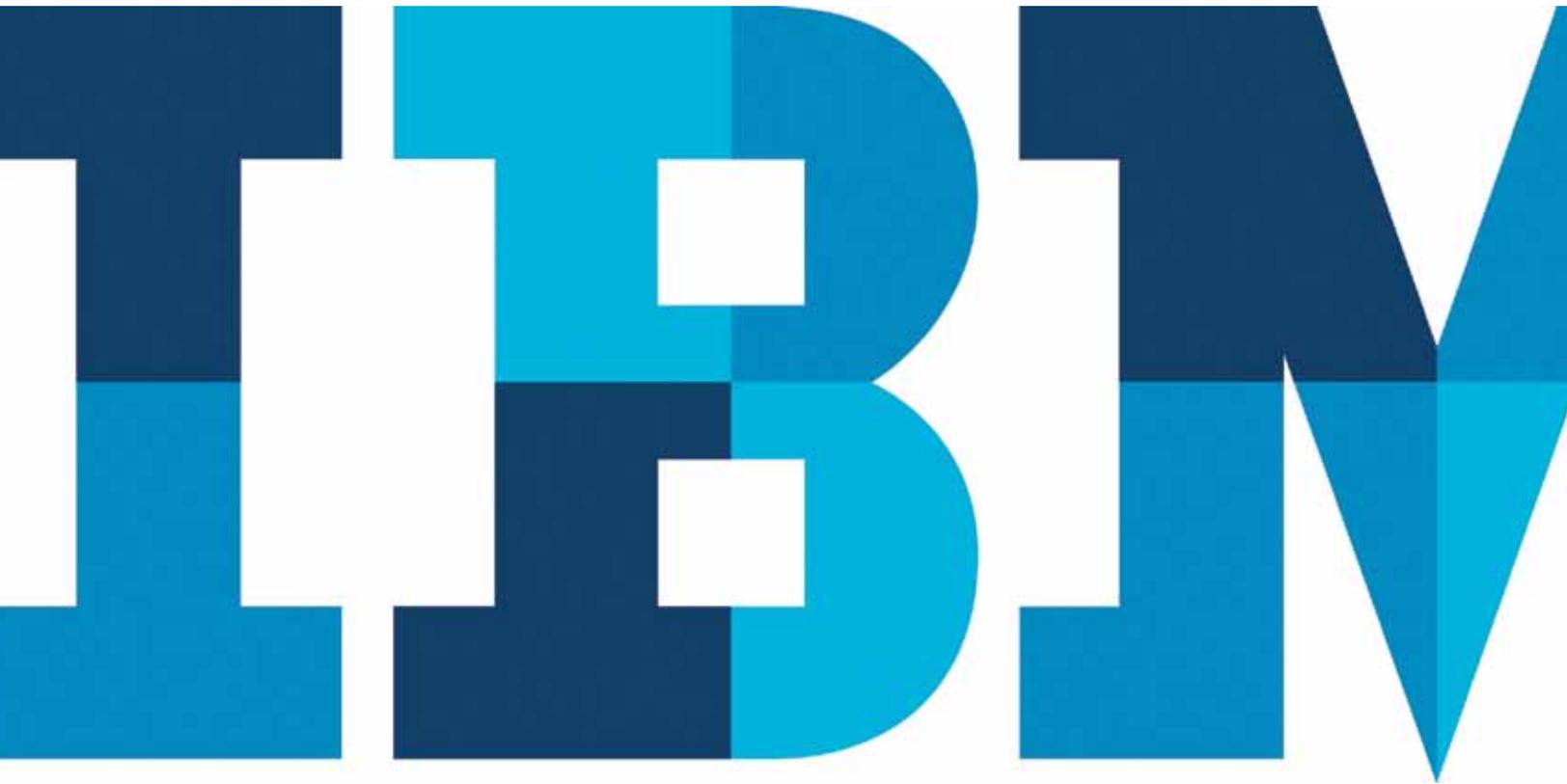


# Customer Intelligence Appliance

*An appliance-based joint solution for omni-channel customer analytics from IBM and Aginity*



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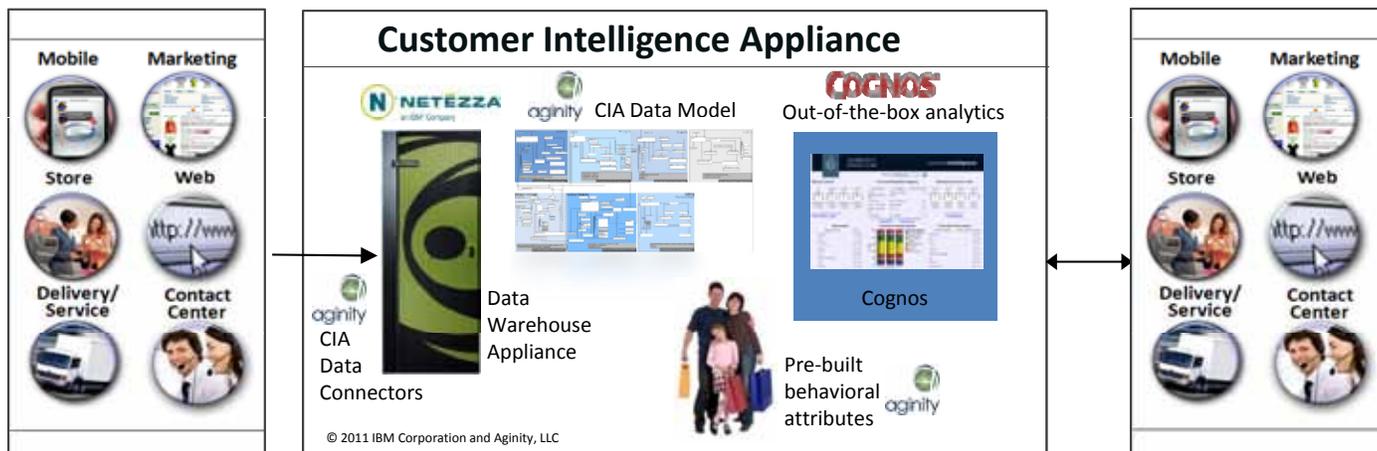
**Executive Summary**

