

# Build Customer Loyalty with the IBM Next Best Action Solution

## IBM Redbooks Solution Guide

There are many studies that highlight the need for organizations to better engage with and gain a full understanding of their customers as individuals. This need has been brought about by the new "empowered customers" who are leveraging new channels of interaction, such as mobile devices and social media. Empowered customers demand appropriate attention, personalized offers, and relevant recommendations, all seamlessly delivered across their chosen interaction channels. Delivering an outstanding customer experience has become a strategic imperative for today's organizations.

Organizations that strive to deliver an outstanding customer experience face the challenge of continuously incorporating disparate sources of customer information: new and existing, often fragmented, internal and external to their organizations. All of these data sources -- structured, unstructured, and semi-structured -- must be integrated and analyzed for every customer in the contexts of their individual situations. Figure 1 illustrates the information and the sources to consider in choosing the next best action to take.

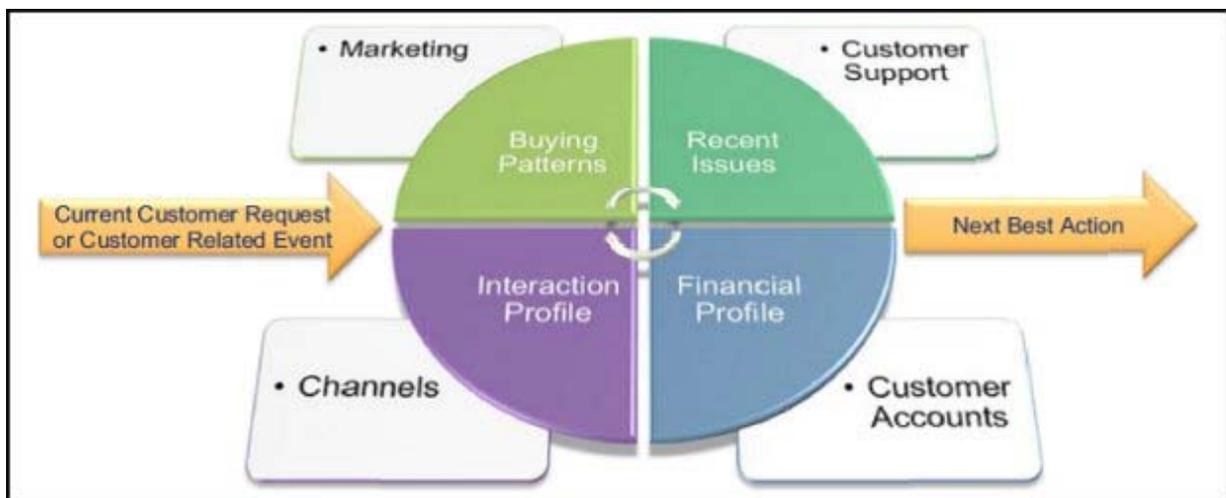


Figure 1. Determining the next best action

The IBM® Next Best Action Solution helps translate all of the available customer information into actions or interactions that make sense to the customer so that you can guide long-term customer loyalty and value. It is the enabler for delivery of an outstanding customer experience across all organizational business functions, such as sales, marketing, customer retention, service and fault resolution, and accounts. The solution can collect, integrate, analyze, and score data to determine the most appropriate action for each customer, based on their historical, social, and contextual information. It combines the following software products:

- IBM Predictive Customer Intelligence (PCI)
- IBM Interact
- IBM Information Server
- IBM InfoSphere® BigInsights™ Enterprise Edition
- IBM Cognos® Enterprise

## Did you know?

In a recent study, 74% of online consumers get frustrated with websites when content (for example, an offer, an advertisement, or a promotion) appears to have nothing to do with their interests. Meanwhile, eConsultancy found that 72% of companies say they don't understand how to implement website personalization. Common barriers are lack of technology or inability to translate data into action.

Similarly, a recent survey from Sociomantic Labs shows that the influence of web ads was twice as high on those who found them well-targeted than those who did not (52% versus 26%), and the discrepancy was even greater when it came to Facebook ads (50% versus 17%). This trend continued in all of the channels cited, including online video (22% citing an influence when the ads were targeted compared to 7% when not targeted), mobile ads (22% versus 5%), Pinterest (47% versus 11%), and Twitter (31% versus 3%).

