

RETAIL AND CONSUMER GOODS
**ANALYTICS
STUDY 2017**

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Albert Guffanti, aguffanti@ensembleiq.com

CGT EDITORIAL

EDITOR-IN-CHIEF
Peter Breen, pbreen@ensembleiq.com
EDITOR
Alarice Rajagopal, arajagopal@ensembleiq.com

RIS BRAND DIRECTOR

Paula Lashinsky, plashinsky@ensembleiq.com

RIS EDITORIAL

DIRECTOR
Joe Skorupa, jskorupa@ensembleiq.com
EXECUTIVE EDITOR
Timothy Denman, tdenman@ensembleiq.com
MANAGING EDITOR
Jamie Grill-Goodman, jgoodman@ensembleiq.com

CGT SALES

ASSOCIATE BRAND DIRECTOR
Diana Masurack Mann, dmann@ensembleiq.com
DIRECTOR OF BUSINESS DEVELOPMENT
Mike Johnson, mjohnson@ensembleiq.com

RIS SALES

ASSOCIATE BRAND DIRECTOR
Catherine J. Marder, cmarder@ensembleiq.com
SENIOR ACCOUNT EXECUTIVE
Simone Knaap, sknaap@ensembleiq.com
ASSISTANT TO THE BRAND DIRECTOR
Jen Johnson, jjohnson@ensembleiq.com

EVENTS

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DIRECTOR, EVENT PLANNING
Pat Benkner, pbenkner@ensembleiq.com
DIRECTOR EVENT CONTENT
John Hall, jhall@ensembleiq.com

MARKETING

VP, MARKETING & COMMUNICATIONS
Bruce Hendrickson, bhendrickson@ensembleiq.com
MARKETING DIRECTOR
Kim Sterling, ksterling@stagnitotmail.com

AUDIENCE DEVELOPMENT

DIRECTOR OF AUDIENCE DEVELOPMENT
Gail Reboletti, greboletti@ensembleiq.com
AUDIENCE DEVELOPMENT MANAGER
Jeffrey Zabe, jzabe@ensembleiq.com

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Scott Ernst, sernst@ensembleiq.com
ONLINE EVENT PRODUCER
Whitney Ryerson, wryerson@ensembleiq.com

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Kathryn Homenick, khomenick@ensembleiq.com
CREATIVE DIRECTOR
Colette Magliaro, cmagliaro@ensembleiq.com
PRODUCTION MANAGER
Pat Wisser, pwisser@ensembleiq.com
ART DIRECTOR Lauren DiMeo
ldimeo@ensembleiq.com

SUBSCRIPTIONS 978.671.0449

EnsembleIQ

4 Middlebury Blvd. | Randolph NJ 07869
973.607.1300 FAX: 973.607.1395

CORPORATE OFFICERS

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The Great Analytics Divide

Over the past five years, we've been analyzing and contrasting the analytics maturity of retailers and manufacturers, and our efforts have reaffirmed that the analytics/insights divide will be the single biggest differentiator in consumer industries.

While there is significant intent amongst both retailers and manufacturers to improve their maturity and move to more data and fact-based decision-making, execution continues to lag intent because of competing priorities and an unclear understanding of where to focus limited resources. At the same time, what we uncovered five years back holds truer than ever: Both retailers and manufacturers treat Amazon as the benchmark and gold standard for analytics and the gap between them and Amazon is widening.

This has created the great analytics divide between the analytics haves and analytics have-nots and survival and growth in this world of the 'what-I-want-when-I-want-it' consumer depends squarely on the ability to use insights to improve decision-making.

There are four key areas of focus where retailers and manufacturers are investing to bridge the gap:

1 | Data

DESCRIPTION: Garbage in is garbage out. The foundation of any successful analytics initiative is unified, consistent, regularly updated and relevant data from trusted sources. With an explosion in consumer data and machine data in years to come, this is a foundational step.

INDUSTRY MATURITY: MEDIUM
Stagnant due to low investment and long ROI.

2 | Analytics Tools & Machine Intelligence

DESCRIPTION: The infrastructure and tools required to clean, integrate, manage and analyze the data to generate actionable insights. Use of big data/machine learning/cognitive learning and automated decision-making tools to make decisions faster.

INDUSTRY MATURITY: MEDIUM
Slow but rising. No dearth of tools/tech.

3 | Skills & Ingenuity

DESCRIPTION: Skills and resources required to interpret the output produced by analytics tools. A layer of human intelligence, creativity, intuition and intellectual ambition to question the outcome, weigh the impact and discuss what data does and does not say before making the final business decisions.

INDUSTRY MATURITY: LOW
Hardest area to overcome. Investments in niches.

4 | Strategy Codification

DESCRIPTION: Building a data-driven DNA of the organization that spans culture, organizational structure, business processes and codified knowledge in the form of patents and algorithms.

INDUSTRY MATURITY: LOW
Not a focus for most.

However, retailers and manufacturers need to remember that analytics isn't a goal, and analytics for analytics sake is a sure-fire way of wasting resources and draining credibility.

The biggest challenges that even mature firms have are:

- **Simplicity-Prescriptiveness:** The inability to translate analytics into simple, clear language that someone can act on.
- **Focus:** Focusing on the wrong things or on unclear problem statements that provide little impact to the business.

The greatest challenge with the analytics divide is that you don't see it until it hits you; you know when your competitor has turned on BOPIS, but you don't know when your competition has turned on their analytics to win share of wallet with your loyal customers till they defect — defense doesn't always win championships.



Gaurav Pant
Principal Analyst, EKN Research

NOTE: This report is a collaborative effort between the CGT, RIS News and EKN teams. The data featured in the report was collected in early 2017 through two targeted surveys tailored to measure and contrast the current state of analytics maturity in the consumer goods and retail industries.