**Customer Intelligence Appliance (CIA)**

For retail executives and analysts, who are dissatisfied with siloed, black-box, inflexible CRM and analytics solutions, the Customer Intelligence Appliance (CIA) is an appliance-based solution, that provides an integrated multi-channel view of customers, best practice reporting, and customer behavior segmentation and analytics accelerators. Unlike existing siloed, black-box, inflexible CRM and analytic solutions, the CIA integrates customer data across the virtual and physical world without limiting access to the detailed customer information, and exposing this integrated data to other core retail systems and processes.

By leveraging pre-developed, proven, industry best practice solution components and appliance technology from IBM and Aginity, the CIA can be up and running in as few as twelve weeks. Utilizing CIA, retailers are able to understand the value of individual customers and customer segments to the business and prioritize marketing spend to target customers based on propensity to respond and net derived value. CIA enables retailers to dynamically score customers utilizing built-in behavioral attributes, facilitating trigger based offers that may be executed in real-time across any device or channel. CIA improves campaign response rate by 10-50%, as retailers leverage omni-channel insights and predictive analytics to attract, engage and retain customers. The CIA solution consists of the Netezza data warehouse appliance, a flexible omni-channel data model, data loading wizards, retail reports, analytic modules, behavioral attributes and behavioral segmentation capability. The following short stories show how retailers use CIA.

- Data Deluge. Integration and identification of customers across all channels, despite the mountains of data created from online and offline channels.
- Are Loss Leaders Worth the Loss? Optimization of promotional spending, taking advantage of the “pull along” effect of promoted products to other products in the assortment.



*An integrated set of smart and adaptable software, hardware and embedded analytics that bridges digital and physical worlds, connects into operational systems and makes a retailer’s interaction with their customers more real-time, relevant and personalized across all touchpoints.*

- **Knowing When to Pull the Trigger.** Actively listening for “triggers” to launch offers instead of pushing mass campaign emails.
- **Don’t Tell the Others, but You’re my Favorite.** Creating a personalized experience for every customer, even when working across millions of customers.



## Challenges facing retailers today

### New devices, applications and media empowering the customer

The retail landscape has been irreversibly and profoundly changed by innovations in technology. While retailers are seeing record growth in online sales, where holiday season online sales have increased as much as 15% over last year, competition to get the customer’s attention has increased significantly. Mobile shopping is on the rise as more smartphone owners are making purchases through their phones, while consumers are using the Facebook platform to earn virtual credits and discounts, and influence their friends’ purchases. The consumer is not only making choices in a much more informed way, but is also exerting more influence on others, more often leaving behind digital bread crumbs in the

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The IBM Netezza CIA creates a single view of customers across channels, touchpoints and time, and provides analytics that build richer, more profitable and lasting customer relationships.

#### Key Business Benefits:

- **360 degree customer view**  
CIA integrates data from all channels in an organized manner utilizing its flexible and elaborate data model to create a unified view of the customer.
  - **Customer Lifetime Value**  
CIA allows analytics that enables retailers to understand customer lifetime value, so retailers can optimize spend based on customer value.
  - **Improved ROI on Promotions**  
Leveraging the analytics embedded and a better understanding of the customers, retailers can target customers much more effectively and increase ROI on offers.
  - **Faster Richer Customer Segmentation and Marketing Campaign Execution**  
CIA’s behavioral attributes enable quick scoring capability without sending data to another application, enabling a much faster turn-around for the retailer and faster speed to market in capitalizing on new offers and opportunities.
  - **Higher Conversion and Retention**  
A complete understanding of the customer, allows retailers to understand motivation for switching and conversion and also a deeper understanding of what it would take to retain customers. CIA analytics result in improved customer loyalty for the retailer.
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process. The consumer has become powerful and retailers are trying to find ways to honor and capitalize on the shift in power. As a result, traditional approaches to interacting with the customer are becoming obsolete. Retailers who can stay ahead of their competition in creating positive interactions with newly more powerful customers will be successful.

