THE ANALYTICS ARMS RACE:
MAY THE BEST INSIGHTS WIN

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RIS

RETAIL AND CONSUMER GOODS
ANALYTICS
STUDY 2018

APRIL 2018

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I recently spoke with an executive at a consumer goods startup who explained his company’s strategy for market expansion: Check Google Analytics to find heavy clusters of website visits. Meeting over. Decision made. Another victory for the digital economy.

Whether so cavalier a decision will ever qualify as sound business strategy is certainly up for debate. A company making such relatively impulsive moves might not be around very long. Besides, it’s pretty easy to make such flip assessments when, aside from your products and your people, your company assets are virtually all, well, virtual. This company simply conducts some research into regional commerce regulations (uh, maybe), launches a local-language version of its website (if necessary) and hires a regional sales rep or two to work from their homes. Established companies need to build out a little more infrastructure, and therefore require a bit more due diligence.

Nonetheless, I couldn’t help thinking about that company as I examined the results of this year’s Retail and Consumer Goods Analytics Study. Over the last three years, sister publications CGT and RIS have joined forces for this annual check on the analytics “maturity” level on both sides of the industry.

Over those three years, the industry has certainly improved maturity-wise, with many CGs and retailers moving up the ladder to more sophisticated, more actionable and more accurate analytics capabilities. In fact, the measurement scale itself has improved, with the “no formal analytics” base we started with in 2016 falling off and the ultimate end-game accurate analytics capabilities. In fact, the measurement scale itself has improved, with the “no formal analytics” base we started with in 2016 falling off and the ultimate end-game accurate analytics capabilities.

Yet despite what now is universal agreement that enterprise-wide analytics excellence is critically important to future success, and despite the fact that many of the tools needed to deliver that level of business intelligence are now available, a lot of companies still seem to be moving a little too slowly up the ladder.

In fact, as report author Lisa Terry notes, many companies still feel they have “a long way to go” before achieving internal data alignment. In this market, however, slow and steady is probably not going to win the race. Not when so many emerging companies are inherently farther along on the analytics journey than most traditional players. Not when a Stitch Fix can come along, identify a largely unmet consumer need (curated apparel shopping), and leverage a proprietary analytics platform to become a billion-dollar company in less than seven years. Not when Amazon — considered by many to be the analytics bellwether — keeps upping the ante every few months. Not when there are smaller competitors entering markets based on Google Analytics alone.

That’s something to keep in mind as you read through this year’s report and benchmark your own progress against the industry as a whole. Are you one of the roughly one-fifth of respondents that have already gained internal data alignment? Are you among the minority of companies that have gotten to the prescriptive analytics level for some business functions? Pat yourselves on the back. You deserve it.

But whether you deem yourself woefully behind the industry or even feel like you’re well ahead of the game, there’s a good chance your rate of progress is still a little too slow. Because in this race, even the most effective, efficient tortoise is going to spend way too well ahead of the game, there’s a good chance your rate of progress is still a little too slow.
Analytics Maturity Is a Moving Target

AS THE RETAIL INDUSTRY CONTINUES TO EVOLVE, COMPANIES SET EVER-HIGHER STANDARDS

Challenged at one end by digital behemoths and at the other by nimble, born-in-the-cloud startups, retailers and consumer goods companies are under tremendous pressure to deliver exceptional, personalized customer experiences that drive revenue and repeat business. The emergence of an analytics arms race has forced companies to find ways to expend their limited resources on technologies and applications they believe will deliver the most bang for the buck.

As retail and CG executives seek to build their analytics infrastructure, governance and talent pools, they must also rethink internal processes and shift their cultures toward an analytics mindset. And even as they gain capabilities, new market demands emerge that continually raise the bar ever higher.

But the analytics marketplace is also evolving rapidly, offering new capabilities such as artificial intelligence and machine learning, supported by cloud architecture, that carry the potential to turbocharge analytics programs. These not only discern data patterns more quickly, but sometimes even generate their own algorithms to further fine-tune output. That makes them an ideal match for high-volume, rapid functions of retailers and consumer goods companies are looking to outsource at least a portion of their analytics work.

