
"Multi Dimensional Pattern
Matching Technology"
3D
3D Search

WELCOME TO THE NEW ERA
THE 3D SEARCH ERA

3D Search

3D Search is a unique, proven, advanced pattern matching technology that assimilates, stores and manipulates data at extremely high speeds. Because of its flexibility and unique capabilities, it is currently being used within a variety of applications from national security applications to advanced forensic science. Any of its product derivatives, particularly the information indexing, search and retrieval aspects, can be embedded as a value-added option within other product lines. Before this next generation technology, software has historically lacked the sophistication to take on the combined capability of data storage, assimilation, search & retrieval and manipulation, across both structured and unstructured information sources to meet these challenges.

The Traditional Approach

Without 3D Search, organizations typically store the various types of data, documents, sound, archive and new-media in separate repositories. More recently, there is an upsurge in interest in frontending these repositories with content management and/or corporate indexes (search engines) in order to find relevant information. This new generation of front-end systems requires additional hardware, software, infrastructure, development, training, maintenance and support. 3D Search can both complement and enhance such approaches or provide a new and beneficial way of developing effective solutions to meet core system, content management, and search or retrieval needs. Initial discussions frequently concentrate on the use of 3D Search within Search and Retrieval applications, as they are relatively easily understood concepts. However, it should be noted that the 3D Engine is fully competent in data assimilation, manipulation and storage. Search and Retrieval are merely by-products of the inherent capabilities.

The 3D Approach

3D "assimilates" any number of structured and unstructured data sources into vectored relationships. This approach creates "knowledge matrices" containing data, interrelationships, and application-like functionality, which are super-scalable. Since the pattern recognition engine assimilates each item, it only stores the item once. For example, the word "the" will be recognized as a pattern and stored in a binary format once. Likewise, a sound wave representing a spoken word from an individual would be stored as a pattern as would (say) pixelsrepresenting an image. Thus, 3D lends itself to recognizing information of any type, from data to Chinese, Arabic, Afrikaans or even vectored drawing lines within a drawing.

Efficient Storage

Let's say the information stored in 3D is 50,000 documents containing hundreds of thousands of times the word "the". Remember the word pattern is only stored once. Two extremely beneficial outcomes are driven from this:

1. 3D can create a super-index that is smaller than the original source [e.g. 6GB of text is typically reduced to 250-280 MB yet remains functionally rich. The super indexing capability has an exponential effect as data sources are added [e.g. a second 600 MB CD ROM may only add another 2 MB to the 3D store/index].

2. Since the information is vectored and pre-indexed, search and retrieval in sub-second response is simply a by-product of the core data assimilation and manipulation capabilities. Therefore, 3D often acts as a universal portal for real-time information sharing.

Synopsis

3D is ideally positioned in the Document Management and Content Management marketplace, ahead of the likes of Verity, Autonomy and AltaVista, and clearly make it the system of choice. Since the information is vectored and pre-indexed, search and retrieval in sub-second response is simply a by-product of the core data assimilation and manipulation capabilities. This is usually an area where conventional systems experience a noticeable degradation in performance as the 'data set', and hence the index, continue to grow.

In simple terms, 3D's unique index structure pre-indexes data, so when it needs to be retrieved, 3D 'already knows where the data is within the index' so it does not need to 'look' for it. This can be difficult to believe, however the performance of 3D is proof of concept. Equally, as the pattern recognition engine assimilates each item, it only stores the item once; as subsequent identical items are indexed, only the pointers are updated. This super indexing capability has an exponential effect as data sources are added.

There are four levels of intelligence that can be applied or derived from the 3D store. Remember that a store could include text, data, sound, and so on. These are assimilated into a set of 'knowledge matrices'. In broad terms, levels 1 and 2 deliver the functionality of search and retrieval engines. Whereas levels 3 and 4 support solutions in data management, data mining, legacy system migration, system integration, information extraction-transformation and loading to other systems.

Other features include:

1. The use of http capabilities to interact between systems and provide universal reach to the widest range of viewing devices

2. Fully embedded encryption as an attribute to the data, thereby obviating the need for typical security systems

3. Capabilities that allow companies to "enable" their data by manipulating it prior to presentation or integration with other systems

4. The ability to automatically profile information

5. Providing data with intelligence and allowing it to appear to be thinking for itself

6. Create federated "peer-to-peer" and "spoke and hub" databases and search indices that can access and retrieve information across an enterprise or extended enterprise

3D is capable of being utilized at all levels within all types of business or Public Sector organizations. Complete with Internet capabilities 3D can be used for internal core systems or in Internet applications.

Implementation times are short compared to traditional technologies, and business benefits are delivered far more quickly. Implementation risk is reduced as 3D can run parallel to native and legacy systems whilst delivering business benefits. Corporate data can be enabled far more effectively than with other knowledge management technologies, with less impact on the native systems and with much reduced set-up and staff training times. System response times can be dramatically improved whilst reducing loads on the underlying systems infrastructure.

The value of unstructured data can be harnessed and brought within the active information domain, and users can interact with that data using whatever natural language is appropriate to the data. Security can be integrated within the data rather than being an external reference layer, resulting in greater flexibility of access and in faster response times. In summary, 3D represents a significant low-risk opportunity to discover and utilize the latent potential of existing systems in ways that do not exist using traditional technology.

For those who wish to understand 3D's integration and operation from a more technical perspective, the following brief notes will be of interest. Remember however that 3D is proprietary technology and as such, much of the internal operation of 3D remains confidential. As previously discussed, 3D handles structured and unstructured data with equal ease and no change in performance characteristics. Therefore comparing 3D to SQL or Oracle would only be touching the tip of the iceberg in terms of 3D's capabilities. What can be discussed is the difference in the implementation approaches of traditional database systems and 3D. Traditional databases are fairly quick to set up, however optimization and performance enhancements take much more time.

The accepted set up approach is often to normalize first and then de-normalize later. This process is very time consuming and a little 'hit and miss'. 3D instinctively indexes 'everything' whilst continuing to deliver sub-second response.

Successful Implementations Include:

- Mercury Communications
- British Airways
- Unilever
- Tesco
- Scotland Yard
- Metropolitan Police
- Forensic Science Service
- Victima International