Sources:

- 10 Web Personalization Stats You Ought to Know  
<https://www.dynamicyield.com/2014/06/10-web-personalization-stats/>
- New Survey From Sociomantic Labs Shows Personalization Dramatically Improves Digital Advertising's Ability to Influence and Convert Consumers  
<https://www.sociomantic.com/new-survey-from-sociomantic-labs-shows-personalization-dramatically-improves-digital-advertisings-ability-to-influence-and-convert-consumers/>

## Business value

The IBM Next Best Action Solution described in this document is an extensible solution that uses scalable technologies. It is integrated based on IBM's experience of repeated delivery in a range of client situations. It offers the following advantages to your customers:

- Delights existing customers by anticipating their needs and desires
- Delivers a smarter, personalized, and timely customer experience that is rooted in the context for each customer
- Provides a seamless and consistent cross-channel customer experience that saves customers time and eliminates the frustration caused by inappropriate offers and interactions resulting from the lack of a holistic customer view
- Promotes the feeling of being known by your organization and treated according to their individual wants and needs

The Next Best Action Solution offers the following advantages to your organization:

- Maximizes strategic lifetime value, profitability, and loyalty of your customers and reduces customer attrition
- Increases the success of revenue-generating recommendations, such as up-sell, cross-sell, and retention

- Empowers customer-facing employees by giving them the optimal recommendation for each customer, eliminating undesired variations across all of the interaction channels
- Identifies and converts customers by observing their behavior and proactively engaging with them through the appropriate interaction channel, exactly when they are most ready for influence, such as when they are in a physical store or discussing products while using social media
- Optimizes events that drive enterprise business results, one interaction and one decision at a time, and helps you understand where value is and the consequences of not taking action
- Microsegments your customer base to provide targeted marketing at the individual “market segment of one” level providing strong market differentiation to your organization
- Enables your organization to spot trends, patterns, and anomalies; compare what-if scenarios; predict potential threats and opportunities; identify and manage key business risks; and plan, budget, and forecast resources
- Creates an ever-improving and enriching single view of the customer that can be shared across the organization, providing actionable insights to decision makers to achieve better business performance
- Increases customer satisfaction and loyalty

By adopting this approach and implementing the Next Best Action Solution, your organization will begin a subtle but far-reaching business transformation that will provide a competitive advantage in the constantly changing digital marketplace.

## Solution overview

The Next Best Action Solution consists of five high-level components, as shown in Figure 2.