FIGURE 1

Top Analytics Challenges

2018

<table>
<thead>
<tr>
<th>RETAIL</th>
<th>CONSUMER GOODS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited analytics toolset</td>
<td>Absence of a clearly articulated analytics strategy</td>
</tr>
<tr>
<td>Right staff not in place to lead analytics strategy</td>
<td>39%</td>
</tr>
<tr>
<td>Inability to integrate data from multiple sources</td>
<td>38%</td>
</tr>
<tr>
<td>Absence of a clearly articulated analytics strategy</td>
<td>36%</td>
</tr>
</tbody>
</table>

2017

<table>
<thead>
<tr>
<th>RETAIL</th>
<th>CONSUMER GOODS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inadequate talent or dedicated staff</td>
<td>Limited software toolset</td>
</tr>
<tr>
<td>Limited software toolset</td>
<td>Inability to integrate data from multiple sources</td>
</tr>
<tr>
<td>Inability to integrate data from multiple sources</td>
<td>Limited software toolset</td>
</tr>
<tr>
<td>Right staff not in place to lead analytics strategy</td>
<td>Culture of the company is more intuition-driven than data-driven</td>
</tr>
</tbody>
</table>
such as personalization and replenishment. Signs indicate both retailers and CGs are enthusiastically exploring these next-gen solutions. The race is now on to leverage these new tools to best advantage.

Facing Down Big Challenges

Retailers and CG companies are well aware of the accelerating tech landscape and the gap that continually widens between their current capabilities and what is possible. That’s likely why “limited analytics toolset” is consistently a top challenge for both (Figure 1). But retailers are really feeling the pain this year, with 63% citing this as a top challenge, up from 47% in 2017. The inability to integrate data from multiple sources is a related issue, making tools integration a potential choke point in the analytics infrastructure.

With limited capabilities comes uncertainty about strategy: It’s the top pain point for CG companies (at 39%) that’s also shared by 41% of retailers. Both sides lack the right staff to lead their analytics strategy, and CGs also cite the absence of a single owner for the effort. It’s difficult to stake new ground in analytics without the tools, resources or governance required to execute.

Executive leadership is struggling in part because they’re approaching the issue the wrong way, says Andrew Walter of AJW-Advisory, a former vice president of IT & shared services at Procter & Gamble. “Too many are not starting from the business problem down vs. the technology/data up.” Strategy is essential to ensure that investments will support business goals.

Organizing for Analytics

More evidence of their shared challenges comes in how companies organize around analytics. Industry analysts often point to a Center of Excellence as the ideal, and many retailers (47%) and CGs (55%) agree. However, just 7% of retailers and 18% of CGs have actually established CoEs. Instead, CGs are most likely to be managing...
analytics by department, while retailers most commonly make it the responsibility of IT (Figure 2).

It’s important to remember that analytics is, at its core, a technology, says Greg Buzek, founder and president of IHL Group. “There still is a requirement of systems management, uptime and security. While the budget might come from marketing or operations, it is best if IT is involved. When they are not, security holes are created and that is bad news for any [company].”

**Sizing Up the Staff**

Although they share similar staffing challenges, retailers and CG companies are addressing their needs with very different resources. Despite the similar size of responding companies, retailers maintain on average 10 internal analytics resources, compared with 28 at CGs. This may reflect the tenure of their analytics experience: CG companies have been at this longer, while retailers started more recently and now may be choosing automation over building internal staff.

“Within CG, over time, access to information was developed and optimized in separate silos by function, often with different systems and different data standards,” explains Vittorio Cretella, executive advisor with VCAdvisory and former chief information officer of Mars, Inc. Until those systems are overhauled, CGs will continue to need more personnel to manually “connect the dots” and drive insights.

Despite the staffing disparity, both retailers and CG companies perceive a deficit in their analytics talent and tools. To address this, about one-third on each side are looking to outsource some work to vendors. Similar numbers are recorded for “hiring internal personnel” and for simply “haven’t made any move at all.” At this point, only a handful see artificial intelligence/machine learning tools as a replacement for these resources, although that may change as their use of these technologies matures.

**Achieving Data Alignment**

Another goal for both retailers and CG companies is a “single source of the truth” across the organization. Nearly half of retailers (42%) and one-third of CG companies (32%) feel they “still have a long way to go” toward a single shared data source. But impressively, 23% of retailers and 16% of CGs believe they’ve achieved this goal.

The journey to a single data source “will last as long as it takes for CG companies to embrace a more data-centric culture, renew their ways of doing business and adapt to the digital economy,” says Cretella. “The sharp contrast between their attention to product manufacturing quality vs. the poor quality of data is indicative of that cultural gap. It starts from the top, with CG leaders needing to make decisions based on data insights and not only on experience.” To address this gap, both retailers and CGs are embracing cloud infrastructure and big data analytics (Figure 3).

