BUSINESS STRATEGY

Business Strategy: The Dawn of a Golden Era — Recent Developments in Assortment Planning

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IDC RETAIL INSIGHTS OPINION

Assortment planning is the hub of merchandising strategies and tactics, with buying, pricing, space planning, and omni-channel decisions flowing from localized assortment ranges and breadths. Satisfying omni-channel shoppers, financial objectives, and operating constraints requires assortment planning capabilities that first- and second-generation applications simply do not offer. These systems are costly to maintain and often impossible to modernize to meet today's requirements. They are fully depreciated. The assortment planning market has a healthy mix of established and emerging vendors. New pricing models and SaaS cloud deployment options invite experimentation and innovation, with barriers to entering an attractive market falling. In this context, IDC Retail Insights surveyed the 12 leading assortment planning vendors with particular attention to innovations released in 2013, 2014, and 1Q15. The results of this survey and related research lead to the following conclusions:

- Assortment planning vendors are meeting market requirement better than ever.
- Vendors are on the right track responding to retailers' business needs; 51% focused on operational efficiencies to make planners more productive and 35% focused on revenue improvement.
- Vendors are also on the right track responding to retailers' needs for advanced yet simply executed insights. In particular, 32% of initiatives are delivering advanced forecasting and analytics and 16% are improving rules, methods, KPIs, and metrics.
- Very few initiatives (5%) are focused on bringing new customer and other data sources to bear on assortment decisions, perhaps leaving an important opportunity for new insights fallow.
- The number of innovations is increasing, from 46 in 2013 to 89 in 2014, and 26 in the first quarter of 2015. Advanced forecasting and analytics, rules, methods, KPIs, metrics, and integration saw the largest increase in the number of innovations. In terms of benefits addressed, operational efficiency and revenue improvement grew the most.
- Innovations in assortment planning will continue and seven broad emerging technology trends will increase their pace and quality, including ever more affordable technology, better planning-related data, open source analytics, cognitive systems, reduced system and process latencies, mobile and social collaboration, and design thinking.

IN THIS STUDY

Assortment planning is the hub of the wheel of merchandising strategies and tactics. Buying, localization, pricing and promotion, space allocation and visual merchandising, and replenishment and allocation decisions for stores and ecommerce channels flow from its range and breadth decisions. Omni-channel tactics too, especially the orchestration of endless aisles, click-and-collect shopping, and network-optimized order fulfillment tactics, depend in part on assortment planning decisions. It also sets the context in which planners and merchants manage vendors, make supply chain and distribution decisions, and achieve – or not – merchandise financial goals.

With its critical role in managing omni-channel complexities, retailers need more sophisticated assortment planning systems. This report presents a scan of leading vendors' recent efforts to improve 10 dimensions of their assortment planning applications (collapsed into seven for reporting purposes) and identifies the benefit areas these improvements address – revenue growth, operational efficiencies, cost reduction, and improved customer loyalty.

THE APPROACH

We surveyed 12 of the leading retail application vendors whose application portfolios include assortment planning. Vendors' self-reported innovations were released in 2013, 2014, and to date 2015 within an IDC Retail Insights framework that classified each innovation in three dimensions – innovation categories, primary type of benefit delivered, and examples of retailers gaining these benefits. Vendors described their innovations at length, all of which were substantial, and defended them as needed in interviews completed after our review of their written submissions. The parameters of this analysis are presented in Table 1.

TABLE 1

Study Dimensions

| Vendors	Innovation Categories	Benefit Types
7thonline - Aptos (formerly known as Epicor) - IBM - JDA - JustEnough - Logility - Oracle - Periscope, a McKinsey Solution - Predictix - SAP - SAS Institute - TXT Retail	- Advanced forecasting techniques, predictive/prescriptive analytics, clustering, and optimization - New customer (customer related) and other new data sources - Reporting analytics, KPIs, and metrics - Omni-channel capabilities - Plan seeding, versioning, and options - Planning methods/rules management - System performance improvements and advanced computing and storage technologies - User experience: images/visual content, data visualization, and so forth - Role-based process management - Integration to allocation, buying, and other systems	- Revenue improvement - Cost reduction - Shopper loyalty/RFM - Operational efficiency

Source: IDC Retail Insights, 2015

SITUATION OVERVIEW

Benefits Classes Addressed

The 12 leading assortment planning application vendors surveyed reported a total of 180 substantive innovations from 2013 to 1Q15. They have focused their efforts on improving operational efficiencies, which accounts for 51% of these innovations, and on increasing revenues, another 35% of innovations. The two other benefit classes, reducing costs and improving customer loyalty, have drawn much less attention, each accounting for approximately 7% of recent innovations (see Figure 1).

FIGURE 1

Benefits Classes Addressed
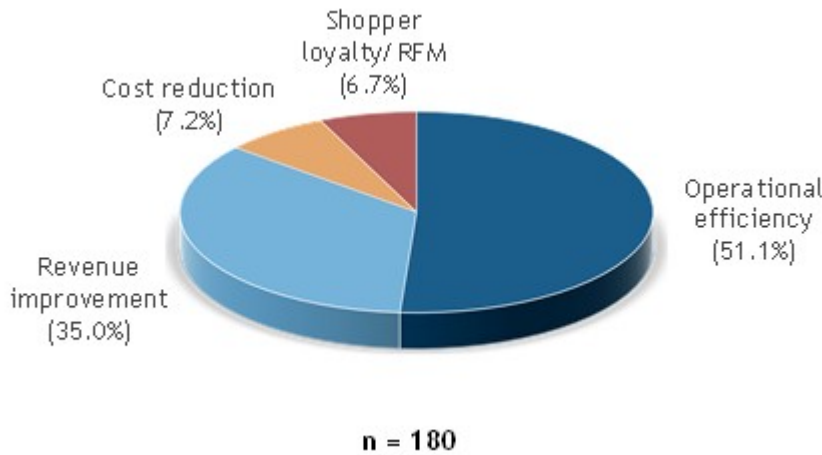
Source: IDC Retail Insight's *Assortment Planning Vendor Innovation Survey,* 2015