### **Many new ways to identify the customer**

In order to truly stay ahead of the competition, retailers have to know their customers. Knowing the customer starts with identifying them. In the past, the only way to identify a person was by using their credit card or loyalty information entered at the check-out counter or online. Today, there is a whole host of new information available to retailers. Mobile phone numbers, email addresses, cookies, Facebook handles, digital payment methods, and Twitter feeds are all different interactions or touch points that can be used to identify the customer. The identification process also involves tying together the physical interactions that occur in the store with the various digital interactions. Making these connections is not easy. Whereas retailers in the past struggled with getting one version of the truth across a customer's purchases, the breadth of new channels, applications and devices has made this job much harder.

### **Disconnected and siloed applications impede analytical customer insights**

As there is complexity in identifying the customer, there is further complexity in trying to understand these customers, their behaviors, and their contributions to the retailer. The traditional process of segmenting customers is slow as data is moved between business intelligence (BI) systems and predictive modeling systems, where segmentation models are run and the data are then loaded to other systems for offer generation, campaign management and CRM. Each step adds complexity and creates latency. By the time the relevant predictive analytics have been run, sometimes weeks have passed and opportunities to run campaigns or make offers have passed. Since customer behavior is always changing, slow systems and analytic processes make it even harder to generate timely and relevant offers.

Speed to market requires nimbleness in analytic processes and agility in using customer data and behavior models. The siloed disconnected relationships between traditional customer analytic systems, predictive modeling systems and CRM systems undermine this agility.

### **Analytic systems are unable to scale**

A major problem facing IT organizations as they try to meet the demands of marketers and users for more information and insights about customers and their needs, is that data volumes are growing exponentially. Volumes of stored data are doubling every three years. Traditional OLTP database platforms are limited in their ability to act as viable analytical platforms when dealing with customer level transactional data, while data warehouses and BI environments are ill-suited to operational analytics. One of the reasons that traditional business intelligence systems are known to have a high failure rate is because of an inability to handle complex queries and analytics running against the lowest level of transactional and interaction data. Customer oriented analytics fundamentally require the use of atomic level data, which creates further pressure on systems and IT. There is a need to ingest these enormous volumes of data, run complex analytics, and return the results fast enough for the retailer to leverage before the insight becomes obsolete.

## **An appliance-based solution for omni-channel customer analytics**

### **Customer Intelligence Appliance Overview**

The CIA solution consists of a high-performance analytic processing engine; a highly-flexible and adaptable omni-channel retail data model; integration tools capable of organizing customers' interaction data from any source; pre-built analytic models that provide instant insight and serve as building blocks for more complex analytics; basic behavioral segmentation; and a standard reporting toolkit.

<b>Aginity Customer Cross Channel Data Model</b>	Data model providing a single integrated view of a retailer's customers, including data from all channels and touch points. This data foundation supports the CIA, but can be used with other business intelligence reporting and analytic tools.
<b>Aginity Data Sourcing and Integration</b>	Pre-developed data integration and ETL routines that accelerate and simplify the integration of a retailer's customer data from multiple source systems into the CIA data foundation.
<b>IBM Netezza Analytic Appliance Platform</b>	Purpose-built platform for retail data warehousing and analytics projects. Combines database, server and storage technology in a single solution for faster deployment, higher performance and lower total cost of ownership.
<b>Best Practice Analytic Reporting</b>	Core set of customer analytic reports, delivered out-of-the-box with CIA, to quickly provide retailers with new customer insights to drive rapid business process improvements and ROI.
<b>Behavioral Segmentation and Analytics</b>	35-40 core customer segmentation models that help retailers gain insight on potential improvements across the enterprise, from marketing and promotions, to merchandizing, store planning, and product enhancement. Leveraging cross channel data on customer's interactive with a retailer's complete value proposition (product, price, promotion, channels and more), these models go beyond traditional segmentation to reveal deep insight into who a retailer's customers are, what they want, and how they can be most effectively attracted, satisfied and retained.

*The five layers of CIA*

The Customer Intelligence Appliance is a combined offering from IBM and Aginity, an IBM business partner that provides big data analytics software to the retail industry. By leveraging pre-developed, proven, industry best practice solution components and appliance technology from IBM and Aginity, the IBM Netezza CIA can be deployed in a few as twelve weeks.

### The Data Model

When dealing with multiple channels, applications and multi-terabytes and petabytes of data volumes, the organization of the data becomes very important. The CIA data model is a flexible mature model which reflects Aginity's accumulated expertise in helping dozens of retailers solve their most complex customer data information integration and organization challenges. The data model is designed to leverage the in-database analytic capability of the IBM Netezza platform. Specifically by leveraging the performance and flexibility features of IBM's analytic appliance, new data added into the Aginity data model automatically benefits from IBM Netezza's high performance processing speed advantages, without any special indexing or tuning. As new devices, new channels and new applications are created, the data model needs to be able to handle these changes without requiring a redesign. The CIA's data model allows for this flexibility and adaptability while optimizing the use of the IBM Netezza analytic platform.

The core of the data model allows multi-channel data integration across channels, touchpoints and time, integrating different customer behaviors and forming a single view of the customer. Additionally, the data model encapsulates key behavioral attributes, which can be used to model and

understand customer behavior. These behavioral attributes are granular views of customer's online and offline patterns and form the basis of the advanced behavioral segmentation capability that CIA offers.

