

## Answering the Tough Questions

Today's financial analysts must find critical fragments of information in an exploding sea of data, and piece them together to meet their research and decision-making objectives.

- Unlike data bases, the **FAE** lets analysts pose queries in English rather than SQL, carrying out a clarifying dialogue if needed.
- Unlike search engines, the **FAE** returns **answers** and **lines of reasoning** behind each answer – not just possibly relevant documents – by drawing on federated data sources and human-like common sense reasoning.

## Solutions to Your Analysis Challenges

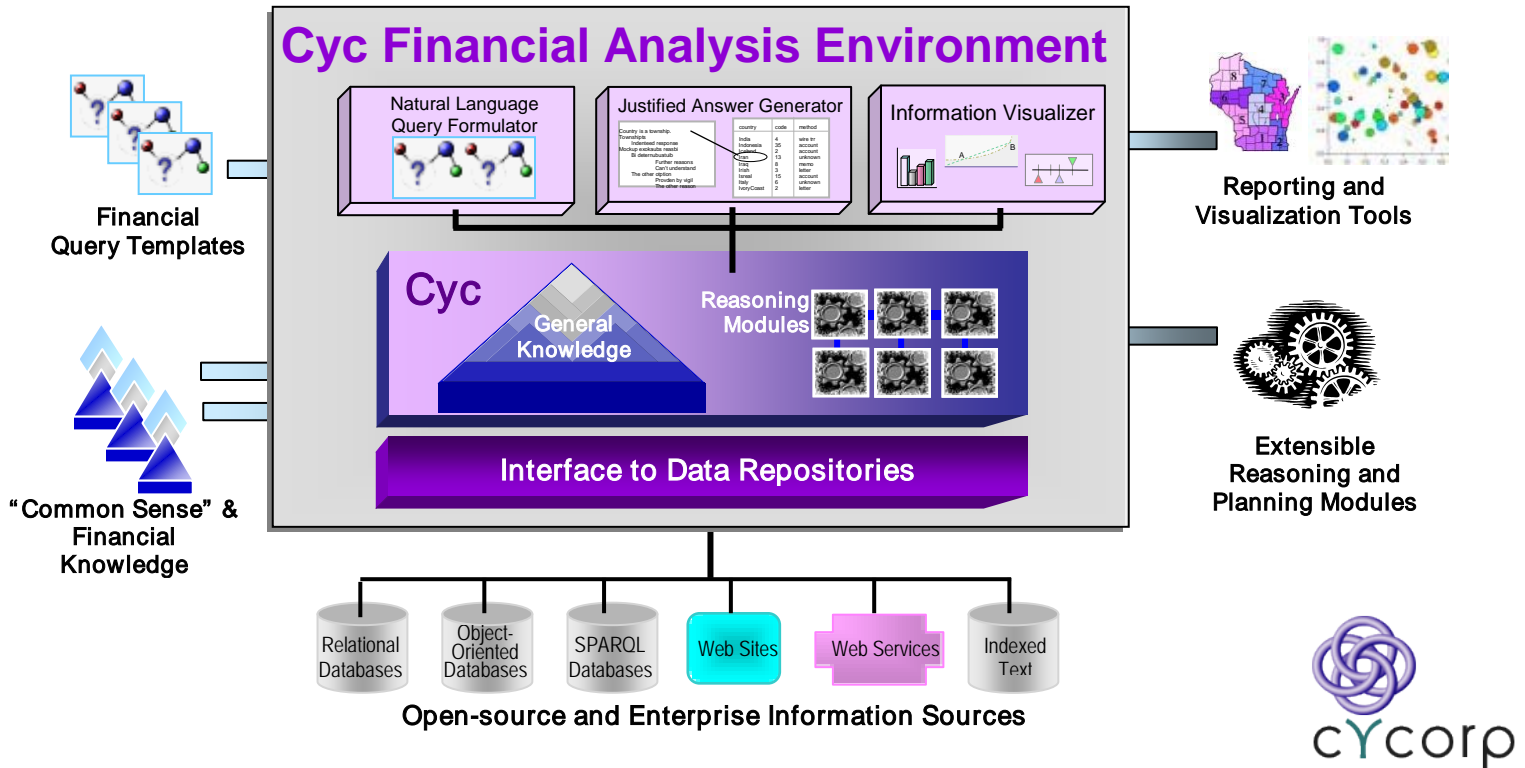
Building on the powerful **Cyc Analysis Platform**, the **FAE** provides tools specifically designed to support complex knowledge-fusion tasks. The **FAE** is tailored to the financial sector, with an enhanced financial ontology and domain lexicons, business rules, and interfaces. Cycorp's **Semantic Knowledge Source Integration** and question-answering API's permit powerful integration with a variety of open-source and enterprise data sources.

