

Answering the Tough Questions

Today's analysts – business, defense, intelligence, political, medical, financial, etc. – must find critical fragments of information in an exploding sea of data, and piece them together to meet their research objectives.

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

Solutions to Your Analysis Challenges

The **Cyc Analysis Suite** provides tools specifically designed to support complex knowledge-fusion tasks. The tools extend the general **Cyc Analytical Platform**, customized for specific industry sectors with domain-tailored ontologies, knowledge packs, lexicons, business rules, and interfaces. Cycorp's **Semantic Knowledge Source Integration** and question-answering API's permit further customization to interface with your specific knowledge management and analysis environment.

Answers, Justifications, and Visualizations

The **Cyc Analysis Suite's** tools provide a variety of information displays, offering the analyst alternative views of the data, including maps, event timelines, relationship networks, and dynamically-assembled fact sheets about domain-relevant concepts (e.g., companies, terrorist groups, acquisitions, sales, attacks, countries, specific individuals, and so on.) 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 Cyc Analysis Tools

Medical Studies / Clinical Trials

Plan and review study data including populations and subgroups, medical conditions, treatments, symptoms; formation and evaluation of cohorts

Counter Terrorism

Research terrorist group leadership structure, weapons, activities, beliefs, motives, areas of operation, ROE's, ...

Financial Analysis

Evaluate company performance, market trends, impacts of world events, ...

Business and Market Analysis

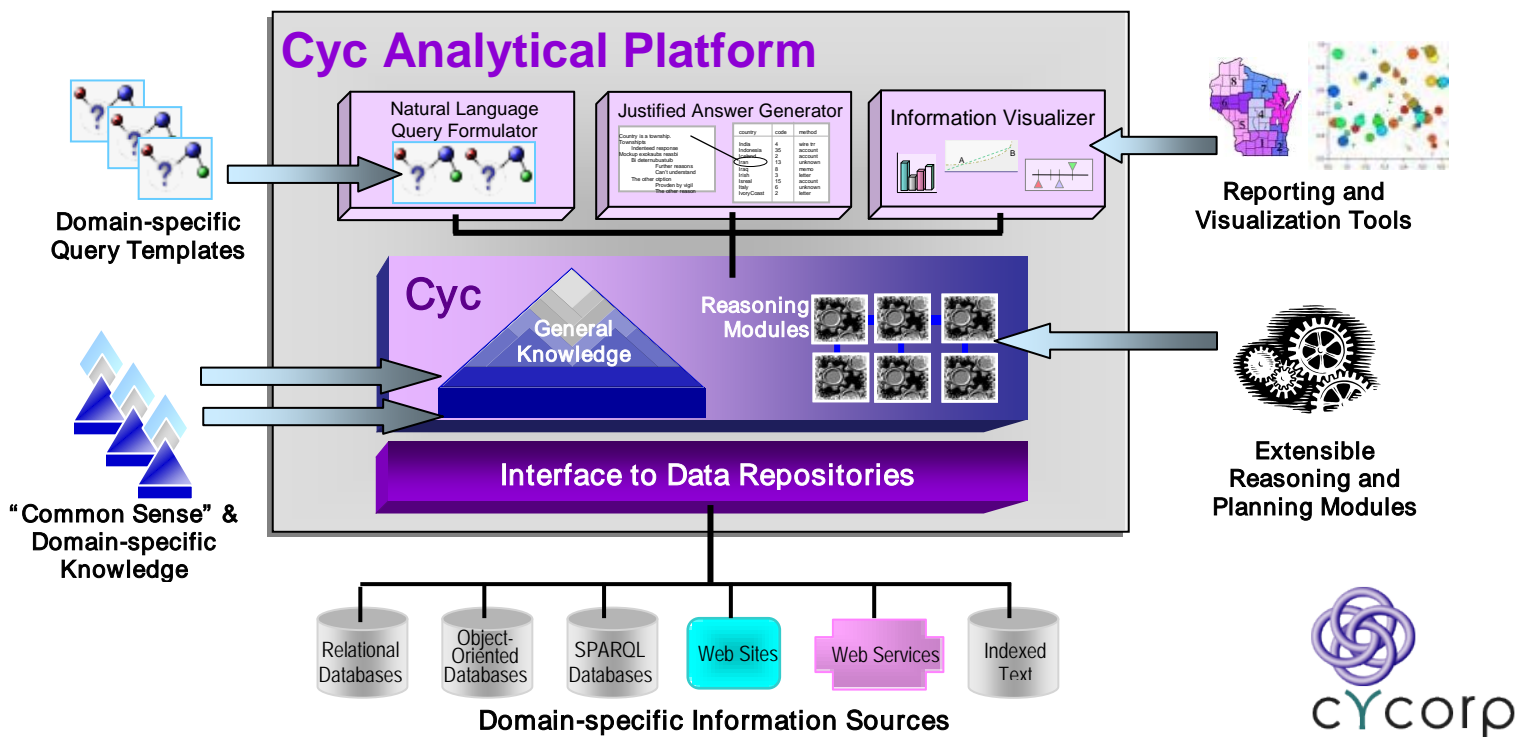
Assess industry and sector market segmentation, products and services, market trends, M&A's, ...

Cross-Cultural Analysis

Using models of behaviors and norms in different cultures, determine how a possible course of action will be perceived within that context

Regulatory Compliance

Define and monitor compliance policies, compare to internal and external guidelines, including SOX, HIPPA,...



Simple Yet Sophisticated Semantic Reasoning Power

Every Cyc Analysis Suite application 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

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

- Intuitive, form-based natural language interface
- Automatically converted to structured knowledge
- Clarification dialogs to resolve potential ambiguities

- 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

- 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

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

- Semantic integration with external data, providing transparent access to databases, spreadsheets, websites, web services, or other structured and semi-structured information sources

Case Study: CAE - A Cyc Analytic Environment for Counterterrorism

Precise relations among concepts

Queries can be as general (*Who was involved in a terrorist event?*) or as precise (*Who is a leader of a Syrian terrorist group known to have conducted kidnappings in a democratic European capital in the last year?*) as needed

Discovery of relevant relationships

Find semantically meaningful (but possibly undocumented) connections; e.g., an analysis of Mustafa Kamel reveals unexpected links to Omar Othman, who is shown to be the religious teacher of many of Kamel's associates

The screenshot displays the Cyc Analytic Environment interface. At the top, a search query is entered: "What terrorist attacks in South America in July 1994 are performed by Hezbollah?". The interface shows search results for "Hezbollah" and "South America". A detailed answer is provided: "Answer: 1994 bombing of the Amia Jewish Center in Buenos Aires". The answer includes a "Because:" section with a detailed justification: "1994 bombing of the Amia Jewish Center in Buenos Aires happened in Buenos Aires, Argentina is in Argentina. Argentina is a geographical subregion of South America. 1994 bombing of the Amia Jewish Center in Buenos Aires is a terrorist attack. Hezbollah was a perpetrator in 1994 bombing of the Amia Jewish Center in Buenos Aires." The interface also lists "External Sources" with links to MIPT, Hezbollah, and Tehran Rising.

Questions posed in English

Simple or complex questions can be posed in English or question templates can be filled out and merged

Clear answers and explanations

Answers in clear English and drill-down explanations – including the underlying data sources – are readily available

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

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