### Loading from a variety of data sources

CIA provides out-of-the box data loaders that are able to receive and load all cross channel data seamlessly into the data model. The data loading capability allows the retailer to easily integrate a variety of data sets into the CIA data model. The data loaders handle the different file formats that the data resides in, allowing for online, offline and application specific data sets. As the database changes and the data model is adjusted to handle additional sources, new data loaders are programmatically generated and made available, minimizing the effort in making the change.

### The IBM Netezza Analytic Platform

The IBM Netezza analytic platform is an appliance based MPP (massive parallel processing) platform designed to support massive volumes of data, while running complex analytics at 10 to 100X times the speeds seen in other platforms. The IBM Netezza appliance is up and running in a matter of days, and requires minimal administrative capabilities. The IBM Netezza platform scales as the data grows, supporting the incremental addition of new capacity in response to growing data sets without changing the platform. The platform is designed to run complex analytics in-database very quickly against multi-terabyte or petabyte scale data sets. The IBM Netezza CIA solution utilizes this in-database analytic capability to deliver query responses that are very efficiently and fast, even against large data sets of transaction level and granular customer level data.

The IBM Netezza Customer Intelligence Appliance is an omni-channel customer analytics platform that can handle enterprise scale analytics workloads and massive data volumes, and can be up and running in a matter of weeks.

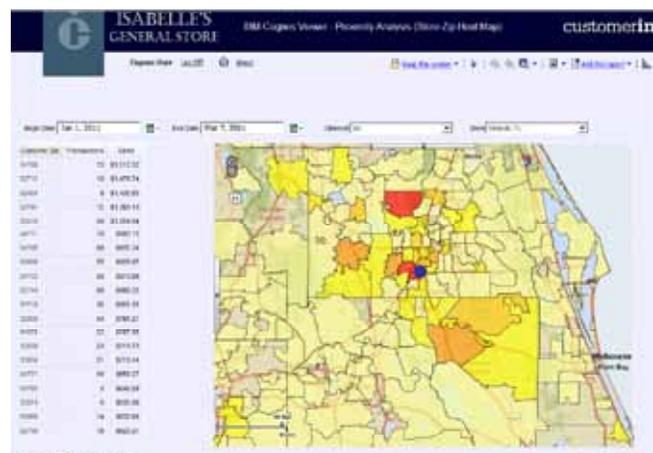
#### Key Technology Benefits of CIA:

- **Speed and Simplicity**  
The entire CIA solution is up and running in a matter of weeks, faster than any data warehouse deployment, delivering results immediately to the retailer, without excessive consulting services in the deployment process.
- **Access**  
CIA exposes key behavioral attributes and other customer analytics to the end user enabling the user to require limited help from IT, especially as it relates to re-scoring attributes to create new targeted customer lists – while also running complex analytics directly within the database
- **Flexibility**  
CIA provides a flexible data model that allows for new data sources and flexibility to create new attributes with no major change in the data model
- **Scalability**  
Allowing the appliance to scale as data grows, leveraging the advantage of the Netezza underlying appliance platform.
- **Analytic Performance**  
**CIA provides an analytic platform optimized to return complex queries running against the lowest leaf level data much faster (10 to 100X) than any other database platform**

#### Analytic Reporting

The CIA solution includes out-of-the-box reporting capabilities. Using the IBM Cognos platform, CIA includes a set of pre-defined KPI's and analytic reports that are generated and made available to users automatically as part of the deployment process. Using these out-of-the-box reports, retail business users can begin getting new insight and value from the CIA solution more quickly, creating ROI and benefit from the project within the first few weeks of deployment. CIA's analytic reporting capability factor in the complexity of cross-channel analytics and brings together results that are easily analyzed and understood for decision making. The

reporting starter kit embeds key analytics around cross-channel market basket, cross purchase, customer lifetime value analytics and segment migration and preference analytics.



*With the IBM Netezza CIA, retailers can use rich integrated customer information like ZIP code and which stores shop in to create promotions that match each customer's preferred channels.*

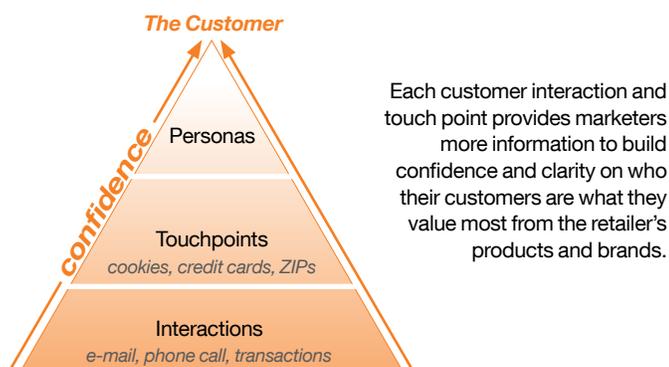
#### Behavioral Segmentation

Leveraging the behavioral attributes embedded in the data model, the CIA enables rapid profiling of customers' behaviors across many dimensions of their response to the retailer's value proposition. As an example some of the attributes automatically included in the CIA data model include preferred channel for purchase; product categories purchased; propensity to respond to various types of promotions, price sensitivity; frequency of web site visits or store visits; average total lifetime purchase size (across all channels and in a specific channel), and time elapsed since last purchase. Using these attributes, retailers can create customer target lists which are very focused and which result in a much higher ROI when running campaigns and offers. These attributes also provide a rich basis for more sophisticated many-dimensional segmentation models, which can be developed in a short two to three month engagement with retail consulting experts from IBM or Aginity. These many-dimensional strategic segmentation models enable more sophisticated customer experience planning, the development of customer-based strategies and performance objectives, and the implementation of a truly customer-driven go-to-market approach.

