



YOU RULE

WHITEPAPER

# The Road to Digital Transformation



Own the Future  
by Separating  
the “Signals”  
from the  
“Noise”

## EXECUTIVE SUMMARY

Digital transformation is now critical for success in the retail industry where traditional CPG manufacturers and retailers face formidable competition from global e-commerce companies. Given the strategic and operational stakes, senior executives must own the decisions to adopt particular data solutions and emerging technologies such as predictive analytics and artificial intelligence. Yet, many lack a practical grasp of how such technologies can achieve specific business outcomes, and are vulnerable to hype and unrealistic promises. This paper targets 5 misleading claims (the “noise”) and sets the record straight, giving senior retail industry leaders a sharper understanding of the challenges such technologies actually address, and the real opportunities they offer (the “signals”).



**“Digital transformation requires organizational transformation. The winners will eliminate 30% of their operating costs and 30% of their outdated technologies to invest in new processes, new technologies and innovation.”<sup>1</sup>**

– Thom Blischok, Global Retail Futurist

In today's complicated and fast-changing retail environment, consumer packaged goods (CPG) manufacturers and their retailer partners face tremendous pressure from e-commerce juggernauts, declining sales, rising costs and rapidly-evolving consumer behaviors and preferences. Many increasingly turn to data science, analytics and emerging technologies like artificial intelligence (AI) to gain a critical competitive advantage. The belief is that these new digital technologies will help them bolster sales growth, optimize supply chain efficiency, improve in-store productivity, and sharpen their go-to-market execution, while also reducing labor and other costs.

If it all sounds like the retail version of nirvana, make no mistake – that level of digital transformation is not for the faint of heart. As global retail futurist and thought-leader Thom Blischok puts bluntly:

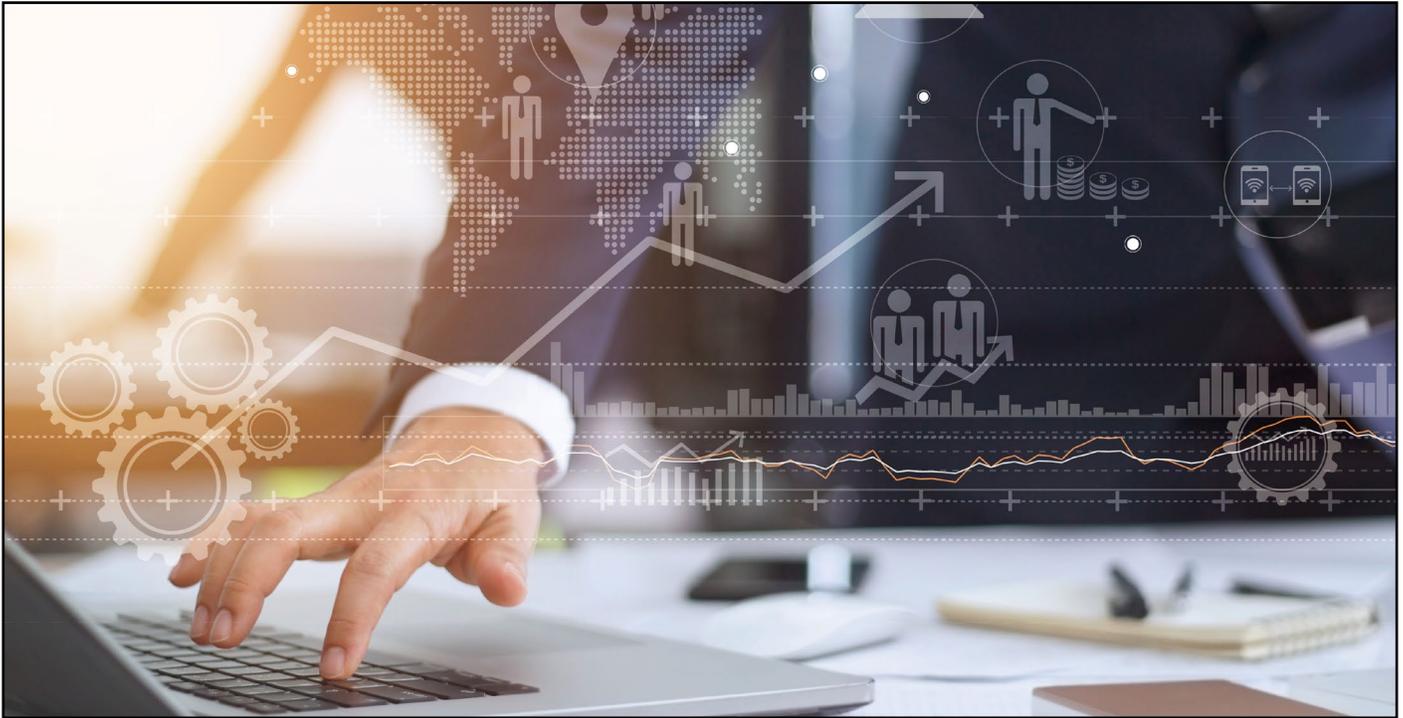
“Digital transformation requires organizational transformation. The winners will eliminate 30% of their operating costs and 30% of their outdated technologies to invest in new processes, new technologies and innovation.”<sup>1</sup>

