

Adobe® Insight

Advanced, real-time customer analytics for a true competitive advantage

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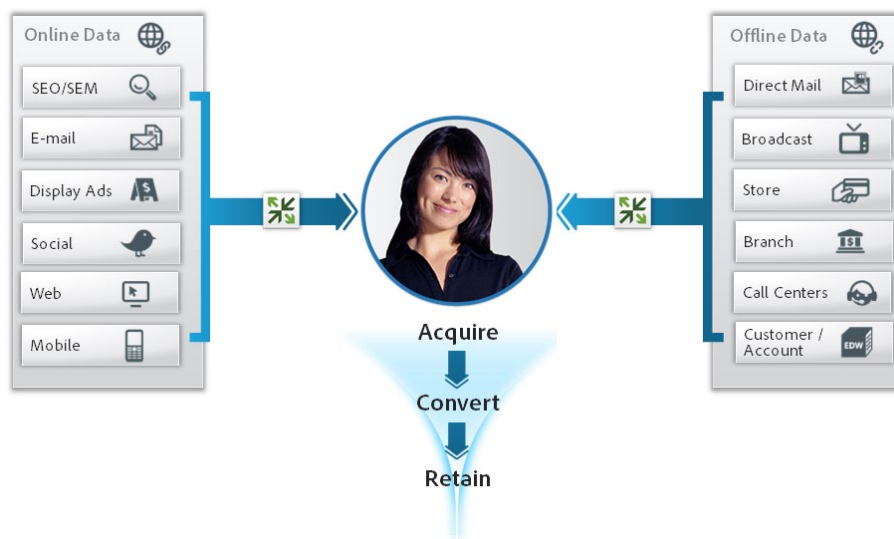
The big data phenomenon

Consumers today engage with brands and companies in more ways than ever—via websites, social media, mobile devices, ATMs, RFID tags, in stores, kiosks, call centers, interactive voice response (IVR) systems, and more. All of these interactions have two main things in common. First, they generate massive amounts of rapidly changing and largely unstructured data. Second, most available tools used to analyze large volumes of data trade off the breadth and depth of the analysis with the time it takes to arrive at meaningful business insights.

As a result, organizations have struggled to make timely, intelligent business decisions based on consumer behaviors, whether they want to accurately attribute the impact of all advertising channels on final conversion, determine the lifetime value of a customer, or find out why customers are hanging up the phone at a certain point in an IVR process.

Deemed “big data,” this new wave of data has important, distinct qualities that differentiate it from traditional corporate data. No longer centralized, highly structured, and easily manageable, most of this new data is highly distributed and increasingly large in volume.

Adobe Insight enables organizations to quickly analyze large volumes of rapidly evolving big data from multiple channels and data sources in real time. Powerful visualizations make it easy for users to immediately infer meaning to make timely, customer-focused business decisions that improve overall business performance.



Adobe Insight consolidates customer data across multiple channels and data sources to provide a 360-degree view of the customer.

Adobe Insight: a visual business analysis tool

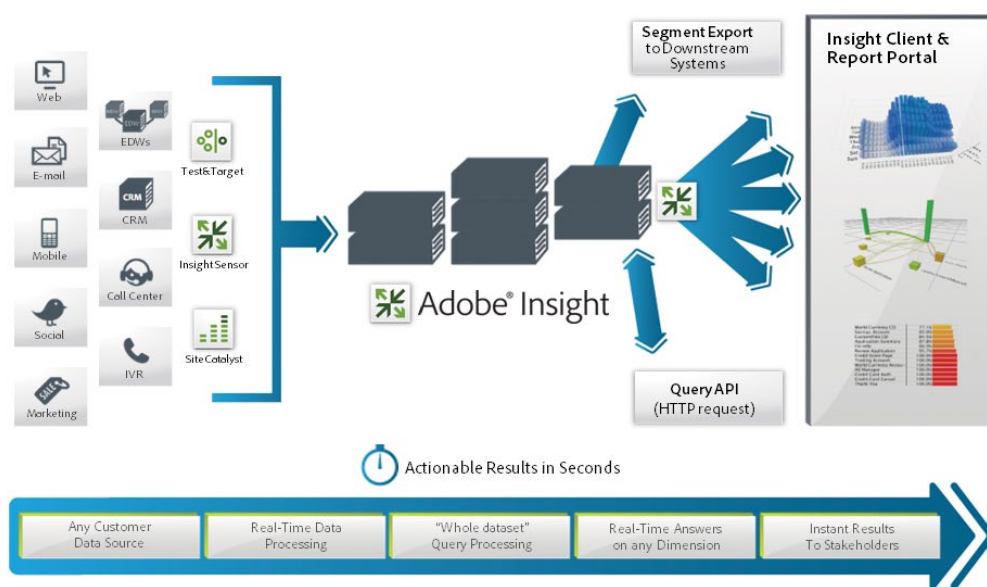
Some may think of Adobe Insight only as a solution for answering questions about consumer behavior on websites, but it was actually built as a general-purpose tool for analysis of many types of data. Adobe Insight is a highly productive solution for unrestricted processing, analysis, exploration, and reporting on terabyte-plus amounts of data, volumes that would bring most other solutions to a crawl.