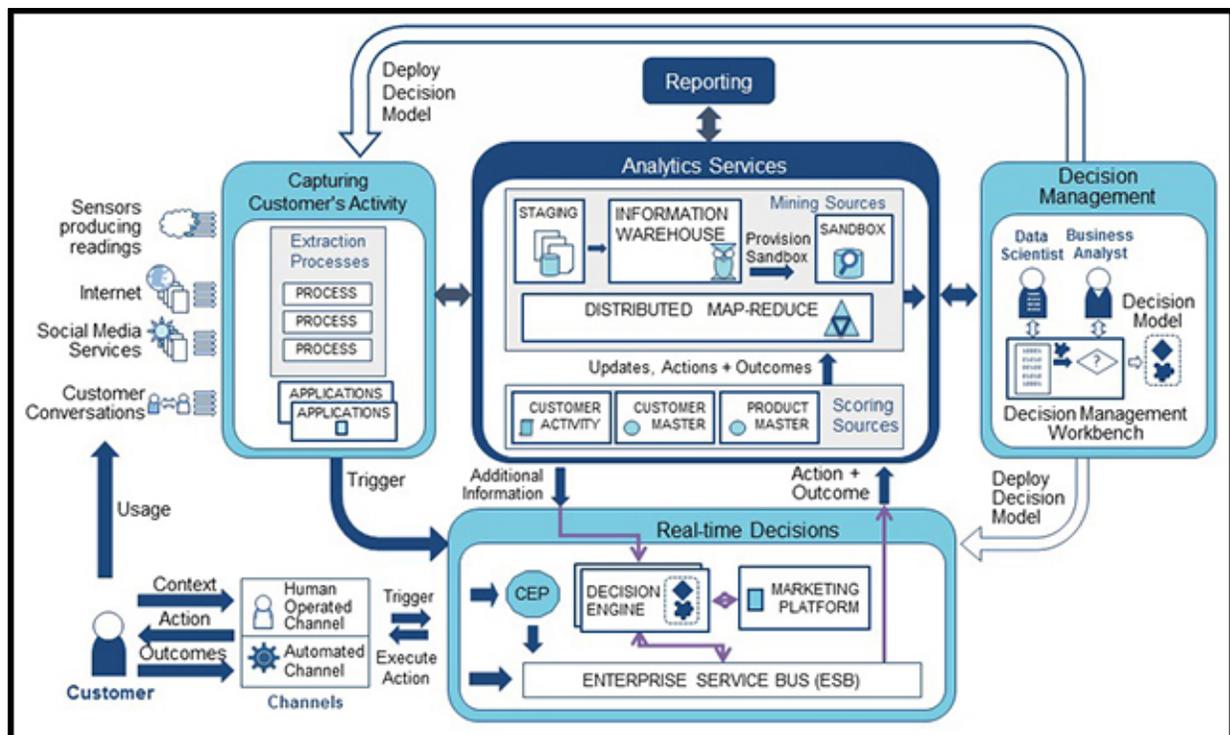


Figure 2. High-level components of the Next Best Action Solution

These are the five components and functions:

- *Capturing Customer Activity* receives information about the actions, movements, and communications of customers, which are of potential relevance and interest in guiding future interactions. The information may come from a wide variety of different sources (for instance, sensors within a mobile device or social media sites), be of many types (such as geospatial information or natural language text), and be received in many forms as real-time events or in a batch transfer. When information is received by the Capturing Customer Activity component, Process Trigger Rules are used to determine whether to trigger a decision within the Real-Time Decisions component.
- *Real-Time Decisions* makes decisions based on Rules and Decision Models. The component is triggered by customer activity and decides what action should be taken. The decision is determined by applying predefined models to the information contained within the triggering event, and potentially past events, and additional information retrieved from the Analytics Services component. The decision may or may not result in an action being taken and delivered to the customer by a human or automated channel. The outcome of the action is collected and recorded for future use.
- *Analytics Services* collects and maintains a store of historic data about customers and their interactions. This information can be provided to the Real-Time Decisions component if historic data is needed to inform decisions. It is also provided to the Decision Management component
- *Decision Management* creates analytical models, rules, and decision models based on the information provided by Analytics Services. Analytical tools are used by data scientists and analysts to create predictive models. For instance, based on historic data, a model for customer churn might be generated that predicts the risk of a customer terminating their contract based on factors identified as the key predictors, such as slow fault resolution. This model is then used to create a decision model that is deployed to the Real-Time Decisions component, which triggers a free gift offer when a high churn risk is identified for a customer. Models are also deployed to the Capturing Customer Activity component to determine whether or not the real-time decisions component is triggered on receipt of information about customer activity.
- *Reporting* provides a view of the historic information within Analytics Services through dashboards and reports that allow users to see and understand how the solution is performing and to provide information on metrics, such as offers made and outcomes. This information can be used to continuously adjust the solution to improve the outcomes.

## Solution architecture

Figure 3 shows the next level of detail for each of those components and shows the minimum set of products required to implement the solution.

