The Artful Science of Personalization: Intimacy at Scale

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Dimensions of Success: Supply Chain Mastery and Customer Intimacy

Two essential capabilities stand out as key to success in any retail model — supply chain mastery and customer intimacy. Well-oiled retail machines get the "rights of retail" right by optimizing the levers of supply chain excellence and orchestrating the intricacies of customer intimacy. The former ensures that the right merchandise is on hand to sell, and the latter ensures that there are loyal customers to buy it.

These two dimensions of retail alone aren't sufficient to create sustainable profitable growth. Other core capabilities complement and support them:

- Merchant skills in buying, assorting, pricing, and localizing seasonal, fashion, and basic assortments
- Operator skills in hiring, training, retaining, scheduling, and tasking store associates as well as executing last-mile tactics in supply chain, marketing, merchandising, and customer engagement
- Marketer skills in communicating brand values contextualized for "segments of one" across devices and channels that increasingly converge digital and physical environments
- eCommerce skills in creating scalable, reliable, flexible, configurable, and easily navigated commerce platforms with dynamically personalized relevant content

Advances in information technologies over the past two decades have changed the "rules of the game" in retail. These changes are creating the seemingly oxymoronic imperatives of "artful science" and "intimacy at scale." Advances in information technology — science at the scale and speed of retail — are extending the boundaries of creative exploration and practical implementation.

Supply Chain Mastery: The Search for Scale and Scope

In the old game of supply chain mastery, retailers "made do" with invisible inventory, shipments, and orders; latent batch planning isolated from execution; performance metrics isolated across functions and processes; and aggregated data for executional decision making. In a digitally transformed retail ecosystem of savvy consumers and competitors, the new game requires virtually universal visibility of "things" (e.g., an ecosystem of merchandise from supplier to customer). Acceptable data latency is compressed to various degrees toward zero across business processes. While still separate in many disciplines, continuous replanning integrally connected to execution is emerging as the norm.
Customer Intimacy: Relevance and Reciprocity

For all practical purposes, today's consumer is "always on" with "mobile first" access to information, social networks, and commerce sites. Consumers are nearly always able to act immediately. Today's consumer expects that his or her favorite retailers will create life relevance at every point of interaction.

Consumers' best experiences anywhere now form consumers' minimum expectations everywhere. In the old game of customer intimacy, retailers struggled, to their detriment and their customers' chagrin, to "make do" with noise across incongruent channels, paltry actionable customer insight, poor-quality aggregated data, and offline descriptive analytics with little if any in-context predictive or prescriptive value.

In the digitally transformed retail ecosystem of digitally savvy consumers and competitors, the new game of customer intimacy requires mastery of data of varied sorts, sources, and velocities; analytics that inform next best actions in the context of human communications unified across digital and face-to-face interactions; and omni-channel orchestration of touchpoints through time.

The "New Game" in Digital Transformation

Digital transformation (DX) of social, commercial, and personal aspects of life is creating new modes of interaction, varied sources of value, and more exacting expectations. Digital transformation has thrown retail into an epoch of change in ecommerce and omni-channel commerce. The inexorable digital transformation of retail will prove to be an accelerator of omni-channel change toward consumer empowerment and retailer agility.

Unfortunately, for retailers, that duality is not balanced. Billions of consumers globally will quickly and unpredictably change their individual behaviors within their own personal services webs as the majority of retailers struggle with transforming complex legacy organizational and business models, internal and ecosystems processes, and technologies to compete in the "new normal" of retail.

The IDC organizational model of digital transformation plays out in five dimensions — information at the core complemented by operational models, omni-experience, and worksourcing wrapped within a new leadership model. In the context of this document, three dimensions stand out — information DX, operating model DX, and omni-experience DX.

Information DX

Information-based digital transformation lies at the core of the emerging retail ecosystem of selling, consuming, marketing, operating, influencing, distributing, creating, and producing. Retailers emerging as leaders in this new ecosystem will have been the first movers in treating information as a core asset of no less importance in recognized value creation than people, communications, channels, supply chains, products, inventory, and localization. Successful first movers will have developed and leveraged the technology, skill, process, and data prerequisites of actionable information in the new fundamentals of retail.

Operating Model DX

Maturity in the digitally transformed retail supply chain model enables the enterprise to spend more time and energy focused on developing new products and services. It does this by integrating external digital connections to markets and suppliers with internal processes directly impacted by customer requirements.

Digital transformation for retail includes all participants in the supply chain, from suppliers to designers and eventually the warehouse, transportation, and store associates. They must all be in alignment for an optimized operation that the consumer perceives as seamless. By connecting people, processes, and technology with a single view of the truth throughout the supply chain, retailers will realize reduced loss due to excess inventory, stronger understanding of their standings from clearer information and communication, improved bottom lines, and better customer satisfaction and loyalty.
**Omni-Experience DX**

Digital transformation is needed to seamlessly leverage ecosystems and networks to enrich and improve communication and engagement, thus driving continually adaptive tactics that drive growth. Nothing short of a complete review and overhaul of the systems, processes, and technologies retailers have in place will be needed to satisfy the constituent (customer, employee, or partner) that seeks convenience, choice, and positive experiences. The change required is bigger than selecting a new mobile or marketing platform. The challenge is to rethink business models and governance models.

