail business), not just analytics. This leads to a more integrated analytics offering that can provide a richer capability for the end customer. In return, due to complexity of the offering and wide range of capabilities, companies who are in this budget range will need more specialized workforce, such as data scientists, sophisticated IT and security infrastructure, a development team, and business analysts.

There is no pricing information or product architecture available from SAS. All solutions are provided after consulting with the customer, at which time the pricing is also determined. The sales associate, however, confirmed that the \$1M per year is within the ballpark price of the solution.

A subset of the products that may be included in a retail analytics solution is listed below:

- Advanced Analytics Software
- SAS® Customer Intelligence
- Data Management Software
- SAS® Customer Intelligence
- SAS® Data Quality
- SAS® Demand Forecasting for Retail
- SAS® Enterprise Miner™
- SAS® Forecast Server
- SAS® Integrated Merchandise Planning
- SAS® Retail Forecasting
- SAS® Revenue Optimization Suite
- SAS® Size Optimization: SAS® Size Profiling and SAS® Pack Optimization
- SAS® Visual Analytics

The solution may include other products that integrate into HR and finance systems and other business intelligence related software.

Based on the analysis, SAS analytics maturity seems to be at the high end of the predictive analytics space as depicted in figure 4.4.1

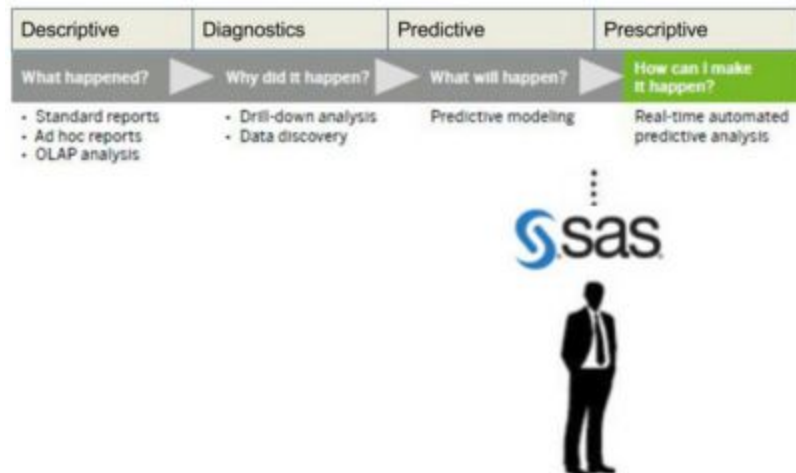


Figure 4.4.1 - SAS Analytics Maturity Level

As a result of highly customizable solution from SAS, a retailer will get analytics capability across the spectrum. According to SAS Web site, following analytics features are available for retail businesses:

Marketing.

A complete view of the customer. Create a single view of each customer – one that includes preferences, propensities, transaction history and social media interactions – across brands and merchandise.

The ability to predict customer behavior. Use predictive analytics to gain insights into the major factors that influence customer satisfaction, long-term relationships and sales results.

Omnichannel marketing: Gain a richer, more meaningful omnichannel customer understanding so you can put customer intimacy at the heart of your retail operations.

Merchandising.

Merchandise financial planning. Plan and manage sales, margin and inventory turns across all categories and channels.

Merchandise in-season management. Set data-driven financial performance goals and match inventory to in-season demand. Then review performance data and adjust merchandise forecasts as needed in response to changes in demand patterns and inventory conditions.

Merchandise assortment planning. Build product assortments that have the ideal breadth and depth so you can match customer needs while simultaneously supporting your financial goals.

Allocation. Analyze store-specific needs and optimally distribute inventory across all your retail outlets.



Demand forecasting. Generate forecasts and automate in-season reforecasting so you can intelligently build assortments and prepopulate “seed” plans using product and store attributes.

Store clustering and assortment localization. Identify clusters based on actual sales history, and focus assortment planning activities on the most significant store groups. Add customer preferences to your analyses to make local assortments a reality.

Operations.

Discover and adopt new – and sustainable – ways to improve efficiency and effectiveness across all elements of your operations – structure, staff, processes, tools, metrics, etc.

Supply chain.

Get the right products to the right locations in the right quantities – and at the right time.

Better forecasts. Understand demand better than ever with a powerful and highly automated forecasting solution that can produce results down to the individual store and SKU level.

Better planning. You can seamlessly integrate our forecasting solution into your existing planning processes to quickly and easily identify opportunities and improve profitability.

Better business results overall. Improve every aspect of your business with better forecasting and replenishment. That means sufficient in-stock levels, less wasted inventory and greater profits.

Finance.

Improve all aspects of your organization's financial health.

Pricing

Regular price optimization. Set the best price for every item you sell based on multiple factors – the competition, your goals, business rules, ad placement, etc. – at a customer, market or store level. React quickly – and correctly – to changes in the market (e.g., when a competitor changes prices).

Promotion optimization. Deliver the most compelling and profitable customer-centric promotions. Use demand modeling and forecasting to optimize both promotional price and ad placement to capture a bigger share of your customer's wallet.

