IBM Tealeaf CX

*A leading information source for online
Customer Experience Management*

- Passively captures network traffic without impacting site performance.

- Provides breakthrough visibility into customer interactions on your website including in-page and RIA interactions that occur solely in the browser.

- Affords the discovery of unexpected customer experiences and the scoring of customer struggle in real-time.

- Reliable and time-tested architecture – scales to fit large and sophisticated websites.

IBM® Tealeaf® CX is an industry-leading robust datastore of online customer information and the engine behind all IBM Tealeaf products. Using groundbreaking patented technology, Tealeaf CX captures and manages each visitor interaction on your website. Across the organization, from e-business and production support to customer service and compliance, Tealeaf CX is a distinct solution that delivers breakthrough visibility into your customers' online experiences.

The following IBM Tealeaf solutions are powered by Tealeaf CX:

- **IBM® Tealeaf® cxImpact** provides rapid visibility into the hidden problems impacting your business to help you detect, quantify and resolve issues and sources of customer struggle.
- **IBM® Tealeaf® cxView** affords proactive management by providing an early warning system into significant changes in critical customer experience metrics, struggle scores and KPIs.
- **IBM® Tealeaf® cxOverstat** is designed to improve campaign performance and content placement while optimizing a site's page flows with intuitive visual analytics such as heat maps, attention maps, link and form analytics.
- **IBM® Tealeaf® cxReveal** empowers customer service teams with replayable access to both live and historical customer activities on your website from existing customer relationship management and support portals.
- **IBM® Tealeaf® cxVerify** preserves a complete and permanent record of all customer interactions on your site for effective customer dispute resolution, fraud investigations, as well as for audit and compliance requirements.
- **IBM® Tealeaf® cxConnect** provides smooth integration with business intelligence, analytics and website optimization solutions for achieving cross-channel and customer behavior analysis.
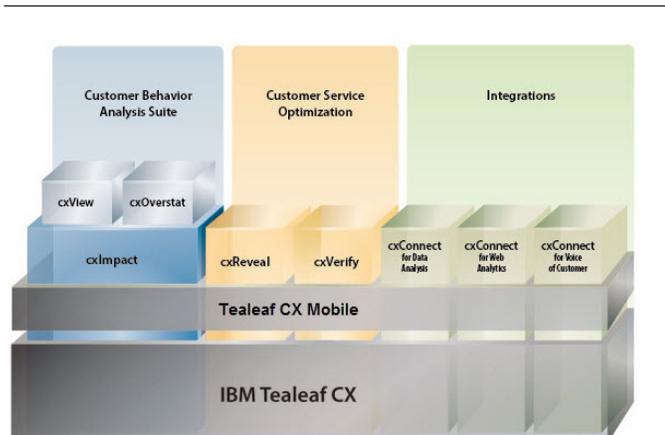
Figure 1: IBM Tealeaf customer experience solutions.

Feature highlights

- **Real-time event engine** utilizes complex pattern analysis to track and score customer behavior in real-time.
- **Segmentation analysis** made simple via the automatic population of session dimensions.
- **Intelligent data management** and flexible archiving of customer experience data.
- **Data security and privacy** through global data destruction, authenticated client access and roles-based filtering.

IBM® Tealeaf® CX Mobile

Tealeaf CX Mobile enables you to capture, replay and understand the experiences of customers accessing your web properties via mobile devices. The module is sold separately from Tealeaf CX.

How it works

Tealeaf CX provides a non-intrusive, real-time method to capture what each customer is doing and seeing on each page, across a visitor session. To do this, Tealeaf CX passively records the HTTP(S) request and response data by "sniffing" TCP/IP packets from the network via an existing span port or network tap. Example types of captured data include HTTP headers, URLs, URL form fields (both get and post), user login names, cookies, server host names, application, client IPs, page sizes, the HTML source code of the page returned to the customer and other diagnostics included in the HTTP(S) interaction between the customer's browser and the web application. In addition, the capture process records the total round trip page generation times for each page requested in the session, page cancellations, and the connection-type experienced by the customer (e.g., T1, DSL) as measured by the page delivery rate.