Analytic Growing Pains

RETAIL AND CG COMPANIES STRUGGLE TO GET THE RIGHT PEOPLE, GOVERNANCE AND TECHNOLOGY

Analysts widely agree that the future for both retailers and consumer goods companies relies heavily on digital engagement and their ability to understand the consumer. The story unfolding in both industries is one of striving to collect more rich and varied data; mastering the complexities of cleaning and managing it; and assembling the right assortment of tools, talents and processes to quickly draw and act on the analytic insight. Organizations must also move analytic capabilities for specific application areas along the maturity ladder according to each one's ability to deliver dividends through the insights they produce.

Shifting organizational structure and culture so profoundly is a substantial undertaking demanding executive-level commitment, significant resources and strong change management. Retailers and CG companies must accomplish all this in a marketplace that is also rapidly changing. They face constant evolution in omnichannel expectations and digital platforms as well as consumer demand for an ever-widening array of delivery options. Add in the implications of emerging technologies such as artificial intelligence and the Internet of Things and life gets even more complicated.

It's a fast-moving target. That's one reason both retailers and CG companies report little overall improvement in moving the needle on analytics maturity (Figure 1). For every prescriptive analytics capability they gain, they must start at square one with a new application area that pulls back their overall average. So while retailers in particular report making real progress against their competitors in analytics, as a group they feel there is still lots more work to be done to get beyond the basics. Small and mid-size CG companies work in an industry that is generally further along in analytics, but they remain bested by deep-pocketed leaders who have rebuilt their businesses to be data-centric.

Retailers and consumer goods companies face similar obstacles in pushing their analytics programs along, with technical and organizational challenges dominating the tops of their lists (Figure 2). They share issues with limited tool sets, inadequate staff and data integration woes. But

FIGURE 1

Level of Maturity

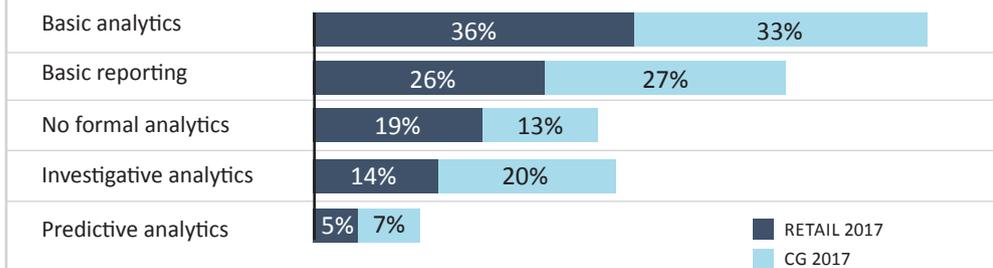


FIGURE 2

Top Analytics Challenges

2016

RETAIL	
Limited software toolset	41%
Culture of the company is more intuition-driven than data-driven	41%
Absence of clearly articulated analytics strategy	35%
CG	
Inadequate resources to interpret output of analytics tools	44%
Culture of the company is more intuition-driven than data-driven	40%
Lack of sufficient budget	34%
Absence of clearly articulated analytics strategy	34%

2017

RETAIL	
Inadequate talent or dedicated staff	56%
Limited software toolset	47%
Inability to integrate data from multiple sources	47%
CG	
Limited software toolset	36%
Inability to integrate data from multiple sources	36%
Culture of the company is more intuition-driven than data-driven	32%
Inadequate talent or dedicated staff	30%

while retailers cite the lack of a centralized analytics process — a structure issue — CGs are more concerned about the cultural change: Getting staff to think more analytically across the organization. Shifting a culture can lag technology advancement by years.

It's easy to get discouraged in the face of so many obstacles, but companies can overcome their data analytics hurdles by readjusting their thinking about how to define success. "Don't let the perfect be the enemy of the good," says Robert Hetu, research director, Gartner Retail Industry Services. "Some companies are paralyzed by data and analysis, seeking the perfect answer. A good answer based on relatively accurate data that is arrived at quickly is preferable to a perfect answer — if that were even possible — that takes weeks or months to develop."

Getting Talent Right

One significant obstacle both CG companies and retailers struggle with in the quest to become more mature analytics organizations is assembling the right talents and skill sets to get a handle on their data and generate actionable insights. Figure 2 highlights the issues both sides face with inadequate talent or dedicated staff.

"There are two problems," says Gaurav Pant, SVP research & principal analyst, EKN Research. "The first is you don't have enough of the right people to analyze the data. The second is you're able to do all the grunt work but you have few people who can make sense of it, to translate it from a business action perspective." Retailers and CG companies must feel their way to a best-fit strategy for both how the team is put together and the responsibilities of each member.

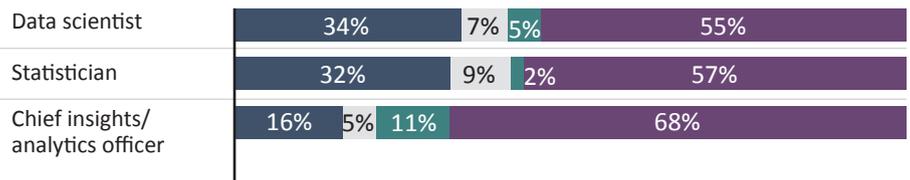
Despite naming the talent gap as a significant pain point, both CG companies and retailers are not planning to do much to change it (Figure 3). While CG companies are starting out better staffed, neither plans to hire aggressively. The handful of CG companies and retailers who rate themselves as beating Amazon in analytics maturity are also likely the ones pushing forward in hiring.

