

State of the Industry Research Series : **2013**
The Future of Retail Analytics

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Executive Summary

Retail has always been a data-intensive industry. As the tools available to store, manage and analyze this data evolved, so did the role the analysis of data played in retail decision-making. From visibility and control, to transparency, to efficiency, to customer engagement.

It is cheaper, faster and easier today to store and process more data than ever before. Retailers have gotten better at data management. Question is, how well are they able to leverage insights from this analysis to drive strategic decisions?

EKN conducted an industry survey to benchmark the state of the retail industry in terms of analytics maturity. Findings from the primary research covering 65+ respondents, interview based qualitative inputs from retail executives, and EKN's secondary research from public and proprietary sources are presented in this report.

In a retail environment where consumer spending is stunted and competition from newer, digital channels is eroding store sales, the route for brick and mortar retailers to earn a larger share of wallet of the customer is through deeper, Omni-channel customer engagement. Customer engagement is only as effective as how well you know the customer and how well you are equipped to act on that insight across your channels. Perhaps this is why customer insight emerges as retailers' highest-priority goal from analytics initiatives in 2013. In addition, findings from EKN's survey include:

- **Retailers' analytics maturity is low:** 2 in 5 retailers state they lag behind their competitors in terms of their analytics maturity and a further 2 in 5 suggest they are at par. The "analytical retailer" is thus the exception rather than the rule.
- **Data management and integration** will be a key area of investment in an effort to increase analytical maturity. Retailers are looking to integrate a variety of data sources over the next 2 years, however public and open data remains a relatively under-explored opportunity.
- **Retailers find their current analytics organizational setup sub-optimal.** Only 18% currently have a shared services model for analytics in place whereas approximately 60% would like to move towards such a model.
- Retailers will invest in **contextual, visual and mobile-friendly delivery of insights** to combat the biggest challenge that prevents them from leveraging analytics strategically – delivery of insights to the right resource at the right time.
- Retailers' eCommerce or **Omni-channel function emerges as the business function with the highest potential opportunity** for analytics impact, the highest rate of data growth and the highest planned technology investment. However, it is also currently the function with the lowest analytics maturity.
- **Usability is the most important feature** retailers will look for when choosing analytics solutions in 2013. Even with the delivery of insights being their biggest challenge, mobile or tablet access ranks relatively low.

The traditional view of data management and analysis in retail has been tool-driven – be it relational databases of decades past or Business Intelligence tools more recently. In EKN's view, "business analytics" is a concept that focuses on decisions and outcomes, and is a far better indicator of the future of retail analytics.

Inside the report:

- EKN's Business Analytics Software Vendor Landscape
- The Analytics Honor Board
- EKN's Analytics Maturity Assessment Framework (Excerpt)

Research Findings Fast Facts:

- Retailers rate Amazon, Wal-Mart and Target as leaders in customer analytics
- 84% of retailers employ data analysts
- Web or Social Media Analytics software is expected to have a 96% install base among surveyed retailers over the next 2 years

The Future of Retail Analytics: From Intelligence to Outcome

What's in a Name?

Retail technology terms are an etymologist's delight. What is the difference between Business Intelligence and analytics? Between analytics and Big Data analytics? Far from being trivial, the distinction is important for retailers to know, especially those in conversation with software providers who classify themselves as providing solutions in one or the other of these areas.

Business Intelligence refers exclusively to tools and software focused on retrieving, analyzing and reporting data stored in an existing enterprise database such as a data warehouse or data mart. BI tools typically focus on querying, reporting, On-Line Analytics Processing (OLAP) and alerts. They help answer the questions – what happened, how many, how often, where the problem is, and what actions are needed.¹

Analytics is a more ambiguous term since it overlaps with Business Intelligence in that BI tools play an active role in analytics. EKN sees the term analytics comprised of two distinct ideas, both of which are important to understand separately – business analytics and analytics software.

Business analytics is the art, science and philosophy of utilizing insights to improve decision-making in the context of a particular business function or process. It is focused on a continuous, ongoing, and iterative exploration of past business or business process performance to gain insight, drive business planning, and deliver a particular business outcome.

Analytics software is a class of tools that leverages data to create context-rich, actionable insight. Compared to Business Intelligence tools, analytics software typically have improved visualization, the ability to work with real-time data, and include additional functionality such as forecasting, regression, and modeling. Business analytics is focused on the questions – why is this happening, what if the trends continue, what will happen next (predict), and what is the best that can happen (optimize)². Jeremy Kirk of IDG News Services provides a good example³ of a customer trying to withdraw money from a cash machine as illustrative of how application of analytics must influence a specific action. "The data being leveraged is a bank account balance, the process is the withdrawal, the context-specific insight is the fact that the customer has no overdraft protection, and the action is the confiscation of the debit card."

In its [State of the Industry Research on Big Data in Retail](#)⁴, EKN defined Big Data as collectively referring to the strategy, business processes, tools and technologies that pertain to datasets whose size and complexity is beyond the ability of typical database software tools to capture, store, manage, and analyze.

¹ International Institute of Business Analysis

² International Institute of Business Analysis

³ Analytics buzzword needs careful definition

⁴ EKN State of the Industry Research, Big Data in Retail

Analytics in Retail: A Historical Context

Retail is a data-intensive industry. We serve millions of customers, move hundreds of thousands of items, stock thousands of SKUs in hundreds of stores, in pursuit of that one goal – a profitable relationship with customers.

For decades retailers have focused on data and its analysis to drive improvements in core business processes and to improve operational decision-making. With advances in analytical tools and an improved understanding of the value of such tools, the functions that benefitted most were Supply Chain, Finance and Merchandising. Even recently, Marketing's adoption of web and social media analytics was initially driven more from a channel performance measurement and improvement perspective, rather than a need to understand consumer behavior and preferences better.

Not only have the volume (amount), variety (different sources and types) and velocity (the speed at which this data flows through the enterprise's decision making processes) of data that a retailer needs to process through its business information systems increased exponentially over the last few years, retailers' goals from the analysis of this data have also changed dramatically. From being focused on transparency, efficiency and business agility, retailers now need to focus their analytics efforts on customer insight and engagement.

In the new normal of retailing where the consumer is value-conscious, always-on, mobile-enabled, socially-active and channel-agnostic, retailers are finding it difficult to differentiate themselves based on traditional factors such as price, promotions, location and assortment alone.

On the other hand, with consumers themselves reliant on technology – personal computers, tablets, mobile and smart phones, the Internet, and social media – they are leaving behind digital breadcrumbs and displaying their “digital body language”. Combined with how consumers interact with retailers across their own channels, loyalty programs, promotions and customer service, this mass of consumer data offers retailers their best chance yet to really know their customer.

From being focused on transparency, efficiency and business agility, retailers now need to focus their analytics efforts on customer insight and engagement.

Knowing the customer better than competition and having the ability to orchestrate business decisions at the speed of insight is the new retail competitive battlefield, and business analytics, not Business Intelligence, can be one of the strongest weapons in a retailer's arsenal.

Business analytics will only evolve further into a strategic capability that sits at the intersection of customer preferences, business strategy and business processes. Insights will be deeply embedded across a retailer's functional value chain, affording it both the ability to be investigative and predictive (strategic), as well as the adeptness to be efficient and agile (operational). Therein lies the future of retail analytics.

Analytics Through the Ages:

Business Focus Investment Wave	Wave 1: Visibility and Control	Wave 2: Infrastructure and Operations	Wave 3: Execution and Excellence	Wave 4: Customer Engagement
Analytics Age	Stone Age	Bronze Age	Iron Age	Modern Age
Focused on	Improving visibility into key aspects of stock and sales	Integrating data across business functions	Building an enterprise data repository	Gleaning customer insights from enterprise and external data
Buzzword	Spreadsheet	Decision Support System (DSS)	Optimization	Big Data
Defining moment		Kroger decides to participate in the experimental UPC program (1970)	Wal-Mart's database in 1999 is said to be 200TB, one of the largest in the world.	Amazon's proclamation that it is a technology company first (2011). Target predicts a teen is pregnant, before her father knows. (2013)
New Retailer	Target/Dayton Hudson (1902)	Wal-Mart (1962)	Amazon (1994)	Apple Store (2001)

From Business Intelligence to Business Analytics

In a recent point of view, EKN describes the convergence of 4 key trends that is reshaping retail, including an explosion of consumer and enterprise data that dwarfs anything we, as an industry, have ever dealt with before.

Yet, the biggest challenge facing retailers isn't managing the volume or variety of data. It is having the ability to identify what business outcomes they can impact through the integration and analysis of this data, and the execution capability to glean relevant insights and deliver them to the relevant person to be able to act on them at the right time.