Adobe Insight shines for finding patterns and trends in long-term datasets based on customer behaviors, but it also identifies emerging trends from the moment they start. Designed with usability in mind, Adobe Insight provides customized dashboards, which can be updated in real time based on a multitude of data sources to analyze business questions at a glance.

A key capability of Adobe Insight is its ability to automatically associate past behavior with attributes collected based on new customer behaviors. Imagine specifically tying a Customer ID of a newly acquired customer that visited a site today, and mapping it to that user's past web behavior that was—until today—associated with an unknown visitor. This allows marketers to tie the customer's value to marketing campaigns and online content that happened across a broad time span.

Armed with these types of correlations, businesses can react on a dime and alleviate the problems with traditional systems, which need to rerun time-consuming queries to obtain up-to-date reports or see trends. This Retroactive Event Processing feature in Adobe Insight enables various capabilities, including complex cross-channel attribution analysis. These features are unmatched when compared to other analytics or business intelligence (BI) solutions currently available on the market.

The capability to answer queries is complemented by tremendous performance and scalability when loading data. Optimized for quickly loading and processing datasets with billions of rows of data, a flexible set of transformations in Adobe Insight provides a fully configurable, real-time processing platform. For example, extraneous data can be filtered out, events at different times will be automatically correlated, secondary sources of data can be incorporated—users can conceive and build a huge array of custom processes to fuel Adobe Insight with an ever-changing array of data for analysis and move informed business decisions forward without delay.



Comprehensive ad-hoc multidimensional and customer analytical capabilities in one tool

Democratizing data analysis, visualization, and reporting

In Adobe Insight, powerful back-end ETL (extract, transform, load) technology is coupled with an elegant front-end, the Insight Client. The graphical interface is designed to encourage exploration and make it easy to graphically pose complex queries to the server. It generates reports that are clean and data focused.

The Insight Client provides many types of advanced visualizations, from dynamic tables of numbers to line charts and 3D geographical views of sales results from store locations—for example, combining external sources with an organization's own dimensions and metrics to convey information. Visualizations can be annotated with personal observations to produce high-quality, publishable reports that can be distributed to others via email, the web, or an open Query API that exposes the data or reports to external systems.

The Insight Dashboard provides enterprises with a platform for accessing metrics data from a variety of existing BI and analytics applications. With the ability to access and consolidate analytic information into a single browser-based interface, users across the organization are able to readily perform analysis and draw meaningful insights from large volumes of complex data in real time. Insight Dashboard offers integration with Adobe Insight by leveraging the Insight Query API to configure views of defined data segments, dimensions, filters, and metrics.