To close the talent gap, Ken Morris, principal at Boston Retail Partners, recommends companies develop solid relationships with local universities to foster strong analytics programs, then tap that talent pool. Already, such programs are increasing the availability of data scientists, he says. "The new, and more difficult to address, talent shortage is [finding] analytics leaders that have deep business/

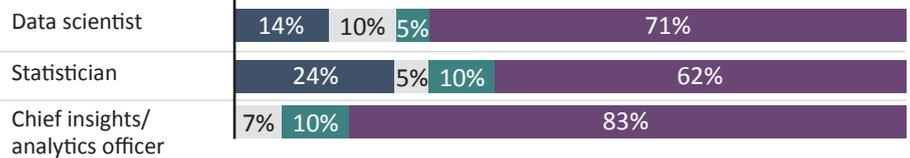
FIGURE 3

Status of Analytics Staff

RETAIL



CG



■ CURRENTLY EXIST

■ PLAN TO HIRE IN THE NEXT 12 MONTHS

■ PLAN TO HIRE SOMETIME IN THE NEAR FUTURE

■ NO PLANS TO HIRE

functional/industry expertise balanced with enough quantitative awareness/understanding to define strategy and execution for analytics opportunities."

There is a critical need for retailers to hire chief digital officers, which is "an absolute requirement if a retailer plans on being in business in 2025," says Jeff Roster, VP of retail strategy for IHL Group. "The stakes have never been higher. The margins for error have never been smaller. Amazon has redefined customer expectations of inventory visibility, two-day delivery and endless aisle. Every retailer must respond or risk being an afterthought in the customer's mind."

Who Runs Things?

Closely related to the proper staffing of analytics functions are their governance. Currently, both CG companies and retailers tend to place responsibility for managing analytics resources within the departments that use them (Figure 4). CG companies are slightly more likely than retailers to embrace

a centralized approach through an analytics department or center of excellence, treating analytics as a shared service.

The current dominance of decentralized analytics is also seen in levels of shadow spending. Nearly half (48%) of consumer goods companies and at least a quarter (26%) of retailers report purchasing BI/analytics software outside the IT budget last year, with many others unsure of just who is funding these efforts. Unifying analytics spend is one potential outcome of moving to a centralized analytics department or center of excellence — considered widely by both sides as the ideal approach (Figure 5).

EKN Research's Pant expects companies to use a center of excellence approach as a means of structuring their operations and gaining competence in analytics, then moving the expertise out into individual departments in five years or so. A category manager, for example, would simply need analytics competency as part of the skill set.



FIGURE 4

Who is responsible for executing business analytics in your organization?

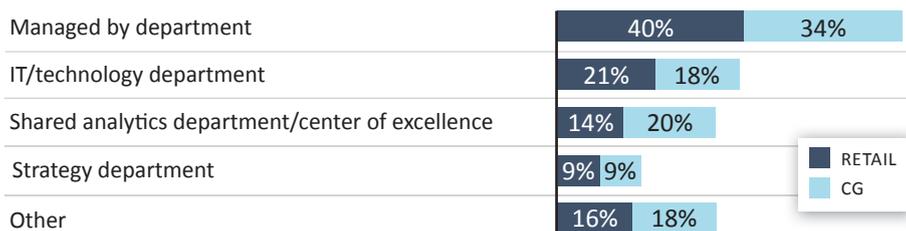


FIGURE 5

Who should ideally be responsible for executing business analytics in your organization?



FIGURE 6

What Retailers Share and Don't Share

Share Most	Share Least
1 Inventory	1 Online customer behavior
2 Promotional performance	2 Loyalty/CRM
3 POS	3 Pricing and online sales (tie)

Data Sharing Slogs Along

Analytics is all about putting data in context to gain insights that drive business decisions. Drawing data from a wider pool often enriches owned data with new perspectives and data points that enhance

the understanding of every aspect of the business, including the all-important consumer.

But CG companies and retailers have a long, fraught history with data sharing. Despite analyst views that both sides enjoy a wide range of benefits, from better demand forecasts to lower inventory levels

to better on-shelf availability, some retailers remain skeptical about sharing the needed data, preferring to keep some data close to the vest — or charge their partners a fee.

For that reason, data sharing is still limited. CG companies and retailers agree that inventory, promotion performance and POS data are the most shared. Weekly or daily sharing is most common, although a surprising percentage is still ad hoc. The numbers haven't shifted much in recent years, but since this year's average CG company respondent is smaller, survey results could indicate that data sharing for these well-established data types is becoming standard across the industry. That's good news for analytics programs across the board.

But the big focus now is on using data to better understand customers, and that's where old habits kick in. Many retailers are highly reluctant to let consumer goods companies gain access to their valued customer data. Fully 70% do not share online customer behavior data, and just over half do not part with loyalty/CRM, pricing and online sales data. There is some good news, however. There is upward movement in data sharing of all three "share least" data types compared to 2016. Pricing data saw the biggest rise.

CG companies must hope this trend continues. According to McKinsey, CG leaders in their categories are much more likely to be closely partnering with online retailers to obtain more customer data and use their own sites to increase understanding of consumers.

"Our survey revealed that all winners receive full-basket and shopper-panel data from retailers; most winners also receive loyalty-card and coupon-redemption data," according to McKinsey's "Winning in Consumer Packaged Goods through Data and Analytics" report. That puts CGs at a distinct advantage in achieving customer insights over companies who are still battling to obtain this retail data.

