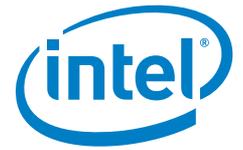


SOLUTION BRIEF

Retail, Hospitality & Consumer Goods
Data-Driven Retail



Omnichannel Analytics Deliver a Unified Truth for Improved Customer Experience

Real-Time, Analytics-Driven Insights Speed Better Decision Making and Decrease Time to Value.

“Customer insight and intimacy is one of Sobeys’ strategic pillars. With SAS* analytics, we can understand who our key customers are, as well as understand the different types of customer we have by individual market.”

Clinton Keay
Chief Financial Officer
Sobeys

Industry Strategic Challenges

In today’s unified commerce environment, retailers are inundated with massive amounts of data from multiple sources every day. Success depends on their ability to interpret and act on this data quickly and accurately. Faster is decidedly better. Companies that proactively use advanced analytics achieve better business results, such as more effective marketing and streamlined merchandising. Solutions from SAS* have been helping retailers speed time to value since 1976. Now, omnichannel analytics with the power and performance of next-generation Intel® Xeon® processors make it possible for retailers to run more complex analysis in even less time.

The retail landscape is continuously evolving, as is the role of digital technology in the consumer journey. Today, many purchasing decisions are made online rather than in a store. Targeting customers online with the right offer at the right time can be critical to success—particularly for retailers of longer-life products who have a limited opportunity at the end of a product’s life cycle when a customer is most likely to be considering a new purchase. Companies that use

analytics to proactively predict when customers will be in the market and approach them in advance significantly increase the efficiency of their marketing investment.

Similarly, merchandising decisions have become increasingly granular and customer-centric as digital commerce has influenced consumer expectations and made shopping a much more transparent process. If a store doesn’t have in stock the item a customer wants, the customer can easily go online to the competition and buy it from them instead. To achieve financial success, retailers know that they must be able to tailor store-level assortments based on a comprehensive understanding of in-store and online demand, while at the same time minimizing cost and complexity.

Flexible and scalable solutions with built-in omnichannel analytics from SAS integrate anticipated consumer behavior and market conditions into e-commerce and physical inventory processes. Optimization and machine learning make it possible to run complex analysis across large data sets rapidly to gain deep insight into critical business issues—the key to meeting the challenges of retailing in the digital age.

Industry Trends

 **28%**

In-store sales influenced by mobile devices used before or during shopping trips²

82%

Say that brands could have retained them with more seamless cross-channel experiences³

Business Drivers and Desired Outcomes

Advanced analytics are already providing a variety of revenue-generating and cost-saving benefits to retailers. And the enhanced power and performance of the latest computing technology will speed the delivery of these benefits:

- More efficient and effective marketing programs
- Smarter, fact-based decisions
- Relevant, personalized customer interactions
- Increased customer satisfaction and fewer out-of-stock events
- Streamlined operations and data retrieval

Enabling Digital Transformation

Advanced analytics are at the heart of a successful transformation from brick and mortar to unified commerce retailing. Together, Intel and SAS are supporting this transformation with high-performance tools that speed time to insight for better decision making and real-time responsiveness.

Solution Overview

Retailers rely on innovative solutions from SAS and Intel to help them know their customers better. This deep knowledge allows them to design personalized shopping experiences that forge tighter connections between retailers and shoppers. In-depth insights also enable more effective marketing, merchandising and operational planning, ultimately improving the bottom line. Now, more powerful Intel Xeon processors are making it possible to achieve these results in significantly less time.

**UP TO 17X
PERFORMANCE WITH
HEADROOM TO GROW¹**

10110
001
101
11010



More complex analysis and deeper business insights in less time. With larger data sets.

¹ Software and workloads used in performance tests may have been optimized for performance only on Intel microprocessors.

Performance tests, such as SYSmark and MobileMark, are measured using specific computer systems, components, software, operations and functions. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when combined with other products. For more complete information, visit <http://www.intel.com/performance>.

From a test reported by Principled Technologies - Get all the facts at http://www.principledtechnologies.com/SAS/SAS_Intel_E7v4_info-graphic_0716.pdf



Timely, Targeted, Data-driven Decision Making Throughout the Business

SAS Omnichannel analytics solutions make it easy for retailers to quickly make sense of massive amounts of data for better, more proactive, business decision making. They start by bringing together multiple sources of data, including big data sources from third parties and social networks, for a single, holistic view of customers, merchandise, marketing plans, and operations. With this single source of the truth to build on, SAS analytics provide an understanding of what is happening in the business and why it is happening, along with providing retailers with insights into what they can do to get more from resources such as merchandise, promotions, supply chain, and store operations.

New and emerging technologies such as the Internet of Things, analytics at the edge, event stream processing and real-time decisioning provide retailers with new capabilities that allow them to connect to customers in new ways. These technologies make it easy to provide customers with relevant content and help them enjoy a more satisfying shopping experience, whether in-store, online, or wherever they may be.

