

ZAPTHINK ZAPNOTE™

EPISTEMIC *GIVING REAL POWER TO BUSINESS ANALYSTS*

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Analyst: Jason Bloomberg

Abstract

Traditional business intelligence (BI) solutions are often inflexible and incomplete, because they depend on rigidly structured data found in relational database systems (RDBMS). Such solutions often exclude nonrelational data, and force users into a "SQL query" mindset.

Epistemic leverages the power of Web Services to break free from the traditional relational database/SQL query approach to business intelligence that poorly addresses non-relational data and provides intelligence of limited use. Where business analysts using these traditional tools must massage the results in Excel in order to analyze them, analysts using the Epistemic Analytics Toolkit can begin their analysis right away.

Epistemic's use of Web Services provides two important lessons for other software vendors: first, Web Services can provide substantial value to vendors who do not consider themselves "Web Services vendors," and second, Web Services offer much more than simple point-to-point integration.

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Putting Intelligence into Business Intelligence

Traditional business intelligence (BI) solutions suffer from the “hammer and nail” problem: if the only tool you have is a hammer, all problems look like nails. Since traditional BI solutions sit on top of relational databases, all BI queries look like SQL queries. BI tools display results that look like SELECT statement result sets. The business analyst must then import these results into Excel, and spend many hours within Excel performing what amounts to grunt data manipulation tasks. Only after the analyst has fully massaged the results can the true analysis actually begin. After all, businesses aren’t run with tables of numbers; executives need key performance indicators and other critical knowledge about their business to manage their companies properly.

Epistemic uses Web Services to break out of the hammer and nail rut that much of BI remains mired in. The *Epistemic Analytics Toolkit*, Epistemic’s core product, understands that data come in many forms: relational, hierarchical, and unstructured, just to name a few. The Toolkit groups “islands of information” under loosely coupled Web Services veneers in order to present the data in a form that preserves the underlying context of the information that is often lost in the pure relational approach. As a result, the information the Toolkit presents to the user retains more of its meaning, and it is already organized in a useful fashion. Instead of having to spend hours massaging the data, the business analyst can get right to what they’re supposed to be doing: analyzing the data.

The Epistemic Analytics Toolkit

The *Epistemic Analytics Toolkit* provides the infrastructure for rapid implementation of BI solutions that provide enterprise users with a synthesized view of their data and the ability to analyze it on demand. The Toolkit enables users to add the power of analytics to the operational power of existing applications. It also gives users an integrated view of their value chain, in real time, including information from both the front office and back office, as well as data from suppliers, customers, and partners.

The Epistemic Analytics Toolkit provides the following capabilities:

- Enables access to disparate data sources without physical aggregation, such as relational and multidimensional databases, XML documents, Web Services, enterprise applications, and real-time data feeds
- Inference-based analysis and dynamic Online Analytical Processing (OLAP) that consolidates and aggregates data on-the-fly, and classifies and categorizes the data on

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demand

- Application Programming Interfaces (APIs) that both simplify integration with existing applications and enable users to develop custom solutions
- Includes functionality of the *OnDemand Analytics* product, which enables users to perform analysis when needed.

Epistemic has written the Epistemic Analytics Toolkit in Java. The Toolkit consists of the *Epistemic Analytics Server*, which includes APIs for accessing a variety of data sources, as well as several libraries for information delivery. It also hosts analytic, notifier, and data caching services. These capabilities are as follows:

- The Epistemic *Data Access API* provides access to external data sources from within the Epistemic Analytics Toolkit. The Toolkit represents external data as user-centric entities called *subjects*, which are simply units of information that correspond to business entities like accounts, customers, and products. A subject acts as a single point of access for all pertinent information about a business concept whose data might reside in multiple data sources.
- Epistemic's *OnDemand Analytics* are analytic services that users can invoke on demand, where the user defines the parameters of the analysis at runtime. OnDemand analytics provide for ad hoc analysis including dynamic expression evaluation, dynamic OLAP to allow on-the-fly operations using dynamically defined dimensions and metrics, and inference-based analysis that permits classification and categorization of data using complex rules.
- The Epistemic Analytics Toolkit also contains a data caching service and a notifier service.