The digitally empowered consumer is disrupting traditional approaches to managing every step of the consumer goods/retailer value chain. As Amazon has demonstrated, the more you can understand consumer expectations, the better you can anticipate, respond to and even shape them. All that takes a substantial investment in people, resources and culture change. Both retailers and consumer goods are working hard to keep up with a moving target. They are making progress but are also continually challenged to adapt to new demands. **CGT/RIS**

Analytics Transformation Mid-Stream

THE RETAIL INDUSTRY IS IN AN ANALYTICS ARMS RACE. MAY THE BEST INSIGHTS WIN

Customer centricity and the rise of digital commerce, led by Amazon, has pushed retailers to collect and measure more data than ever before. Many are in the midst of a cultural and technical transformation, shifting toward a more analytics-driven approach to how they manage their businesses. Along with such a dramatic change are inevitable delays and hurdles, with the ability to attract the right analytics talent leading the list.

The good news is that retailers are making real progress and gaining ground on the competition.

Progress on All Fronts

Companies investing in analytics for the long haul know it all starts with a solid foundation: clean data, robust tools and good governance. It's not sexy, but it's essential to support analytics applications that will deliver accurate, meaningful insights and true ROI.

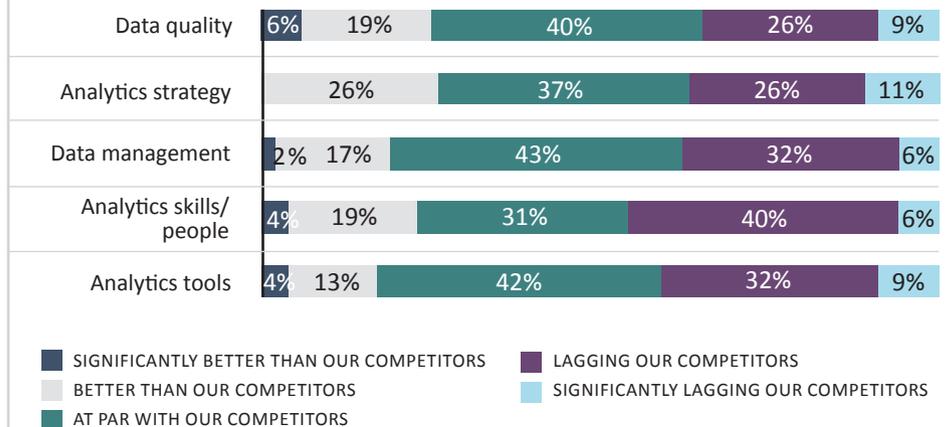
Retailers have spent the last year making those needed investments (Figure 7). They've made progress across the board, with the biggest gains — the number of retailers saying they are now better or significantly better than the industry — coming in data management, data quality and analytics tools. This year's survey also asked about retailers' ability to use data to make decisions, and found a healthy 37% besting the competition. At the other end of the spectrum, most respondents have pulled themselves out of the "significantly lagging" category across capabilities.

But progress against Amazon is little changed over the past year — except for a small group who now call their analytic capabilities significantly better than Amazon's. Amazon continues to push the bar aggressively forward, making even achieving par a significant accomplishment. While some retailers collect detailed data as part of the sales process, such as furniture dealers, "It is possible that this represents retailers across a wide variety of business models," says Ken Morris, principal, Boston Retail Partners. "Innovative or digitally native companies (e.g., Zappos, Bonobos) are more likely than established brick-and-mortar retailers to have effective analytics capabilities."

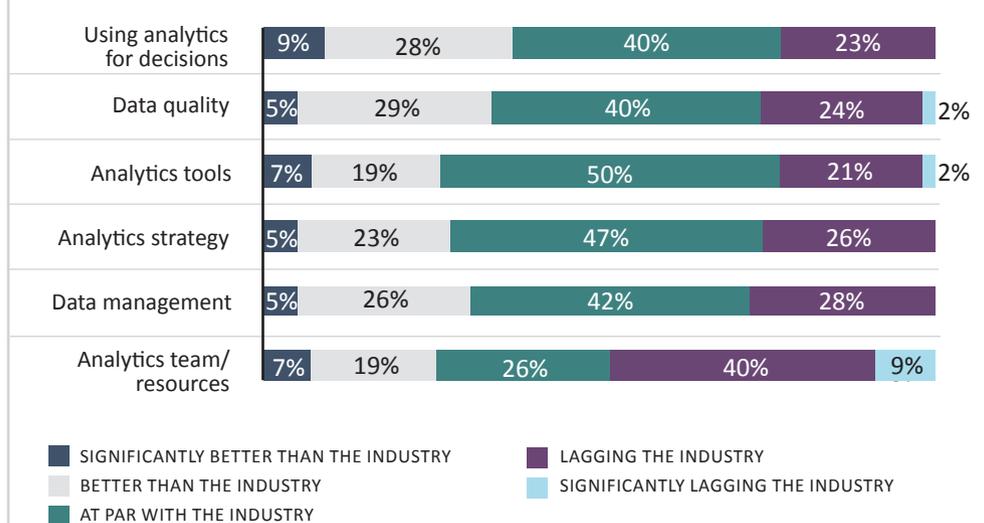
FIGURE 7

Retailer Gains Against Competitors

2016



2017



RETAIL AND CONSUMER GOODS ANALYTICS STUDY 2017

RETAIL

Like retailers, Jeff Roster, VP of retail strategy for IHL Group, considers Amazon the gold standard for analytics skill. “Until retailers can offer their customers perfect inventory visibility, tracking of all orders and a seamless customer experience in-store, they will be behind. That is where the focus will be for the next three years.”

