

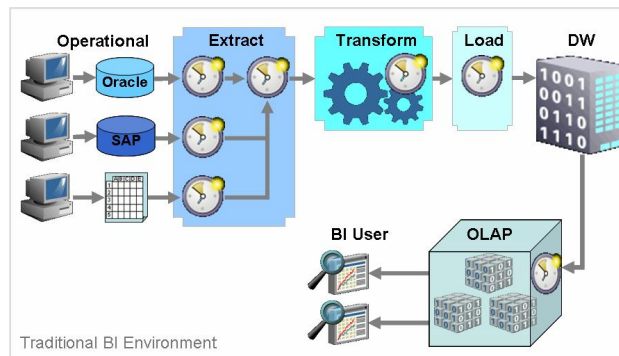
REAL-TIME BUSINESS INTELLIGENCE OVERVIEW

The goal of business intelligence (BI) systems is to facilitate faster and better decisions - decisions based on a wider information set than that which is found in most operational systems. Very often current time series operational data must be coupled with related summarized historical data to provide the data background necessary to make timely and effective decisions. Real-Time business intelligence will provide such information much more quickly and at a higher frequency than with current methods. For instance, in the case of credit card transactions, it would be wise to check for fraud before money changes hands. Not all BI information needs to be present in real-time, very often a weekly or monthly BI analysis is fully sufficient. If you do production planning monthly then you can use less finely-grained information. If you have a customer on the phone you may want his history, trends and suggested x- and up sell immediately. Timeliness of BI information is defined by the process this information supports. Therefore real-time within the same enterprise could vary from seconds to days or months.

Traditional Barriers to Real-Time Business Intelligence

If BI information is needed in seconds or even fractions of seconds, traditional BI systems must overcome many barriers to real-time BI:

- n Complex and time consuming set-up of BI infrastructures, such as data warehouses
- n Data must go through a lengthy ETL process of data cleansing, mapping, reformatting, de-duplication, consistency check, standardization and enrichment
- n Performance weaknesses when handling distributed, unstructured (emails, letters, notes), or high- volume data very often separate warehouses are needed
- 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 the data is not indexed



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.

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')

Total cost is reduced and time-to-benefit is optimized

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

No data load restrictions from analysis and reporting

Backup and restore capability for structured and unstructured data

No loss of details in analytics

Hilbert Real-Time Business Intelligence

The Hilbert Engine together with the other components of the Hilbert Architecture, the Hilbert Space and - Network resolves the challenges to current BI solutions: fast implementation, fast access and analysis, upfront and post-implementation flexibility, scalability and delivers real-time business intelligence.

Fast Implementation

Data does not need to be transformed when loaded into Hilbert Space. Data is loaded as it is - for Hilbert there is no such thing as false or erroneous data. There is no need to vary or customize the loading procedure to accommodate different reporting requirements.

Through the ultra high-speed analysis of the Hilbert Engine, data transformation and consolidation is done at reporting time. If reporting requirements change, only the analysis

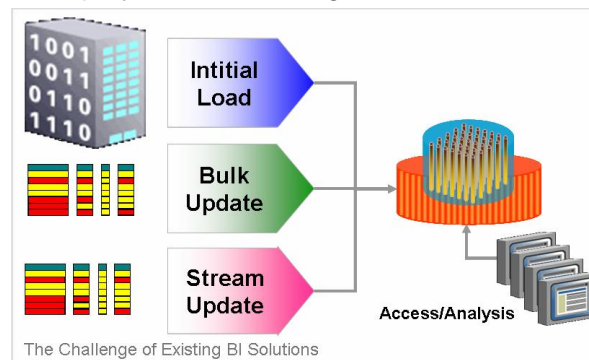
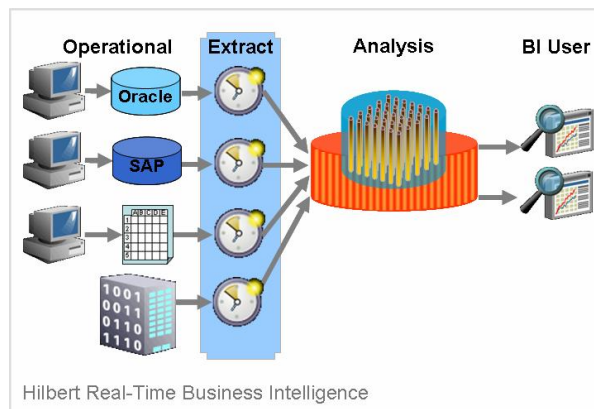
work is changed - no change to data load or data transformation procedures is necessary. Hilbert does late data-binding of analysis in contrast to the early data-binding of analysis other vendors must do. Of course you are able to cleanse and transform data in Hilbert but it is not a prerequisite for analysis.