For executive teams making such decisions, the challenge is to embrace appropriate technology solutions that will meaningfully improve business capabilities and outcomes – now and in the long-term. Unfortunately, a clear digital transformation strategy is complicated by the hype, unrealistic promises and “cookie-cutter approaches” associated with the various technologies involved.

What can those technologies achieve? Are they a practical fit with existing organizational capabilities and evolving needs? Which solutions will actually achieve sales, profit and cost-reduction objectives?

Launching a digital “Hail Mary pass” and hoping for the best is not a winning strategy for CPG companies or retailers. Leaders must sort through a cacophony of confusing claims before they can identify the right game-changing solutions. In this paper, we separate those “signals” from all that “noise.”

<sup>1</sup> The Dialogic Group, LLC, 2019.



**NOISE: Digital technologies are THE answer to all retail challenges.**

During periods of crisis and confusion, it's natural to look for catch-all solutions (or even the "Hail Mary pass"). For the major players in today's global retail industry, digital technology has become the go-to answer for every business, operational or consumer-focused need.

How do you compete with the likes of Amazon or Alibaba? The world's most formidable e-commerce competitors are relentlessly data-driven and technologically adroit. The world is clearly moving in their direction. Consumers (especially the younger cohort) routinely demand lower prices, enhanced digital engagement and seamless omnichannel access.

Advanced digital technologies, such as AI, Deep Learning (DL), Machine Learning (ML), Natural Language Processing and Robotic Process Automation, promise an accelerated on-ramp to future retail industry success. Vendors of such technologies often claim their solutions will:



Optimize your supply chain



Drive sales and ROI through every channel



Increase shopper engagement and satisfaction



Collaborate better with retailers



Make accurate predictions and forecasts, and better, more timely decisions



Lower costs

When making technology buy decisions, many executives make a simple but fundamental mistake. With the encouragement of vendors and even internal IT departments, they focus on the technology solution first before they clearly identify the problem to solve.



We call that “Right to Left” thinking. Decision-makers need to reverse that tendency and think “Left to Right” instead.

**Practical Business Problem**

**Appropriate Insights and Data**

**The Right Technology Solution**

For example, let’s say supply chain costs have exploded because of high distribution expenses, persistent out-of-stocks (OOS) and a tight labor market. A Deep Learning (DL) solution that promises to resolve the interactions between a number of different variables might sound impressive and even game-changing, but that may be more AI-power than you need for the problem at hand. Instead, since simple recurring processes are at play, a Machine Learning (ML) solution might offer the best path for automating the steps involved and generating the efficiencies and cost-savings required.

DL might be exactly what you need, however, to predict and capitalize on real-time price elasticity for soft drinks at convenience stores in markets where variables like temperature swings or sporting events can generate sudden spikes in demand. Under those conditions, you would be better served with a tool capable of handling dynamic variables that interact in complex ways.

Kirk Wheeler, Senior Vice President of Global Sales and Marketing at Retail Solutions, Inc., (RSi) commented on these challenges: “When it comes to making sound technology decisions, you need to focus on the practical business challenges first then determine the data and insights required before getting to the solution that will help you achieve your goals.”

In other words, the right digital technology solution must be driven by the problem you want to solve.

Kirk also acknowledges that it’s easy for executives to think “too broadly” when it comes to digital transformation. “Focusing on a challenge like ‘engaging with millennials’ or ‘transforming the shopping experience’ can be galvanizing for an organization. But operationalizing a vision through technology requires breaking the components down into solvable business problems.”