At different levels of maturity and to varying degrees of success, leading retailers such as Best Buy, CVS, Amazon, Target and Wal-Mart among others are leveraging analytics to:

- Gain a deeper understanding of their customers' behaviors, needs and preferences to build a more personal relationship.
- Improve marketing effectiveness through micro-targeting, personalization and delivery of context and channel sensitive promotions and offers that increase the likelihood of purchase.
- Optimize the supply chain to ensure the most profitable outcome in terms of demand fulfillment balanced against cost of carrying excess inventory.
- Determine pricing, including bundle and basket pricing, based on the value customers attach to their needs at any given time.
- Spot flash trends, such as a celebrity sighting in a particular pair of jeans, that have an impact on demand to be able to turn them into revenue capturing opportunities.

Even as such industry leaders evolve their business structures, strategies, tools and resources in an effort to embed analytics into the very fabric of the organization, most retailers, by their own assessment (43% in EKN's survey stated they lagged behind competitors in their strategic use of analytics), are still struggling with wide ranging issues that prevent them from leveraging analytics strategically.

Knowing the customer better than competition and having the ability to orchestrate business decisions at the speed of insight is the new competitive battlefield of retail.

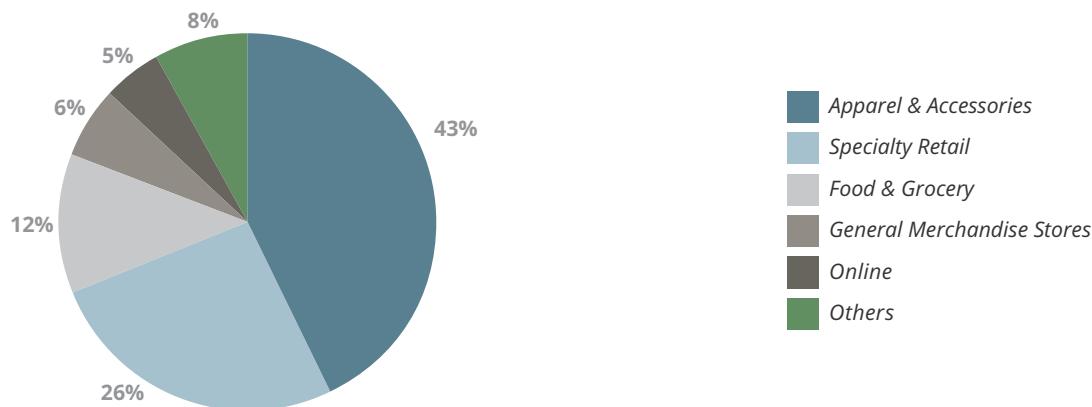
- They are **overwhelmed by a data tsunami** (from POS systems, enterprise transactional data, machine logs, loyalty data, unstructured and semi-structured data from emails and machine logs, social media data) and are unable to build a data management and integration strategy best aligned with their format and business goals.
- They find the **multitude of software types and an increasingly crowded vendor landscape** confusing. And, in an environment where investments in IT are justifiably scrutinized, some may find themselves battling for internal justification and investment due to failed ROI metrics from prior analytical tools.
- Business Intelligence, as defined above, is tool dependent, whereas business analytics depends as much on the organization's culture and outlook towards analytics as it does on tools. Most retailers have adopted BI tools as a matter of natural progression of systems. BI tools can thus offer insights that can prompt bottom-up change. A culture of business analytics, however, has to be driven from the top down. Some retailers may find it difficult to truly embrace "analytical retail" due to their **management's archaic or under-informed outlook** towards analytics.
- The single biggest stumbling block facing business analytics is the **lack of skilled resources** that can help retailers make sense of data and contextualize insights for improved decision making.
- A related issue that is as important is how business analytics teams are structured in the enterprise. Retailers are **struggling with how their teams and resources are currently structured**, a fact that is borne out by findings from EKN's research, presented in a subsequent section of this report.
- Another skill related issue for retailers is **re-training existing employees** who perform roles that have transformed to be increasingly dependent on analytics. Traditionally, some of these roles may have been seen as art more than science, which makes the issue even more complicated given the personalities involved. Such roles include retail marketers, buyers and merchants.

EKN Analytics Maturity Assessment Framework (Appendix A) provides a quick reference method for retailers to benchmark where they stand.

Research Findings

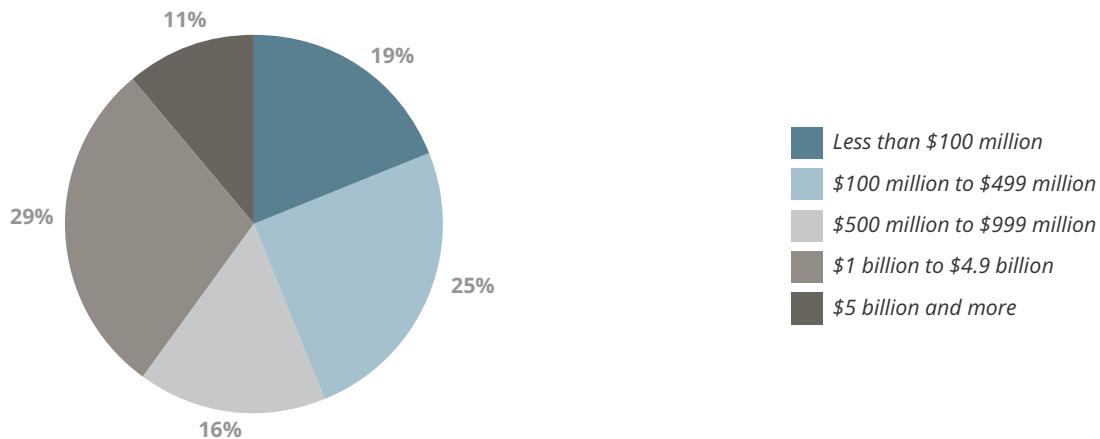
Survey respondent distribution by segment

(Figures are percentage of total respondents)



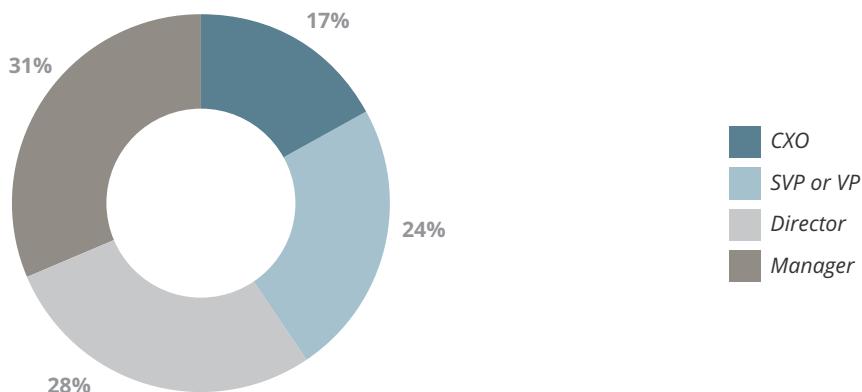
Survey respondent distribution by annual revenue

(Figures are percentage of total respondents)



Survey respondent distribution by designation

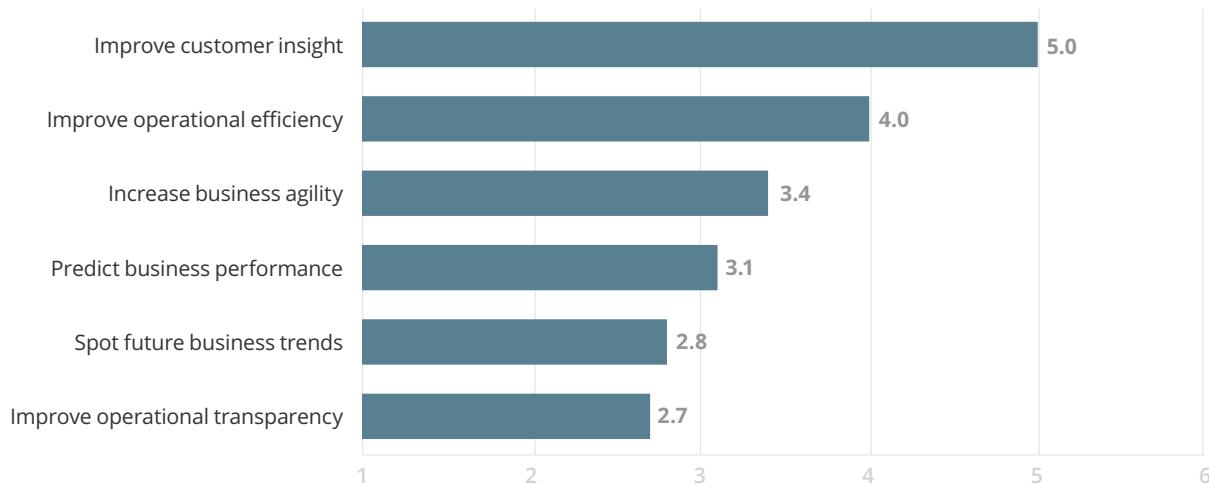
(Figures are percentage of total respondents)