Adobe Insight is ideal for these types of customers:

- Enterprises with single or multiple data silos that have trouble quickly answering questions about combined online/offline data and need real-time ad-hoc analysis capabilities
- Enterprises that have a lot of data about their customers, including a common customer identifier such as an account number or loyalty card (i.e., retail, financial services, travel/hospitality)
- Adobe SiteCatalyst* customers (or users of other web analytics solutions) that want to combine data collected online with offline data sources (CRM, customer spend data) into a single analysis infrastructure. Adobe Insight can integrate an unlimited number of data sources for analysis, and it also can correlate online and offline data for deeper behavioral understanding of all customer touch points
- Digital marketing groups that want to facilitate targeting based on customer segments defined by online and offline data
- Enterprises that want to track customer behavior across channels (web, IVR, call center) to reduce servicing costs and monetize and improve customer experiences

Powerful customer analytics solutions

Although Adobe Insight was initially developed to perform rapid ad-hoc multidimensional analysis, the solution's unique balance of speed, scale, and flexibility have made it the perfect tool for advanced customer analytics. Below are just a few examples of how large organizations are using Adobe Insight to tackle complex business problems:

Cross-channel campaign attribution

Adobe Insight enables users to look at the sequencing of all the campaigns and events that touched prospects or customers before they actually converted, and then use this information to develop sophisticated campaign-attribution models to optimize the cross-channel advertising mix. Different rules-based attribution models that can be applied include: First and Last Touch; Linear (even-weighted across touch points); Participation (all interactions receive full credit); Restricted first/last touch (over-weights certain channels); Starter + Players + Closer (a percent of credit allocated to first, middle, and last positions); Adjacency scoring (interactions closer in the path to a conversion are scored higher); and Latency scoring (interactions more recent in time to a conversion are scored higher). For more details about advanced web and store attribution, please see <http://blogs.adobe.com/digitalmarketing/analytics/advanced-web-store-attribution-in-insight>.

Personalized multichannel targeting

Consumers often shop online but then complete the purchase on the phone or in a store. Or, they purchase different types of products offline than they do online. Adobe Insight can provide a greater context for online optimization with offline business transactions that can be used to enhance online customer data to provide deeper insights around customer behaviors. These enriched customer segments can be fed to downstream systems for improved testing and targeting, personalized messaging, and enhanced email marketing. For a further look at leveraging online/offline data for multichannel targeting, go to www.omniture.com/offer/1277.

Engagement scoring

Accelerating the sales cycle is top of mind at every company today. By using Adobe Insight to develop detailed, accurate multichannel engagement scores for customer prospects, organizations can achieve several critical goals, including delivering more relevant personalized content, more clearly identifying where buyers are in the purchase cycle, and giving sales teams more meaningful, actionable customer information. With Adobe Insight, evolving customer interactions across websites, email campaigns, events, and other channels can be analyzed to successfully gauge a customer's propensity to buy. For a firsthand look at how one company is using Adobe Insight to predict customer purchasing behaviors, please read www.omniture.com/offer/1071.

Predictive marketing

Digital marketers have moved far beyond the need to simply understand what happened and why it happened. The ability to act on data—while it's still current and relevant—is more critical than ever. However, the tremendous data volumes available today have made it hard for marketing professionals to extract meaningful insights and then quickly act on them. Predictive marketing delivers much-needed capabilities to address the big-data explosion and increased marketing accountability and agility demands facing digital marketers.

Using the Adobe Predictive Marketing Solution, which includes Adobe SiteCatalyst, Adobe Discover®, Adobe Insight, and Adobe Consulting Services, digital marketers are empowered with advanced predictive marketing capabilities through innovations in modeling automation and data visualization. For an in-depth look at the Adobe Predictive Marketing Solution, go to www.adobe.com/aboutadobe/pressroom/pressreleases/201203/032112AdobePredictiveMarketing.html.

Multichannel analytics for call centers

Adobe Insight can also be used to understand how customers are navigating across various channels, such as web, Live Chat, IVR, and interactions with call center agents. For instance, organizations can answer such questions as: What specific IVR prompts or web pages drove calls to a phone representative? Or, do certain versions of a web content page have a higher propensity to drive call volume? With Adobe Insight, organizations can overlay customer satisfaction and customer sentiment to find the right balance between servicing cost and customer satisfaction, potentially focusing on web containment for lower-value customer segments, and driving higher-value customers to talk to a live agent for higher-touch servicing and improved upsell and cross-sell opportunities. For additional detail about lowering call center volume, while improving customer service, go to www.omniture.com/offer/1055.