Fast Access and Analysis

The conversion of all information (numbers and text) into unique integer representations in a multidimensional space, allows highly efficient mathematical algorithms to be employed in harvesting the information that resides within data.

Access and analysis are performed at the full arithmetic processing speed of the computer, with no added overhead. Additional CPU, RAM and Disc head optimization and access to distributed data through the Hilbert Network deliver an

unparalleled performance. The use of Hilbert as a service in a Service-Oriented Architecture opens a new world of seamless integration even within existing operational systems.



CPU and RAM usage as well as disc access is optimized to get unparalleled performance and speed

Ability to analyze data in ways not even thinkable before Hilbert

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

Ability to analyze data in ways not even thinkable before Hilbert

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

Ad-hoc queries without any re-indexing

Queries, analyses and reports are processed many times more rapidly than in any other environment

Development of complex SQL statements and associated programming staff is not needed

Support of networked, multi-computer, multi-data store processing environments

Data consolidation capability with no interruption of operational databases

Extremely flexible system that builds and displays user-specified information

Maximum end-user flexibility in creating custom reports and analyzes

n **Flexibility**

Hilbert offers a new way of thinking in business intelligence - the late data-binding of information requests. While data warehouse designs or even ETL processes are built based on reporting and analysis requirements (early data-binding) Hilbert Architecture binds the information at a very late stage in business analytics - just before a job is executed (late data-binding). You can now make reporting changes on the fly - changes that are based on user needs, not on IT availability. Even better, cumbersome re-indexing is never needed. Flexibility is also demonstrated in the ability to connect multiple data sources to get a holistic view of your data or to see your Meta-Data. Through the Hilbert Network many different Hilbert Engines (which may support distributed data sources such as conventional data bases) can be connected in a serverless, load and data-balanced environment. You can have a local or global view of all your data from each workstation.

Scalability

The managed data space in Hilbert Space has no limits and through the Hilbert Network even differently configured Hilbert Engines can work together. The load in the Hilbert Network is balanced in terms of data and CPU usage and with blade server farms and parallel computing power scalability is inherent.

Conclusion

The Hilbert Solution is optimized for ultra high-speed data handling - data analysis is done in seconds or fractions of seconds. Optimized data storage and access in Hilbert Space, the use of highly efficient mathematical algorithms in the Hilbert Engine, and the CPU, RAM, Disc, and Network optimization synergize to open a new dimension of unmatched processing speed and analytical performance to Business Intelligence. The integration of Hilbert as a service within a Service Oriented Architecture breaks through the last barrier to providing intelligence to operational day to day business processes. Unparalleled speed, flexibility and scalability position Hilbert far in the forefront of Real-Time business intelligence, and delivers processing speed and analytical performance unmatched by any conventional solution. None of our competitors come close.

Your Advantages

- n 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')
 - § Total cost is reduced and time-to-benefit is optimized
- 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

- n CPU and RAM usage as well as disc access is optimized to get unparalleled performance and speed
 - § Ability to analyze data in ways not even thinkable before Hilbert
- n High speed data access and analysis through the use of highly efficient mathematical algorithms
 - § Ability to analyze data in ways not even thinkable before Hilbert
 - § Performance so speedy that it appears independent of volume and query complexity
- n Ad-hoc queries without any re-indexing
 - § Queries, analyses and reports are processed many times more rapidly than in any other environment
 - § Development of complex SQL statements and associated programming staff are unnecessary
- n Support of networked, multi-computer, multi-data store processing environments
 - § Data consolidation capability with no interruption of operational databases
- n Extremely flexible system that builds and displays user-specified information
 - § Maximum end-user flexibility in creating custom 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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