By this measure, buttressed by our analysis of the innovations, vendors are on the right track responding to retailers' technology and business objectives as mandated by market conditions:

- Improving merchant and planner productivity to shift the focus of their time and efforts to achieving commercial objectives and handling the complexities of omni-channel retailing

- Increasing revenue by improving assortment performance mainly in terms of localization, range breadth and depth, and pricing

That only 6.7% of initiatives are focused on shopper loyalty is worth noting as an indication of the continued parallelization or bifurcation of customer-centric initiatives undertaken by marketing and the product-centric strategies and tactics pursued by merchandising.

The wall between customer-centric marketing and product-centric assortment planning is starting to crumble. A plush toys company, for example, has organized its primary merchandise and assortment planning hierarchy to customer segments, not to product classes. The company balances assortments within these customer clusters to achieve merchandise financial plans.

The wall between customer-centric marketing and product-centric assortment planning is starting to crumble.
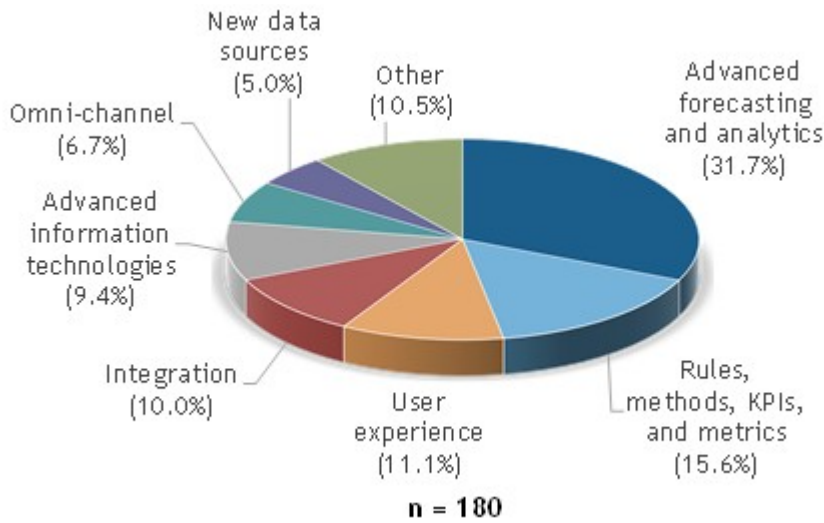
Domains of Innovation

Vendors have focused on delivering important capabilities to the market. As Figure 2 shows, they are concentrating their innovations in two areas that account for 48% of innovations:

- Advanced forecasting and analytics (32%)
- Rules, methods, KPIs, and metrics (16%)

FIGURE 2

Areas of Innovation

n = 180

Source: IDC Retail Insight's *Assortment Planning Vendor Innovation Survey,* 2015

From our point of view, assortment planning application vendors have their development efforts focused in the right direction – on advanced forecasting and analytics ranked first and rules, methods, KPIs, and metrics ranked second. A broad body of IDC and IDC Retail Insights research demonstrates that organizations that introduce new analytics and metrics are much more likely than competitors that introduce one or neither of these capabilities to achieve better results in the data-driven race to top performance. The remaining innovation areas complement and enable these must-have capabilities. They also drive operational efficiency in the production and application of insight from data.

In view of our body of research, Figure 2 suggests that assortment planning vendors are underserving another key capability that earmarks success – the introduction of new data sources. IDC and IDC Retail Insights market survey research and antidotal discussions across a range of industries strongly correlate utilization of new data sources with business success. At first glance, the paucity of initiatives identified as omni-channel in nature (7%) is another surprise. However, many of the initiatives in the more broadly adopted areas of innovation support omni-channel business capabilities.

We're seeing momentum gathering for a new approach to improving user experience – design thinking, although none of the assortment planning applications now on the market is based on this approach. As discussed in the Future Outlook section of this report, we expect to see the employment of design thinking in assortment planning application development within the next 12-18 months.

Benefit and Innovation Heat Map

We used a heat map to gauge the relationship between types of innovation and types of benefits. We found:

- Innovations in advanced forecasting and analytics predominate among initiatives aimed at increasing revenue and improving shopper loyalty, although the absolute number of such

innovations connected to revenue improvement was much higher than the number of innovations directed at shopper loyalty and customer RFM value benefits.

- Advanced information technologies and advanced forecasting and analytics are the most common initiatives aimed at cost reduction.
- Enablement of operational efficiencies spreads across six types of initiatives with none accounting for more than 25% and rules, methods, KPIs, metrics, and user experience initiatives being most common.
- Advanced forecasting and analytics account for 50% of initiatives focused on shopper loyalty and customer RFM values.
- While fewest in number, overall pluralities of new data and omni-channel initiatives address shopper loyalty and customer RFM value (see Figure 3).