Advanced display attribution and retargeting

Today companies are paying millions of dollars to ad serving networks such as DoubleClick/Yahoo and Atlas. The problem is that they don't have good insight into the impact of that spend. Imagine being able to understand all the ads that a visitor is exposed to prior to a visit (view-through or click-through) as well as the ultimate customer value from an online as well as an offline perspective for those customers.

With Adobe Insight, marketers can better understand which banner ads drive people to a site. While some analytics tools only pinpoint the last banner ad a person saw before coming to a website, Adobe Insight enables digital marketers to see which display ads people saw on third-party sites prior to arriving at their site—even from sites a customer visited many days ago. This makes it possible to identify an event (such as reviewing a banner at some point in the past) and subsequent result—visiting a site—that other digital marketing tools simply cannot see. As a result, it is possible to give the third-party site credit within an attribution model for driving an interaction or conversion event. It also gives marketers valuable insight into which banner ads are the most effective, and therefore should be used in more campaigns.

Threat analysis for government

Adobe Insight can play an important role in empowering government agency analysts—in law enforcement, defense, and other areas—to assemble, process, and translate a vast quantity of highly sensitive data gleaned from many systems. The faster this data can be analyzed and used as the basis for clear, actionable decisions, the more effective and successful government response can be in any situation.

As the volume of agency, defense, and legal data grows, and the window of opportunity to take action on that data shortens, government decision makers need real-time analytics capabilities. With Adobe Insight, government analysts gain a unique combination of instant results—even when billions of data points are being analyzed—rapid data integration, and sophisticated analyses, including geospatial, time-series event, and n-dimensional analyses. To learn more about how Adobe Insight is helping accelerate government intelligence to the speed of thought, go to <http://fcw.com/whitepapers/2012/03/adobe-dl-accelerating-gov-intel-033012/asset.aspx?tc=assetpg&tc=assetpg>.

Enterprise rights management (ERM)

The pressure on organizations to control their classified information is greater than ever. It's not uncommon for breaches in information security to regularly make headlines, whether it is a company losing valuable intellectual property, mishandling of customer communications or patient records in healthcare, or compromised data in many other settings. To address the need to better safeguard sensitive information from accidental or malicious distribution, Adobe offers a best-in-class combination of ERM capabilities in Adobe LiveCycle® Rights Management and real-time data analysis and visualization capabilities found in Adobe Insight. As a result, organizations can track and control access to confidential information long after it leaves their firewalls, easily viewing which documents users are opening or printing and seeing in which regions or offices information might be in jeopardy. For a more complete look at Adobe Insight and ERM, go to www.omniture.com/offer/1261.

Multichannel retailing

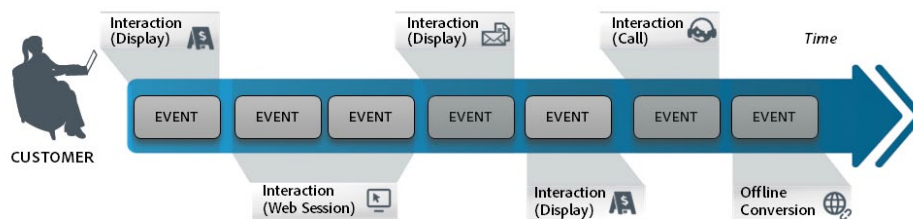
In retail, essential business data changes every second, across virtually every customer touch point and business system. With Adobe Insight, organizations can analyze constantly changing data volumes, including data from point-of-sale, kiosk, and inventory systems, as well as from multiple web properties. The aim is to correlate transactions and interactions across all channels to gain a more complete view of customers, ultimately improving customer experience and retail returns.

Adobe Insight enables retailers to uncover behaviors and trends across channels and then use that knowledge to better target customers with relevant messages delivered through the best avenues. Just a few of the results range from increased frequency of customer interactions and more purchases to improved ability to optimize product mixes and placements in stores and online. Learn more about Adobe Insight for Retail at <http://blogs.adobe.com/digitalmarketing/digital-marketing/mobile/best-buy-adobe-insight-connecting-web-mobile-to-store-sales>.