By including all of this customer and transactional data, along with social networking information, in their merchandise and planning analytics, retailers will be better positioned to have the right products in the right place, at the right time and for the right price.

Business Functional Architecture

At the business level, SAS provides a range of solutions for Retail spanning Marketing, Merchandising, Supply Chain, Sales and Operations. Today these solutions are built on SAS Omnichannel analytics, supported by Intel® architecture. This foundation of the SAS platform on Intel architecture leads to business solutions with the highest levels of performance, reliability and manageability, tied securely into a retailer's broader technology architecture, both in the data center and in the store.

SAS Omnichannel analytics solutions based on Intel architecture enable better strategic decision making throughout the business:

Marketing

- Increase the effectiveness of marketing campaigns to yield increased sales and improved return on marketing investments.
- Predict performance of campaigns and balance marketing investments.
- Communicate effectively across all channels.

Merchandising

- Improve localized assortment planning with store and SKU granularity.
- Reduce out-of-stock events and the need for markdowns with better size profiles based on location SKU.
- Plan more accurately for future seasons with attribute analysis.

Supply Chain

- Deliver better customer service with lower levels of inventory and reduced supply chain costs.
- Ensure that the right product is available at the exact location and time needed.
- Understand demand across all channels, service levels, shipping and fulfillment costs.
- Optimize profit margins and increase revenue.

Sales

- Determine the best price based on multiple factors, across all channels.
- Optimize promotional prices and ad placement with demand modeling and forecasting.
- Mark items down at the right time to maximize margins and inventory sell-through.

Operations

- Enable business value creation and drive efficiency in all aspects of the business.
- Speed reporting cycles for more timely decision making and executive insights.
- Create a culture of analytics with self service tools.
- Improve customer satisfaction and experience in-store.
- Detect suspicious cyberactivity and fraud, and more accurately calculate risk.

Analytics Value in Retail

 <p>MARKETING OPTIMIZATION</p>	 <p>SUPPLY CHAIN PLANNING</p>	 <p>MERCHANDISE INTELLIGENCE</p>	 <p>SALES & REVENUE OPTIMIZATION</p>	 <p>INFORMATION TECHNOLOGY</p>
<p>Marketing Optimization Campaign Management Customer Analytics...</p>	<p>Demand Management Inventory Optimization Market Simulation...</p>	<p>Merchandise Assortment Planning Size Profiling/Pack Optimization...</p>	<p>Regular Price Optimization Promotion Price Optimization Markdown Optimization...</p>	<p>Analytics CoE Cyber Security Data Management..</p>
<ul style="list-style-type: none"> Establish Unified Commerce capability Improve campaign effectiveness Improve return on marketing investments Increase sales Improve LTV of customers 	<ul style="list-style-type: none"> Better customer service, lower inventories, lower supply chain costs Ensure right product at right place at right time in the right quantity Optimize profit margins & grow revenue 	<ul style="list-style-type: none"> Localized Assortment Planning, Store and SKU granularity Size profiles based on location/SKU, resulting in fewer Out-of-Stocks and less Markdowns Attribute analysis helps with future season planning 	<ul style="list-style-type: none"> Set the best price based on multiple factors Optimize promotional price and ad placement using demand modeling and forecasting Make critical markdown decisions quickly maximizing margins and inventory sell-through 	<ul style="list-style-type: none"> Create culture of analytics Enable business value creation Improve customer satisfaction Detect suspicious cyber-activity

BIG DATA, HIGH PERFORMANCE ANALYTICS, ANALYTICS AT THE EDGE, REAL-TIME DECISIONING, MACHINE LEARNING

Intel® Technology Foundation

Investing in the tools required for advanced analytics yields a rapid return on investment (ROI)—one that's accelerated by previous Big Data investments. The algorithms involved in advanced analytics differ from those involved in Big Data in that they often need to work on large data sets in memory. In addition, advanced analytics moves attention from clouds of low-cost compute nodes to higher-performance nodes. This requires powerful servers, on-board, blazingly-fast memory and high-speed solid-state drive storage—all connected through the highest-performing networks. Intel is supporting the growth in data-driven retail with the best solution components in all of these areas—CPU, memory, storage and networking—along with the end-to-end security that protecting retail customers demands.

Intel® Technology-Based Servers
 Intel® Storage
 Intel® Security
 Intel® Networking Solutions
 Data Center Management
 Internet of Things

Where to Get More Information

Are you interested in finding out more about the SAS Modernization Program? Please contact your SAS sales representative or visit us on our website at: sas.com/intel or www.intel.com/sas.



² Deloitte, "Navigating the Digital Divide," May 2015.

³ Accenture's Global Consumer Pulse Survey, Sept. 2016.

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