Advanced Supply Chain

Retailers’ supply chain analytics capabilities are the most mature (Figure 8) and retailers are most likely to be using investigative or predictive analytics in this area. This includes demand forecasting, a merchandising discipline used to direct supply chain management and execution, as well as replenishment, an area which has seen heavy retailer investment over recent years. In addition, inventory management continues to be a high priority.

“Our research shows a majority of retailers are in the diagnostic phase of advanced analytics maturity,” says Robert Hetu, research director, Gartner Retail Industry Services. “This is the second of the four-stage maturity: descriptive, diagnostic, predictive and prescriptive.”

Marketing and merchandising analytics capabilities lag those of supply chain, with the move toward more advanced capabilities very much a work in progress (Figure 9). As retailers’ focus shifts more sharply to being customer-centric, they are seeking similar levels of investigative and predictive analytics capabilities for these functions. Customer insights tops retailers’ analytics priorities this year (53%), followed by personalization and promotion effectiveness (30% each).

One reason for supply chain’s relative maturity is the availability of solutions in those areas. Major vendors started in financials and supply chain — and benefited from the horizontal nature of those solutions. As solution providers build out merchandising, marketing and other customer-centric analytics tools, retailers will more easily adopt those capabilities.

Top Challenges

As Figure 7 illustrates, retailers have made progress in the maturity of their analytics team/resources; 19%