Centralizing applications in the cloud facilitates speed of deployment, faster software updates, lower costs for software, hardware and maintenance, and a real-time, single version of the truth, says Ken Morris, principal at BRP Consulting. “A cloud approach to storing and analyzing product and customer data is essential to achieve access to one version of the truth in real-time.”

**Customer Analytics Leads the Way**

Another common challenge, the lack of clear strategy, is evident in the top areas of analytics focus reported by both retailers and CG companies. It’s not surprising that consumer insights, including profiling and analysis, ranks at the top for both, due to the widespread belief that the path to success lies in better understanding and serving the customer (Figure 4). However, for retailers,
the customer is the consumer, so it’s natural that personalization is the second most popular response, since automation is critical to deal with such a large store of data. Retailers are the customers for CGs, so analytics to understand retail demand is closely rated to promotion effectiveness and demand forecasting — all critical functions for market success.

Collaboration for Common Benefit

Accessing a broader range of data streams is a best practice for gaining deeper insights into consumers and the business for both retailers and CG companies. Yet despite years of urging by industry analysts, retailers are still moving very slowly toward sharing more types of data or increasing the frequency of sharing.

But there is some good news. Significant numbers of retailers have moved away from their “never share” stance in favor of regular or at least ad-hoc sharing. The biggest changes came in sharing of online consumer behavior data, where the ranks of non-sharers dropped from 70% to 50% and the number sharing regularly jumped from 17% to 33% (Figure 5). Elsewhere, those who never share pricing data fell from 51% to 35%, and loyalty/CRM data stingies dropped from 53% to 40%.

Other reports echo this trend toward increased data sharing. However, in Shopper Marketing magazine’s latest trends report, 59% of consumer goods respondents said that, while retailers are opening up, they’re using data sharing as a revenue stream rather than sharing freely in the spirit of collaboration.

“The days of retailers ‘piecemealing’ data or sharing it as a carrot or stick for other commercial negotiations will be reserved for tactical leaders playing not to lose vs. the accelerating e-commerce players,” says Walter. “Leading retailers need to elevate data access and analytics to a strategic discussion with their CG partners and create new, sustained business models.”

The Great Analytics Challenge

Innovation in advanced analytics promises great things for retail and CG companies overwhelmed by too much data and not enough insights. But while intent is high, many companies still lag in key capabilities and struggle to put together the right resources, governance, organization and cultural commitment to remake themselves into fully analytics-driven businesses. As the leaders accelerate their superior capabilities and extend into new channels and categories, everyone else is under significant pressure to put the pieces in place to understand and serve their own customers like no one else can. CGT/RIS

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**FIGURE 5**

The Data Retailers Share with CG Partners

<table>
<thead>
<tr>
<th>Share Regularly</th>
<th>Ad Hoc</th>
<th>Never Share</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>POS transaction data</strong></td>
<td>51%</td>
<td>7%</td>
</tr>
<tr>
<td><strong>Loyalty/CRM data</strong></td>
<td>35%</td>
<td>12%</td>
</tr>
<tr>
<td><strong>Online sales data</strong></td>
<td>37%</td>
<td>12%</td>
</tr>
<tr>
<td><strong>Online customer behavior data</strong></td>
<td>17%</td>
<td>12%</td>
</tr>
<tr>
<td><strong>Pricing data</strong></td>
<td>39%</td>
<td>9%</td>
</tr>
<tr>
<td><strong>Promotion performance</strong></td>
<td>47%</td>
<td>16%</td>
</tr>
</tbody>
</table>
Wielding Analytics in the Battle for Customers

RETAILERS RETALIATE AGAINST AN EXPANDING COMPETITIVE SET

“Analytics success will be one of the greatest determinants of future success,” says Robert Hetu, research vice president and agenda manager for retail at Gartner. But analytics success is proving an elusive target for retailers, who face challenges not only from online and omnichannel competitors, but also from retailers in adjacent markets expanding their assortments and supplier partners directly targeting consumers. The race is on to see who can adopt the latest tools to best understand their target customers and deliver personalized experiences that flow seamlessly across channels — matched with fast, flexible fulfillment — to gain an analytics-fueled advantage.