Retailers' customer analytics maturity remains low, even with customer insights being their topmost priority

Most important goals from analytics initiatives in 2013

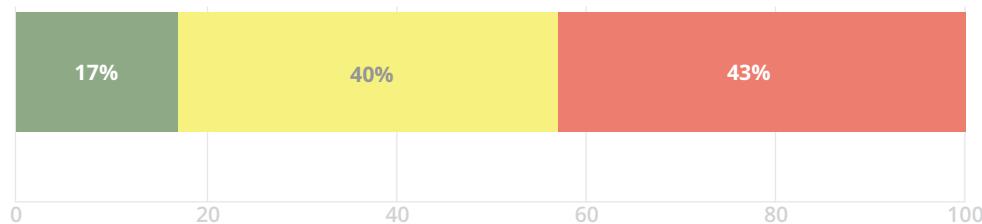
(Scores represent weighted average ranking, 1 being the lowest and 6 being the highest)



How would you describe your organization's use of customer analytics compared to your competitors?

(Figures are percentage of total respondents)

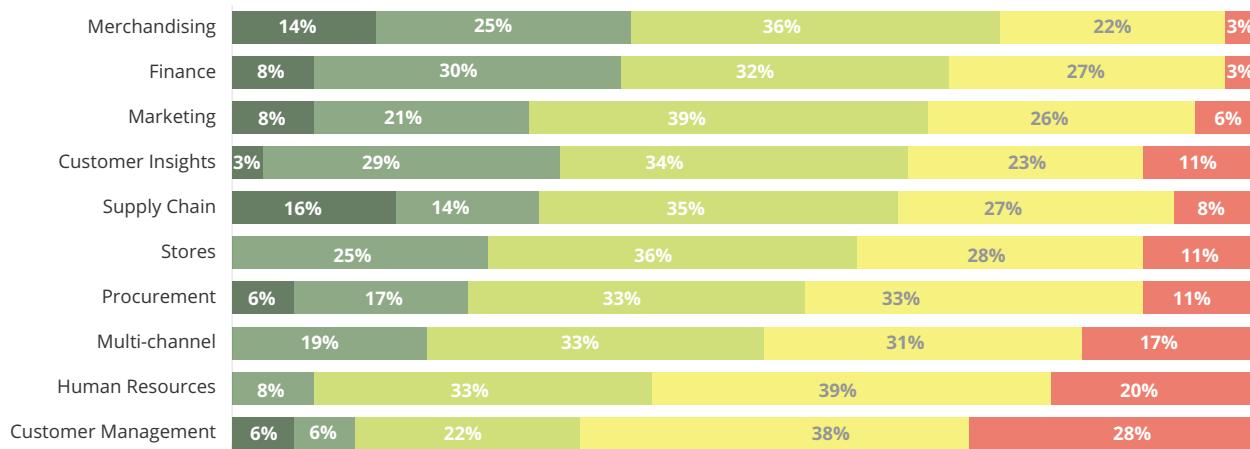
Better than our competitors At par with competitors Lagging our competitors



Analytics maturity across business functions

(Figures are percentage of total respondents)





By a large margin, retailers rate improving customer insight as their #1 objective from analytics initiatives in 2013. Yet, few retailers rate themselves better than competition in terms of their use of customer analytics. 43% consider themselves lagging behind competition, while 40% state they are at par with their competitors. Clearly, those that consider themselves leaders in this space are few and far between.

Further, retailers' analytics maturity varies by function, and Customer Insights ranks low, with 2 in 3 retailers able to conduct "basic" analytics at best. Refer to EKN's Analytics Maturity Assessment Framework (Appendix A) for detailed descriptions of the levels of analytics maturity.

As described earlier, the last wave of analytics investments in retail was centered on operational efficiency and transparency. Not surprisingly the top 3 functions in terms of analytics maturity - supply chain, merchandising and finance - are all operationally focused.

Improving customer insight presents an opportunity for retailers to leverage analytics more strategically, and to be able to create competitive differentiation. To do so, they will need to move up the analytics maturity curve aggressively, which in turn will require investments in redefining processes, skill-development, resourcing and upgrading of tools.

With a substantial increase in the volume and variety of data that retailers plan to integrate into their systems, data management and integration processes gain importance

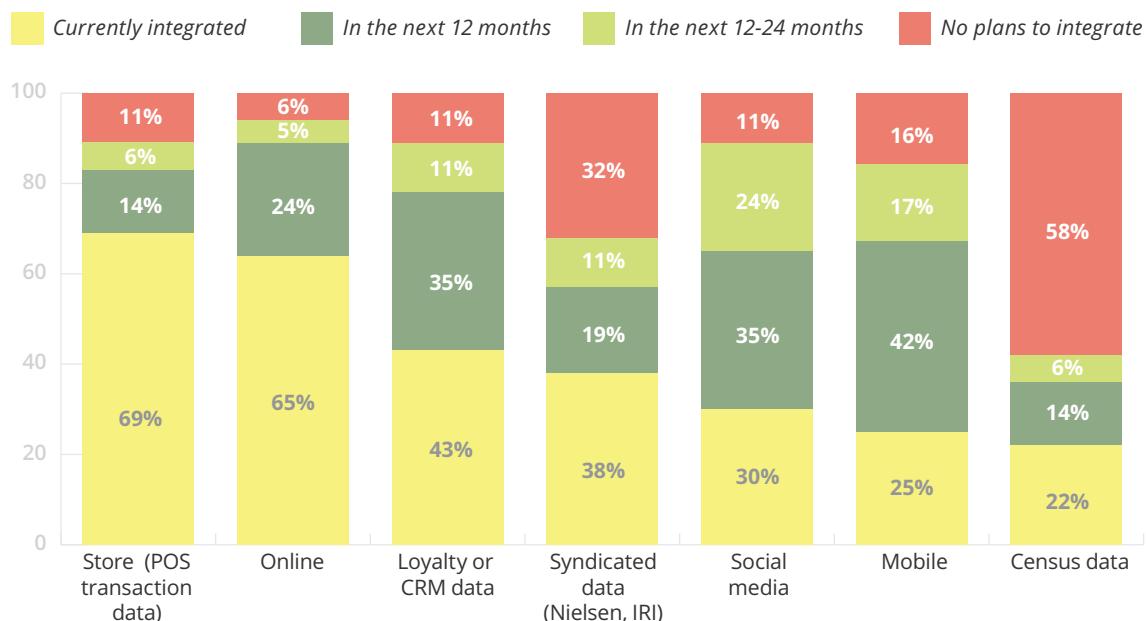
Organizational capabilities critical to leveraging analytics strategically

(Scores represent weighted average importance, 0 being the lowest and 3 being the highest)



Timeframe for retailers for integrating data sources into analytics

(Figures are percentage of total respondents)



Retailers rate having a clearly defined analytics business strategy and an effective data management and integration process as the most important organizational capabilities required to be able to leverage analytics more strategically.

As retailers institute a stronger data management and integration process, they will improve their ability to successfully integrate a variety of sources of data into their customer insights process. For those struggling to navigate the syntactical and conceptual minefield Big Data can be, this provides a real glimpse into retailers' data integration plans over the next 2 years.