Social media analysis

Today, the question for digital marketers is no longer if they should engage in social media marketing but how to do it. Critical to success, however, is capturing and analyzing data from social campaigns and integrating it with data from other initiatives, both online and offline. One of the biggest differences between tracking social engagement compared to engagement via more traditional marketing channels is that the cause-effect can be much harder to track, compared to something like direct advertising. For instance, in social media, a customer might read a tweet or Facebook post, see a status update, click a link to a company website, and then only at a much later date come back to make a purchase.

Adobe Insight offers tremendous value to digital marketers wanting to integrate social media data into their overall strategies, giving them a single analysis infrastructure to consolidate all online and offline data for a complete view of a customer. Channel-specific systems—such as those that monitor website engagement—can monitor customer activity on that channel but miss customer activities in other channels. At the same time, certain business intelligence and customer relationship management applications can give snapshots of information on certain customer metrics but they cannot analyze patterns across the complete customer journey.



Adobe Insight provides analysts with a unique view into all customer touch points, and lets them see how customer conversations evolve and the resulting costs and values associated with each behavior.

Where does Adobe Insight fit into the market?

The market for big-data analysis is divided into several categories that overlap, and many tout the same messages about their solutions. It can be confusing to determine which solutions are best suited for which business needs. Big data is not a new phenomenon, but the market is growing and changing rapidly, with new players emerging and traditional offerings attempting to meet the growing need to incorporate and analyze huge data volumes in smarter, more efficient ways.

Traditional OLAP business intelligence tools

First, there are several well-established business intelligence (BI) tools providers. These are typically SQL-compatible databases with online analytical processing (OLAP) tools layered on top. Traditional OLAP tools are built to analyze operational data such as revenue or production. Because they are built on traditional databases, their analysis works by inserting, removing, or retrieving individual database records, which can result in poor query performance.

The workaround is 'cubes,' or pre-aggregations of data that analysts have determined the business likely will need to answer standard operational questions. To set up these cubes, business analysts define up front what information executives might need to make future strategic decisions for years to come and build the appropriate cubes to answer those questions. But this approach has several shortcomings.

Adobe Insight compared with traditional OLAP BI tools:

Unlike traditional BI tools, Adobe Insight does not rely on complex cubes or pre-aggregated information to answer business questions. Insight provides users with a visual interface that allows them to build queries with a few simple clicks, with access to a dataset that has correlated every loaded dimension with every other loaded dimension. That gives users the power of N-Dimensional segmentation and the ability to query the entire dataset with every question versus providing pre-calculated responses to the most frequently asked questions.

Here is a simplified example: total revenue by a certain department is added as a data element. Later, an executive wants to know what portion of the quarter's revenue was lost from new customers who did not sign up for a service during an initial online application process. That data was not included in the data cubes to answer the question, so the executive has a choice—move on without the answer, or wait for IT to build additional cubes that contain this data, or have an IT resource write a custom SQL query to extract the metrics of interest, and then rewrite it in a time-consuming process each time more questions arise.

Suppose the executive receives the new data, but then makes a surprising discovery and wants to know about something else that is not in an existing cube. It quickly becomes apparent to the executive that cubes constrain the number of questions that can be answered, the ability to conduct dynamic segmentation and analysis, and the capability to explore and drill down into the details of data.

The reality is that cubes and traditional BI fall short when it comes to ad hoc analysis, because they have to be rebuilt each time there's a need for new data analysis. For customers with millions of rows of data, traditional BI tools might suffice. But for customers with hundreds of millions, billions, or even tens of billions of data points, speed is everything. Adobe Insight accommodates more data, analyzes more dimensions, incorporates data in real time, and, most importantly, obtains answers in minutes instead of hours, days, or even weeks.

In-memory BI

In-memory and visually oriented BI tools are another rapidly growing category. These solutions typically offer highly visual interfaces to bring analytics to a broader class of users. In-memory analytics also take a new approach to querying data that resides in a computer's random access memory (RAM), as opposed to querying data stored on physical disks. This results in shortened query response times, allowing BI and analytic applications to support faster business decisions.

In-memory analytics can reduce or eliminate the need for data indexing and storing pre-aggregated data in OLAP cubes or aggregate tables. There are two drawbacks of in-memory systems, however: They tend to be expensive as their capacity expands; and, they can only accommodate a limited amount of data at a time, and therefore are not well suited to the big data phenomenon.

