



BUYER CASE STUDY

PricewaterhouseCoopers Helps Clients Manage Financial Risk and Compliance with Cambridge Semantics' Anzo Smart Data Platform

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IDC OPINION

PricewaterhouseCoopers (PwC) is a network of firms in 157 countries that are committed to delivering quality in assurance, tax, and advisory services. In addition, in the United States PwC concentrates on 16 key industries and provides targeted services that include – but are not limited to – human resources, deals, forensics, and consulting services. The organization helps resolve complex issues and identify opportunities. Within PricewaterhouseCoopers, the capital markets technology consulting team develops solutions to help financial firms manage their risk, including the risk of misuse of material nonpublic information. Within that area, PwC helps clients select, configure, and implement various tools, including the Anzo Smart Data Platform (Anzo SDP) tool from Cambridge Semantics, to manage their risk and identify potential exposures of material nonpublic information. In addition:

- The Anzo SDP uses industry-defined semantic models developed by various industry groups or company-defined models to link and manage diverse data. The semantic models are graph models. They allow for the data to be linked by business concepts and meaning and allow for the metadata to travel with the data.
- The Anzo SDP enables an investigative approach based on combining disparate data sources in an interactive model that allows compliance officers to investigate for compliance violations. Anzo SDP can link and aggregate account activity, Web logs, email and phone archives, IM communications, and other sources to uncover potential violations of regulatory requirements as well as internal policies and procedures violations.
- PwC has helped clients evaluate how Anzo SDP can allow them to move beyond traditional search solutions to add capabilities and features based on semantic technologies and graph relationship analysis to provide information about patterns of activity and hidden relationships that exist in the data coming from multiple sources but are not easily detectable using standard search and retrieval products.
- Cambridge Semantics' Anzo SDP is an example of the next generation of information access platforms that IDC calls "unified information access." These platforms use semantic analysis, graph databases, content analytics, and other tools to expand and enable what has been the traditional search platform.

IN THIS BUYER CASE STUDY

This IDC Buyer Case Study examines the use of Cambridge Semantics' Anzo SDP – a next-generation semantically enabled information access platform – by PricewaterhouseCoopers to help

investment banking and financial trading clients develop a financial risk compliance solution to identify and address the potential misuse or dissemination of material nonpublic information.

SITUATION OVERVIEW

Organization Overview

Peter Horowitz, in PwC's Financial Services Advisory practice, is a principal consultant and works with PwC regulatory subject matter specialists as well as a whole host of technology consultants in the capital markets space. Capital markets here applies broadly to both the investment banks as well as asset managers and their service providers.

Several years ago, PwC's regulatory leaders identified insider trading as a very important topic for the company's clients and saw the potential for many types of enforcement actions coming from the SEC and the U.S. Justice Department in the foreseeable future. To get in front of this, PwC began reviewing the commercial vendors that were out in the marketplace that claimed to address these kinds of situations.

What PwC found is that most of the vendors in the unified information access space were not adequately providing the types of solutions that were needed to successfully handle the aforementioned difficult and complex situations. Specifically, identifying the potential for misuse of material nonpublic information can be extremely difficult to detect. Emails, messages, and trades and the people making them need to be looked at in a holistic manner. Links and relationships need to be examined in detail, no matter what the source is. For compliance officers and analysts, identifying and exploring these relationships are a crucial component of understanding what, how, why, and when information is shared and whether it is compliant or not.

Challenges and Solution

PwC had started to think about some of the emerging technologies that went beyond simple search and indexing. PwC knew and understood that it wanted to find solutions to help clients index not just the key words but basically every word in unstructured texts, such as emails, instant messages, research reports, expert network memos, and other similar data forms in a way that leveraged the semantic context of those words. PwC wanted to be able to help clients ingest structured data, orders, executions, cancels, corrects, positions, market data, and so forth and link it all together so that clients could evaluate the information as a whole.

PwC knew that to accomplish this, it would need search as well as natural language processing and it would also need the ability to link information and entities in a flexible way for detection and analysis purposes. In this particular case, the legacy data models that existed for this type of information were not flexible and responsive enough either for ad hoc inquiry or to accommodate new research approaches. Traditional database products require designers to operate within a fixed model of the relationships in the data and to anticipate in advance what inquiries are going to be made of the data warehouse. They then design the data model that way and then are ready for those inquiries. If a new inquiry comes up in a data warehouse setting that falls outside the scope of the current data model, it requires a new design and a new add or modification to the data model. According to Horowitz, PwC understood what features and functions that it needed, and when it started looking for platforms that had either parts or the whole set of requirements covered, it identified Anzo SDP from Cambridge Semantics as a solution that specifically offered capabilities to ingest internal and external information and to link it semantically with other entities and information in the repository. Once composed, users

could issue queries about that data, set up new dashboards easily, and be able to drill into the data and its relationships.

As part of its research process, PwC examined a number of products from a wide variety of vendors before selecting Cambridge Semantics' Anzo SDP as one of the products to consider when helping clients manage challenging risks. Specifically, PwC has helped clients use Anzo SDP to perform analytics on data and provide related insight and perspectives.