FIGURE 3

Assortment Planning Innovation and Benefit Heat Map (% of Innovations)

	Cost Reduction (7% of Total)	Operational Efficiency (51% of Total)	Revenue Improvement (35% of Total)	Shopper Loyalty/RFM (7% of Total)
Advanced forecasting and analytics	23.1	10.9	60.3	50.0
Rules, methods, KPIs, and metrics	0.0	22.8	11.1	0.0
User experience	0.0	19.6	1.6	8.3
Integration	7.7	14.1	6.3	0.0
Advanced information technologies	38.5	10.9	1.6	8.3
Omni-channel	7.7	2.2	11.1	16.7
New data sources	7.7	3.3	4.8	16.7
Other	15.4	16.3	3.2	0.0

Red cells: >=50% of column; Yellow cells: >=20% of column; Gray cells: >=10% of column

n = 180

Source: IDC Retail Insight's *Assortment Planning Vendor Innovation Survey,* 2015

## Accelerating Pace of Innovation

Overall, vendors reported a total of 180 innovations since 2013, but only 161 of them could be assigned to a particular year. The number of innovation is accelerating, from 46 in 2013 to 89 in 2014, with an additional 26 released in the first quarter of 2015. Figure 4 shows initiatives arrayed by innovation area and Figure 5 shows them by type of benefit sought. In summary:

- In terms of innovations, the number of advanced forecasting and analytics initiatives grew from 17 in 2013 to 29 in 2014 with vendors increasing their rules, methods, KPIs, and metrics initiatives by the same number, 12. Integration initiatives grew by 8.
- In terms of benefits, overall vendors distributed their initiatives in just about constant proportions in 2013 and 2014, though in absolute numbers, operational efficiencies garnered

the most investment, and the number of initiatives addressed to this benefit class increased the most, by 21.

FIGURE 4

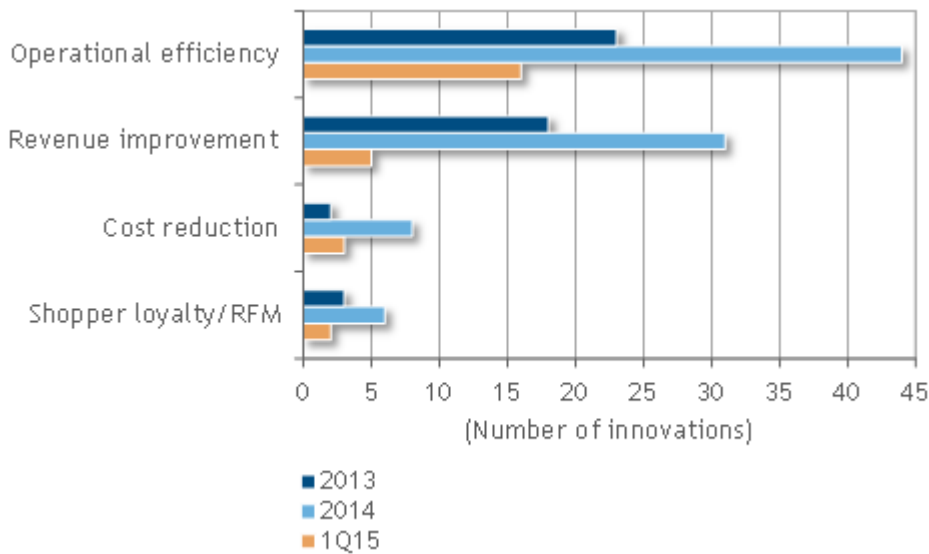**Assortment Planning Initiatives by Innovation Areas, 2013, 2014, and 1Q15**
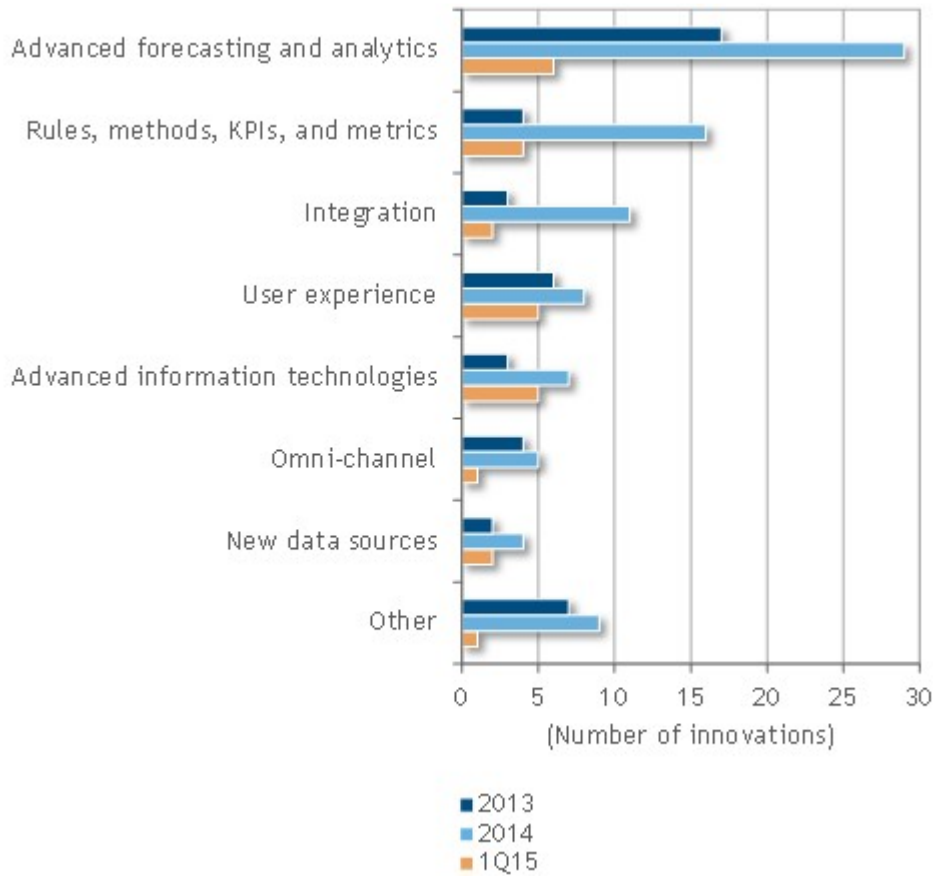
n = 161