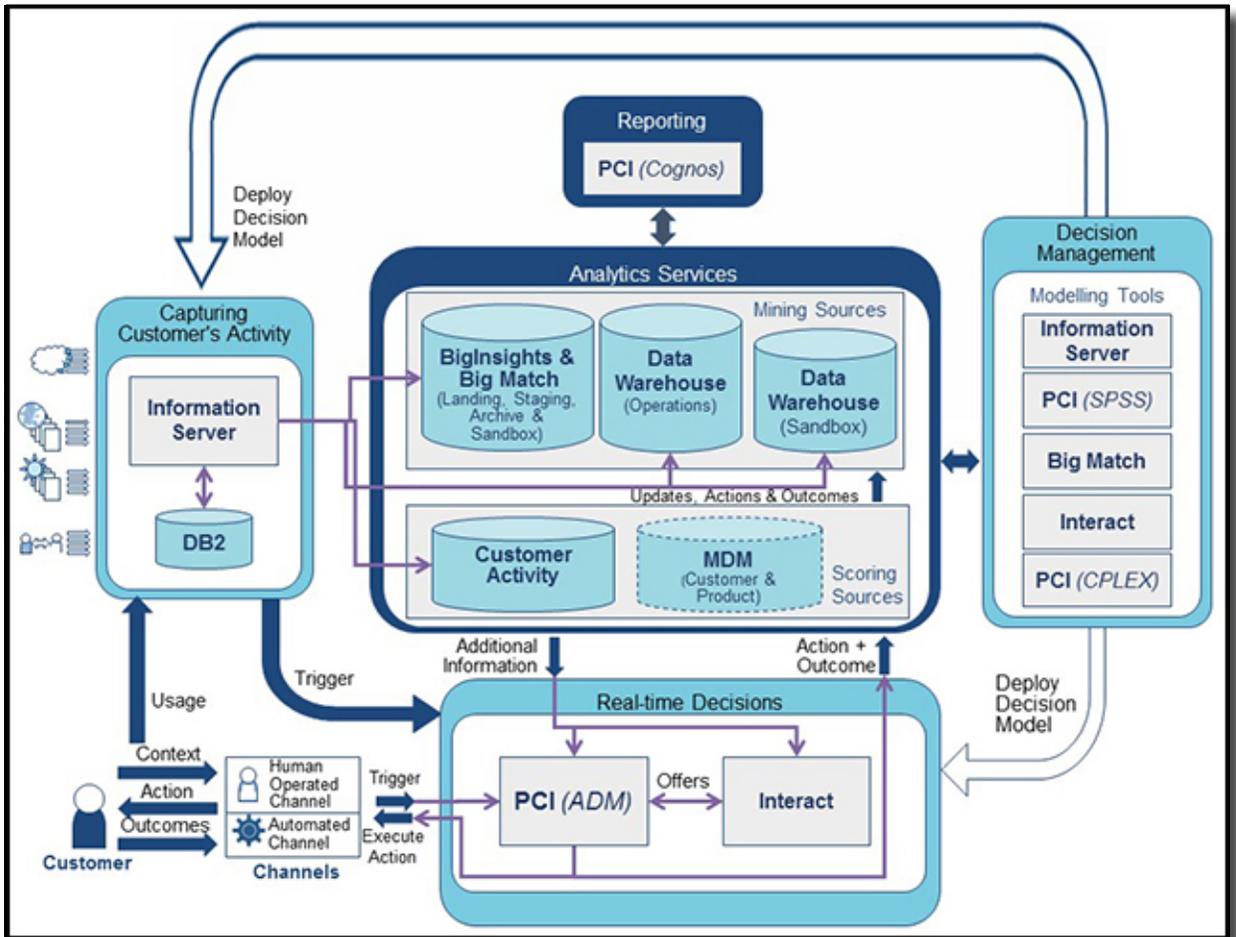


Figure 3. Solution implementation

These are the products required:

- *IBM InfoSphere Information Server* provides a way of capturing the customer's activity and distilling this information into the solution. Information Server is a market-leading data integration platform. It includes a family of products that allows an organization to understand, cleanse, monitor, transform, and deliver data, as well as to collaborate to bridge the gap between business and IT. InfoSphere Information Server provides massively parallel processing (MPP) capabilities to deliver a highly scalable and flexible integration platform that handles a variety of data volumes (large, small, and everything in between).
- The combination of IBM DB2® and IBM InfoSphere® BigInsights™ forms the data store that is required for analytical (OLAP) processing of the customer activity data to create actionable insights for use by operational systems:
  - *DB2* provides a comprehensive multiple workload database for transactional, data warehousing, and analytics capabilities.
  - *InfoSphere BigInsights* manages and analyzes Internet-scale volumes of structured and unstructured data. Built on the open source Apache Hadoop software framework, it enhances this technology by adding administrative, workflow, provisioning, and security features, along with sophisticated analytical capabilities from IBM Research.

The customer activity data is then combined with data from the Customer and Product Master Data Management solution as input to the real-time decision-making process. These are shown as logical components, because many mature organizations will have already invested in the creation of a single view of the customer or product that can be used as input into the solution rather than creating

a new one.