The ZapThink Take

Epistemic is a great example of a software company that leverages the power of Web Services in their product, but does not consider themselves a "Web Services company." Epistemic focuses on the business needs of its customers, who aren't necessarily looking for Web Services. Rather, they are looking for flexible, useful business intelligence tools that help them run their companies. Web Services are simply a critical part of the "behind the scenes" technology that makes Epistemic's Toolkit so flexible and powerful.

Much of today's use of Web Services is for simple integration: using XML to connect two systems together cost effectively. Such integration clearly improves companies' ROI, but only scratches the surface of what Web Services can do. Epistemic takes advantage of some of this promised power by leveraging the principles of Service-oriented development. *Service-oriented development (SOD)* consists of several new approaches to the process of creating software that Web Services enable. In particular, Epistemic combines various backend data sources (which may themselves be Web Services) into subjects and provides access to these subjects, as well as the Toolkit's analytic capabilities, via Web Services. As a result, the Toolkit assembles data sources into coarse-grained islands of information, exposed via Web Services interfaces. This SOD approach is in marked contrast to the traditional SQL-based approach to joining data from multiple sources. Such traditional data integration approaches are often very resource intensive, brittle, and provide results in inflexible result sets. Epistemic avoids these problems by leveraging the power of Web Services.

Profile: Epistemic	(July 2002)
Date Founded: 1996	
Funding: Private	
CEO and founder: Vidur Dhanda	
Employees: 12	
Products:	
• Epistemic Analytics Toolkit	
Address:	
PO Box 1088	
Brookline, MA 02446	
URL: http://www.epistemic.com	
Main Phone: 617-566-1252	
Contacts: sales@epistemic.com	

Related Research

- *Service-Oriented Development* Insight (ZTI-WS101)
- *Web Services Technologies and Trends* Report (ZT-WEBSRV)
- *Scientio* ZapNote (ZTZN-0113)



About ZapThink, LLC

ZapThink is an IT market intelligence firm that provides trusted advice and critical insight into XML, Web Services, and Service Orientation. We provide our target audience of IT vendors, service providers and end-users a clear roadmap for standards-based, loosely coupled distributed computing – a vision of IT meeting the needs of the agile business.

ZapThink's role is to help companies understand these IT products and services in the context of SOAs and the vision of Service Orientation. ZapThink provides market intelligence to IT vendors who offer XML and Web Services-based products to help them understand their competitive landscape and how to communicate their value proposition to their customers within the context of Service Orientation, and lay out their product roadmaps for the coming wave of Service Orientation. ZapThink also provides implementation intelligence to IT users who are seeking guidance and clarity into how to assemble the available products and services into a coherent roadmap to Service Orientation. Finally, ZapThink provides demand intelligence to IT vendors and service providers who must understand the needs of IT users as they follow the roadmap to Service Orientation.

ZapThink's senior analysts are widely regarded as the "go to analysts" for XML, Web Services, and SOAs by vendors, end-users, and the press. They are in great demand as speakers, and have presented at conferences and industry events around the world. They are among the most quoted industry analysts in the IT industry.

ZapThink was founded in October 2000 and is headquartered in Waltham, Massachusetts. Its customers include Global 1000 firms, public sector organizations around the world, and many emerging businesses. ZapThink Analysts have years of experience in IT as well as research and analysis. Its analysts have previously been with such firms as IDC and ChannelWave, and have sat on the working group committees for standards bodies such as RosettaNet, UDDI, CPExchange, ebXML, EIDX, and CompTIA.

Call, email, or visit the ZapThink Web site to learn more about how ZapThink can help you to better understand how XML and Web Services impact your business or organization.

ZAPTHINK CONTACT:

ZapThink, LLC
11 Willow Street
Suite 200
Waltham, MA 02453
Phone: +1 (781) 207 0203
Fax: +1 (786) 524 3186
info@zapthink.com