## Answers, Justifications, and Visualizations

The **FAE** provides a variety of information displays as well as support for integrating into your existing analysis and visualization applications. The **FAE** provides event timelines, relationship networks, and on-the-fly fact sheets about companies, individuals, sales and acquisition transactions, and other relevant financial concepts. Each answer is accompanied by a detailed, dynamically-generated, narrative-style justification, with citation links to all sources that support (or argue against) that conclusion.

## A Sampling of Financial Questions

1. Which Fortune 500 companies have CEOs that have been board members for a non-US investment bank?
2. What customers have previously made >\$1M high risk investments in European markets within one week of a 2% drop in the AMEX?
3. What was the performance of the DJIA in each 48 hour period subsequent to a mention of uranium enrichment by an Iranian official?
4. What publicly traded non-US pharmaceutical companies have patent disputes with a US pharmaceutical company that owns a subsidiary in the country in which the disputant is based?
5. What Japanese steel manufacturers receive more than 50% of their iron ore from US or Canadian mines?
6. What, if any, is the shortest sequence of previous co-board members connecting a board member of AIG with a board member of Merrill?
7. What type of derivative, whose underlyer is equity in African corporations, is most heavily invested in by GS corporate customers in Japan?



## Guided query formulation

- Intuitively pose queries via natural language and drag-and-drop query construction
- Be guided by dynamic, context-based query recommendations and concept suggestions

## Rapid entry of domain information

- System-guided natural language interface
- Automatically converted to structured knowledge
- Clarification dialogs to resolve potential ambiguities

Task Info Concepts Queries

Find Stop

Simple

PERSON is a chief executive officer (CEO).  
Steve Ballmer is an executive of the commercial organization COMPANY.  
COMPANY sells PRODUCT-TYPE.  
COMPANY'S earnings per share is EARNINGS.  
COMPANY'S stock traded VOLUME of shares since last close.  
COMPANY is listed with STOCK-EXCHANGE.  
COMPANY'S main business type is BUSINESS-TYPE.  
COMPANY-1 and COMPANY-2 are competitors.  
COMPANY belongs to INDUSTRY according to Standard & Poor's.  
COMPANY is an S&P 5000 corporation.  
The price of a share of stock in COMPANY has risen by PERCENT since last market close.  
The market capitalization of COMPANY is MONETARY-AMOUNT.  
Shares in COMPANY last traded at PRICE.  
The price of a share in Oracle has risen by MONETARY-VALUE since last market close.  
FOUNDER is a founder of Google, Inc.  
Yahoo's price to earnings ratio is RATIO.  
COMPANY'S 3 month average daily volume is DAILY-VOLUME.  
Intel's daily volume is DAILY-VOLUME.  
Google's 52 week price range is PRICE-RANGE.  
Is Google larger than Yahoo with respect to

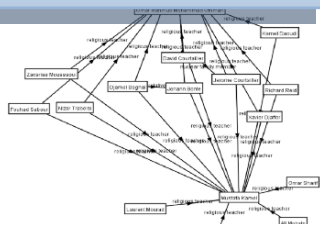
\* The price of CORP stock has changed PERCENT% since last close  
\* and CORP is in the Software industry.

## Fully justified, dynamically generated answers

- View explanations and the underlying rationale and source information
- Exclude facts, rules, or sources you deem unreliable or irrelevant
- Perform *what-if* (hypothetical) reasoning, and confirm or deny system-made suppositions

## Discovery of relevant relationships

Find semantically meaningful (but possibly undocumented) connections; e.g., AIG's CEO, Edward Liddy, was the CFO of G.D. Searle & Co., whose CEO, Donald Rumsfeld, was ...



## Simple Yet Sophisticated Semantic Reasoning Power

The **FAE** delivers unmatched reasoning power in a simple-to-use tool by building on the **Cyc Analytical Platform's** rich set of knowledge representation and reasoning capabilities:

- A **cross-domain knowledge-base** of over 300,000 general real-world concepts, 20,000 types of relations among them, and 3 million facts and rules about these concepts, all in a richly-represented formal logic enabling machine reasoning
- An **integrated library of industry-specific knowledge**, including concepts, relationships, and rules, plus easy **form-based natural-language entry of new information**
- An extensible suite of **powerful inference engines** that answer questions requiring complex chains of reasoning and planning
- A **library of query templates and query components**, represented in both natural language and formal logic, supporting easy construction of precise, complex queries
- Cross-domain **visualization tools** to display textual, spatial, and temporal information using expandable outlines, graphs, timelines and maps
- Flexible **reporting and information exporting** facilities to produce structured textual reports, SQL databases, XML data files, or OWL ontologies
- Semantic integration with external data, providing transparent access to databases, spreadsheets, websites, web services, or other structured and semi-structured information

To find out how a Cyc Analysis tool can help you, contact Cycorp at:

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