Source: IDC Retail Insight's *Assortment Planning Vendor Innovation Survey,* 2015

FIGURE 5

Assortment Planning Initiatives by Benefit Areas, 2013, 2014, and 1Q15

n = 161

Source: IDC Retail Insight's *Assortment Planning Vendor Innovation Survey,* 2015

Trends in Assortment Planning Development

Vendors were given equal opportunity and a wide berth in reporting their initiatives in 2013, 2014, and 1Q15 with a simple instruction: "There's no need to list 'table stakes' capabilities – just what's new and innovative. This is *not* a request for information about all capabilities, but only a spotlight on recent innovation."
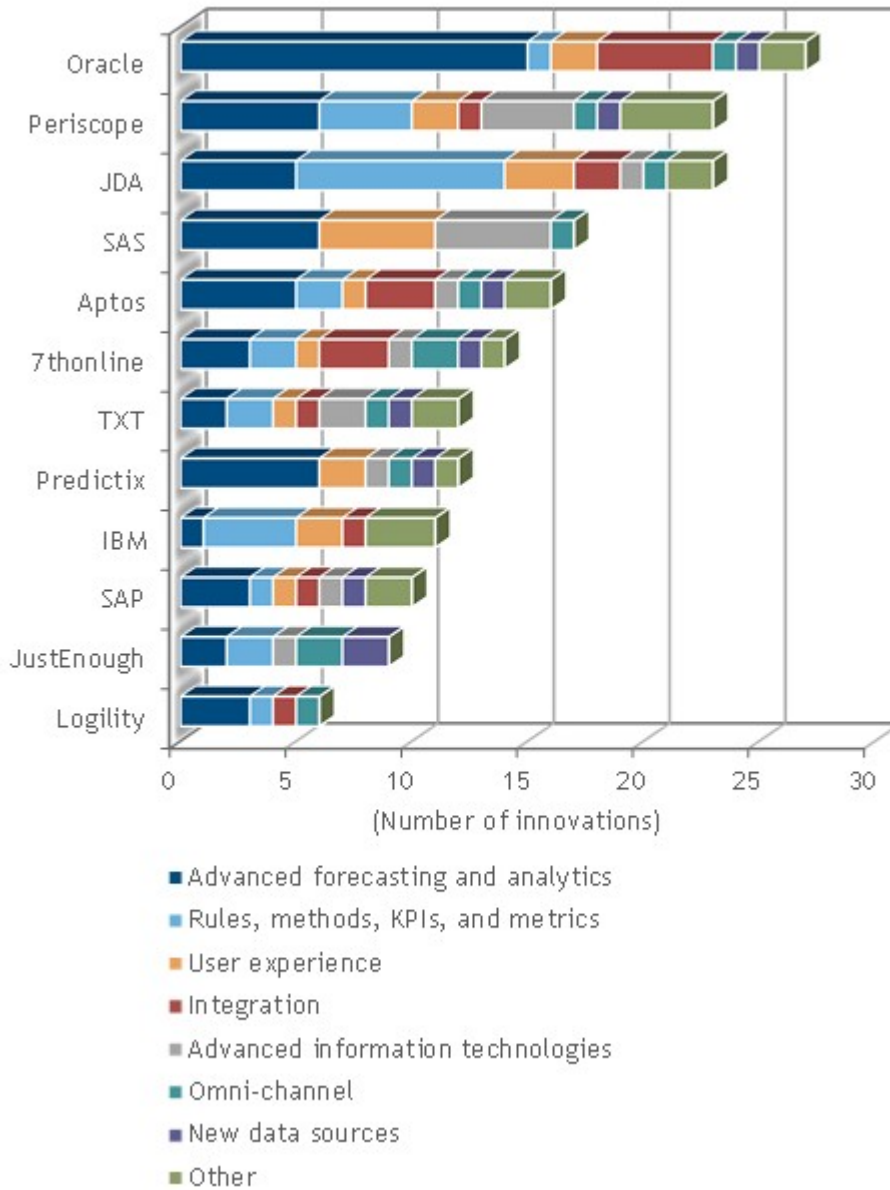
Technology Innovations

As shown in Figure 6, the total number of innovations ranged from 6 (Logility) to 27 (Oracle), with a mean of 15. The absolute number of innovations reported should not be taken as conclusive metric of the scope and pace of vendors' innovation. These numbers should be considered in conjunction with the impact of various innovations and the degree of parsing each vendor took in describing its innovations. For example, as discussed in this section, several of Oracle's 15 innovations in advanced forecasting and analytics are aspects of four basic areas of innovation.

From the perspective of the two most frequent types of innovation, Oracle focused the most on advanced forecasting and analytics – 56% of its total declared innovations, 15 in number. Oracle logged five innovations in integration, an important focus for Oracle overall, the most among all vendors. JDA focused more than other vendors on rules, methods, KPIs, and metrics – 39% of its total declared innovations, 9 in number.