If analytics is an arms race, then retailers feel they are prepared for battle — at least compared with competitors. They have made strides over the past year in developing analytics skills/people: nearly half say they’re better or significantly better than competitors in this area, up from just 26% last year (Figure 6). They’ve also beefed up their analytics tools, with 36% now besting competitors, compared with 26% in 2017. Those are gains of which to be proud.

But comparisons to market leaders paint a different story. Only a handful of respondents feel they’re doing better than leaders in any aspect of analytics. The biggest differential comes in data management, where 27% feel they lag competitors but 67% say they trail the leaders.

“You always want to more closely emulate the leaders, but that might not be realistic,” says Greg Buzek, president of IHL Group. “Peers are a mix of both. The issue is level of resources and limitations on the analytics tools. Most retailers under $1 billion in size don’t have the size or ability to hire an army of

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**FIGURE 6**

How Retailers Compare to Competitors

<table>
<thead>
<tr>
<th></th>
<th>Better Than Competitors</th>
<th>Better Than Leaders</th>
<th>Lagging Our Competitors</th>
<th>Lagging Leaders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analytics strategy</td>
<td>34%</td>
<td>9%</td>
<td>41%</td>
<td>63%</td>
</tr>
<tr>
<td>Data management</td>
<td>27%</td>
<td>5%</td>
<td>27%</td>
<td>67%</td>
</tr>
<tr>
<td>Data quality</td>
<td>30%</td>
<td>9%</td>
<td>30%</td>
<td>63%</td>
</tr>
<tr>
<td>Analytics tools</td>
<td>36%</td>
<td>9%</td>
<td>36%</td>
<td>65%</td>
</tr>
<tr>
<td>Analytics skills/people</td>
<td>46%</td>
<td>14%</td>
<td>30%</td>
<td>61%</td>
</tr>
</tbody>
</table>

**FIGURE 7**

Maturity of Retail Supply Chain Analytics

<table>
<thead>
<tr>
<th></th>
<th>Basic Reporting</th>
<th>Basic Analytics</th>
<th>Investigative Analytics</th>
<th>Predictive Analytics</th>
<th>Prescriptive Analytics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replenishment</td>
<td>18%</td>
<td>33%</td>
<td>18%</td>
<td>21%</td>
<td>10%</td>
</tr>
<tr>
<td>Demand forecasting</td>
<td>15%</td>
<td>48%</td>
<td>18%</td>
<td>18%</td>
<td>18%</td>
</tr>
<tr>
<td>Transportation logistics</td>
<td>21%</td>
<td>51%</td>
<td>12%</td>
<td>12%</td>
<td>3%</td>
</tr>
<tr>
<td>Inventory management</td>
<td>21%</td>
<td>45%</td>
<td>18%</td>
<td>12%</td>
<td>3%</td>
</tr>
</tbody>
</table>
data architects and data scientists.”

But there is another path. As the fusion of AI with analytics systems improves, solutions will not only provide analytics, but also make expert recommendations that simply must be confirmed by people, Buzek says. “Leaders are doing this with people right now. Tiers two and three simply cannot do that.”

Advancing Analytics Maturity

Despite limited resources and a preponderance of basic reporting and analytics capabilities, retailers have made progress in some aspects in the past year.

In supply chain analytics, retailers last year said they were prioritizing inventory management. But it was in replenishment analytics where they’ve been most successful, with the ranks of those using predictive analytics rising from 14% in 2017 to 21% this year. Another 10% are even more advanced, applying prescriptive analytics to replenishment (Figure 7).

Among customer-centric capabilities, retailers made the greatest maturity gains with in-store analytics, moving from just 2% using predictive analytics last year to 21% (Figure 8). They also increased the use of predictive and prescriptive analytics by at least 16 percentage points in several other marketing areas: marketing spend, pricing and promotions, and promotion effectiveness.

These gains, together with past investments, mean retailers now have the most advanced analytics capabilities in replenishment and in-store analytics, followed by pricing/promotions, demand forecasting, marketing spend and promotion effectiveness (all tied). Are these the areas that will best position them to compete?

“While advanced analytics are valuable for almost all areas of retail, they are most critical for replenishment and customer personalization,” says Ken Morris, principal at BRP Consulting. “Advanced analytics are necessary to predict inventory levels across channels that are complicated by omnichannel fulfillment.”

Unfortunately, many retailers have considerable ground to make up when it comes to personalization, with 75% still capable of only basic reporting or analytics.