**New Game Scorecard and the "Shopper Bill of Rights"**

Originating in the four Ps model for marketing rights — price, promotion, product, and place — the rights of retail have evolved into a more comprehensive, nuanced, and exacting "shopper bill of rights" in the context of the empowered consumer. Place has evolved into coordination across dynamic sets of commercial and social channels that must be managed through omni-channel marketing orchestration.

Real-time data and goal-seeking predictive analytics are needed to ensure profitable fulfillment of demand within the new complexities of place in "shop anywhere, ship anywhere" commerce — a paradigm that's rapidly moving beyond the original omni-channel "buy online, pick up in store" model.

Complementing that, promotion has evolved into interactions across digital and physical channels within the consumer's expectation of persistent personalization along the path to purchase. The content of personalized communications is evolving from promotional marketing to guidance embedded in shoppable content marketing, befitting the expectation of always in-place mobile-first shoppers. Expectations for one-click commerce have quickly extended to payment and delivery.

**IDC Retail Insights Predictions**

Each year IDC Retail Insights and other IDC business units produce FutureScapes outlining the decision imperatives or planning assumptions IT and line-of-business executives should consider as they develop plans for the following 12–36 months. Four decision imperatives in particular pertain to the discussion of the artful science of personalization and intimacy at scale.

The first two — overhauling the digital front door and "cognitive everything" — come from IDC’s overall FutureScape for 2016. The second two — convergence of marketing and merchandising on advanced analytics and "have it your way" fulfillment — come from IDC Retail Insights’ FutureScape for 2016. As a whole, they provide a compelling context and rationale for accelerating digital transformation of retail information management, operating models, and omni-experience.

**Overhaul of the Digital Front Door**

IDC foresees a near-term future in which 80% of B2C and 60% of B2B enterprises will evolve their IT structure to support a 1,000-fold increase in consumer and customer touchpoints. This growth will come in part from greater reach along more paths to purchase. However, increasing the number of shoppers touched is not enough.

IDC Retail Insights anticipates the rapid emergence of "personal service webs" (PSWs) at the intersection of systems of engagement and shoppers’ digital cocoons. These are ecosystems of services, apps, and devices for billions of consumers globally that transform personal means of living. This aspect of digital transformation is driven by innovation accelerators — natural language interfaces, cognitive computing, the Internet of Things, and next-generation security.

PSWs are the arena of engagement, differentiation, and competition. A few household names make the point: Siri, Pandora, Google Maps and Waze, MyFitnessPal, and Fitbit and FuelBand. PSWs will create new relationships with consumers, value from new information flows, demand for new services, and conduits to deliver and monetize them at low marginal cost at scale.
"Cognitive Everything"

IDC foresees over 50% of developer teams embedding cognitive services in their apps by 2020 versus 1% today. Recent research from IDC indicates that 9.2% of retailers are implementing or have already deployed some type of cognitive system and that another 27.7% of retailers are either planning to do so or evaluating the possibility. We're seeing cognitive approaches play out in marketing and merchandising. Retailers are also adopting cognitive services, though few realize it, as their knowledge workers use their own intelligent personal assistants (e.g., Siri, Echo, Cortana, or others provisioned through corporate IT).

Marketing Convergence on Machine Learning

A variety of machine learning techniques have been around for years (e.g., in clustering algorithms and the optimization of complex processes). IDC Retail Insights expects the predictive foundations of recommendation engines and forecasting systems to converge on machine learning. This will create a foundation for collaboration among merchandising and marketing as both increasingly consume customer-centric data and sources other than sales for personalized promotions and overall sales forecasting and demand management.

While still few in number, results seen by early adopters of machine learning forecasting are impressive, with the most notable improvements realized in promotion-intensive categories and markets. A wave of fast followers are taking note. As more of consumer interactions are optimized and orchestrated by advanced algorithmic recommendation systems and sophisticated propensity-based hyper-segmentation techniques, their aggregate impact on demand will grow.

Emerging applications are applying machine learning and other cognitive sciences to score and recommend store-level assortments based on the buying propensities of local shoppers. Advanced retailers will coalesce their merchandising and marketing business processes on the convergence of sales forecasting and promotional recommendation data, methods, and processes.

"Have It Your Way" Fulfillment

IDC Retail Insights predicts that by 2017, the next wave of omni-channel retailers will invest in fulfillment "your way," driving dozens of retailers to make new supply chain analytics, planning, and execution investments. Consumers have the ability to find the product they want, when and how they want it, and will no longer conform to the standards set by retailers. Retailers that respond to consumers demanding more of their fulfillment method of preference will reap the benefits of increased sales and customer loyalty.

The notion of 360-degree customer insight seemed revolutionary and aspirational. It's neither now; rather, it's within reach as the scope of digital transformation has degraded its potential to bring about revolutionary change. Retailers need better market intelligence to match the information advantage that their customers enjoy.
Keys to Customer Intimacy at Scale

IDC Retail Insights believes that boiled down to core initiatives, the core metrics of customer intimacy at scale are profitable loyalty, inventory productivity, omni-channel customer empowerment, and efficient operational excellence. Achieving these goals in a digitally transformed retail ecosystem requires the capabilities discussed in the following sections.

