

HILBERT[®] TECHNOLOGY SUMMARY

OVERVIEW

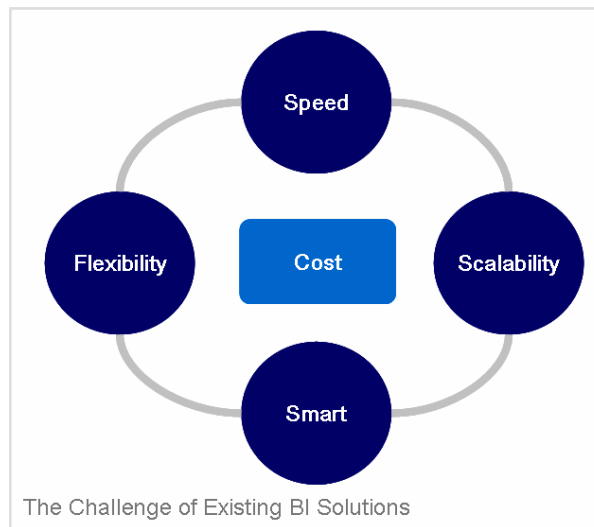


Today's software solutions are hampered by the complexity, overhead and expense inherent to harvesting information from data as it currently exists in conventional data management architectures.

The Challenge

Most Business Intelligence (BI) solutions offer attractive analytical graphics, OLAP (**O**nline **A**nalytical **P**rocessing) or ETL (**E**xtract **T**ransform **L**oad of data into a data warehouse) capabilities but these very often add constraints to already complex operational solutions; such as:

- n Complex and time consuming set-up of BI infrastructures, such as data warehouses or ETL processes
- n Performance weaknesses when handling distributed, unstructured (emails, letters, notes) data or high-volume data
- n Set-up restrictions when reporting requirements change
- n Long or recurring planning and set-up cycles—desired results (reports, Balanced Scorecards, etc.) require iterative reworking of source data
- n No or slow on-the-fly analytics capabilities if data is not indexed



Thus speed, flexibility, smart processing and scalability are the imperatives of current BI solutions, yet companies struggle to get these four requirements economically optimized.

Traditional Barriers

Most industry standard data is non numerical text information. The way computers currently process such text requires the assignment of ASCII standard codes (numbers from 0 to 256) to every single character. This requires millions of native computer instructions to find, examine, and manipulate ASCII text. To compensate for this highly inefficient architecture, information technologists must create elaborate indexing schemes for each 'most sought for' field they want to find and retrieve quickly. Each individual word is now assigned an arbitrary number, resulting in the complete loss of the semantic information surrounding the original word. This loss of semantic information causes an even more significant loss: that of the context in which words were used.

Why Hilbert?

We are the only solution provider for ultra high-speed access, manipulation, storage and analysis of large volumes of structured and unstructured data.

Speed, Flexibility and Scalability have been the design criteria of the Hilbert solution.

The Hilbert solutions are offered as embedded Hilbert Engine technology, standard products or industry specific solutions.

Bjorn Gruenwald, CEO and Founder of Hilbert Technology Inc.

High speed data access and analysis through the use of highly efficient mathematical algorithms

Low cost of ownership

Ability to analyze data in ways unthinkable before Hilbert

All data can be loaded, no need for pre-cleansing, deduping or format transformation

No data load restrictions for analysis and reporting

Backup and restore capability for structured and unstructured data

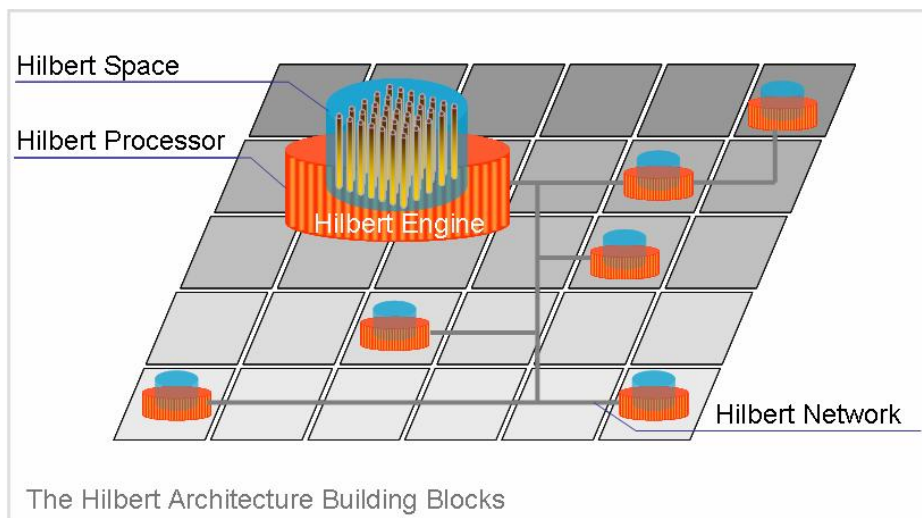
No loss of details in analytics

Consequently, although you can achieve a relatively speedy search for a single index, there is no context in which this number has any meaning. Without context there is no information! Though the contextual information remains hidden in the original text, to process the original text without indexing would be so time consuming that it would bring the fastest computer to its knees.