FIGURE 8

Maturity of Retail Supply Chain Analytics

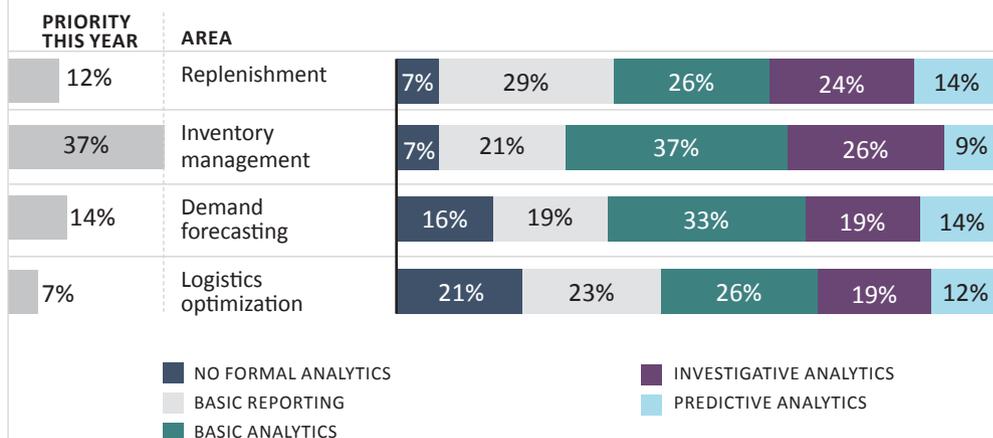


FIGURE 9

Maturity of Retail Customer-Centric Analytics

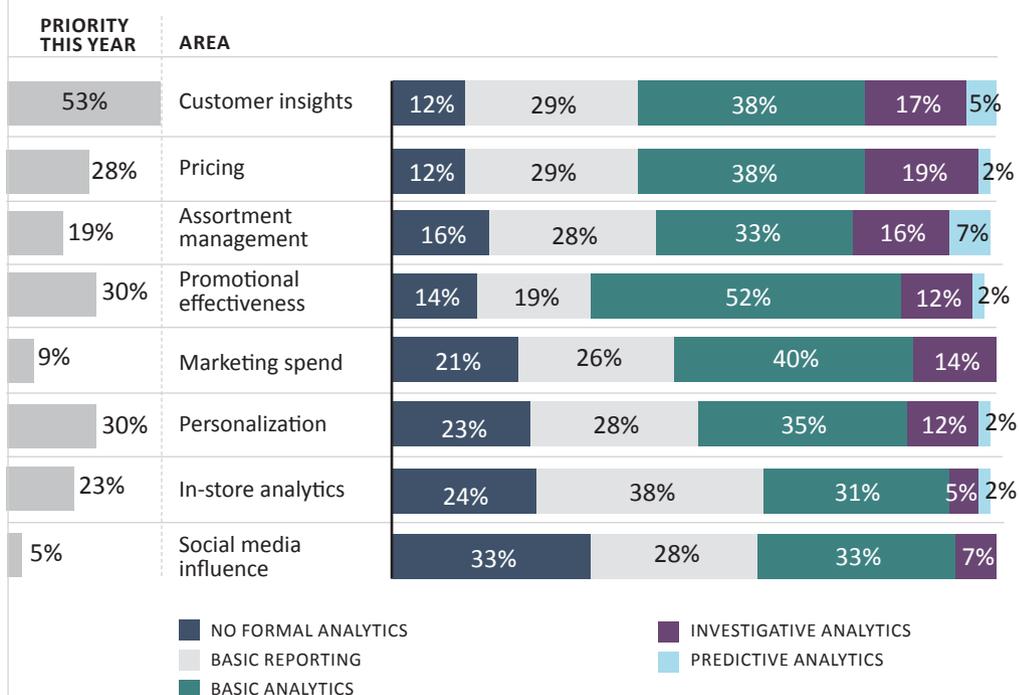




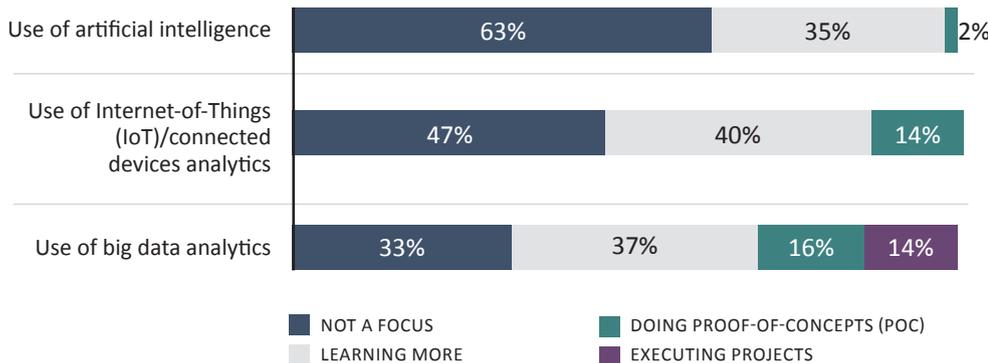
FIGURE 10

Top Analytics Software Plans



FIGURE 11

Next-Gen Analytics Adoption



say they are better than the industry, and 7% rate themselves significantly better. But they still call inadequate talent or dedicated staff their biggest analytics challenge (56%, in Figure 2). This suggests that while progress has been made, as retailers have pursued analytics talent they have also seen how difficult it can be to assemble the ideal complement of skills, tools and data governance. However, as seen in Figure 3 in the overview section, retailers' plans to fill specific analytics positions are anemic at best, suggesting they are still not confident on how to organize and properly staff this key function.

Limited software toolsets and the inability to integrate data from multiple sources are the

next biggest analytics challenges for retailers (47% each, in Figure 2). But the indicators are much stronger here for intent to solve these issues than for filling the talent gap. More than half of retailers intend to add for the first time, upgrade or change suppliers for a long list of analytics application areas (Figure 10). And lack of intent to make changes may just mean they have already checked those boxes. Investment plans appear quite healthy, with retailers prioritizing web/online analytics, enterprise BI & reporting tools and in-store analytics for their spending this year.

Budgets and Vendors

Budgets also reflect retailers' focus on

continuing to strengthen their analytics chops; while they devoted an average 10.5% of IT budgets to analytics in 2016, they project that climbing to 16.6% by 2021, a CAGR of 12.1%.

Retailers are split nearly 50/50 on whether they currently, or plan to, turn to outsourced resources to conduct data analytics vs. building out this capability completely in-house.

IHL Group's Roster sees outsourcing as a key strategy to help retailers overcome their staffing issues. "I don't believe it's a requirement for many retailers to have data scientists on their teams," he says. "I do think it's mission critical though to have access to that expertise. We're seeing a rapid scale up of service providers offering this capability."

A portion of retailers' IT budgets must be carved out for forward-looking applications of analytics (Figure 11). Big data has seen the most progress so far: 14% are already executing projects and 16% are in the proof-of-concept phase. Applying analytics to data from the Internet of Things, connected devices and artificial intelligence are at earlier phases of education and adoption.

IoT will dramatically increase the data available for customer insights. "With this explosion of data, it is even more critical to understand decision modeling — identifying what data actually drives key decisions and what data is merely excess noise," says Morris. Other analytics trends to watch include graph databases, cognitive capabilities, open source analytics platforms and the impact of cloud-based POS to enable real-time analytics.

It's difficult to underestimate the importance of robust data management and a strong analytics focus to the future of retail. Omnichannel and brick-and-mortar retailers are being challenged by pure-play retailers built from the ground up based on these competencies, as well as consumer goods companies with a longer track record in analytics pushing for direct and sometimes transactional relationships with consumers. All are continuing to work at establishing and maintaining the analytics talent, tools, structure and culture that will allow them to remain competitive in the new, insights-based, customer-centric retail marketplace. **CGT/RIS**

The Bar Keeps Getting Raised

CG COMPANIES ARE STRUGGLING TO KEEP UP WITH THE DATA-DRIVEN MARKET LEADERS

Consumer goods companies as a group have a longer track record than retailers do in using analytics to understand and drive the business. But as digital has gained steam, data availability has mushroomed and analytics capabilities have taken a quantum leap forward, many CG companies have struggled alongside retailers to keep up with the data-driven market leaders.

That's particularly the case for the CG companies that responded to the survey supporting this report. The majority (65%) of last year's respondents had annual revenues of \$1 billion or more, while just 46% of this year's respondents were that large, and the percentage of sub-\$100 million CG companies doubled. With fewer resources, these SMB respondents face even greater challenges at achieving par with competitors in their ability to wield analytics power to understand, serve and influence customers.

But the good news is that CG companies recognize this deficit, and are focusing their investments moving forward on analytics capabilities that support their customer-centric business goals. They are also continuing to build up their already well-established analytics acumen in supply chain to further their maturity in areas such as planning and demand forecasting.

Analytics Maturity

This smaller-skewing group of CG companies see themselves lagging their competitors significantly in analytics data quality, data management and analytics team/resources, which have continued to challenge the industry as a whole (Figure 12). Getting the right analytics tools in place also looms as a huge challenge. These basic building blocks are critical to creating the bedrock on which analytics-driven organizations are built.