FIGURE 8
Maturity of Retail Customer-Centric Analytics

<table>
<thead>
<tr>
<th>In-store analytics</th>
<th>Pricing &amp; promotions</th>
<th>Promotional effectiveness</th>
<th>Marketing spend</th>
<th>Customer insights</th>
<th>Assortment planning</th>
<th>Space planning</th>
<th>Personalization</th>
</tr>
</thead>
<tbody>
<tr>
<td>27%</td>
<td>24%</td>
<td>15%</td>
<td>30%</td>
<td>18%</td>
<td>18%</td>
<td>21%</td>
<td>3%</td>
</tr>
<tr>
<td>39%</td>
<td>33%</td>
<td>45%</td>
<td>39%</td>
<td>42%</td>
<td>54%</td>
<td>52%</td>
<td>72%</td>
</tr>
<tr>
<td>12%</td>
<td>24%</td>
<td>21%</td>
<td>12%</td>
<td>24%</td>
<td>18%</td>
<td>15%</td>
<td>12%</td>
</tr>
<tr>
<td>21%</td>
<td>18%</td>
<td>18%</td>
<td>12%</td>
<td>12%</td>
<td>6%</td>
<td>6%</td>
<td>6%</td>
</tr>
</tbody>
</table>

Where the Dollars Are Going

Aware of these deficits, retailers are turning their attention squarely toward the customer. Three of the top six areas of analytics focus are related to measuring and analyzing customer behavior: social media, web/online and data warehouse/storage. (Figure 9).

Although analytics is important to every aspect of retailing, “You can’t over-emphasize the customer aspect of analytics, as it is imperative,” says Morris. “Understanding what loyal customers like and what makes former loyal customers leave will tell you where you need to focus.”

Moving to Next-Gen

As retailers work to move up the maturity curve with existing analytics technologies, they’re also eyeing next-gen advancement. Some of these offer the potential to help retailers overcome constraints such as limited analytics skill sets, while others promise to deliver new capabilities and, in turn, deeper insights.

Consistent with today’s laser focus on tailoring the brand experience, retailers are putting personalization at the top of the list, just before three key enabling technologies that can deliver it: cloud infrastructure, big data
analytics and artificial intelligence (Figure 10).

“Retailers are recognizing the value of centralizing applications in the cloud: speed of deployment, faster software updates, lower software, hardware and maintenance costs, and a real-time, single version of the truth,” says Morris. “Real-time visibility and access to product and customer information is critical to effectively executing cross-channel fulfillment services. Without real-time data, information provided internally and externally is out-of-date and, therefore, risks being inaccurate and out of context.”

Retailers see particular promise in AI and machine learning to help them tackle the big data problems that have long challenged existing systems and skill sets. Gartner has predicted that AI solutions employed by retail companies may come to autonomously manage as much as 85% of all customer interactions.

The potential that retailers see in AI and machine learning is clear in the wide array of application areas where they’re testing the technologies. But three rise to the top: customer relationship management, merchandise planning and execution, and assortment planning/category management (Figure 11).

“These are the exact areas that Gartner recommends,” says Hetu. “They’re a gold mine of opportunity to automate inefficient, Excel-based tasks, freeing resources for higher-value activities. With large numbers of relatively high-paid associates who are responsible for making big-dollar decisions that affect every aspect of the business, headquarters are also prime targets for reduction and elimination through intelligent automation services.”

Retailers know that bolstering analytics capabilities is essential to making the most of their data. But even as they move the needle, the rapidly evolving marketplace and ever-changing landscape of competitors continuously ups the pressure. Many are pinning their hopes on emerging technologies like AI and machine learning to turbocharge their ability to gain fresh, timely insights that can set their brands apart. The race is on to leverage these new capabilities. CGT/RIS
Consumer goods companies have been leveraging analytics for a long time. But only recently has data become plentiful enough and tools powerful and accessible enough to truly transform the way they run their businesses. Making that technical and cultural transformation is key to competing in an increasingly complex, demanding marketplace where sales channels, marketing strategies and consumer expectations are in constant flux.

Most analysts agree that the ability to exploit advanced analytics will be the key to future success — even the key to survival. And CG executives are racing to focus their often limited resources in the right places to gain that critical competitive advantage. Many have made admirable gains in the past year — but will it be enough to set them apart?