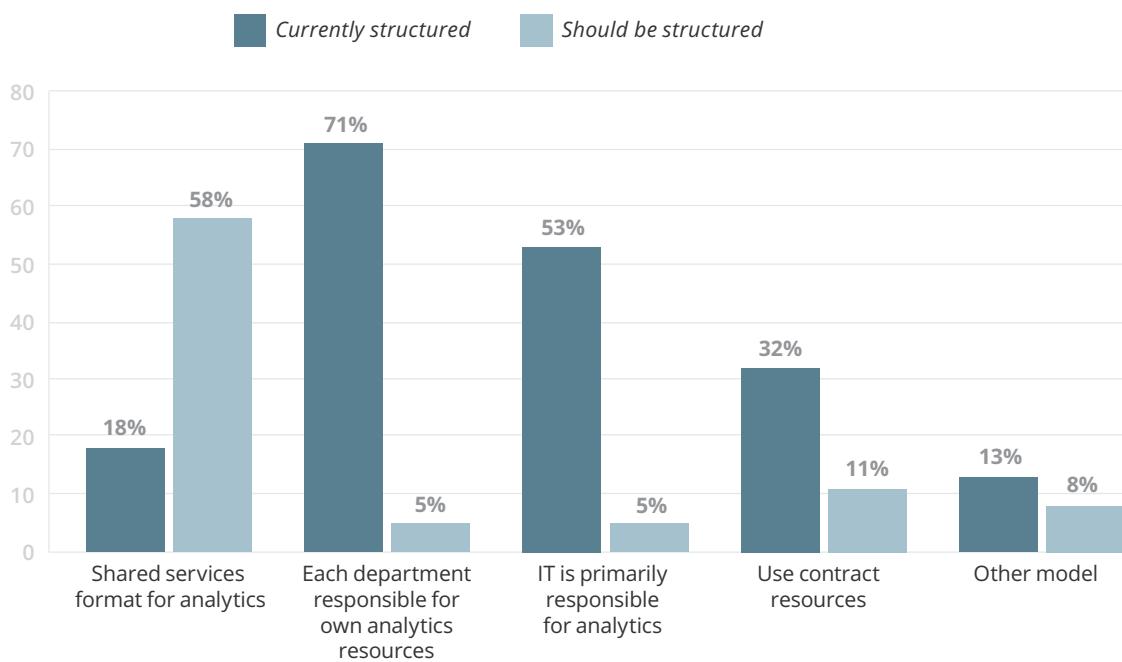
- **Current state:** Store (POS transaction data), online and loyalty or CRM data emerge as the top 3 sources of data retailers already integrate as part of their analytics initiatives. Yet, this integration is far from being an industry standard.
- **Future state:** Retailers will plug gaps in the aforementioned areas. The most aggressive data integration plans have to do with social media – as those retailers integrating this data will go from 30% in 2013 to approximately 90% in 2015. Mobile data will see a similar growth in integration, albeit from an even smaller base.
- **Missed opportunities:** 58% of retailers have no plans to integrate public or open data such as Census data. EKN believes such readily available, free to use data provides retailers an opportunity to further enrich insights gleaned from internal and external customer data. 1 in 3 retailers also report no plans to integrate syndicated data from sources such as Nielsen and IRI.

In [EKN's State of the Industry Research on Big Data in Retail](#), retailers at a higher level of analytics maturity identified data variety as their biggest data management challenge (as compared to data volume for those at a lower level of maturity). As retailers integrate a larger variety of data over the next 2 years, Big Data will find a real meaning in their organizations. It will be humbler than the conquer-the-world aspirations typically associated with it; but it will be a start.

Retailers' current organizational structure is a key impediment to leveraging analytics more strategically

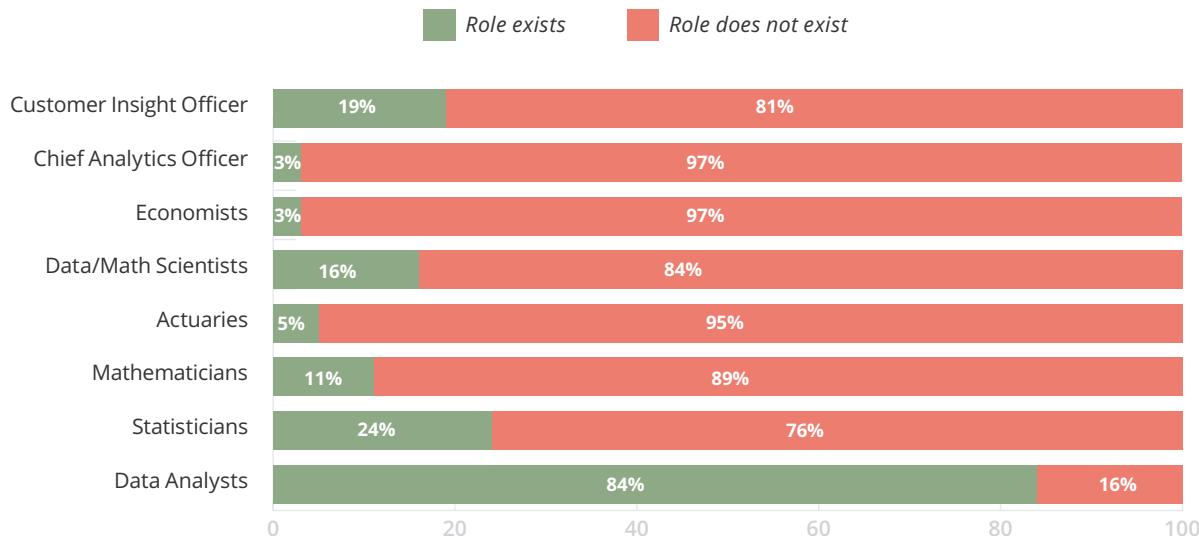
Structure of the analytics team in a retail enterprise: current structure vs. desired structure

(Figures are percentage of total respondents)



Analytics' roles currently existing in a retailers' enterprise

(Figures are percentage of total respondents)



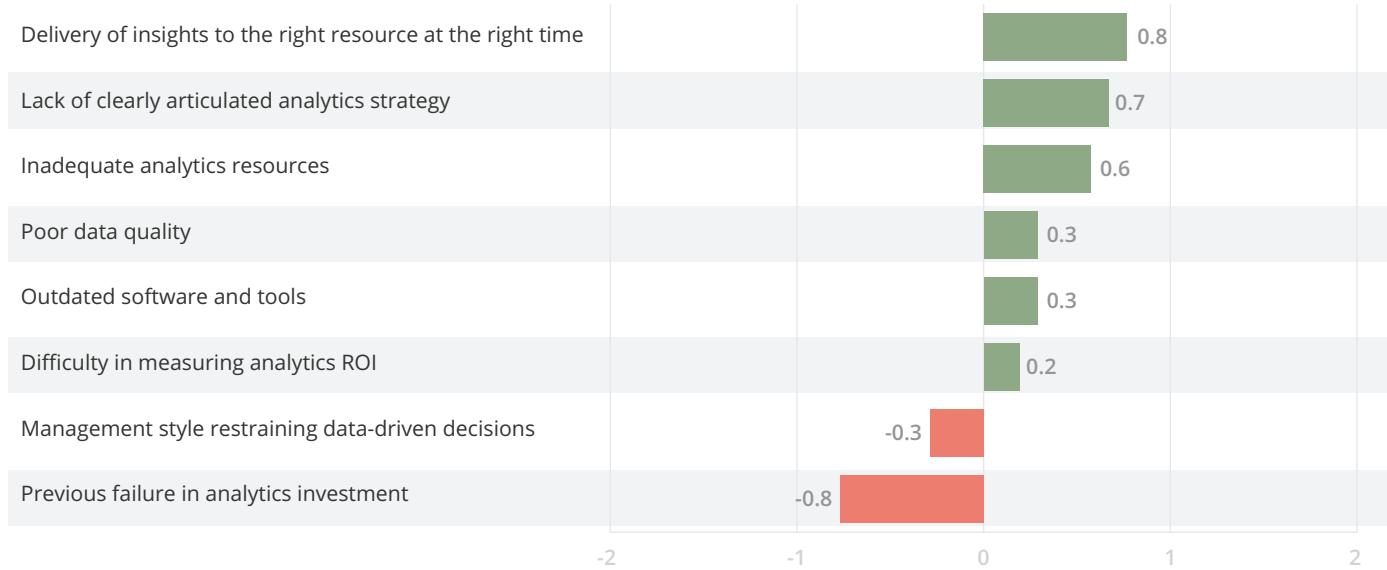
Towards leveraging analytics more strategically, a trifecta of organizational structure and staffing related factors emerge as critically important: assigning a senior executive owner, analytics resources of various disciplines, and an optimal organizational structure. While these are seen as critically important by retailers, their current staffing and structure set up is found wanting.

- **Senior executive owners:** Less than 20% of retailers have instituted a position of Customer Insights Officer or Chief Analytics Officer. Along with other structural changes, EKN believes instituting such a position is a step in the right direction for larger retailers looking to elevate the strategic importance of analytics in their organizations. Smaller retailers should also define the role, but may choose to have an existing executive position take it on as additional responsibility.
- **Organizational structure:** 71% of retailers currently have individual departments responsible for their own analytics resources while 53% rely on the IT function primarily for analytics support. Only 5% state either of these as their desired state. Contrastingly, 3 in 5 retailers would like to move to a shared services model for analytics, up from 1 in 5 today.
- **Multi-disciplinary staffing:** Retail analytics staffing is heavily focused on one particular skill, with 84% respondents reporting they employ data analysts. While data analysts will continue to be the largest constituents of an analytics team, EKN believes retailers will need to invest in specialist skills such as statisticians, actuaries, data scientists and economists, especially with a move towards a shared service model.