## A Deluge of Data from People, Some You know, Some You Don't

### Scalable In-Database Analytics for Omni-channel Retailing

**Scenario:** Customer behavior transcends the boundaries of the store, frequently shifting from one type of medium to another throughout the shopping life cycle. Shoppers are leveraging multiple channels for individual purchases – they research online, they engage with other shoppers through social media, they price compare, and then they may pay a visit to the store, before finalizing and deciding where to make the purchase. A shopper is dropping digital bread crumbs throughout the process, bread crumbs that when followed by the retailer will lead to an understanding of the customer. The bread crumbs though come in different sizes and colors, they are hidden, coded and in some cases lead to multiple customers. To get a complete 360 degree view of the customer, retailers need to know how to extract, synthesize, and integrate these breadcrumbs out of mountains of data. This allows a business to more accurately predict what a customer wants, respond to needs and execute trigger based marketing.



### Data persistence the key to knowing your customer

Unique identifiers are commonly used in organizing data in databases. However when dealing with the omni-channel world, it takes more than just using unique well constructed keys to identify customers. Customer information comes from

facebook handles, email addresses, cookies, credit cards and also traditional ID's. Persisting and linking these different sources of information is the key to forming a unique 360 degree view of the customer, across all channels, sources and interactions points. Retailers need to persist and link the data collected from every interaction by the customer. In some cases multiple people might be using the same touch point, and so what complicates the issue is that the same cookie and credit card might be used by multiple people. Being able to intelligently decipher patterns and associate them with the right customer is tricky, and here the key to correctly identifying the customer is dependent on the application's ability to hold and persist patterns. As new interactions, applications and devices are used, the application needs to continue to persist the data and be flexible enough to store data from the new data sources.

### Recognizing Shopper Intent and Acting on Digital Breadcrumbs

Actions such as adding an item to an on-line shopping cart and browsing multiple items in a category indicate purchase intent. But when they abandon their cart, there is still a chance that a shopper is interested in purchasing. Sometimes shoppers use their online cart as a shopping list for in-store purchases, sometimes they are comparison shopping across retailers, sometimes they have just not decided to pull the trigger. And these behaviors can vary by product category, demographic and season. So, understanding patterns of behavior across channels, linked by IDs like cookies and customer numbers, can be very helpful when interacting and messaging with a shopper. This is exactly what a prominent multi-channel retailer did during the busy holiday season. They observed 3 categories of online purchase intent behavior, filtered out those customers who converted in-store, then sent 3 types of dynamic follow-up e-mails, each with relevant product offers. The result: over \$10MM in incremental sales.

## How it works

Personas, Touchpoints and Customer Interaction. The Customer Intelligence Appliance forms a picture of a customer through a set of data structures and rules, associating a Customer (e.g. an Individual or Household) to a Persona (how a person represents themselves) to a Touchpoint to a series of Customer Interactions.

## Customer Interaction

Customer interaction may take many forms: clickstream, e-mail response, sales transactions, surveys, to name a few. The Customer Intelligence Appliance represents “header” type information across all customer interactions in a consistent manner that allows for the addition of new interaction types without impact to other areas of the database like Touchpoints and Personas. This means that a new App, new clickstream event or new method of digital advertising can be added without disrupting existing analytics and reports. It also means that the associated identifiers for these interactions, Touchpoints, may be easily added.

## Touchpoints

Touchpoints, such as e-mail addresses, phone numbers, Facebook handles and cookies represent the interaction point for a customer. The Customer Intelligence Appliance database is architected to retain these touchpoints linked to any customer behavior, which we term Customer Interaction. By retaining this association, we can determine customer preference for interaction by Touchpoint. For example, the same customer may prefer to buy their first pair of jeans in-store, but additional pairs of the same style and size online. That same customer may have been influenced to buy their first pair of jeans through a conversation on Facebook and have e-mail offers sent to their Spam folder. So, preserving the Touchpoint for purchase preference, marketing responsiveness and sequential patterns create actionable trends for a retailer. Then, once these patterns are well understood, some of them can actually be acted upon with anonymous customers. But this works best if the Touchpoints are linked together to represent a customer with what we term a Persona so that we can be predictive about what is likely to follow initial purchase intent behavior.

## Personas

A Persona represents how a person wants to present themselves. Many people act very differently through their business account than through their personal loyalty card, which may both be held at the same retailer. Each of these Personas can have different contact information, buying patterns and marketing response characteristics. While there can be value to identifying two personas belonging to the same person, many people choose to explicitly not link the two together. So, marketing across the Personas may annoy a customer and prove counterproductive. But linking the appropriate contacts and Touchpoints, some of which a customer directly specifies, builds the basis for a Persona. Specified Touchpoints are said to be deterministic; inferred Touchpoints are said to be probabilistic. The probabilistic matching, done through a sister solution to CIA called Customer Identification, establishes confidence levels for the relationships between Personas and Touchpoints along with those between Customers and Personas.