Benchmarking Analytics Progress

Competitors are a valuable benchmark for measuring progress. When consumer goods companies compare themselves to peers, they report a significant jump in their analytics skills and people, with 44% saying they’re better or significantly better than competitors, versus just 11% in 2016. They also made advancements in analytics tools, with the ranks of companies believing they’re beating competitors moving from 11% to 30%. Strategy is another area where significant numbers of CG companies (42%) feel they do well against the competition (Figure 12).

But those numbers drop considerably when CG companies compare themselves to industry leaders. Just 17% believe their analytics skills/people are better or significantly better, for example, and only 5% feel that way about their tools.

### FIGURE 12

<table>
<thead>
<tr>
<th>How CGs Compare to Competitors</th>
<th>Better than Competitors</th>
<th>Lagging Our Competitors</th>
<th>Better than Leaders</th>
<th>Lagging Leaders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analytics strategy</td>
<td>41%</td>
<td>12%</td>
<td>26%</td>
<td>53%</td>
</tr>
<tr>
<td>Data management</td>
<td>28%</td>
<td>9%</td>
<td>24%</td>
<td>64%</td>
</tr>
<tr>
<td>Data quality</td>
<td>33%</td>
<td>12%</td>
<td>27%</td>
<td>51%</td>
</tr>
<tr>
<td>Analytics tools</td>
<td>30%</td>
<td>5%</td>
<td>28%</td>
<td>60%</td>
</tr>
<tr>
<td>Analytics skills/people</td>
<td>44%</td>
<td>17%</td>
<td>19%</td>
<td>51%</td>
</tr>
</tbody>
</table>

### FIGURE 13

<table>
<thead>
<tr>
<th>Maturity of CG Supply Chain Analytics</th>
<th>Basic Reporting</th>
<th>Basic Analytics</th>
<th>Investigative Analytics</th>
<th>Predictive Analytics</th>
<th>Prescriptive Analytics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demand forecasting</td>
<td>23%</td>
<td>33%</td>
<td>23%</td>
<td>19%</td>
<td>2%</td>
</tr>
<tr>
<td>Inventory management</td>
<td>23%</td>
<td>33%</td>
<td>23%</td>
<td>19%</td>
<td>2%</td>
</tr>
<tr>
<td>Replenishment</td>
<td>27%</td>
<td>37%</td>
<td>23%</td>
<td>10%</td>
<td>8%</td>
</tr>
<tr>
<td>Transportation logistics</td>
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<td>42%</td>
<td>19%</td>
<td>11%</td>
<td>2%</td>
</tr>
<tr>
<td>Category management</td>
<td>26%</td>
<td>41%</td>
<td>24%</td>
<td>8%</td>
<td>2%</td>
</tr>
</tbody>
</table>
Unfortunately, even comparing against leaders may not be enough to fully measure the gap between where businesses are and where they need to be.

“Comparing your analytics savviness to your traditional industry competitors is no longer sufficient,” says Andrew Walter of AJW-Advisory LLC, a retired vice president of IT & shared services at Procter & Gamble. “Consumer goods companies and retailers need to benchmark versus the best across industries. Digital and analytics disruption is blurring traditional competitive threats and business opportunities, so competing with analytics is more critical than ever.”

Advancing the Maturity Needle

With margins thinning and limited resources at their disposal, CG companies must be strategic when allocating investment dollars to improve analytics capabilities. Self-assessment of maturity in supply chain analytics indicates that companies have gained the most value in demand forecasting (with 21% using predictive or prescriptive analytics) and inventory management (16%), two functions that have a huge impact on the bottom line. Both results represent improvement from last year, with inventory management gaining 16 percentage points. Space planning, customer insights and assortment planning — all of which require analyzing patterns in high volumes of data — are the consumer-centric areas where CG companies are the most advanced (Figure 13).