FIGURE 6

Vendor's Innovation Initiatives

Advanced forecasting and analytics
Rules, methods, KPIs, and metrics
User experience
Integration
Advanced information technologies
Omni-channel
New data sources
Other

n = 180

Source: IDC Retail Insight's *Assortment Planning Vendor Innovation Survey,* 2015

The SAS Institute demonstrated a balanced, focused approach across its portfolio of 17 innovations –
6 in advanced forecasting and analytics, 5 each in user experience and advanced information
technologies, and 1 in omni-channel capabilities. Periscope also demonstrated a balanced approach,

focusing on advanced forecasting and analytics (6); rules, methods, KPIs, and metrics (4); and advanced information technologies (4).

Benefit Areas Addressed

Figure 7 shows three patterns as to how vendors distributed their efforts across two types of benefits most frequently addressed – operational efficiency and revenue improvement: a more or less equal split between the two or a focus on one or the other of the two benefit areas. 7thonline, Aptos, Predictix, Logility, and TXT Retail stood out as demonstrating the most even split between efficiencies and revenue growth. Oracle stood out proportionately by its focus on revenue improvement. The remaining vendors focused more on operational efficiencies, with JDA oriented the most that way in absolute terms and IBM oriented the most in that direction on a percentage basis.

FIGURE 7

Benefit Areas Addressed by Vendors
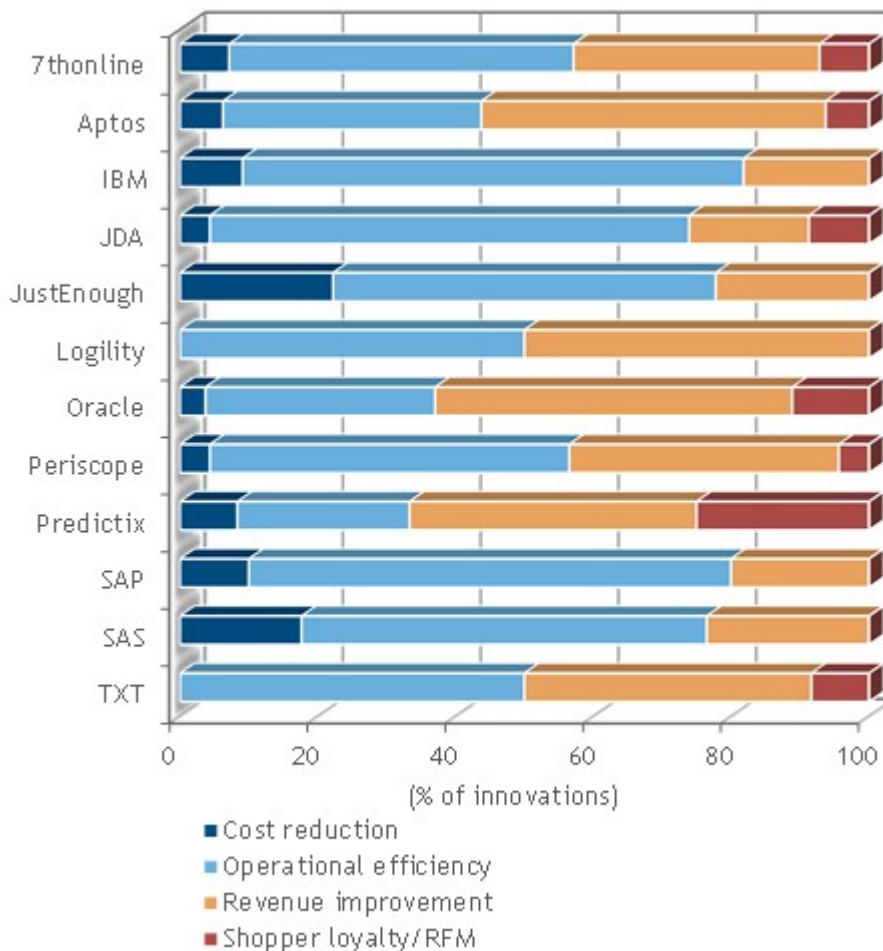
n = 180

Source: IDC Retail Insight's *Assortment Planning Vendor Innovation Survey,* 2015

Vendor Assortment Planning Innovation Profiles

This section focuses on the primary area(s) of each vendor's innovations.

7thonline

7thonline assortment planning now has a cloud-based SaaS deployment option. 7thonline's forecasting now supports daily ingestion of POS data with autotrend detection, life-cycle profiles, and seasonality. Store clusters can now be recommended based on sales by product attributes. Fashion allocation and transfer recommendations are now based on sell-through projections to maximize full-price sales/minimize markdowns.

For brands operating wholesale businesses, recent integration improvements enable custom mapping and direct integration to two leading retailers' order management systems. 7thonline now offers integration to PLM product information databases, supports shared attribute-based quantified conceptual assortment plans with designers, and integration to allocation systems.

7thonline introduced visual assortment planning in early 2013. At the same time, it introduced door-level style/color demand forecasting and ladder planning.

Aptos (Formerly Known as Epicor)

Aptos has focused its advanced forecasting and analytics efforts on improving localized assortments through enterprise BI and improved exception handling for better depth and breadth decisions, supported by size curve analytics; store clustering on configurable items, and store attributes and hierarchies; KPIs and metrics; multichannel views across the planning cycle; and enhancements to user experience.

Recent initiatives improve Aptos' pattern-based localized assortment performance "playbooks" designed to give buyers, planners, and allocators insight to adjust their assortment mix, alter the size and price balance, and shift delivery timing based on exception engine and forecasts.

A introduced a cloud deployment option in early 2015, as part of an overall technology strategy to move its enterprise applications footprint to the cloud. Its three major functional improvements — advanced store grading, localized assortment planning, and size profiling — can be deployed on their own or integrated into other vendors' buying and allocation systems and, of course, into its own allocation and buying applications.