Delivering insights to the right resource at the right time is retailers' top-most analytics challenge

Challenges that prevent retailers from leveraging analytics more strategically

(Scores represent weighted average importance, -2 being unimportant and +2 being most important)



Of the list of challenges available to them, respondents in EKN's survey chose the 'inability to deliver insights to the right person at the right time' as the biggest. It is a bigger challenge than the perennial lack of resources. During interviews with EKN, many retail executives said exactly the same thing – as much as we would like to keep upgrading our analytics capabilities and produce more incisive insights, the insights we do produce aren't always acted upon due to a gap in who it is delivered to and when.

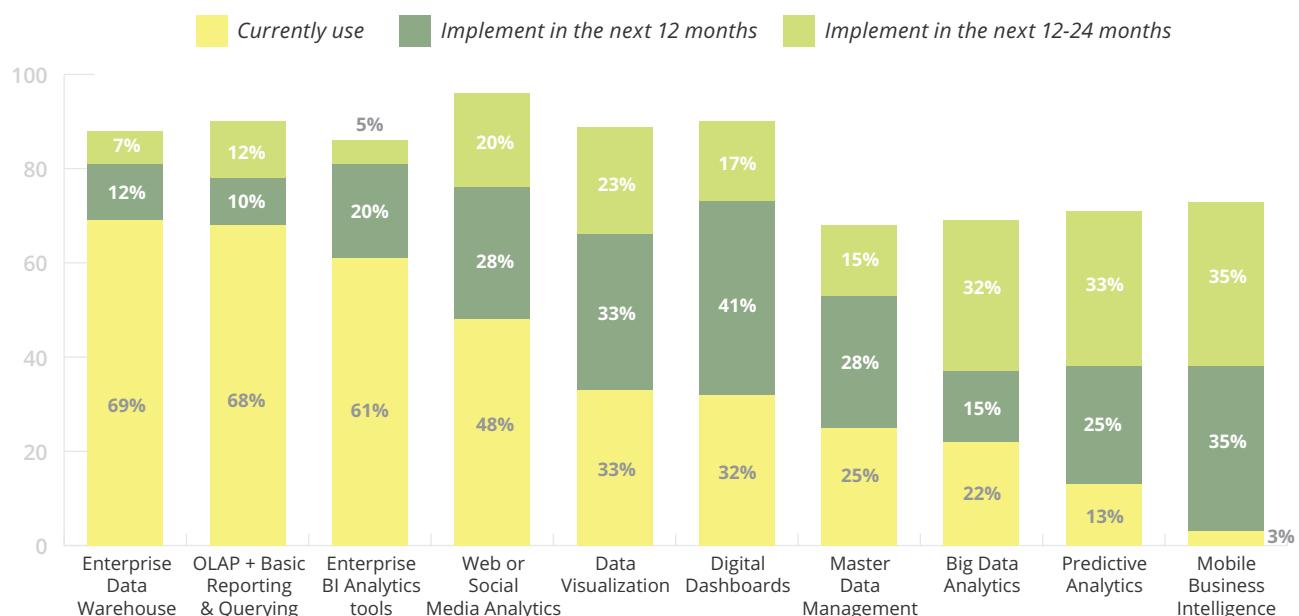
As retailers look to address this challenge, EKN suggests retailers evaluate their business processes and tools to ensure the delivery of insights are:

- **Time-sensitive:** As much as there is need for real-time and on-demand insights, not all analysis needs to be delivered in real-time. Real time insights need to be viewed with the filter of response time; real time information is meaningless if you can't act on it immediately. It is easy to visualize how real time price, stock and sales information can help you dynamically adjust prices online and optimize your margins, but the same information isn't that valuable in real time for a brick and mortar retailer that takes a week to implement a markdown. Insight delivery should be time-sensitive and aligned to when you can act on a decision, i.e. optimized to be delivered at the time its consumption will be most valuable.
- **Rich:** Contains as much context as necessary, so a business user can make an informed decision.
- **Relevant:** Delivered to the appropriate business user.
- **Consumable:** Easy for the business user to consume, without requiring knowledge of fundamentals of statistics. Visualization can help a larger audience consume and react to insights.

Retailers' technology investments over the next 2 years are focused on improving insights delivery and analytics maturity

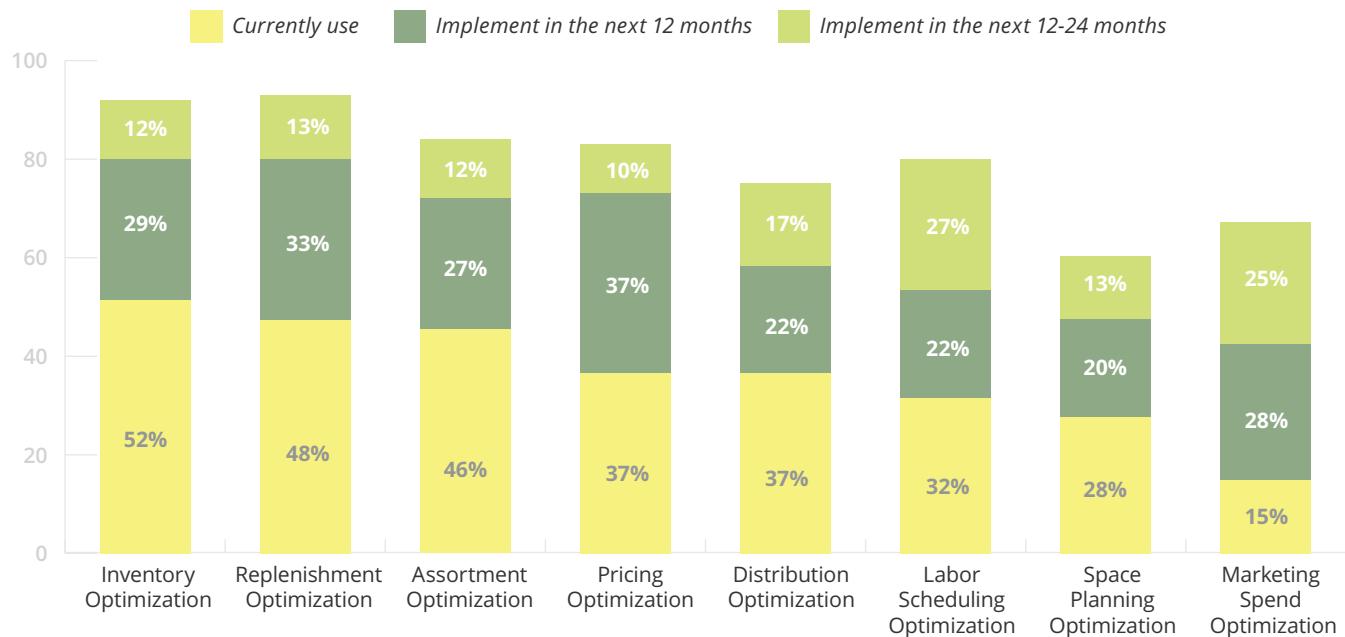
Adoption of Business Analytics solutions by retailers, current use vs. plans for adoption in future

(Figures are percentage of total respondents)



Adoption of Optimization solutions by retailers, current use vs. plans for adoption in future

(Figures are percentage of total respondents)



EKN views analytics software in the following broad categories:

Core Business Intelligence solutions	Emerging Business Analytics solutions	Optimization solutions
Core analytics tools and technologies that are foundational in nature. These tools and technologies have a high degree of adoption across retailers.	Emerging analytics tools and technologies that sit on top of the foundational layer and provide advanced analytics capabilities. The adoption level of these technologies is low	Niche vertical specific solutions that utilize advanced algorithms and analytics to solve vertical specific business challenges.
<ul style="list-style-type: none"> • Enterprise Data Warehouse • OLAP and Basic Reporting & Querying • Enterprise BI Analytics Tools • Planning & Forecasting • Master Data Management • Web and Social Media Analytics 	<ul style="list-style-type: none"> • Data Visualization • Digital Dashboards • Big Data Analytics • Predictive Analytics • Mobile Business Intelligence (BI) 	<ul style="list-style-type: none"> • Inventory • Replenishment • Assortment • Pricing • Distribution • Labor Scheduling • Space Planning • Marketing Spend

Retailers will increase technology spending on Business Intelligence and analytics from 13.7% of IT budget in 2013 to 17.7% of IT budget in 2016, representing a 9% compounded annual growth rate.

Previously, we established two key takeaways. First, retailers' analytics maturity across the enterprise is low and they need to move up the maturity curve in order to leverage analytics strategically and create competitive differentiation. Second, retailers need to improve the delivery of insights to the right resource at the right time.