- *IBM Predictive Customer Intelligence (PCI)* personalizes the customer experience by making recommendations that are most relevant to each unique customer, based on their buying behavior, web activity, social media presence, and much more. Using automation, this integrated software solution gathers customer information from multiple internal and external sources and models customer behavior. Scoring then provides you with customized actions that you can take to provide the right offer to the right customer at the right time. IBM PCI combines several software components, for example IBM SPSS® Modeler, IBM CPLEX®, and Analytical Decision Management. Together, they provide the following capabilities:
  - Predictive analytics to help you anticipate the behavior of individual customers
  - Decision management to convert predictive model scoring into an appropriate action
  - Real-time scoring to generate and regenerate predictions on demand
  - Cross-campaign optimization to identify the most profitable decision for each customer
  - Customer lifetime value segmentation to classify customers and provide recommendations for retention
- Analytical Decision Management and Interact combine to support the decision-making process in real time:
  - *IBM Analytical Decision Management (ADM)* supports decision management in PCI and also automates and optimizes transactional decisions made at the front lines of an organization to consistently maximize outcomes. Combining predictive analytics, local rules, scoring, and optimization, it delivers recommended actions in real time to workers and systems, which empowers them to make the right business decision each time.
  - With *IBM Interact*, marketers can personalize, in real time, the experience of customers interacting with websites, call centers, and other inbound marketing channels. IBM Interact uses powerful behavioral targeting analytics and marketer-defined business logic to deliver the optimal marketing message in each case.
- The version of *IBM Cognos* within PCI delivers self-service analytics with cost-effective scale for your business intelligence and performance management initiatives. Users can freely explore information, analyze key facts, and quickly collaborate to gain alignment with key stakeholders and act on insights. This can be extended with Cognos Enterprise, which supports delivery of consistent information and analytics across the web, mobile, or desktop and can be embedded into other applications.

## Use scenarios

The Next Best Action Solution is relevant to many organizations across a range of industries. In banking, insurance, and telco, it is often used by call center staff to more effectively handle inbound calls from customers. In this scenario, the solution suggests one or more best next actions to the CSRs, which they use to direct the conversation with the customers. The actions might include making an offer, such as a special discount on a product identified as being of potential interest, based on their interests or buying histories. Alternatively, if the customer has cause for complaint, perhaps due to issues with the service they have received, the action suggested might be to provide a direct contact with a senior support or complaints resolution team.

A superior experience can be provided by taking into account the information about the client across channels (for example, web, mobile, call center, email) and across different parts of the organization that have distinct and separate information systems (for example, a telco with separate mobile, broadband, and TV businesses or a bank with separate credit card, personal banking, and investment businesses). Taking a holistic view of a client creates a sense that the organization “knows” them, increases client satisfaction and loyalty by avoiding making inappropriate offers, and increases the chance of upselling

and cross-selling new products and services.

Increasingly, organizations are also considering outbound interactions via new channels, such as making use of a mobile app. This opens up the possibility of sending push notifications to a customer's mobile device based on their movements. For instance, when customers pass close to a coffee bar, this might trigger a decision model that determines that certain customers like coffee in the morning and sends an offer for a half-price drink to entice them into the coffee bar.

## Integration

The Next Best Action Solution provides a solid foundation that can be extended in many different ways and enhanced by integration with a wide variety of other IBM products and solutions. Here are some of the other IBM products that integrate with and enhance this solution:

- IBM InfoSphere Master Data Management enhances Analytics Services used as the Master Data Source for the product, offer, customer functions, or custom data
- IBM InfoSphere Data Replication enhances the complete solution by automatically replicating data between different data stores that need to be kept in sync
- IBM InfoSphere Streams enhances Capturing Customer's Activity and Real-Time Decisions by allowing for highly scalable and performing decision engine that allows models and rules to be executed directly on the data stream in near real time
- IBM WebSphere® Operational Decision Manager enhances Real-Time Decisions by providing platform for complex even processing (CEP) and execution of complex business rules.
- IBM WebSphere Commerce enhances the overall solution for a retail type environment by providing a rich source of customer, product and order information
- IBM Integration Bus (limited license included with PCI) enhances Real-Time Decisions by including ESB pattern implementation (management of decision-making process, routing of triggers and events, transformation and augmentation of data, implementer of action, and so on)
- IBM PureData® Solution for Customer Insight (previously Netezza CIA) enhances Capturing Customer's Activity, Analytics Services and Real-Time Decisions providing packaged solution for customer insight
- IBM Watson™ Explorer enhances Analytics Services and Decision Management by providing powerful unstructured data search and analyzes functions
- IBM Mobile Push Notification (previously Xtify) enhances the overall solution by providing the geo-location, geo-fencing, push messaging and customer activity and outcomes functions
- IBM Presence Zones enhances the overall solution by providing the location and in-store functions
- IBM Tealeaf® enhances the overall solution by providing the customer activity and outcomes functions
- IBM Silverpop enhances the overall solution by providing cross-channel customer behavior functions
- IBM Digital Analytics (previously Coremetrics) enhances the overall solution by providing customer activity and outcomes functions, for example LIVEProfile
- IBM Social Media Analytics enhances the overall solution by providing integration with Facebook, Twitter, and BoardReader and sentiment analytics
- IBM Campaign (previously IBM Unica®) enhances the overall solution by providing outbound campaigning functions
- IBM DB2 BLU enhances the overall solution by providing high-performance in-memory analytical processing

## Supported platforms

Solutions are available on the traditional platforms, such as IBM Power Systems™, IBM System z®, and hardware appliances. Elements of this solution can also be delivered via the cloud.