IBM

IBM has focused on applying advanced forecasting and analytics to improve add/drop/keep decisions based on shopper behavior and demand transference analysis constrained by rules limiting the number of changes and protecting products specified by attributes and new products without sales history from deletion. Integration to space planning tools has been improved. Optimization can be directed to any weighted combination of user goals of margin, sales, units, and so forth. Enhanced reporting and visualization have been the other foci.

IBM has introduced several new capabilities in rules, methods, KPIs, and metrics, including new market coverage and store change reports that quantify revenue opportunities and make add/drop recommendations. Planners can now compare performance of scenarios on user-defined metrics and create custom reports.

JDA

JDA has focused its assortment planning initiatives on advanced forecasting and analytics; rules, methods, KPIs, and metrics; integration; omni-channel planning; and user experience. In advanced forecasting and analytics, JDA has delivered innovations in channel (store) and customer clustering to connect merchandise financial planning to width/depth decisions by customer attributes and segments. Advances in automatic in-season reforecasting can now quickly catch initial sales trending off forecast and later diversions to respond faster. Advanced heuristics solve for rationalized receipt plans, pack size configurations, and time-phased delivery subject to vendor constraints to keep assortments in stock more efficiently.

A key part of JDA's innovation in assortment planning hinges on the company's recent advances in machine learning clustering and forecasting techniques. JDA's recent efforts focus on scoring store cluster assortments by customer segments and using customer attributes as a basis for building store clusters. In late 2013, JDA introduced omni-channel-aware planning logic and visualizations including (in part) shared inventory pooling; goal setting by channel, omni-channel, and channel-specific assortments; aggregated omni-channel buying; and channel-specific product attributes and supply chain strategies. JDA introduced nine distinct innovations in rules, methods, KPIs, and metrics since 2013 – 39% of all such innovations.

Two 2015 innovations add mobility to the buyer's role and interactive image management supports visual ranging decisions.

JustEnough

JustEnough innovated in three primary areas since 2013 – new data sources, system performance, and analytics and forecasting. These were complemented by improvements in rules, methods, KPIs, and metrics and omni-channel capabilities. Architectural changes improved scalability. New logic and functionality support management of inventory investment and movement across channels. The diminishing rate-of-return logic constrains size/color depth for more realistic "smart start" seed assortment plans and direct open to buy to faster selling products.

JustEnough introduced advanced store clustering, across many data sets and dimensions to complement size/sales store grading for setting up assortment localization strategies. Introduction of space metrics and space requirements improves localization strategies' fit to store constraints to reduce risk of over/under assorting and connects buying and allocating to presentation. New product image view management streamlines and improves building of collections and visual merchandise presentation.

Logility

Logility has focused its recent innovations on advanced forecasting and analytics, integration, and time-phased omni-channel assortment planning. Forecasting and analytics have improved dynamic store clustering and store-level sales forecasts, with style/color/size attributes, to align assortment decisions to supply chain planning, including supplier sourcing as well.

Another introduction integrates store/item to chain-level assortment planning with the broader Logility supply chain and sourcing platform in addition to allocation. Integration with Logility Voyager Solutions' advanced analytics platform provides advanced alerts, diagnostic analytics, and KPIs for reporting and analysis. A new virtual warehouse enables companies to simultaneously plan assortments for multiple

channels. Business rules allow inventory to be "reserved" for a period of time and/or made available to other channels after a specific date.

Oracle

Oracle's 15 advanced forecasting and analytics initiatives address five primary areas, demonstrating wide application of statistical, clustering, and optimization in assortment planning:

- Consumer decision trees and demand transference, primarily addressing needs of retailers trading in grocery and consumer packaged goods
- Advanced multiattribute-based, dynamic, and flexible store clustering and microspace optimization
- Scenario-based (what-if) assortment creation (recommendations to fill the wedge) and swaps capability (to expand, contract, or refresh)
- Two areas of cross-promotional effects – halo and cannibalization effects and the net combinatorial impact of multiple concurrent promotions
- Returns forecasting

Two other related initiatives incorporate macro- and microspace optimization recommendations into the assortment planning process to align plans with upstream financial goals and metrics. Use of product images, sourced from any content management system, throughout all RPAS solutions (planning, supply chain, and optimization) improves the user experience.

On the integration front, Oracle is enhancing assortment planning with capabilities drawn from demand transference science, consideration of inventory positions during product transitions, promotional variants in replenishment decisions, and multilevel distribution.

Periscope, a McKinsey Solution

Periscope delivered key innovations in advanced forecasting and analytics, advanced information technologies, and rules, methods, KPIs, and metrics as well as a few significant miscellaneous ones falling into our "other" category. Advanced analytics focused on innovations in consumer decision trees (based on disaggregated loyalty card data or solely from online data) and application of trees to accurately predict consumer purchase behavior by store cluster. Innovations in advanced information technologies included a tenfold improvement in performance, support for a "massive" number of simulations, automated data updating and quality assurance, and ability to analyze billions of transactions via Hadoop technology.

Periscope introduced structured analysis of customer shopping behavior and integration of online assortment information from various Web channels product intelligence data analytics. A new iPad game helps users grasp difficult concepts and a new elearning program helps merchants refresh their knowledge of the application. Plan seeding now helps planners build supply chain-friendly store-level assortments, simulation wizards improve planners' efficiency, and autocompletion of "playbooks" help merchants work through complex standard processes.