Identifying Relationships Using Cambridge Semantics' Anzo SDP

PwC has experience and templates that it uses to help clients design, configure, and implement solutions in their own organizations. According to Horowitz, the compliance department in these organizations has one of the toughest data challenges. The compliance department has to collect information from all the organizations' different third-party sources and then integrate it with all of the different corporate systems, HR, learning and development, and so forth to get a picture of what is happening inside these organizations. Combining all of these with news, instant messages, and other trading data is an enormous and overwhelming task for many investment banks and financial service firms. Horowitz believes that the budgets that many financial services institutions have committed to compliance or risk analysis are not enough to cover all of the needs using standard relational database technology. He believes that semantic tools, such as Anzo SDP and others, should become part of the future state of the compliance strategic architecture, given the nature and enormity of the challenge facing financial organizations.

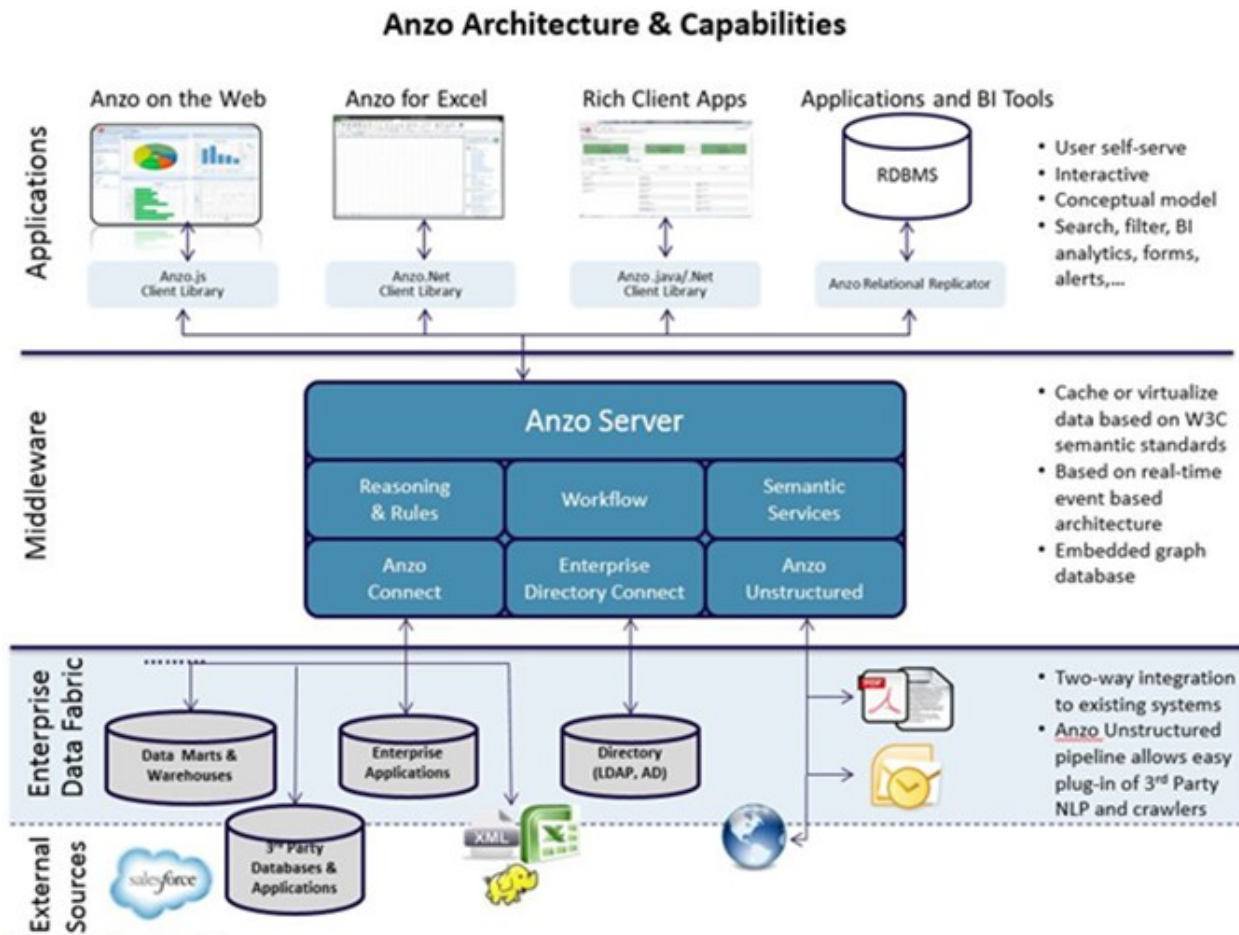
Anzo Smart Data Platform

The Anzo Smart Data Platform is a semantics standards-based set of software and tools combined with a modern, enterprise-class services-oriented and event-driven architecture. This platform sets the foundation for building and deploying what Cambridge Semantics calls Smart Data solutions. These solutions are tailored to specific business purposes, focus on end-user self-service, deal with any data from anywhere, and can be built and evolved quickly and flexibly. Anzo Smart Data solutions are made possible by turning data into Smart Data and by leveraging industry-defined semantic models or company-defined models to link and manage diverse data. The semantic models are graph models. They allow for the data to be linked by business concepts and allow for the metadata to travel with the data.