Retailers' technology investment plans over the next 2 years line up nicely in an attempt to address these very challenges.

- **Upgrading analytics maturity:** Predictive analytics tool (58% of retailers) and Big Data (47%) emerge as key areas of investment for retailers.
- **Improving delivery of insights:** Retailers will invest in digital dashboard solutions (58%) and in improving data visualization (46%). Most importantly, 70% of retailers indicate plans to implement a mobile business intelligence solution, up from a mere 3% in 2013.

Retailers choose their analytics leaders: Amazon, Target and Wal-Mart

Retailers who leverage customer analytics best



The combination of technology and analytics will continue to transform retail. It is one of the key reasons why Amazon became a top 15 US retailer within a couple of decades of its incorporation, why Netflix slew a \$6 billion dollar giant within a similar time span, and why Wal-Mart has remained the world's largest retailer for almost two decades.

Of the above, let us look at the traditional brick and mortar retailer a bit deeper. Wal-Mart was able to become the world's largest and foremost retailer because of an unparalleled and laser focused execution of a very clearly articulated strategy - Every Day Low Price (EDLP). A strategy it was able to execute effectively because of its attention to their supply chain. The efficiencies they yielded within their supply chain were enabled by world leading technology and analytics practices and systems. Today, Wal-Mart leads the charge towards deeper customer insights with significant investments in analytics capabilities and technologies such as Big Data. That itself should serve as a wake-up call to those retailers who are willing to wait out this analytics revolution.

Respondents, via an unaided question in EKN's survey, identified Wal-Mart, Amazon and Target as leaders in terms of leveraging customer analytics. UK based retailer TESCO and fashion retailer GUESS earned strong recall as well.

Business Analytics Retail Honor Board: Amazon, Target and Wal-Mart

	 amazon.com®	 TARGET	 Walmart
Customer Analytics in Action	<p>Allows its competitors to post Ads for the same product that the customer is looking at on Amazon.com on the same page along with Amazon's own listing. It uses analytics to monitor the clicks those Ads produce, determines where, when and from what customer segments they are poaching sales, and then modifies its own pricing, marketing and product mix accordingly.</p> <p>Leader in the field of personalization. Uses real-time analytics to proactively create custom cross sell offers based on the customer profile.</p>	<p>Target's predictive analytics program can deduce whether an individual shopper possesses characteristics that make them particularly good targets for a specific marketing effort. It assigns each shopper a unique code — known as the Guest ID number that ties demographics and shopping behavior and preferences into a trackable entity.</p>	<p>Wal-Mart's Global.com unit leverages "big, fast data" and social analytics to quickly identify evolving customer tastes. Its Social Sense project identifies the popularity of items through social media, helping buyers identify underserved demands and new product interests.</p> <p>Wal-Mart's Shoppycat is a tool that recommends suitable products to Facebook users based on the hobbies and interests of their friends. It uses its Social Genome technology among others to help customers find presents for their friends.</p>
Technology Enablement	<p>Uses its own technology, Amazon Elastic MapReduce (Amazon EMR), a web service that enables businesses, researchers, data analysts, and developers to process vast amounts of data. It utilizes a hosted Hadoop framework running on the web-scale infrastructure of Amazon Elastic Compute Cloud (Amazon EC2) and Amazon Simple Storage Service (Amazon S3).</p> <p>Offers different content and dynamic pricing to various customers and makes adjustments as appropriate using Big Data analytics.</p>	<p>Uses tools from SAS, IBM (Demandtec, Netezza) and Teradata among others.</p> <p>An Active Data Warehouse effectively manages complex user queries on large data volumes in a mixed workload environment across the entire enterprise.</p>	<p>Created a few of their own tools such as Thorax and Lumbar, and subsequently open-sourced them. Thorax is framework to build large-scale web applications and Lumbar is a build tool that can generate modular platform specific applications.</p> <p>In an effort to consolidate 10 different websites into one website and store all incoming data in the new Hadoop cluster, Wal-Mart moved from an experimental 10-node Hadoop cluster to a 250-node Hadoop cluster and developed new tools to migrate their existing data from Oracle, Netezza and Greenplum hardware to their own systems.</p>

Organizational Structure	 <p>There are cross-functional business teams for each division, and each team has an analytics specialist. Teams share their findings with other divisions and have a core team that focuses purely on the deep technical skills required to measure and act on Big Data.</p> <p>There is also a dedicated Client Experience Analytics (CXA) Team that runs customer simulations against Amazon's global web properties on an ongoing basis. These customer simulations help the team measure website latency across the globe, identify trends or issues, simulate website activity, and more. The simulations are done on a massive scale to mimic the 98 million active customer accounts across more than 10 web properties.</p>	 <p>Target's Guest Marketing Analytics department is its central nervous system for customer analytics, responsible for delivering Target the competitive advantage of knowing its customers better than any other retailer.</p> <p>Leveraging its operations in India to scale up its dedicated Business Analytics team.</p>	 <p>As part of its digital strategy, Wal-Mart set-up Global.com to coordinate the company's digital initiatives. Moreover, Wal-Mart set up a board-level Technology Innovation Committee that governs its strategies in areas such as eCommerce and mobility.</p> <p>The Information Systems Division (ISD) has created an Analytics Center of Excellence to coordinate analytical data and software initiatives. The Strategy group is leading many of the marketing and operational analytics projects, and coordinating the use of external suppliers of analytical capabilities.</p>
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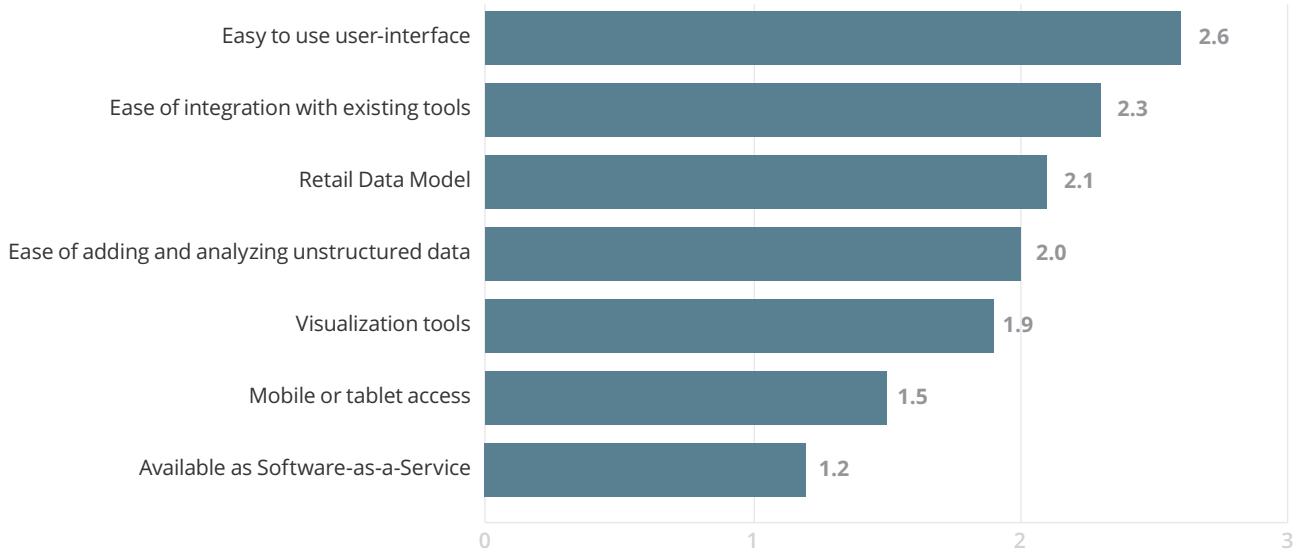
Usability emerges as the most important feature in choosing analytics solutions. SAS and IBM rated as leading solution providers in Visual and Customer Analytics.

Figure: Leading solution providers in visual and customer analytics

Visual Analytics		Customer Analytics	
Rank 1	SAS	IBM	
Rank 2	IBM		SAS
Rank 3	Microstrategy		
Rank 4	Oracle		
Rank 5	Tableau, Qlikview		
		Rank 3	Microstrategy
		Rank 4	Oracle
		Rank 5	SAP

Importance of features while evaluating a Business Intelligence (BI) or analytics tool in 2013

(Scores represent weighted average importance, 0 being the lowest and 3 being the highest)



EKN's survey asked retailers to choose the top 3 solution providers in two categories – Visual Analytics and Customer Analytics. In both categories SAS and IBM ranked consistently as the top two providers, followed by Microstrategy and Oracle. While SAP rounded out the top 5 in Customer Analytics, Qlikview and Tableau, both relatively smaller providers, made the top 5 for Visual Analytics.