## Ordering information

Ordering information is show in the following table.

Table 1. Ordering part numbers and feature codes

Program name	PID number	Charge unit description	Announcement letter
IBM InfoSphere Information Server	5724-Q36	PVU	<a href="http://www.ibm.com/common/ssi/cgi-bin/ssialias?subtype=ca&amp;infotype=an&amp;appname=iSource&amp;supplier=897&amp;letternum=ENUS207-043">http://www.ibm.com/common/ssi/cgi-bin/ssialias?subtype=ca&amp;infotype=an&amp;appname=iSource&amp;supplier=897&amp;letternum=ENUS207-043</a>
IBM DB2 Enterprise Edition	5765-F41	PVU	<a href="http://www.ibm.com/common/ssi/cgi-bin/ssialias?infotype=an&amp;subtype=ca&amp;appname=gpatem&amp;supplier=897&amp;letternum=ENUS213-210">http://www.ibm.com/common/ssi/cgi-bin/ssialias?infotype=an&amp;subtype=ca&amp;appname=gpatem&amp;supplier=897&amp;letternum=ENUS213-210</a>
IBM InfoSphere BigInsights Enterprise Edition	5725-C09	PVU	<a href="http://www.ibm.com/common/ssi/cgi-bin/ssialias?subtype=ca&amp;infotype=an&amp;appname=iSource&amp;supplier=897&amp;letternum=ENUS214-270">http://www.ibm.com/common/ssi/cgi-bin/ssialias?subtype=ca&amp;infotype=an&amp;appname=iSource&amp;supplier=897&amp;letternum=ENUS214-270</a>
IBM Predictive Customer Intelligence	5725-R08	RVU	<a href="http://www.ibm.com/common/ssi/cgi-bin/ssialias?subtype=ca&amp;infotype=an&amp;appname=iSource&amp;supplier=897&amp;letternum=ENUS214-229">http://www.ibm.com/common/ssi/cgi-bin/ssialias?subtype=ca&amp;infotype=an&amp;appname=iSource&amp;supplier=897&amp;letternum=ENUS214-229</a>
IBM Interact	5725-D22	RVU	<a href="http://www.ibm.com/common/ssi/cgi-bin/ssialias?subtype=ca&amp;infotype=an&amp;appname=iSource&amp;supplier=897&amp;letternum=ENUS213-444">http://www.ibm.com/common/ssi/cgi-bin/ssialias?subtype=ca&amp;infotype=an&amp;appname=iSource&amp;supplier=897&amp;letternum=ENUS213-444</a>
IBM Cognos	5724-W12	User	<a href="http://www.ibm.com/common/ssi/cgi-bin/ssialias?infotype=AN&amp;subtype=CA&amp;htmlfid=897/ENUS212-289&amp;appname=USN">http://www.ibm.com/common/ssi/cgi-bin/ssialias?infotype=AN&amp;subtype=CA&amp;htmlfid=897/ENUS212-289&amp;appname=USN</a>

## Related information

For more information, see the following publications:

- *Smarter Analytics: Driving Customer Interactions with the IBM Next Best Action Solution*, REDP-4888 [www.redbooks.ibm.com/redpapers/pdfs/redp4888.pdf](http://www.redbooks.ibm.com/redpapers/pdfs/redp4888.pdf)
- *Retain and Delight Your Customers by Applying IBM Predictive Customer Intelligence*, REDP-5163 <http://www.redbooks.ibm.com/Redbooks.nsf/RedbookAbstracts/redp5163.html?Open>
- IBM Predictive Customer Intelligence product page <http://www.ibm.com/software/products/en/predictive-customer-intelligence>
- IBM Interactive Marketing solution home page <http://www.ibm.com/software/marketing-solutions/interactive-marketing-solution/>
- IBM Interact product page <http://www.ibm.com/software/products/en/real-time-inbound-marketing/>

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