The Anzo Smart Data Platform was built for easy integration and use of third-party software modules to provide additional value-added capabilities. Cambridge Semantics has already integrated software modules from a variety of vendors and partners to allow for improved crawling, analytics, text processing, machine learning, and language translation. Enterprises can use these modules to improve their analytics and data processing. Figure 1 shows an architecture diagram describing how Anzo SDP works.

FIGURE 1

Anzo SDP Architecture



Source: Cambridge Semantics, 2015

Results

PwC's clients have been happy with the solution that they have developed on top of the Cambridge Semantics Anzo SDP platform. PwC has created an insider trading ontology and other facilitators that it uses to help clients evaluate, configure, and implement Anzo SDP.

With respect to return on investment (ROI) calculations, PwC hasn't helped clients make any formal ROI estimates for their solution as of yet, but it is examining the benefits from its clients' point of view. For clients using standard compliance platforms today, with hundreds of people looking at false positives day in and day out to clear them, from anti-money laundering to fraud to antitrading, through email surveillance and the like, PwC sees the business case as being simple to justify.

Today, financial institutions have many analysts monitoring compliance and the systems in use at these firms are generating 95% false positives, needing hundreds of analysts to remediate, cure, and then resolve them. Solutions such as Anzo SDP and others offer quality alerts and exceptions that are

a small fraction of the alerts that are offered by typical solutions used in the industry today. These solutions significantly reduce the number of analysts necessary to do all this work.

ESSENTIAL GUIDANCE

Unified information access systems are a growing trend in the search and content analytics market. These types of systems combine access to structured and unstructured information in new and interesting ways such that end users can get a holistic view of a particular topic, situation, or subject.

Unified information access platforms provide a single point of access that integrates and finds relationships in information across multiple heterogeneous sources of information. These platforms have the following characteristics:

- Integrate access to unstructured, semi-structured, and structured information
- Combine features of database, business intelligence, and search technologies in a single architecture
- Provide a modular, well-integrated set of tools and services to normalize, index, search, query, present, visualize, analyze, and report information
- Create a single platform for information gathering, analysis, and decision support
- Accommodate quickly changing information through real-time or near-real-time updating and analytics
- Are highly scalable
- Provide a platform for building information-centric applications that support specific industries, tasks, and workflows

The market for search and content analytics continues to produce solutions and innovations geared to help users and businesses address the unsolved problems they face in attempting to find information online and within their organizations. The current market for search and content analytics has already begun to diversify, embedding these foundational technologies in search-based applications, big data applications, reputation monitoring applications and, especially, unified information access platforms, content analytics applications, and a new generation of decision support and recommendation applications.

IDC sees a number of long-term trends that will support the continuing growth in the unified information access space, including:

- Growth of content analytics analyzing unstructured information, adding value via metadata, linkages to structured data, and overall organization
- The shift to unified access technologies and the convergence of search with business intelligence
- The increased usage of voice recognition, machine translation, and machine learning technologies as part of a comprehensive suite of solution development tools
- The emerging development and use of semantic- and graph-based technologies to identify, explore, and report on relationships between entities, events, actions, and time

The unified information access market is continuing to be validated by the number of recent acquisitions in the search and content analytics market, especially around content analytics, mobile-based search and semantic search and, most recently, cognitive systems.

Through the use of solutions like Anzo SDP, leading organizations are moving beyond traditional search solutions to add capabilities and features based on semantic technologies and graph relationship analysis to provide information about patterns of activity and hidden relationships that exist in the data coming from multiple sources but are not easily detectable using standard search and retrieval products. Cambridge Semantics' Anzo SDP is an example of next generation of information access platforms that IDC calls "unified information access." These platforms use semantic analysis, graph databases, content analytics, and other tools to expand and enable what has been the traditional search platform.

Organizations that are looking beyond traditional search and information management tools should closely examine the capabilities that semantic analysis technologies and platforms like Cambridge Semantics' Anzo Smart Data Platform offer. These platforms provide a whole range of capabilities that are extremely well suited to the challenges posed by the combination of structured and unstructured information.

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Related Research

- *Market Analysis Perspective: Worldwide Content Analytics, Discovery, and Cognitive Systems, 2014* (IDC #252951, December 2014)
- *IDC's Software Taxonomy, 2014* (IDC #249238, June 2014)
- *Worldwide Search and Content Analytics 2014-2018 Forecast and 2013 Vendor Shares* (IDC #248830, May 2014)
- *Requirements for Unified Information Access Systems* (IDC #244622, November 2013)
- *Unified Information Access 2013: Unifying Content Silos to Uncover Hidden Value* (IDC #240053, March 2013)

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