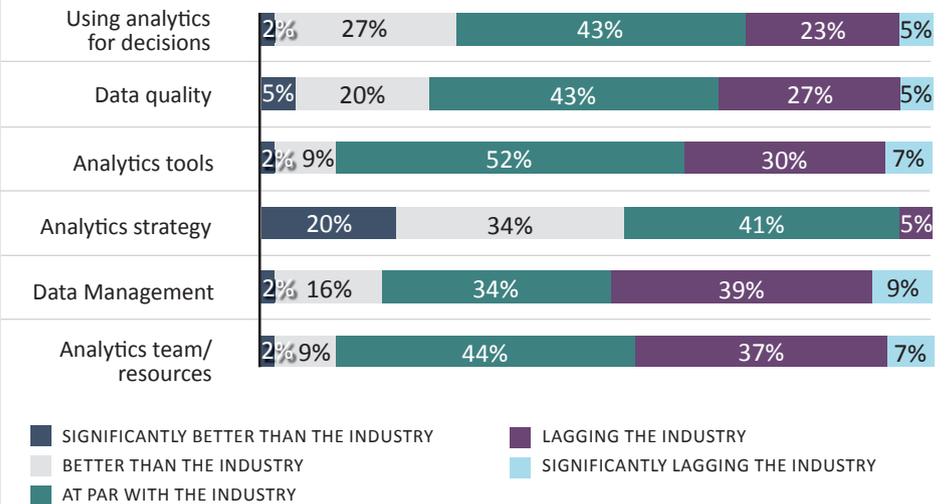
"There's an element of greater pessimism on their performance across everything that we're seeing," says Gaurav Pant, SVP research & principal analyst, EKN Research. "They generally feel that they're not doing as well as they should be."

When Amazon's substantial analytics prowess is the

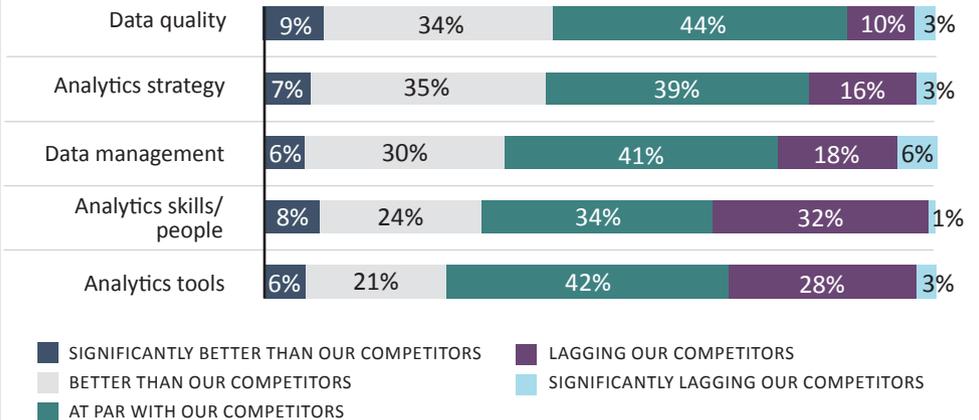
FIGURE 12

Analytics Maturity in CG

2017



2016



(NOTE: AVERAGE RESPONDENT SIZE WAS SMALLER IN 2017 THAN IN 2016.)

yardstick, CG respondents' self-evaluation is even more dismal. At least 80% of respondents rate themselves as lagging or significantly lagging Amazon in every aspect of their analytics programs. That's not all that much higher than the scores last year's respondents gave themselves compared to Amazon. It's possible that until Amazon began ramping up its private label business in some categories, some CG companies did not see them as head-to-head competitors, and therefore did not aggressively invest in technologies to improve their chances to compete.

Supply Chain Maturity

CG companies' growing efforts to develop direct consumer relationships through digital channels is reflected in the increasing application of advanced analytics capabilities in areas such as price and promotions and customer insights, where greater transparency is yielding rich data (Figure 13). Marketing personalization and social media influence are also seeing the use of advanced analytics.

Trade promotion capabilities are similar to these categories in the application of advanced analytics, but this is a much more mature area, so investment to push to more predictive analytics capabilities may be lagging because CGs have found it challenging to derive value.

CG companies are far more mature in inventory and supply chain analytics, with 41% using investigative or predictive analytics in category management and nearly as many in inventory management. Demand forecasting leads use of predictive analytics at 14%.

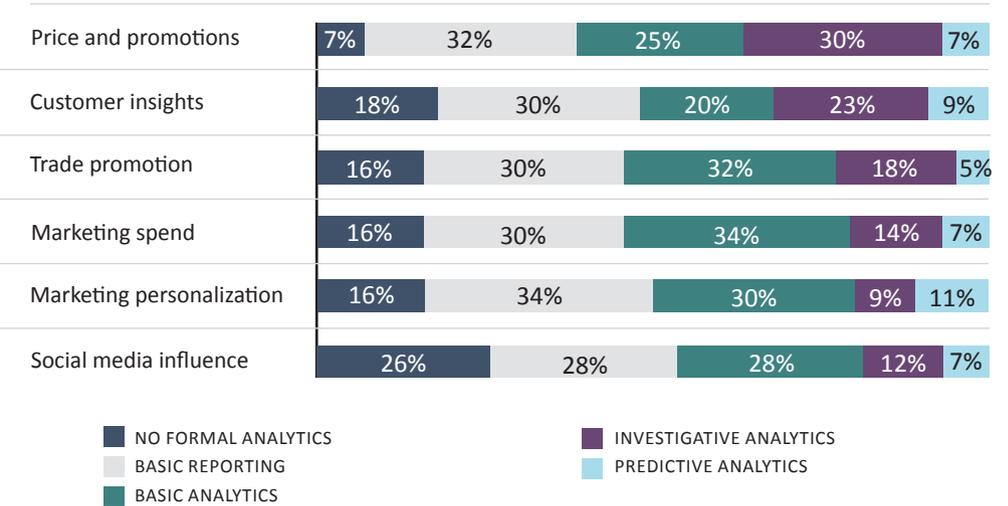
CG companies' business goals are clear in their analytics priorities (Figure 14). Enhancing understanding of the consumer and improving digital marketing effectiveness lead the list at 39% each, followed by improving price performance and trade spend effectiveness. All are indicative of CG companies shifting from an operations and execution focus to getting to know consumers more directly through digital channels.