**SIGNAL: “Clarify the business problem before deciding on the best technology solution.”**

## Lexicon of Terms

### **Artificial Intelligence (AI):**

The use of computer systems to “mimic” human intelligence to learn, reason and self-correct.

### **Machine Learning (ML):**

A branch of AI that gives systems the ability to learn and improve automatically without specific instructions.

### **Deep Learning (DL):**

A branch of ML that uses artificial neural networks and algorithms to solve complex problems and learn from large data sources.

### **Natural Language Processing:**

A branch of AI that uses computer programs to understand and process natural human language.

### **Robotic Process Automation:**

The use of AI and ML to manage high-volume repeatable tasks in place of humans.

### **Descriptive Analytics:**

The use of analytics to assess data for observable trends and patterns.

### **Predictive Analytics:**

The use of data mining, AI, ML and statistical modeling to forecast future events.



## **NOISE: "Retail data provide crucial, actionable insights."**

Everyone in the retail industry knows that the sector is "data rich" and "knowledge poor." Even so, the reality behind that statement is awesome to consider.

Over the past decade, data volumes have grown exponentially. We've raced past gigabytes and even terabytes of data and are now dealing in petabytes. To put that in context, a typical CPG manufacturer works with hundreds of retailers, generating a half trillion rows of data sets, compounded by a nearly infinite number of objects and attributes. Moreover, data flows may be structured or unstructured, and can be accessed through any variety of sources ranging from delivery trucks to the point-of-sale and apps on a consumer's smart phone.

How can you generate practical insights in near real-time to make quality decisions that will have a measureable and meaningful impact on business operations and outcomes?

Retail data can provide actionable insights but those insights can only be extracted via a robust data-management system. That platform must be capable of accessing a broad range of vital data sources at once, with high levels of granularity (store/product level), while accommodating structured and unstructured forms, in near real-time. Data must be collected, harmonized, cleansed and stored in large stacks in the cloud. Only then can the appropriate AI tools be leveraged to extract the information needed to make decisions in areas ranging from pricing products to running effective promotional campaigns or digital engagement strategies.



As an example, one major goal might be to leverage dynamic pricing to maximize revenues and customer engagement. Yet, the data required to operationalize such a strategy has a very short shelf-life. You won't be able to compete effectively on price if your data streams are more than an hour or two behind, or if they don't include all the relevant attributes and sources with the appropriately deep level of granularity.

In this case, businesses with older information systems start with a clear disadvantage. As Amit Jain, Chief Technology Officer at RSi, observes, "One of the problems many companies face is that their legacy tools can't work with this volume of data. You need to make progress replacing those systems or you'll be left behind or wiped out."

The question for the management team then becomes clear: What investments in new systems and capabilities should you make to solve your mission-critical business problems and achieve overall goals for growth, sales and margins?



## **SIGNAL: "Robust data management leads to actionable data insights that translate into meaningful business outcomes."**



## **NOISE: "Predictive analytics is a solution you can buy."**

Maximizing on-shelf availability (OSA) to solve the industry's massive and stubbornly persistent out-of-stocks (OOS) problem is among the biggest challenges plaguing the retail industry. To alleviate these pressures, CPG manufacturers and retailers are adopting complex predictive models driven by AI-based technology. Many vendors and IT experts insist that it's not only possible to attain near-perfect accuracy in those models, it's crucial to do so. Nothing else matters.

The truth is much more nuanced and complex. In fact, total accuracy may not even be desirable and could actually exacerbate the challenges you face.

Ask any statistician or economist: It's easy to attain a 99% accuracy rate. You simply need to reduce the number of variables involved. Unfortunately, that level of accuracy may not be very meaningful in the dynamic world of retail. You may end up with a model that predicts and proves nothing that actually happens in the real world.

A useful predictive model begins, over-time, to approximate real world events. In building such a model, you want to include as many pertinent and meaningful variables as possible. While this will degrade your accuracy rate at first, it will make your predictions more robust and reliable. The more attributions and conditions included in your model, the more useful it will be in helping predict what will happen to OOS's at some future moment.

In that sense, a 60% accuracy rate can be better than a 99% accuracy rate. 60% may reflect the actual level of certainty in real-world conditions. Knowing that it is 60% likely that some event will occur, you would be wise not to "bet the farm" on the absolute certainty of an expected outcome. Instead, you might hedge knowing that your confidence should be little better than a coin flip.