Markdown optimization. Develop well-thought-out markdown plans. Make critical markdown decisions quickly. And maximize margins and inventory sell-through.

Section 5: Summary

Our team developed and applied a retail categorization model, created a landscape of providers, and final recommended solutions for different spend levels to demonstrate the breadth of the retail analytics market segment, and touch on the complexity of the topic.

Entry level solutions will require the retailer to apply some investment of time and expertise in order to gain the most from their investment. Recommended solutions for a mid-size and large retailers are much more likely to have the option of implementation assistance, as well as a number of providers who can cover all five categories of retail business operations for high synergy.

The team determined the final decision is not if a retailer should implement retail analytics, but which category to start with, and determine if a plan to cover all five categories as they grow their business.

Appendix

Companies providing analytics software offerings

Focus: MC = Merchandising, SC = Supply Chain,

MK = Marketing, SO = Store Operations, SP = Strategy & Planning

Company	Description	Focus	Web Site
AcceleratedAnalytics	Outsourced analytics from PoS and EDI 852data		http://www.acceleratedanalytics.com/features/
Alteryx	PoS Analytics	SC, MK, SO, SP	http://www.alteryx.com/solutions/retail-analytics
Angoss	Predictive analytics	MK	http://www.angoss.com/resources/industries/retail/
Azure Datamarket	SaaS and Data Sets hosted by Azure	Data source	https://datamarket.azure.com/about
Bindo PoS	Analytics bundled with PoS		https://bindopos.com/en/ipad-pos-for-retail/analytics
Fuzzy Logix	Standalone Analytics	SC	http://www.fuzzyl.com/
GoodData	General Analytics, no retail focus, embedded analytics		http://www.gooddata.com/
Google Trends	External data	Data source	https://www.google.com/trends/
Haver Analytics	External data sets - 200+ databases of time series data.	Data source	http://www.haver.com/
IBM	IBM Analytics for Retail	SC, MK, SO	http://www.ibm.com/analytics/us/en/industry/retail/
Information Builders		MC, SC, MK, SO, SP	http://www.informationbuilders.com
Insight Squared	More of a BI offering		http://www.insightsquared.com/
Lokad	Revenue based pricing Analytics	SC, SP	http://www.lokad.com
Microstrategy	Analytics and visualization	MC, SC, MK, SO, SP	http://www.microstrategy.com/us
Netsuite	SaaS Integrated ERP, CRM, eCommerce with Analytics	SC, MK, SP	http://www.netsuite.com/portal/home.shtml
Prevedere	Predictive Analytics, External prediction (economic influences)	MK, SP	https://www.prevederesoftware.com/
RapidMiner	Predictive Analytics (supported Open Source) - see Gartner Reprint Advanced Analytics.pdf		http://rapidminer.com/

qlik	Business Visualization and Analysis	MC, SC, MK, SO, SP	http://www.qlik.com/
Quandl	External data sets and connector		https://www.quandl.com/
SAP	Retail Analytics & PoS Analytics - Gartner Reprint Advanced Analytics.pdf most customers are existing SAP customers	MK, SP	http://www.sap.com/bin/sapcom/en_us/downloadasset.2014-12-dec-06-01.enabling-competitive-advantage-in-retail-with-sales-insights-pdf.html
SPS Commerce	Retailer & Supplier Analytics with collaborative options	SC	https://www.spscommerce.com/products/
Square Analytics	Analytics bundled with PoS	MK, SO	https://squareup.com/pos/dashboard/analytics
Tableau	Visualization	SO, SP	http://www.tableau.com/
Tamr	Machine learning for Customer Data Integration, Sourcing	SC	http://www.tamr.com/
targit	Integrated tool: Dashboards, analytics, reports, alerts	SC, SO	http://www.targit.com/en
Vend	PoS Analytics	SC, MK, SO	https://www.vendhq.com/tour/pos-reporting
ZAP	PoS Analytics	SC, MK, SO, SP	http://www.zapbi.com/DiscoverZAP/BYINDUSTRY/Retail/POS.aspx
Zoho	SaaS	MK, SO, SP	https://www.zoho.com/
Birst	Data integration, analytics, presentation	SC, MK, SO, SP	https://www.birst.com/
Pentaho	Comprehensive Data Integration and Business Analytics Platform, Dig Data, Mashups, Analytics, Visualization	MC, SC, MK, SO, SP	http://www.pentaho.com/solutions/retail
Yellowfin	Data connectors, analysis, reporting. Dashboard marketplace.	SC, MK, SO, SP	https://www.yellowfinbi.com/
Clearstory Data	Internal/external data access/prep and harmonization, Story board presentation	MC, SC, MK	http://www.clearstorydata.com/retail/
Tibco software	Event-driven platform connecting applications, data, people, and processes	MC, SC, MK	http://www.tibco.com/industries/retail
SAS		MC, SC, MK, SO, SP	http://www.sas.com/en_us/industry/retail.html
Retail Next	Store traffic analysis	MC, MK, SO	http://retailnext.net/

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