Machine Learning for 360-Degree Orchestration

Long-in-the-tooth time-series approaches to forecasting that inform pricing, assortment, promotion, and other tactics have run their course. They fall far short of what's needed today. They were designed and tuned for a different era prior to elastic, scalable, subscription cloud environments; operationalized machine learning; inexpensive data storage; and the complexities, scale, and speed of omni-channel retail.

Retailers are now able to harvest insights from competitors’ strategies, market trends, and consumer behaviors. Leading retailers will take advantage of these advances for financial benefits, operational efficiencies, and customer loyalty.

A Holistic Customer Intimacy Evaluation Framework

Profitable customer intimacy strategies at scale need to be implemented analytically through a balanced scorecard approach. Strategic, tactical, and operational decisions need to be informed by a holistic measurement framework. The framework should incorporate descriptive, predictive, and prescriptive metrics for "narrow lens" concerns of decisions at hand in the context of their impacts on broader organizational concerns.

IDC Retail Insights believes that organizations seeking capabilities to operate their businesses with profitable customer intimacy at scale should keep their eyes on three markers as they evaluate their technology options:

- Machine learning on cloud optimized infrastructure
- Flexibility and configurability for continuous improvement
- Proven value already delivered in production at enterprise scale

In this process, there are three key pitfalls to avoid:

- **Looking for just another business intelligence (BI) tool**: Business intelligence has its place in reporting balanced scorecard metrics but falls well short of providing the broader set of holistic predictive and prescriptive analytics required for managing profitable customer intimacy at scale.

- **Expecting that a single tool has everything you need when you start**: While proven value delivered at enterprise scale is a necessary technology marker, it's important to realize that these are early days of rapid innovation. While in the past some vendors have tried to "freeze the market" with bold assertions about future products that never make it to market, that ploy doesn't work now in the context of accelerated release cycles. For instance, IDC predicts that 50% of developer teams will embed some aspect of cognitive in their product releases.

- **Shortchanging your own internal readiness in talent, organization, culture, technology**: Too often the biggest cost of rolling in new capabilities stems from *not* investing in talent and organizational change readiness for rapid roll-in of new capabilities. Excellence requires a balanced approach across five dimensions — leadership, organization, process management, data, and technology.
Considering Infor

Infor builds business applications with last-mile functionality and scientific insights for select industries, delivered as a cloud service. With 15,000 employees and customers in more than 200 countries and territories, Infor automates critical processes for industries including healthcare, manufacturing, fashion, wholesale distribution, hospitality, retail, and public sector.

Infor software helps eliminate the need for costly customization through embedded deep industry domain expertise. Headquartered in New York City, Infor is also home to one of the largest creative agencies in Manhattan, Hook & Loop, focused on delivering a user experience that is fun and engaging. Infor deploys its cloud applications primarily on the Amazon Web Services cloud and open source platforms.

Infor customers include:

- 18 of the top 20 aerospace companies
- 8 of the top 10 high-tech companies
- 10 of the top 10 pharmaceutical companies
- 22 of the 25 largest U.S. healthcare delivery networks
- 20 of the 20 largest U.S. cities
- 20 of the top 20 automotive suppliers
- 19 of the top 20 industrial distributors
- 18 of the top 20 global retailers
- 4 of the top 5 brewers
- 19 of the top 20 global banks
- 10 of the 10 largest global hotel brands
- 6 of the top 10 global luxury brands

Challenges

While Infor has been active in retail for some time, it only recently launched a strategic business unit focused on this vertical industry. That move includes developing from scratch core retail capabilities starting with item master and inventory master applications and evolving into a core merchandising system, a long-term effort extending well into next year. It also includes acquiring two retail application vendors: Predictix offers a suite of retail intelligence applications in pricing, promotions, merchandise financial planning, and assortment planning while focusing on existing assets. Starmount, the second acquisition, extends Infor CloudSuite Retail into store systems with a mobile-first product suite. Its Dynamic Science Lab complements Predictix' deep machine learning science. Impressive as these initiatives are individual and collectively, they comprise a lot of moving parts. Infor and Predictix have relied on development partners in many of these pursuits — with continued success requiring carefully coordination.

There are incumbents and start-ups in the retail-specific application markets Infor is entering. All have strengths, with weaknesses as well of course, and Infor’s success depends on beating both sets of competitors in delivery capabilities suited for the new and rapidly changing needs of retailers. Infor is placing a big bet. It’s been quite successful so far, but there’s a steep climb ahead.
Conclusion

IDC Retail Insights strongly believes that the new rules of retail put the industry on a wholly new playing field replete with new business models and competitors; informed, empowered, and connected customers; and continually emerging and interweaving channels. Millions of consumers in the United States and Europe, and billions globally, are quickly, easily, and unpredictably running deeper into digitally transformed lives. Most retailers are saddled with legacy systems, processes, data, and cultures. Adapting to and exploiting the realities of retail are as complex and fundamental as they are urgent and necessary.