## Connecting the Data to Analytics and Operations

Together, the combination of Personas, Touchpoints and Customer Interactions form a set of data structures that capture and retain a complete picture of customer behavior. This forms the foundation for a series of descriptive and predictive analytics that make the information extensible and actionable. With a set of identified customer behaviors and associated messaging the Customer Intelligence Appliance can be connected into the systems that interact with customers, such as web sites, smart phones and point of sale devices. These connections, along with reporting to measure effectiveness, create competitive advantage for a retailer.

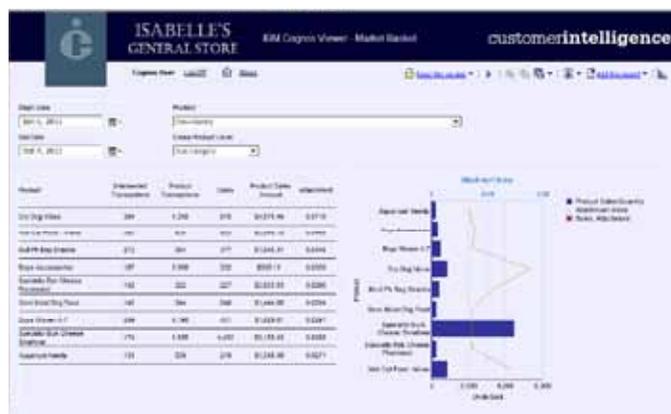
For many retailers, Black Friday is the most important sales day of the year. For others, it's the day before Thanksgiving, Valentine's Day or Father's day. On these seasonal days, retailers battle for shoppers through Door Busters and other attractive promotions. But with a more savvy and digitally equipped consumer who can check prices online and use in-store bar scanning apps to compare price, choosing strategic items to promote has become more difficult. The tools to

identify products that get “pulled along” with promoted products need to be smarter to make these decisions.

## Are Loss Leaders Worth the Loss?

### Scalable In-Database Analytics for Omni-channel Retailing

**Scenario:** For many retailers, Black Friday is the most important sales day of the year. For others, it's the day before Thanksgiving, Valentine's Day or Father's day. On these seasonal days, retailers battle for shoppers through Door Busters and other attractive promotions. But with a more savvy and digitally equipped consumer who can check prices online and use in-store bar scanning apps to compare price, choosing strategic items to promote has become more difficult. The tools to identify products that get “pulled along” with promoted products need to be smarter to make these decisions.



### Product Attachment - Upgraded.

Traditional market basket analysis needs a makeover to keep pace with omni-channel retailing. The true impact of product affinity, or what we call the Attachment Index measures the affinity two products have for each other, adjusting for fast moving items that sell well independent of their inclusion with accompanying products. It also cuts across shopping visits and even sales channel for many products. For many items, like a laptop and a wireless mouse or a bicycle and cycling gloves, realization of the need for the “pull-through” product can happen days or weeks after the primary product was purchased. And some of the pull-through products can

be bought online even if the primary product was more likely to be purchased in-store. So, retailers need to look at how products sell together during the same trip as well as across trips. They also need to understand total basket sizes associated with those trips.

### Market Basket and Cross Purchase Analysis

Traditional Market Basket analysis conveys products that sell together during a single trip. Also important, in conjunction with the items that typically show up in the basket with the primary product, targeted for promotion, is the size of the basket. As the retailer starts to find candidates for promotion, they'll need to navigate up and down the product category, understanding affinities, basket sizes and gross margin at the department, sub department, category, subcategory and even product family levels. This helps confirm candidates for promoted products, cross-promoted products, seasonal assortment, adjacencies and in-store display opportunities. This analysis should work hand-in-hand with Cross Purchase Analysis.

Cross Purchase Analysis shows purchasing across trips and channels, but requires an identifiable customer. It shows the extended impact of a “destination” promoted product, a pattern that likely occurs for a similar percentage of unidentified customers. The best results are obtained when a retailer is able to iterate their analysis between Market Basket and Cross Purchase, since questions beget questions and discovery at a higher level in the product level calls for drill-down to the next level. This calls for a flexible set of analytic functions that let a retailer zero in on actionable insights without battling long running jobs and IT involvement writing custom queries and index-based tuning.

### How it works

Our Market Basket and Cross Purchase Analysis are architected for usability, scale, flexibility and the smartest measures.

- The user interface allows a retailer to select levels for both the target and sell-together products, flexible date ranges and sales channel filtering. It also allows for a purchase “distance” to be used to specify the length of time between the first and last trips for Cross Purchase Analysis.

- Underlying this user interface is a flexible database analytic module that accepts parameters for each of the variables. This allows the module to adapt to different retailer’s product hierarchies and selling channels.
- The final ingredient is a combination of metrics that include sales, units, gross margin and attachment index. This combination allows a retailer to know which products truly have affinity, produce the largest baskets and best multi-trip results and create sufficient gross margin to warrant deep discounts.

The combination of a flexible user interface and scalable, adaptable in-database module allows a retailer to quickly determine the smartest and most profitable combination of products to promote for their big events.