Tableau and Qlikview represent a newer breed of analytics solution providers, and their recognition in the top 5 highlights the opportunity for smaller players to compete with the big boys in the analytics space.

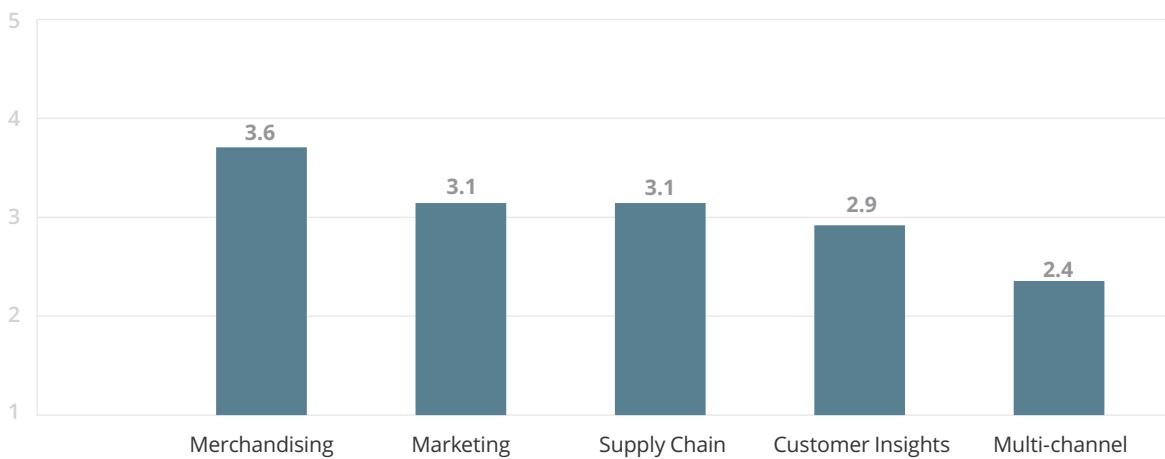
The survey asked retailers what feature they would look for most in Business Intelligence or analytics tools in 2013:

- An easy to use interface ranked the highest, with an overwhelming 95% rating it most important or very important. This is where EKN finds some of the newer tools and solution providers to have an advantage over enterprise grade solutions. Enterprise tools will need to invest in providing a similarly user-friendly experience to maintain their leadership position. The availability of a visualization tool as part of the solution was rated as very important by 78% of respondents.
- Retailers also rated a set of data operations related features as being important – ease of integration with existing tools, retail data model, and the ability to add and analyze unstructured data easily. The data integration and ability to add unstructured data speaks to retailers' plans to integrate a variety of data sources.
- Mobile or tablet access was rated as somewhat important or unimportant by 54% of respondents. Given that the biggest challenge retailers face is delivery of insights, EKN expected mobile access to rank higher.
- 25% of respondents rated availability of the solution as a Software-as-a-Service as unimportant, and an additional 43% rate it somewhat important. EKN recommends providers with SaaS offerings focus on describing the value of their offering as compared to alternatives, rather than on the value of a cloud-based deployment model in and of itself.

Omni-channel emerges as the business function with the highest potential opportunity for analytics impact

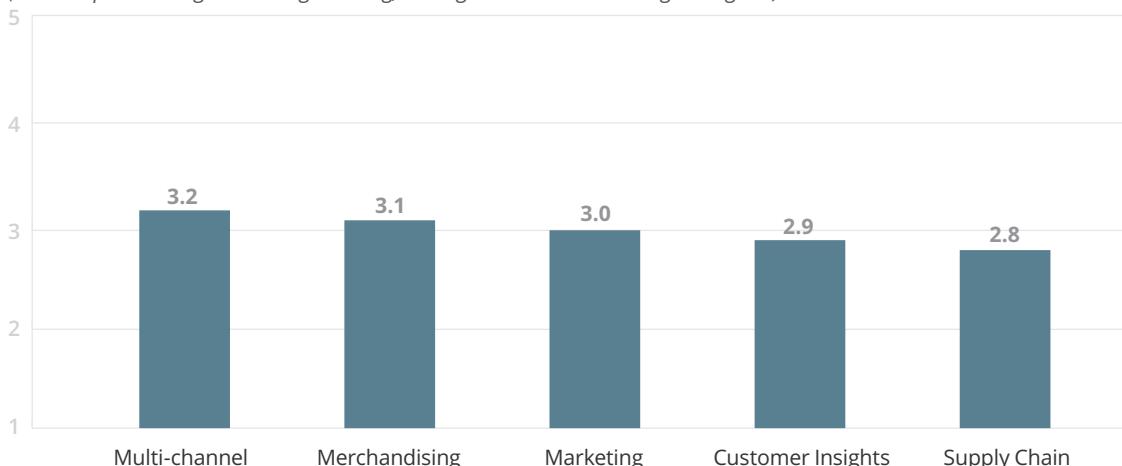
Business functions which are leveraging analytics more strategically

(Scores represent weighted average ranking, 1 being the lowest and 5 being the highest)



Planned technology investments in analytics solutions in 2013, by business functions

(Scores represent weighted average ranking, 1 being the lowest and 5 being the highest)



Omni-channel retailing is the new normal of retail. With online and mobile sales growing faster than store sales, consumer spending is shifting towards online or online-aided sales. Online, mobile and social channels also represent disciplines with the highest rate of growth of consumer-generated data.

Omni-channel analytics presents an opportunity for retailers to understand growing activity in this strategically important area of the business. They must do so by tapping into a growing mass of consumer data, while at the same time integrating these relatively newer data sources with existing enterprise data.

No surprise then that Omni-channel ranks highest among business functions in terms of retailers' planned technology investments in analytics in 2013. Investments will focus on improving Omni-channel analytics maturity, as among the various retail business functions, retailers rated it lowest in terms of leveraging analytics strategically. 17% of respondents perform no analytics in the Omni-channel function, and a further 31% only conduct basic reporting.

Retailers need to move from eCommerce analytics to Omni-channel analytics, i.e. assessing the effectiveness of channels in concert with each other rather than in silos, and identifying cross-channel, rather than channel specific, consumer behavior trends and patterns.

In addition, at the lower end of the maturity spectrum retailers conduct basic operational analytics with goals such as Search Engine Optimization (SEO). The future of Omni-channel analytics is in strategic and performance metrics such as customer loyalty, customer value and channel performance.

Recommendations

 = Short Term (0-6 months)

 = Medium Term (6-12 months)

 = Long Term (1-2 years)

Assess the maturity of your analytics capabilities across business functions. Benchmark yourself against the leaders

ST To improve analytics maturity retailers should start by benchmarking their current maturity against leading retailers at an enterprise and functional level. This exercise will provide retailers the inputs they need to build a customized development path towards higher analytics maturity.

This benchmarking should be done across the following parameters (An excerpt from EKN's Analytics Maturity Assessment Framework)

- Analytics Strategy
- Data
- Software
- Structure
- Talent
- Algorithms
- Metrics
- Insights Delivery

And against the following groups

- Format based competitive Set
- Retail leaders (Wal-Mart, Target, Amazon, Netflix, Tesco)
- Cross-industry leaders

Refer to EKN's Analytics Maturity Assessment Framework (Appendix A) for a quick reference method for retailers to benchmark where they stand. For detailed benchmarking and roadmap creation frameworks, please contact EKN.

Usability, Big Data, Data Visualization and Data Management will drive the the next analytics toolset.

The analytics toolset enabled by the Cloud and delivered as Software-as-a-Service will evolve at a brisk pace and will be faster and cheaper than the current BI infrastructure retailers have in place. The improvement in tools will outpace a retailer's ability to take advantage of them.

ST EKN suggests retailers actively engage in exploring some of the newer technologies in order to provide the right insights at the right time to their executives. EKN recommends focused proof of concepts that are quick to execute.

MT A good place to start is Data Visualization software, which could work off your existing infrastructure; at a higher level of maturity you should evaluate SaaS based Big Data tools. EKN recommends focused exploratory projects in the area of Omni-channel retail and customer insights.

For detailed use cases please refer to [EKN's State of the Industry Research on Big Data in Retail](#).

A fundamental shift in organizational structure, skills and culture is required. Retailers need to shed some of the art and embrace some of the science.

Retailers will not be constrained in their ability to leverage analytics because of a lack of tools, budget or data. Rather, it will be due to a siloed organizational structure and a lack of will to embrace a data driven culture.