### Maturity of CG Customer-Centric Analytics

<table>
<thead>
<tr>
<th></th>
<th>BASIC REPORTING</th>
<th>BASIC ANALYTICS</th>
<th>INVESTIGATIVE ANALYTICS</th>
<th>PREDICTIVE ANALYTICS</th>
<th>PRESCRIPTIVE ANALYTICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-store analytics</td>
<td>16%</td>
<td>52%</td>
<td>13%</td>
<td>15%</td>
<td>5%</td>
</tr>
<tr>
<td>Pricing &amp; promotions</td>
<td>15%</td>
<td>45%</td>
<td>24%</td>
<td>15%</td>
<td>2%</td>
</tr>
<tr>
<td>Promotional effectiveness</td>
<td>27%</td>
<td>37%</td>
<td>19%</td>
<td>10%</td>
<td>7%</td>
</tr>
<tr>
<td>Marketing spend</td>
<td>27%</td>
<td>38%</td>
<td>18%</td>
<td>13%</td>
<td>3%</td>
</tr>
<tr>
<td>Customer insights</td>
<td>15%</td>
<td>45%</td>
<td>24%</td>
<td>15%</td>
<td>2%</td>
</tr>
<tr>
<td>Assortment planning</td>
<td>32%</td>
<td>48%</td>
<td>7%</td>
<td>13%</td>
<td></td>
</tr>
<tr>
<td>Space planning</td>
<td>27%</td>
<td>46%</td>
<td>18%</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>Personalization</td>
<td>26%</td>
<td>44%</td>
<td>21%</td>
<td>8%</td>
<td>2%</td>
</tr>
</tbody>
</table>

**FIGURE 14**

#### Maturity of CG Customer-Centric Analytics

**FIGURE 15**

#### Top Analytics Software Investment Plans

- **48%** Master data management
- **49%** Enterprise BI/reporting tools
- **68%** Data visualization/dashboards
- **42%** Web/online analytics
- **49%** Data warehouse/storage

**FIGURE 16**

#### Next-Gen Analytics Priorities

- **49%** Cloud infrastructure
- **42%** Big data analytics
- **35%** Personalization
- **26%** Artificial intelligence/machine learning
- **19%** Internet of Things
- **12%** Open source analytics
Analytics maturity in any one area, however, is less important than how companies are supporting the bigger picture, says Vittorio Cretella, founder of VCAdvisory and former chief information officer of Mars, Inc. “True competitive advantage comes from the capability to connect insights from those areas into a timely, end-to-end view of business activities. “Understanding correlations — how a promotion is affected by social sentiment and the related impact on its profitability in nearly real-time, for example — will give a CG the decision-making agility required in an increasingly dynamic market environment.”

Top Analytics Software Plans

The ability to put newfound insights to good use is clearly on the minds of CG executives. Many planned investments are aimed at creating the essential infrastructure to ensure that data is collected, cleansed, analyzed and delivered to those who can best act quickly to apply it. Data visualization/dashboards (68%) are a clear priority, reflecting a widespread effort within CG companies to move data outside individual business units and put it in front of more decision-makers across the business (Figure 15).

At the same time they’re building out core infrastructure, CGs are eyeing next-gen approaches that could help them accelerate efforts to move forward. Because so much rides on gleaning meaningful insights out of massive and growing streams of data, they’re prioritizing cloud infrastructure, big data analytics and personalization initiatives (Figure 16). These areas rank even higher than efforts involving artificial intelligence/machine learning and the Internet of Things. Clearly, early reservations about the cloud model have fallen away. In fact, CGT’s “Tech Trends Report 2017” found that 61% of companies already have moved to the cloud, the most commonly adopted step toward digital transformation.

That doesn’t mean AI and machine learning are not important, however. Both technologies are new to the industry, and CGs are testing them across a wide range of areas led by demand planning & forecasting and trade promotions (Figure 17). Other early deployments span marketing and supply chain functions.

“Most retailers and CG companies are just starting to realize the potential of AI as far as analytics goes,” says Sahir Anand, managing vice president, research & strategy for EnsembleIQ Research Solutions. “CG companies must apply AI and machine learning to read patterns within functional areas so that they can provide predictive trends and insights across the organization — to category managers, planners, pricing managers and supply chain executives.”

Anand recommends that CGs invest in machine learning, natural language processing (NLP) and robotics. “Within machine learning, the best areas of investment are demand forecasting, replenishment, pricing and trade promotion, since [the technology] can help read patterns of information in a self-learning manner as well as provide predictive data and scenario-based modeling of outcomes,” he says. “NLP can solve many problems within the supply chain, such as voice-assisted routing or picking. Robotics can help in production line automation and warehouse automation, like pallet movement and pick-pack-ship.”

Plenty of Road Ahead

CG companies can feel good about the progress they’ve made in obtaining the more advanced technologies and skills needed to compete in an insights-driven marketplace. They’ve made important progress in several key areas, including demand forecasting and inventory management. But as the competitive universe expands, they’ll need to move aggressively to implement more transformative tools such as cloud infrastructure and AI.

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