Predictix

Predictix introduced new capabilities of particular note in advanced forecasting and analytics, advanced information technology, and rules, methods, KPIs, and metrics. It is an early adopter of machine learning-based forecasting for better insight into demand drivers, more granular forecasts, and new SKU Forecasts not based on imperfect model or like-item SKUs. The assortment planning

application simulates financial and operational results from alternative assortments. Advanced clustering localizes assortment based on customer buying preferences, complementing or replacing size/sales store grading systems. Advanced attribute-based demand modeling maximizes incrementality and minimizes attribute redundancy.

Since early 2014, Predictix has supported automatic assortment suggestions in view of overall objectives, clusters, supply chain limits based on inventory, units, sales, profit, and GMROI considerations. Last, in the area of advanced forecasting and analytics, Predictix now supports recommendations of assortments configuration to match customer trends, vendor choice preferences, space efficiencies, and cross-channel signals.

An early 2013 innovation enables planning combined offers online and in-store. More recently, Predictix improved assortment planning with less than perfect information on store-level space constraints.

Since 2014, Predictix has introduced two key user experience innovations – a mobile interface in early 2014 and a Google Docs-like HTML5 environment that supports collaboration on a plan instead of individually, sequentially checking out/checking in individual pieces of a plan, in early 2015.

SAP

Introduced in 2014, SAP Assortment Planning for Retail is a native HANA application taking advantage of the platform's in-memory database architecture for speed and scale as well as the company's expanding application portfolio. SAP HANA's advanced technology supports real-time planning calculations based on store item metrics, goal-seeking store clustering leveraging historical product and customer behavior data, and other advanced modeling and predictive analytics. Predictive analytics support new product forecasts and recommend carryover (add/drop/retain) products.

SAP Assortment Planning sits on top of SAP Consumer Activity Repository (CAR), a unified data, analytics, predictive, real-time inventory, and applications platform. CAR brings a customer's transaction history across all channels into a single location. CAR enables customer insight for both analytical and planning applications to help achieve customer-centric retailing. SAP Assortment Planning and other retail planning applications sit on top of CAR and leverage the same master data, sales history, omni-channel customer transaction data, inventory data, unified demand forecast, and a predictive analytics library.

SAP Assortment Planning is integrated to merchandise financial planning and open to buy. An advanced rules engine ensures order of precedence execution of KPIs and cascading calculations in complex simulations across planning workbooks.

SAP Assortment Planning utilizes SAP Fiori, providing a fresh, intuitive role-based user experience for enterprise deployment with responsive design for a consistent experience across desktop, tablets, and mobile devices. It offers consumer-grade simplicity and flexibility with enterprise-grade power, supporting task guidance and workflow management.

SAS Institute

SAS Institute's reported initiatives in advanced forecasting and analytics present significant advances in the use of science to identify and score attributes for optimizing assortments. Core thrusts are identifying the attributes that influence purchases and presenting statistically driven recommendations for localized assorting and buying. There are new capabilities in product rationalization (add, drop, and

keep) based on configurable KPI scores and assortment building capabilities discussed confidentially. Another advance is assortment recommendations that maximize store-by-store return on space based on the store's specific space, available products, customer scores, and merchandising constraints. Product selection, facings, and inventory recommendations are made by SKU and channel/store.

SAS' initiatives in advanced information technology have focused on support for the latest version of the SAS platform and SAS Web application server, enhanced analytical infrastructure enabling the creation of custom analytics based on individual customers intellectual property, a variety of performance improvements (some disclosed under NDA), and new deployment options (also discussed under NDA). Support of Linux and Citrix offers customers lower cost of ownership options.

User experience improvements have focused on integration with SAS Visual Analytics, adding new customer data sources, workflow and UI enhancements, ongoing improvements in assortment creating process (like item functionality), and KPI displays, editing, and scaling.

TXT Retail

TXT Retail has delivered a balanced set of innovations in its assortment planning over the past two years, with key advances especially in advanced forecasting and analytics, advanced information technology, new data sources, omni-channel management, and rules, methods, KPIs, and metrics.

Key improvements in advanced forecasting and analytics include support of clustering based on a wide range of variables – KPIs as well as product, channel, and customer attributes for delineation of multilevel or dimensional groups (e.g., more precise matching of customer segments with product attributes and setting the stage for customer-focused assortments). This supports the development of assortments based on a combination of merchandising KPIs, such as item productivity and weighted customer segment attributes.

Improvements in forecasting support better parameter cleansing and management (e.g., promotions history) for more accurate life-cycle key item planning.

New advanced information technologies include an in-memory calculation and simulation engine supporting analysis of larger data sets and Microsoft Azure deployment option of some functionality. The in-memory engine supports many more complex planning methods. An important omni-channel improvement supports flexible single and channel inventory pooling options as well as central or distributed assortment planning.

Recent improvements in rules, methods, KPIs, and metrics include linked mass data management and calculation methods supporting complex simulations and more choices across merchandise strategies. A second key innovation in this area, exploitation of Microsoft Power BI, leverages that vendor's innovations.

TXT Retail delivered two important innovations in user experience management – mobile device support to enable assortment reviews "in market" and presentation of product images in assortment planning.

Dawn of the Golden Era of Assortment Planning

Our review of recent initiatives in assortment planning conducted for this report and our ongoing assessment of the needs of retailers make clear that assortment planning software vendors are stepping up to address market requirements in ways that exceed their prior efforts. Notably, their success comes against the backdrop of retailers' needs for assortment planning capabilities to manage the omni-channel complexities of satisfying the expectations of discerning informed and interconnected smartphone-carrying shoppers, and doing so profitably and efficiently.