Tealeaf CX broadens online visibility by capturing in-page interactions and client-side functions executed by Rich Internet Application (RIA) technologies such as AJAX, Flash and Flex. Tealeaf CX allows you to optimize form pages and in=page layouts, as well as client-side functionality, to deliver the optimal customer experience. Examples type of captured data include form field abandonment, form-field validation messages, client-side java script errors, end-to-end response time, scrolling and mouse movements. With Tealeaf CX, you not only have breakthrough visibility into the online experience across a visitor session, you also have industry-leading insight into the customer behaviors that occur solely within the web browser itself.
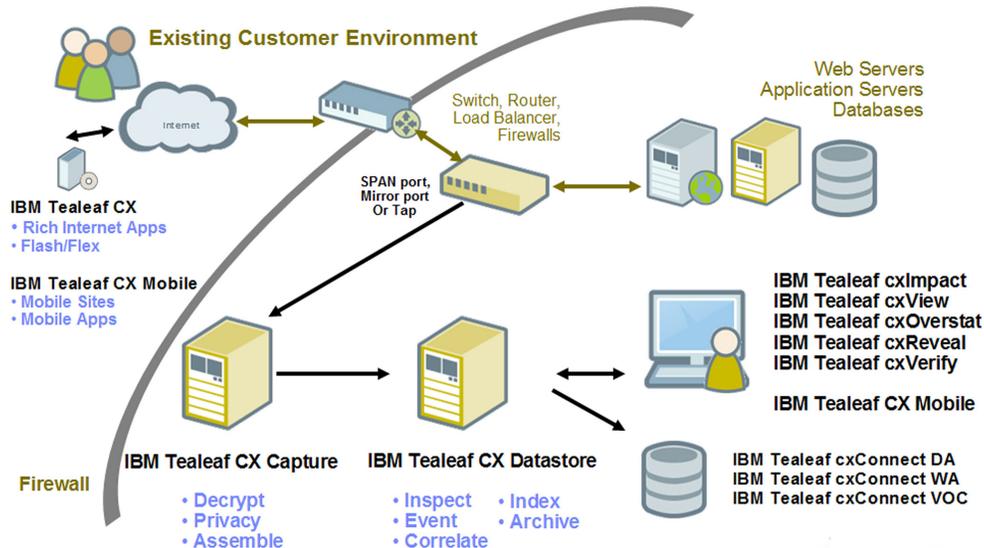

Figure 2: IBM Tealeaf CX Architecture

Real-time data proccessing

As data is received by Tealeaf CX it is streamed through a process that performs specific filtering and manipulation functions to normalize and protect the data. After data is normalized, it is indexed, archived and made available for further access and analysis by other IBM Tealeaf solutions.

Real-time event engine

Advanced pattern recognition

The event engine analyzes captured data in real-time against user-defined rules to provide insight into customer struggle, business process health, customer activity, application errors and performance problems. Using the drag-and-drop editor, event rules can be defined against the occurrence or absence of simple page-level conditions or complex stateful conditions based on multiple actions in the session including sequence, time, and thresholds.

Examples of business events include:

- **Business process**: each step in a business process, or a customer completing or not completing a multi-step business process.
- **Customer struggle**: a customer going through the checkout process multiple times, repeatedly trying to complete the billing information page, or going to help multiple times.
- **Product, feature and service tracking**: a product, feature, or service selected by a customer.

Examples of technical events include:

- **Application error**: an error exception message (e.g., java exception) or global error page.
- **Page error**: HTTP 500, HTTP 40x, blank page, or page weight too great (size > 40KB).
- **Application response**: Pages taking longer than 10 seconds to load.

Note: events do not require application code changes or programming skills to create and maintain. To help you get started quickly, Tealeaf CX includes a set of out-of-the-box events.