According to McKinsey's 2016 survey of North American companies, CGs that are besting their competitors are twice as likely to view advanced analytics as critical to business strategy and are

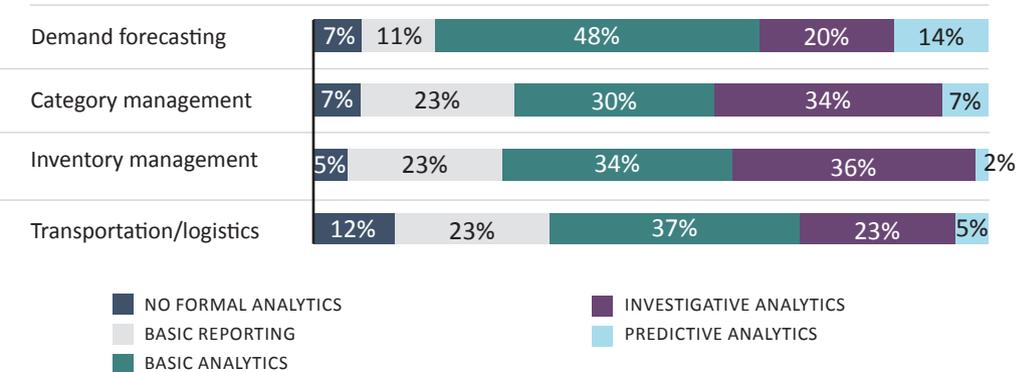
FIGURE 13

Maturity by Application Area

MARKETING AREA



SUPPLY CHAIN AREA



building "insights factories" — analytical models, tools, and processes — to do so.

Investment Focus

CG companies struggle to establish a firm foundation for analytics — especially small and mid-size firms. Top areas for adding new software, upgrading existing systems

or changing to a new supplier are data visualization/dashboards, enterprise BI and reporting and social media analytics (Figure 15). These areas all reflect a desire for CG companies to build capabilities that deepen consumer relationships and make effective use of digital marketing.

At the same time they're shoring up



FIGURE 14

Top Areas of Analytics Focus

Enhance your understanding of the customer	39%
Improve digital marketing effectiveness	39%
Improve price performance	32%
Improve trade spend effectiveness	30%
Improve supply chain planning and demand forecasting	30%
Provide relevant insights to the sales force	27%

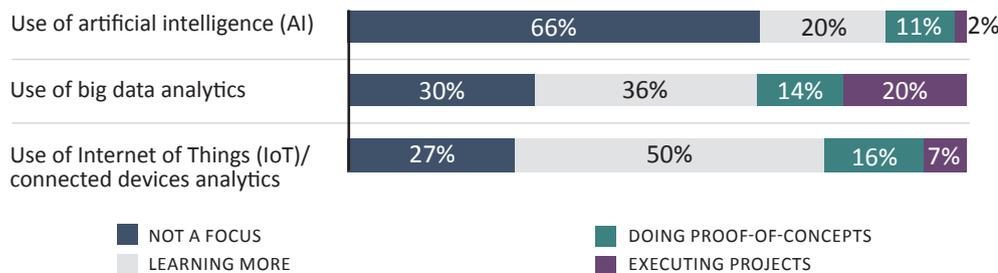
FIGURE 15

Top Analytics Software Plans

66%	65%	60%	55%	51%
Data visualization/ dashboards	Enterprise BI and reporting	Social media analytics	Data warehouse/ storage	Web/online analytics

FIGURE 16

Emerging Analytics Enabling Technologies



core capabilities, CGs must keep up with emerging technologies that will support analytics programs in the future. Big data analytics is furthest along in moving from that watchful state into proof-of-concept and executed projects (Figure 16). Internet of Things applications follow, while artificial intelligence remains the least explored.

AI might be the answer to some of the integration woes CG companies cite as among their top challenges. “Data needs to be harmonized and synchronized, and CGs have a great opportunity to use artificial intelligence to manage the context with master data,” says Lora Cecere, founder and CEO, Supply Chain Insights.

Obstacles to Progress

As seen in Figure 12, CG companies as a group are generally frustrated with their progress in analytics, and they lag in maturity on some fundamental infrastructure needed to build themselves into more sophisticated, insights-driven organizations.

That frustration is clear in their rankings of the top challenges to leveraging analytics more strategically. Limited software toolsets and inability to integrate data from multiple sources tie at 36% each to lead the list (Figure 2). This is no surprise: Small and mid-size CG companies in particular have a difficult time funding foundational investments in tools and data management infrastructure when the return on those investments may be far off. Data integration has long been a struggle, but it is particularly vexing as CGs increase their focus on the consumer.

People issues — both the culture and the need to staff appropriately to derive the most benefit from analytics — are also top challenges.

“We are limited by talent availability,” says Cecere. “The industries of financial services, insurance and telecom are sucking up the available resources with better salaries. The consumer industry is a laggard. The jobs just are not as interesting, the executive teams not aligned, and the salaries are not as competitive.”

Presumably, the CG industry’s budget plans will address at least some of those gaps. Analytics accounts for an average 11.3% of IT budgets now, but will rise to 18.1% by 2021.

Just under half (45%) are spending a portion of that budget on outsourced resources to provide data analytics; another 14% have plans to do so. For small and mid-size CGs who feel their in-house foundation for building a strong analytics platform is lacking, outsourcing may be the right path to catch up with analytics leaders.

The race to build closer relationships with consumers is on, and CG companies know analytics turbo charges those efforts. Many are working diligently to build their programs, allocating a larger portion of IT budgets, working on data integration, tool and management issues and seeking to attract the right talent. While frustrated at the pace, they are slowly making progress. **CGT/RIS**

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