In contrast, if you believe that a specific outcome is 99% certain, you might make decisions about distribution or pricing with total confidence, unaware that you are likely to be completely wrong. Seen in that light, it's clear which level of certainty leads to higher quality decisions, and which to greater risk.

Accuracy levels can be improved over time. Particularly in complex situations, variables can be analyzed and studied at a deep level over many years to make predictions more robust and certain.

As RSi's Jain states, "It takes years of data with many variables and the right analytics to develop AI, ML or DL models that generate truly accurate predictions. Achieving accuracy by reducing the number of variables involved is not how science works."

---

**"It takes years of data with many variables and the right analytics to develop AI, ML or DL models that generate truly accurate predictions. Achieving accuracy by reducing the number of variables involved is not how science works."**

---



**SIGNAL: "Quality decisions should be based on realistic probability assessments not inflated accuracy levels."**



## **NOISE: "Predictive analytics is a solution you can buy."**

Predictive analytics is not an off-the-shelf product; it's an outcome of advanced analytics.

Predictive analytics, in other words, derives from a robust process. The starting point is "descriptive" analytics, which captures and describes what is happening in a given situation, allowing for trends and patterns to be observed. When that data is analyzed with machine learning, predictive modeling and other analytics techniques, future trends or events can be forecasted or predicted.

Those insights can then be further refined over time via consistent feedback loops until accuracy is enhanced, making better predictive decisions possible.

Consider a practical challenge as an example. Many CPG manufacturers focus on alert generation as a way to improve on-shelf availability (OSA). This requires operational connectivity and feedback. Alerts must be delivered in near real-time to enable the store to intercept what's happening on the shelf; otherwise, that information will not enable the store personnel to fix the shelves and improve availability and sales.

Instead of merely putting out fires by solving each specific out-of-stock issue in the moment, a model can be enhanced over time by investigating root causes and making recommendations that can mitigate or prevent the problem by solving some deeper, related issue. Is a persistent OSA issue due to a phantom inventory challenge, a missing shelf-tag, or a discontinued product that shouldn't have been stocked in the first place? Capturing that feedback helps refine the algorithm and create learning that will begin to predict the problem reliably and eventually remedy it.

Digital transformation should enable that level of insight. It is meant to give CPG manufacturers and retailers the ability to understand what's happening and why, while generating the learning necessary to solve problems before they happen. Ultimately, this path to learning improves efficiency, profitability, and the customer experience.

As Amit Jain says, "Every retailer deals with unique circumstances. Those patterns must be understood at a deep level to produce meaningful predictions. If your models are not designed to incorporate learnings specific to your situation, they won't generate useful predictions."

Not all problems are equal. Some interventions represent higher value solutions than others. In leveraging predictive analytics, you need to decide which areas to attack by strategically putting feedback loops in place that will enhance learning and improve outcomes over time. Even when a model is working well, it may be worth the effort to continue to improve it. There will always be new variables at play as stores experiment with how they organize and operate.



**SIGNAL: "Predictability requires engaging in deep learning and building consistent feedback loops. You can't just buy it outright."**



## NOISE: "Omnichannel is just a tech (AI) problem."

E-commerce retailers offer high levels of convenience and selection (and frequently competitive prices, too), which is why consumers are flocking to online shopping in ever increasing numbers. To compete on a more level playing field, CPG manufacturers and "traditional," bricks-and-mortar retailers are looking to AI to create omnichannel shopping opportunities that can keep consumers from permanently switching to the pure-play e-commerce brands.

But, this distorts the nature of the challenge at hand, and encourages those organizations to focus on technical solutions without making hard decisions about how their delivery channels and service offerings may need to be overhauled and reconfigured to succeed in omnichannel.

As the old saying goes, "If the only tool you have is a hammer, everything ends up looking like a nail."

---

**"By 2024, 70 percent of shopping will be e-commerce—shoppers will expect a seamless omnichannel experience, where products are described and identified identically in-store, online, in mobile apps and with proximity-driven promotions delivered directly to their smartphones."**

---

CPG manufacturers and their retailer partners should start their essential omnichannel journey by looking very closely at evolving consumer expectations and priorities. What is the value proposition that will satisfy their demands and even delight them beyond what an Amazon can offer? From there you turn to the appropriate digital solutions.