Struggle scoring

In real-time, as behavioral patterns that signify struggle are identified, the event engine grades the magnitude of the struggle using defined business rules to create a struggle score. Struggle scores are then used to monitor the health of the website.

Multi-dimensional data recording

When struggle patterns or other events are identified, the event engine automatically records customizable attributes about the customer experience, such as transaction success status, business data (shipping country) or environmental information (browser type), and makes them available for real-time, multi-dimensional segmentation.

Reliable and security-rich architecture

Flexible, scalable platform

The Tealeaf CX platform can be scaled based on traffic volumes, data archiving and end-user volume requirements. Its distributed architecture enables optimal utilization of available system resources to be responsive even when processing large data volumes. It can be scaled horizontally to meet future site traffic growth requirements while still providing a single, unified view of the captured data. It is also designed to exploit existing capabilities – data back-up and storage – so companies can integrate the Tealeaf CX platform into their current practices without having to adopt new procedures.

Security and privacy

The Tealeaf CX platform is designed to satisfy even the most rigorous requirements for security and privacy and is used with confidence by many Fortune 500 companies, major banks, and government agencies. Captured information that appears in the HTTP(S) request or response – passwords, Social Security numbers (SSN), or account numbers – can be kept, destroyed or encrypted as soon as it enters the system. Encrypted information appears as if it were destroyed unless the user viewing the session is authenticated on the basis of role, and thereby authorized to view that specific information. In addition, captured data is stored in an encrypted format to help eliminate unauthorized data access. To meet security compliance requirements, the Tealeaf CX platform maintains a detailed audit trail of data access and system changes.

Intelligent data management and flexible archiving

The Tealeaf CX platform provides flexible data management and archiving so you can archive data for extended periods of time for problem resolution, customer behavior analysis, dispute resolution and other web archiving needs. Tealeaf CX intelligently determines which sessions are of interest and should be archived based on user-defined data management rules. Before the selected sessions are archived, the data is compressed to reduce data storage requirements.

About IBM Enterprise Marketing Management

The IBM Enterprise Marketing Management (EMM) Suite is an end-to-end, integrated set of capabilities designed exclusively for the needs of marketing organizations. Integrating and streamlining all aspects of marketing, IBM's EMM Suite empowers organizations and individuals to turn their passion for marketing into valuable customer relationships and more profitable, efficient, timely, and measurable business outcomes.

Delivered on premises or in the Cloud, the IBM EMM Suite of software solutions gives marketers the tools and insight they need to create individual customer value at every touch. The IBM EMM Suite helps marketers to understand customer wants and needs and leverage that understanding to engage buyers in highly relevant, interactive dialogs across digital, social, and traditional marketing channels.

Designed to address the specific needs of particular marketing and merchandising users, the IBM EMM Suite is comprised of five individual solutions. Digital Marketing Optimization enables digital marketers to orchestrate relevant digital interactions to attract and retain new visitors and grow revenue throughout the customer's lifecycle. With Customer Experience Optimization eCommerce professionals can turn visitors into repeat customers and loyal advocates by improving the digital experience of every customer. With Cross-Channel Marketing Optimization customer relationship marketers can engage customers in a one-to-one dialogue across channels to grow revenue throughout the customer's lifecycle. Price, Promotion and Product Mix Optimization allows merchandisers and sales planners to make price, promotion and product mix decisions that maximize profit and inventory utilization. And with Marketing Performance Optimization, marketing leaders, planners and decision-makers can model and assess mix, and manage marketing operations to maximize ROI.

Over 2,500 organizations around the world use IBM EMM solutions to help manage the pressures of increasing marketing complexity while delivering improved revenue and measurable results. IBM's time-tested and comprehensive offerings are giving companies such as Dannon, E*TRADE, ING, Orvis, PETCO, Telefonica | Vivo, United Airlines and wehkamp.nl the power and flexibility required to provide their customers and prospects with what they expect today – a more consistent and relevant experience across all channels.