## Knowing When to Pull the Trigger

### Scalable In-Database Analytics for Omni-channel Retailing



**Scenario:** Have you ever noticed that the email offers you get from retailers and etailers are almost never something you want – even from the ones who are “good at it?” There’s a simple

reason for this: the retailer typically has in mind what it wants to sell (and when) rather than what (or when) the customer wants to buy. Too often, marketing is something we do to customers. But increasingly, customers are demanding not to be bothered with spam-like marketing, even from brands they love and trust. That doesn’t mean we should stop talking – they want to hear from us. They just want us to be better conversationalists. So, how do we know when to pull the trigger?

### Talk, Talk, Talk

Direct marketing is most often executed via “campaigns” in which retailers set up offers and events, and decide which customers to send them to. So-called “propensity models” are generated to predict a customer’s likelihood to respond to the offer, and scores on these models are used to select lists of customers. This typically results in single-digit response rates, which has been considered successful for traditional mass-marketing. But if you’re in a conversation with someone, making one relevant statement in 20 or 30 simply won’t suffice. People stop listening.

### Trigger vs. Campaign – The Art of Active Listening

Just like in ordinary conversation, the solution to this dilemma is to stop talking for a bit and listen! Customers will tell you, directly and indirectly, what they want, when they want it, and how they want it. Here’s a simple example: if someone browses designer swimwear on your website two Saturdays in a row, there’s a good chance they’re going to buy. If they don’t buy from you, they probably bought somewhere else. But now it gets more interesting – let’s say they didn’t buy from you. The inference that they probably bought somewhere else is still a valid observation – something worth remembering. Further, what if they did buy something else from you – say, high-end sunglasses. Suddenly a picture is emerging – this is someone with a taste for the finer things, who is probably going on vacation soon. Depending on how well you know this customer – how much previous history you have with them – you may be able to offer other useful or desirable items for their vacation. But only for a limited time. Don’t keep trying to sell them Spanish suntan oil forever...the conversation has moved on.

We call this type of marketing “trigger-based”. Simple forms of trigger-based marketing are done all the time – for example, sending thank-you notes after a big purchase, or offering add-on items when a customer purchases one component of a larger bundle. But if we’re good listeners, we can get a lot better at triggering effective messages, customer service treatment, and offers.

### How it works

In the digital era, “listening” is done with ears of a different sort. By carefully combining in-the-moment clues (browsing designer swimwear) with a rich historical understanding of each customer (advanced segmentation), we can anticipate what customers are looking for. Of course, we’re still selling something, but instead of organizing customer communications around specific items we want to sell at a given time, we link customer need states to products, services and experience best suited to address those needs, and most likely to delight the customer. Further, we can use the method of communication most preferred by that customer – email, SMS, direct mail, etc. We can tailor message cadence to the customer’s tolerance for more or less contact. And we can mix in thank you’s and other special messages and services in ways designed to maintain the relationship.

This approach turns direct marketing into trigger-based marketing that happens in response to a customer’s stated and unstated needs and desires. This sounds overwhelmingly complex, but the key is to structure the underlying data and analytics so we can start simply and get more complex over time.

- The underlying data model flexibly and consistently “remembers” (or listens to) every interaction with a customer
- A first layer of analytics creates summary attributes of customer preferences and shopping patterns, along with predictions of when, where and how customers are likely to shop – we call these ‘behavioral attributes’

- A next layer of analytics and decision rules deciphers in-the-moment actions, determines most-likely customer states (or missions), and matches them to offers, messages and treatments we have available to meet those in-the-moment needs.
- Critically: if we don’t have a pretty good match for the customer’s mission, we don’t try to talk – better to say nothing than to blather irrelevantly!
- We make this manageable by starting with a very short list of actions and offers, with content based on standard templates and existing creative and copy, and grow from there – with a focus on quality, not quantity.

This “brain” gets connected to execution via your existing fulfillment tools and processes – CIA interfaces with CRM software like Unica, and your third party service providers. Email, SMS and direct mail messages can be fired off dynamically, or in hourly, daily or weekly batches, as appropriate.

No organization should flip completely from campaign-based to trigger-based direct marketing overnight. And in fact, you will likely find that a mix of the two is preferable. After all, customers like to know about big events – whether it’s a special sale, a product launch, or a store opening. But trigger-based communications are much more likely to be relevant – which is the only way to keep today’s consumer listening to your message.

## Don’t Tell the Others, But You’re My Favorite

### Scalable In-Database Analytics for Omni-channel Retailing

**Scenario:** Ah, the old days, when shopkeepers could welcome each customer by name, engage in polite conversation, inquire about their families, remember their tastes and likes, their wishes and aspirations, point out the latest new fashions they’re certain to like. Now retail is a game of numbers – tens of

thousands of employees serving tens of millions of customers. And with mobility and social media, the conversations go on, largely without us. Is there any way to re-capture the old days? How do we create “intimacy at scale” with 50 million customers? How do we make each customer feel like they’re our favorite?



**We’re All Different, Right?**

The secret lies in finding patterns, and tailoring our interactions to customers based on those patterns. We like to think we’re unique in the universe, but we’re all creatures of habit. While our personalities, psyche and emotions motivate us differently related to brands, products and how we want to be served, there are only so many permutations that exist. It’s now becoming possible to identify and understand those motivations and patterns for every customer.