- **Executive Ownership:** EKN believes it is a matter of time until retailers anoint a clear owner for analytics and customer insights at the senior executive level (VP or C-Suite). Instituting such a position is a step in the right direction for larger retailers looking to elevate the strategic importance of analytics in their organizations. Smaller retailers should also define the role, but may choose to have an existing executive position take it on as additional responsibility. Irrespective of the title - Chief Insights Officer, EVP Insights, or Chief Analytics officer - this executive needs to have oversight of all tools, technologies and people related to analytics.
- **Data Democratization:** There needs to be a move away from the siloed, feudalistic model of access to data, to a more democratic method. Access to most data (non-confidential) along with basic data analytics tools should be freely available to a larger cross-section of the enterprise, both in terms of across functions and across designations. For retailers who already have a progressive data access strategy, the next step should allow data and insights contribution. Collaboration best practices have shown enterprise data is only made richer by allowing employees to contribute, and customer insight should be no different. A further higher level of maturity would involve setting up data-sharing and analytics sandboxes with key business partners, vendors, and even customers.
- **Team Structure:** EKN's research shows that only 5% of retailers have their desired team structure for analytics in place. Over the next few years retailers will evaluate different structures and models to determine what works best for them. A few structures and models are described below.
 - **Department Centric:** 71% of retailers currently have individual departments responsible for their own analytics resources. This is an organic model where resources typically work with someone in the IT team to get access to the data. An evolution of this model is when data is freely available to individual departments and they use their own analytics tools. Consistent with how the respondents in EKN's survey voted, EKN views this structure as untenable in the future state of retail analytics.
 - **IT Centric:** 53% rely on the IT function primarily for analytics support. The genesis of this model is easily understood - IT became a natural place for analytics given its access to the databases and warehouses where data is stored, its familiarity with the tools that analyze the data, and the analytical skills of its resource base. EKN sees this model evolving to a shared service model led by a dedicated leader.
 - **Shared Service:** 3 in 5 retailers EKN surveyed would like to move to a shared services model for analytics, up from 1 in 5 today. This is a positive move forward and would enable retailers to scale up their efforts in analytics. In EKN's view the digital marketing and customer insights departments would be amongst the first to benefit from such a setup.

- **Hybrid:** A Shared Service structure along with dedicated Centers of Excellence that have subject matter experts (SMEs) from key departments embedded in them. EKN views this as the ideal structure for most retailers as incorporating domain-focused experience into the insights generated and having tacit departmental buy-in provides them context-rich insight and the ability to act quicker.
- **Skills and roles**
 - **Data Analyst:** Base of the pyramid skill, required to give scale to the organization. This role focuses a lot on the data preparation, execution of pre-determined analysis, basic reporting and analytics. This role requires an undergraduate degree with a focus on math and analytics (math, economics, operations, engineering).
 - **Statistician/Actuary:** Higher up in the pyramid skill set that is focused on creating, running, testing and refining advanced algorithms and models. This role should require a graduate level degree.
 - **Data Scientist:** An oft-quoted but ill-defined role. EKN views a data scientist as a seasoned practitioner in the field of business analytics who has a deep understanding and experience in analytical techniques and their supporting technologies.
 - **Economist:** A niche skill set that large retailers may tap into when trying to understand and assess the impact of macroeconomic trends on their business.
 - **Social Scientist/Anthropologist:** As customer insights become more important, and as retailers try and enhance their ability to understand the social context and structure within which a customer operates, EKN sees them leveraging this skill set either internally or externally as part of their analytics ecosystem.
- **Training:** Analytics training is needed across enterprise functions and levels. Without the right analytical resources and training, even the most advanced tools have no value. Invest in capability building across the board, from executive training to building a strong analytics team.

MT

Retailers need to accelerate their efforts in analytics training; EKN recommends that a portion of the HR Training budget be set aside for this from 2013 itself. An executive program needs to be put together for the leadership team. The creation of an analytics services unit or Center Of Excellence needs to be evaluated.

Appendix A: EKN Analytics Maturity Assessment Framework (Excerpt)

EKN's Analytics Maturity Assessment Framework, available to EKN Peer Forum subscribers, provides a tool for retailers to assess their current state of analytics maturity and a roadmap to move to a higher level. Retailers can get in touch with EKN for more information on the detailed framework

EKN Analytics Maturity Assessment Framework (Excerpt)

Maturity Level	Analytics Strategy	Data	Software	Organizational Enablers
Level 1: Novice	<p>Strategy: No analytics strategy.</p> <p>Analytics: Basic reporting used to provide accurate, after-the-fact information.</p>	<p>Sources: Sales and financial data.</p> <p>Quality & Governance: Poor.</p>	<p>Software: MS Excel, Spreadsheets.</p>	<p>Leadership: No executive ownership of analytics.</p> <p>Structure: IT team is responsible for pulling together the data.</p> <p>Skills: No specialized analytics skills.</p>
Level 2: Intermediate	<p>Strategy: No enterprise analytics strategy. Analytics supports the operational goals of a few departments.</p> <p>Analytics: Basic analytics used to provide after-the-fact trends and analysis.</p>	<p>Sources: Integrated data across enterprise systems such as ERP, SCM and CRM.</p> <p>Quality & Governance: Still poor. Data silos exist. Departments have their own data warehouse and many versions of the truth exist.</p>	<p>Software: MS Excel, Spreadsheets. The planning and finance teams use advanced software packages such as SPSS and SAS.</p>	<p>Leadership: No executive ownership of analytics. An IT Director level person is assigned to drive Business Intelligence.</p> <p>Structure: Individual departments working in silos on their own reports and analysis. The IT team is still responsible for pulling together the data.</p> <p>Skills: No specialized analytics skills. A few departments may use data analysts.</p>

Maturity Level	Analytics Strategy	Data	Software	Organizational Enablers
Level 3: Advanced	<p>Strategy: There is a Business Intelligence roadmap in place and efforts are underway to create a Business Analytics strategy.</p> <p>Analytics: Advanced analytics is used to conduct correlation, causal analysis and forecasting. Some predictive models are also used, especially in the field of forecasting.</p>	<p>Sources: Good integration of core operational performance data. Fair to good integration of customer and online data. Beginning to leverage and integrate unstructured data.</p> <p>Quality & Governance: Efforts on customer Master Data Management (MDM) are underway. Close to decision time synchronization for key data sources.</p>	<p>Software Advanced statistical tools are available but enterprise usage is low. Online analytics tools are being used.</p> <p>Optimization tools have been explored, especially in areas such as forecasting and merchandising.</p> <p>Mobile is being explored as an insights delivery layer.</p> <p>SaaS models are being explored.</p>	<p>Leadership: A senior leader (VP or C-level) is driving analytics delivery.</p> <p>Structure: The creation of a shared service group is underway.</p> <p>Skills: The bulk of analytics resources are data analysts, but resources with advanced statistical skills such as statisticians and actuaries are being incorporated as part of the core analysis team. Analytics is being looked at as a separate career path.</p>
Level 4: Expert	<p>Strategy: Well defined Business Analytics strategy being driven by the CEO, with the support of the Board.</p> <p>Analytics: Use of predictive analytics and optimization algorithms.</p>	<p>Sources: Capabilities to integrate and analyze unstructured data are in place.</p> <p>Getting close to a single view of the customer and single source of truth.</p> <p>Data democracy: Access to most data (non-confidential) along with basic data analytics tools are made freely available to a large cross-section of the enterprise.</p>	<p>Software: Advanced optimization tools and proprietary tools and algorithms are being used. Interactive data visualization and analytics capabilities are available on the mobile device.</p> <p>The cost of analytics infrastructure has reduced because of cheaper, more effective storage and strategic use of cloud-based solutions.</p>	<p>Leadership: A senior leader at the CXO level is driving analytics strategy and delivery.</p> <p>Structure: Hybrid Shared Service structure with the creation of dedicated Centers of Excellence that have subject matter experts (SMEs) from key departments embedded in them.</p> <p>New skills like Data Scientists and Anthropologists join the mix.</p>

Retail Analytics Vendor Landscape

	Core Business Intelligence			Emerging Business Analytics		
	Data Ware-house	Business Analytics Platform	Data Integration	Big Data Analytics	Data Vi-sualization	Mobile BI
	✓	✓		✓	✓	
	✓	✓		✓		
	✓	✓		✓		
	✓	✓	✓	✓	✓	✓
		✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓	✓
		✓		✓	✓	✓
	✓	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓	✓
		✓		✓	✓	✓
	✓	✓*	✓	✓*	✓	✓

* This landscape also considers BI appliances as a software offering.

** The offerings by the vendors listed above include those from their acquisitions for eg. HP Vertica, EMC Greenplum, and IBM Netezza & IBM Cognos

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