Perceptions of consumer needs are often framed through a company's existing strengths. A bricks-and-mortar retailer may believe the consumer wants a "great shopping experience." An e-commerce competitor may think only in terms of digital shopping and fulfillment. This is a trap that encourages executives to force-fit an omnichannel strategy to established delivery channels and operational capabilities.

The Food Marketing Institute (FMI) states the following in their 2019 guide to digitally engaged shoppers: "By 2024, 70 percent of shopping will be

e-commerce—shoppers will expect a seamless omnichannel experience, where products are described and identified identically in-store, online, in mobile apps and with proximity-driven promotions delivered directly to their smartphones."

What does the consumer actually want? What's the best channel to fulfill that need? Switching costs are very low. CPG manufacturers and retailers must be prepared to meet consumers' needs in the right way every time for every product.

At the same time, implementing an omnichannel system can have the unintended consequence of creating serious OOS problems for traditional stores. In the morning when store personnel pick the overnight e-commerce orders to fulfill consumers' click & collect orders, those actions may result in empty shelves later that day, leading to unhappy in-store shoppers. RSi has undertaken groundbreaking research into the OOS problems caused by the growing popularity of omnichannel, and joined together with FMI to publish the following white paper, "**Omnichannel: Integrated Forecasting and Fulfillment**". You can download this RSi/FMI white paper for free by clicking on the "Resources" tab at [www.retailsolutions.com](http://www.retailsolutions.com).

The bottom-line is that successfully executing on an omnichannel strategy necessitates some tough decisions, especially when it comes to investing in one channel, product or service over another. "Avoiding those choices," Kirk Wheeler warns, "puts CPG manufacturers and their retailer partners into a very uncertain gray zone. Today's e-commerce juggernauts will be more than happy to make those hard decisions for them."




---

**SIGNAL: "An effective omnichannel strategy starts with understanding customer priorities and demands. It then takes the smart use of technology to mitigate the unintended consequences, such as worsening OOS problems."**

---



## Developing a Winning Digital Strategy

Twenty years ago, IT was a rogue department in most organizations. Management considered the function separate and distinct from normal business lines, and gave lots of deference to their recommendations and budgetary requests.

Today, data technology and analytics are core components of business operations and strategy, akin to finance, marketing and operations. Management can no longer cede IT strategy, investment and deployment decisions to internal IT leaders or outside vendors. These decisions are too critical to the organization's operational capabilities and competitive positioning.

To develop the right digital transformation strategy, management must base their decisions on a practical, holistic understanding of what such technologies do, how they work and how the pieces fit together to achieve the organization's most important goals. That starts not with advanced technology like AI, ML or predictive analytics, but with a deep understanding of what consumers truly want and need, and what the competitive landscape requires for long term growth and success.

Retail visionary Thom Blischok states that retail is now entering a third wave of economic transformation, one that is based on intelligent digital technologies and automated processes, but that is also more interactive and personalized.

"The future is more digital and more human. Already, consumers have radically different attitudes and tastes. Those changes in behavior, preference and access will only accelerate over the next few years. A dramatically different supply chain and shopping infrastructure and experience will need to be built to meet their needs."

A successful digital transformation is the start of that journey. It can be accomplished by taking deliberate, manageable steps along the way. A good map separates the "signals" from the "noise," and lays out a clear path that will help you grow, profit and rule.

**To learn more, visit [www.retailsolutions.com](http://www.retailsolutions.com).**



**GLOBAL HEADQUARTERS**  
100 Century Center Court Suite 800  
San Jose, CA 95112 USA  
Phone: 650.390.6100 | Fax: 650.967.2209

**[WWW.RETAILSOLUTIONS.COM](http://WWW.RETAILSOLUTIONS.COM)**

### ABOUT RSi

RSi is the world's leading provider of proven, digital transformation technology solutions that enable CPG manufacturers and retailers to grow, profit and rule – from supply chain to shelf. Twenty-seven of the world's leading CPG companies and nearly 250 of the top retailers trust RSi's unparalleled industry knowledge, best-in-class technology solutions, and deep data expertise to generate greater productivity and profitability. CPGs and retailers recapture hundreds of millions of dollars in lost sales each year with RSi's OSAPower, the world's #1 on-shelf availability suite of solutions. RSi's employees, located in 20 locations across the globe, are passionate about empowering customers to rule the shelf, and own the future.