Adobe Insight provides an intuitive graphical data analysis experience and provides real-time processing and analytics 'at the speed of thought,' by querying the whole dataset directly from disk (the parallel clustered servers where all Adobe Insight data resides). Statistically significant answers to queries are provided almost instantly, and, as the numbers are continuously updated over the course of a few minutes, the results of distinct queries become increasingly exact.

Open-source, distributed storage and processing for big data

The third growing category, most often characterized by open-source frameworks, is a foundation for distributed processing of large structured and unstructured data sets across clusters of computers. These solutions, rather than offering front-end visualization and analysis, offer back-end data storage and processing capabilities that can help companies cope with the big data influx. These systems can provide a foundation for processing and storage, but they must be combined with other data warehouse and analysis tools to result in a complete solution.

A popular, emerging framework for organizations dealing with big-data challenges—namely, how to store, process, and analyze huge data volumes—across web initiatives and enterprise application deployments is called Hadoop. According to many IT experts, Hadoop is viewed as a replacement for activities traditionally managed in relational databases known for OLAP and OLTP processes.

With Hadoop, organizations can address the need for rapid, accurate management of all the information impacting a business today, including structured and unstructured data. At its most basic, Hadoop includes two elements: a data storage system built around the Hadoop Distributed File System (HDFS) and MapReduce, a programming model and software framework for developing applications that process big data volumes at the same time on several compute nodes.

As many organizations are discovering, the full value of a framework like Hadoop is realized when combined with powerful analytics and visualization capabilities in solutions such as Adobe Insight. Hadoop excels as a scalable framework for data searching, log processing, data warehousing, and video and image analysis. Many business intelligence tools are developing plug-ins to sit on top of Hadoop, which help provide analysis of the Hadoop data sets and visualization of this analysis.

However, this 'stack' is still limited in the types and amount of data that has been configured in Hadoop data models and stored in nodes/servers, and ends up being more of an interactive and visual dashboard, not capable of infinite, on-the-fly segmentation and data slice-and-dice. Adobe Insight layers much-needed, real-time analytics over all the data, enabling digital marketers to make connections and glean actionable intelligence from billions of structured and unstructured data inputs—uncovering intelligence previously unavailable to them.

Getting into the big data game

It seems as if everyone is talking about big data these days. Even the federal government is getting into the act, having announced the Big Data Research and Development Initiative that includes more than \$200 million in new commitments to "greatly improve the tools and techniques needed to access, organize, and glean discoveries from huge volumes of digital data."

Enterprises, too, are leading the charge in looking for new ways to take advantage of big data and its analysis to gain competitive advantages. The growing market is creating big opportunities, as well as some confusion because there are many different types of solutions and companies claiming superiority. Adobe Insight is already in use at the largest government agencies and corporate enterprises, enabling them to take advantage of big data to produce insights and returns.

Conclusion

Grappling with the analysis of an enormous influx of big data, especially with the advent of the web and mobile devices, will not be an easy transition for most enterprises. Those that undertake the task and embrace big data and choose real-time, ad-hoc analysis as the foundation of their business practices stand to gain a significant competitive advantage over their rivals. Big data combined with sophisticated business analytics that can incorporate both online and offline information have the potential to give enterprises unprecedented insights into customer behavior and volatile market conditions, empowering them to make data-driven business decisions faster and more effectively than the competition.

Traditional OLAP or in-memory tools have proven their worth in helping overcome the hurdles of gaining insights into big data. Big data analytics solutions that leverage big data warehouse architectures such as Hadoop are great for high-performance parallel/distributed data processing, but they can be augmented with ease through solutions such as Adobe Insight that are capable of analyzing customers' behavioral data across multiple dimensions and channels.

Using real-time, ad-hoc multidimensional analysis tools enable companies to quickly gain customer insights that change business strategies and deliver significant returns. The unique data warehouse and analytical infrastructure in Adobe Insight enables an unmatched balance of speed, scale, and flexibility that allows organizations and companies to understand and optimize cross-channel interactions to minimize costs to serve stakeholders, improve ROI, and maximize customer satisfaction.

For more information

Solution details: www.adobe.com/products/insight.html