**Behavioral Segmentation – Finding Patterns to Guide Strategy**

The digital age has made it possible to observe customers through multiple channels, touch points and communication

platforms. We now have the capability to recognize and honor the unique choices and behaviors of customers and create a ‘memory’ of them – and more than a memory, an interpretation of those choices and their meanings. When we align the patterns in people’s behavior, natural groupings emerge. The customers literally tell us who they belong with, and what the meaningful segments are. Each of these many-dimensional segments represents an orientation toward our brand and value proposition in the marketplace.

These segments enable creation of a blueprint for how we can more appropriately engage customers. For example, “I only buy online or via mobile, rarely in the store and prefer discounts when I buy,” versus “I only shop in the store for core items, never open your emails and prefer minimal customer service.” This leads to an ability to develop and execute unique in-store, online and mobile marketing and service treatment strategies that fit the unique customer. Layer onto this individuals’ product, brand and style preferences, predicted next purchases, and recent browsing/searching and wish-list activity, we can populate the content in those treatment strategies in a way that feels highly relevant. Creating the foundational understanding of each customer, teeing up the appropriate action next time we engage them, and tailoring communications based on both stated and inferred customer preferences, begins to get us closer to that one-time shopkeeper – in some ways, even better.

**How it works**

With as few as a dozen or so primary segments – if sufficiently multi-dimensional – we can understand the key differences between groups of customers, and set strategies and treatments accordingly. (We can’t operate against 50 million customers, but 12 segments is manageable.) Further, profiling the primary segments enables us to go even deeper with sub-segments,

refining timing, communication vehicle, pricing, and product, offer and service content.

The key to developing and using this rich customer understanding is the rigorous organization of data and analytics. It begins with a fundamental structure of customer data from all touch points and interaction types.

- The foundation is a comprehensive and flexible multi-channel data management environment that integrates and organizes customer data.
- Next is a layer of analytics called “behavioral attributes” – many models of customer behavior, some simple, some complex, each of which captures the patterns and meaning of various aspects of customer behavior.
- This is augmented by additional customer profiling data – demographics, psychographics, customer survey data, social media and its interpretation, etc.
- Finally, primary segments are discovered, using a select subset of the behavioral attributes, via a set of advanced segmentation techniques which reveal the underlying patterns of customer choice and interaction.

The resulting rich and multi-dimensional understanding of customers enables development of segment-level strategies, tailored communications and treatments, all grounded in a technological platform that integrates easily with CRM and third-party applications, processes and services.

This leads to a wonderful illusion for our customers: even though there are millions of people in each segment, they magically feel like we’re treating them very uniquely. After all, each one is our favorite – just don’t tell the others.

*“How customers engage with our brand and shop is constantly evolving. Customer analytics help us recognize shifts so we can adapt dynamically and engage with consumers with relevance at all levels and across all channels.”*

– Leslie Weber, CIO Bass Pro Shops

## Get Started

Opportunities are hidden away in customer data that retailers are capturing and storing away in unused and under-utilized data silos - opportunities that require immediate attention and immediate action. The IBM Netezza CIA solution is proving to retailers that they can leverage data captured through all channels, and use it to their advantage. CIA users are finding insights and taking actions on those insights in a way that creates a direct relationship with the customer, a relationship that impacts their ability to retain existing customers and attract new ones in an optimized and profitable way.

IBM Netezza and Aginity can help you get started quickly in creating an omni-channel customer analytics platform that will dramatically transform your companies to identify, understand and build richer, more profitable and lasting relationships with customers. More than 150 retailers worldwide use the IBM Netezza analytic appliance, including a growing number who have co-deployed IBM Netezza with Aginity's solutions and services in CIA or related omni-channel customer analytic projects. The Netezza platform enables the scalability and extensibility of the CIA platform. Having successes with CIA already, we encourage you to reach out to us in evaluating how CIA can help you stay ahead of the competition and build lasting and profitable relationships with your customers.

## About IBM Netezza data warehouse appliances

IBM Netezza data warehouse appliances revolutionized data warehousing and advanced analytics by integrating database, server and storage into a single, easy-to-manage appliance that requires minimal set-up and ongoing administration while producing faster and more consistent analytic performance. The IBM Netezza data warehouse appliance family simplifies business analytics dramatically by consolidating all analytic activity in the appliance, right where the data resides, for industry-leading performance. Visit [ibm.com/software/data/netezza](http://ibm.com/software/data/netezza) to see how our family of data warehouse appliances eliminates complexity at every step and helps you drive true business value for your organization. For the latest data warehouse and advanced analytics blogs, videos and more, please visit: [thinking.netezza.com](http://thinking.netezza.com).

## About IBM Data Warehousing and Analytics Solutions

IBM provides the broadest and most comprehensive portfolio of data warehousing, information management and business analytic software, hardware and solutions to help customers maximize the value of their information assets and discover new insights to make better and faster decisions and optimize their business outcomes.

### For more information

To learn more about the IBM Data Warehousing and Analytics Solutions, please contact your IBM sales representative or IBM Business Partner or visit: [ibm.com/software/data/netezza](http://ibm.com/software/data/netezza)



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