In summary, traditional technology is confronted with a dilemma. The choice is between two mutually exclusive phenomena: speed but loss of context on the one hand, and context but loss of speed on the other.

The Hilbert Engine

The Hilbert Engine, together with the other components of the Hilbert Architecture (the Hilbert Space and –Network), resolves the dilemma faced by conventional BI solutions - that speed and data context are mutually exclusive. It also solves the five major challenges in ultra high-speed performance analytics: **integrating distributed data** from multiple sources, **high speed analysis** of data, **post-implementation flexibility** and the **application of smart algorithms** to achieve a **fast and economical implementation**.



The Hilbert Engine has two components, the Hilbert Processor and the Hilbert Space. These two components are very closely linked with each other so that the Hilbert Processor supports all operations necessary to access, manipulate, store and analyze data within the Hilbert Space. The Hilbert Space itself is the container of all data in a total numerical representation and therefore can be accessed by mathematical algorithm to maximize data storage, manipulation and analysis. The Hilbert Engine also coordinates the connection of multiple Hilbert Engines into a networked Hilbert Infrastructure.

Ad-hoc queries without any re-indexing or performance degradation

Maximum end-user flexibility in creating custom reports and analyses

Support of multi-data store processing environments, data can be viewed as an integrated whole

Data consolidation capability with no interruption of operational databases

An extremely flexible system that builds and displays user-specified information

Maximum end-user flexibility in creating custom reports and analyses

Performance so speedy that it seems independent of volume and query complexity

Ability to analyze data in ways not possible without Hilbert

No complex up-front (ETL) process of forcing all data into a common format and common structure (and no loss of data that 'doesn't fit' or is 'too dirty')

Low cost of ownership and rapid time-to-benefit

Data representation in Hilbert Space independent of specific reporting requests

Maximum end-user flexibility in creating reports and analyzes

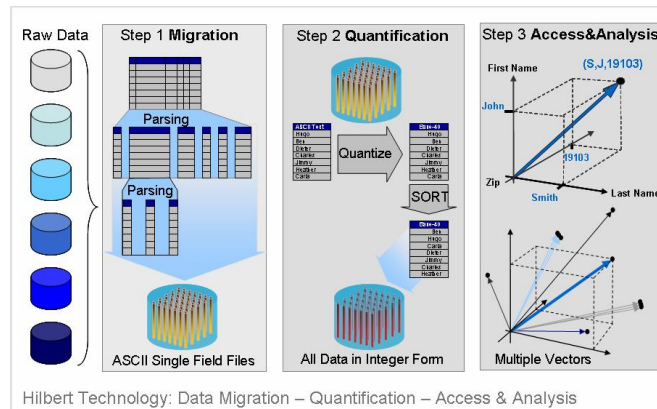
To make data from databases (structured data) or text from text files (unstructured data) available to the Hilbert Space and to access and analyze it, the Hilbert Engine performs three major steps:

n Migration

Parsing information from table format into single-word files

n Quantification

Converting numbers and text data into unique integers and storing the data along with its context in a multi-dimensional data representation (the Hilbert Space)



n Access & Analysis

Finding and accessing data and their contextual relationships in Hilbert Space by applying advanced mathematical operations, and re-converting them to their original representational form.

Conclusion

The conversion of text and numbers to a unique integer representation and the flexibility in set-up and post-set-up environments clearly positions the Hilbert Technology far in the forefront of information science, and delivers processing speed and analytical performance unmatched by any conventional solution that uses traditional database approaches. The numerical representation of all data in a multidimensional space allows unmatched performance gains through the use of highly efficient mathematical operations.

Your Advantages

- n High speed data access and analysis through the use of highly efficient mathematical algorithms
 - § Low cost of ownership
 - § Ability to analyze data in ways unthinkable before Hilbert
- n All data can be loaded, no need for pre-cleansing, de-duping or format transformation
 - § No data load restrictions for analysis and reporting
 - § Backup and restore capability for structured and unstructured data
 - § No loss of details in analytics

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 - § Maximum end-user flexibility in creating reports and analyzes

About Hilbert

Pennsylvania based Hilbert Technology Inc. is an international provider of business intelligence (BI) solutions for large and medium size enterprises worldwide. The offering is based on the revolutionary, patented Hilbert Engine technology for the ultra high-speed access, manipulation, storage and analysis of large volumes of structured and unstructured data. The Hilbert solutions are offered as embedded Hilbert Engine technology, standard products or industry specific solutions. Organizations in public services, law, government, finance, communications, whole- and retail sales, transportation & tourism and chemical & pharmaceutical can employ Hilbert solutions to gain unparalleled speed in access and analysis over large data volumes.

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