The Wildcards of Next-Generation Assortment Planning

Executable Omni-Channel Customer-Centric Assortments

Successful assortments satisfy customer demand at an acceptable profit. The notion that the be-all and end-all of assortment planning lies in *presenting* assortments in-store or online doesn't meet the mark in a world where customers expect to get what they want when they want at a price they're willing to pay. This new threshold of omni-channel customer satisfaction blurs conventional distinctions between assorting, allocating, and replenishing stock and fulfilling orders. The financial and operational calculus of assortment optimization and these adjacent processes need to be aware of trade-offs among them and impacts on the new customer's expectations. Ship-from-store fulfillment strategies, for example, change the functional purpose of the merchandise inventory each store carries.

Highest and Best Use of Store Space

It used to be that when it came to space, assortments were king. While the practices, analytics, and processes of optimized space planning today are a far cry from the old mantra of "pile them high and watch them fly," allocation of space still rests on the premise that carrying merchandise is always the highest and best use of any store space.

That assumption is no longer valid. Stores serve as experience, learning, and fulfillment centers. Fixed-place and mobile interactive devices and digital content demand space to create a customer experience.

Drivers of Market Developments to Watch

Broad Emerging Trends

We see plenty of evidence that strongly suggests the emergence of a "golden era" of commercially available assortment planning software. Other trends and developments in enterprise application software complement leading vendors' recent track records in assortment planning innovation. Each of these vendors has the opportunity to take advantage of the following developments:

- Increasingly easily accessible and affordable compute, store, and network capacities
- Availability of better planning-related data (all better data isn't big and all big data isn't better)
- Access to advanced analytics software (open source and proprietary)
- Emergence of cognitive systems for ingesting, organizing, and analyzing unstructured data
- Continued reduction in system and process latency for actionable quick-turn insights
- Adoption of process-improving social and mobile business collaboration platforms

- Emergence of design thinking to enable consumer-grade "better to use" applications

Each of these developments can improve assortment planning systems and processes. For example, the first three combine to improve the quality and quantity of the high-resolution insight required for precision localization, omni-channel orchestration of assortments, and more efficient buying plans. Building on these capabilities, social and mobile business collaboration platforms will enable buyers to be much more effective in executing on available insights while "in market." Collaboration platforms will improve productivity and enable, culture permitting, contributions from store personnel in buying and localization decisions.

Market Dynamics

On its supply side, the assortment planning market has a healthy mix of established and emerging vendors. Acquisitions have panned out, if only in some cases after rocky starts. Barriers to entry into this attractive market are rather low and falling. New pricing models invite experimentation and innovation. Some technology services companies with advanced domain and industry expertise are eager to convert their intellectual property assets into high-margin application software. Finally, a growing number of retailers are seeing success in their adoption of wholly new approaches to supporting their assortment and buying decisions with better insight. Collective intelligence platforms, notably from First Insight, are gaining traction among fashion apparel and footwear retailers as providing better predictive analytics in sales volumes, life-cycle pricing, and localization, and incumbent assortment planning vendors have noticed this.

Dynamics on the demand side of the assortment planning market will encourage vendor innovation, replacement of existing systems, and first-time purchases. First- and second-generation assortment planning assets are fully depreciated, costly and difficult to maintain, and suffer inherent technology limitations that thwart innovation and alignment within omni-channel requirements. Legacy assortment planning applications simply fall short in key omni-channel requirements even as retailers strive for more profitable customer-engaging omni-channel operations. Brands with wholesale businesses and expanding to direct-to-consumer retail businesses represent an expanding segment of the assortment planning market with unique requirements. The people side of the equation will increase investment in new assortment applications. Talented millennials expect consumer-grade user experiences. The short supply of data scientists and the need for science-based predictive and prescriptive analytics combine to increase the need for bringing cognitive capabilities (e.g., natural language queries) to bear on complex assortment planning decision making.

ESSENTIAL GUIDANCE

Actions to Consider

- Look at your assortment planning assets as the hub of merchandising strategies and tactics that drive revenue, margin, working capital efficiency, and customer value.
- Evaluate how well or not these assets help you meet your financial, operating, and customer satisfaction goals today. Then play out what it will take to meet these goals over the next two to five years, especially in terms of pace, scale, value, and risk of the assortment decisions you will be making.
- Map the gaps between as-is capabilities and near-term requirement, paying particular attention to the dimensions covered in this report – categories of innovation and types of benefits (refer back to Table 1).

Related Research

- *Perspective: JDA Focuses on Delivering in 2015 and Beyond* (IDC Retail Insights #RI256656, June 2015)
- *World of Watson 2015 – IBM and Partners Accelerate Cognitive Computing* (IDC #256592, June 2015)
- *Perspective: Epicor Retail "SpinCo" – The Prequel* (IDC Retail Insights #RI256490, June 2015)
- *Perspective: It's Time to Rethink Forecasting* (IDC Retail Insights #RI253169, December 2014)

Synopsis

This IDC Retail Insights report presents the results of IDC Retail Insights research into recent innovations from 12 leading assortment planning vendors and analyzes forces defining the dawn of a golden era of assortment planning. A healthy mix of established and emerging vendors of the assortment planning market is taking advantage of broad emerging information technologies trends to innovate. Assortment planning is the hub of the wheel of merchandising strategies and tactics. Buying, localization, pricing and promotion, space allocation and visual merchandising, replenishment and allocation decisions, and omni-channel tactics flow from its range and breadth decisions. Retailers need more capable assortment planning applications to manage complexities for profitable results and customer satisfaction.

"First- and second-generation assortment planning applications simply aren't up to snuff against today's requirements, to say nothing of tomorrow's needs," said Greg Girard, program director, IDC Retail Insights: Worldwide Omni-Channel Retail Analytics. "Assortment planning application vendors have redoubled their efforts of late and are bringing new capabilities to market," he continued.

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