

1° QlikDev **Latino América**



QlikView Under the Hood! **Understanding QlikView's Associative** **Architecture**

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Objective

To shed some light on QlikView's unique associative architecture.

Explore the technical essence of what "associative" is and why it's best technology to empower business decisions.

Demonstrate why no other tool on the market offers, or even comes close to offering, the benefits of QlikView's associative architecture.

In other words, explain QlikView's "Secret Sauce"



QlikView

Background

Historically people both inside and outside of QlikTech have struggled with adequately explaining the source of QlikView's broad appeal and unique customer acceptance.

QlikTech describes this behavior as “Associative” but just what does that mean?

Is “Associative” just marketing hype?

Is there a true differentiating technology?

Does the appearance of other “In-memory” solutions on the market mean that QlikTech has lost their advantage?



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It must be the In-Memory!!!

In-memory is only a means to an end.

It is only an enabling technology.

In and of itself it is meaningless unless it provides demonstrated business value.

There are now a number of “In-memory” solutions on the market

If “In-memory” is so special why aren’t these tools a bigger market success and/or eroding QlikView’s market share?



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In-Memory Competition

QlikTech has been guilty of selling “In-memory” as QlikView’s secret sauce.

In some ways this has worked for us as competitors went out and reactively built “In-memory” tools to compete with QlikTech without ever really understanding that in memory was just an enabler for our Associative Architecture and this is our true differentiator.

No competing “In-memory” tools are built using associative architecture and therefore do not offer the business advantages that QlikView does.



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OLAP Alphabet Soup

- MOLAP – Multidimensional Online Analytical Processing
 - Otherwise know as "Cube Based OLAP"
- ROLAP – Relational Online Analytical Processing
 - Otherwise Known as "Real Time Queries"
- HOLAP – Hybrid OLAP
 - Some Combination of the Two Above



Speed and Flexibility?

Tradeoffs - Query Based Architecture

| | Fast | Flexible |
|-------|---------|----------|
| MOLAP | ✓ | ✗ |
| ROLAP | ✗ | ✓ |
| HOLAP | Depends | Depends |



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QlikView is both Fast and Flexible

No Tradeoffs

| | Fast | Flexible |
|----------|---------|----------|
| MOLAP | ✓ | ✗ |
| ROLAP | ✗ | ✓ |
| HOLAP | Depends | Depends |
| QlikView | ✓ | ✓ |



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Is Fast and Flexible Enough?

There are some other solutions besides QlikView that can offer both fast and flexible analysis.

Ex. Running a real time query tool on top of a fast decision support database like Netezza.

Why isn't this type of solution perceived as being as revolutionary as QlikView?



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Query Based Architectures

History of Analysis

- Query Based Analysis has been the Status Quo for the Last 50 Years
- Aggregates Retruned as Query Results
- Each Query is Seperate and Isolated
- Each Query is Fundamentally Isolated from any other Query
- If You Want to Change the Data You Must Discard the Old Query Results and Run a New Query
- Query Result Sets are not "Associated" with other Queries



QlikView is not Query Based

- Every tool on the market today that uses SQL Queries as the basis for analysis is "Query Based"
- This includes all MOLAP, ROLAP and HOLAP tools.
- QlikView (for now) is the only Associative tool on the market.



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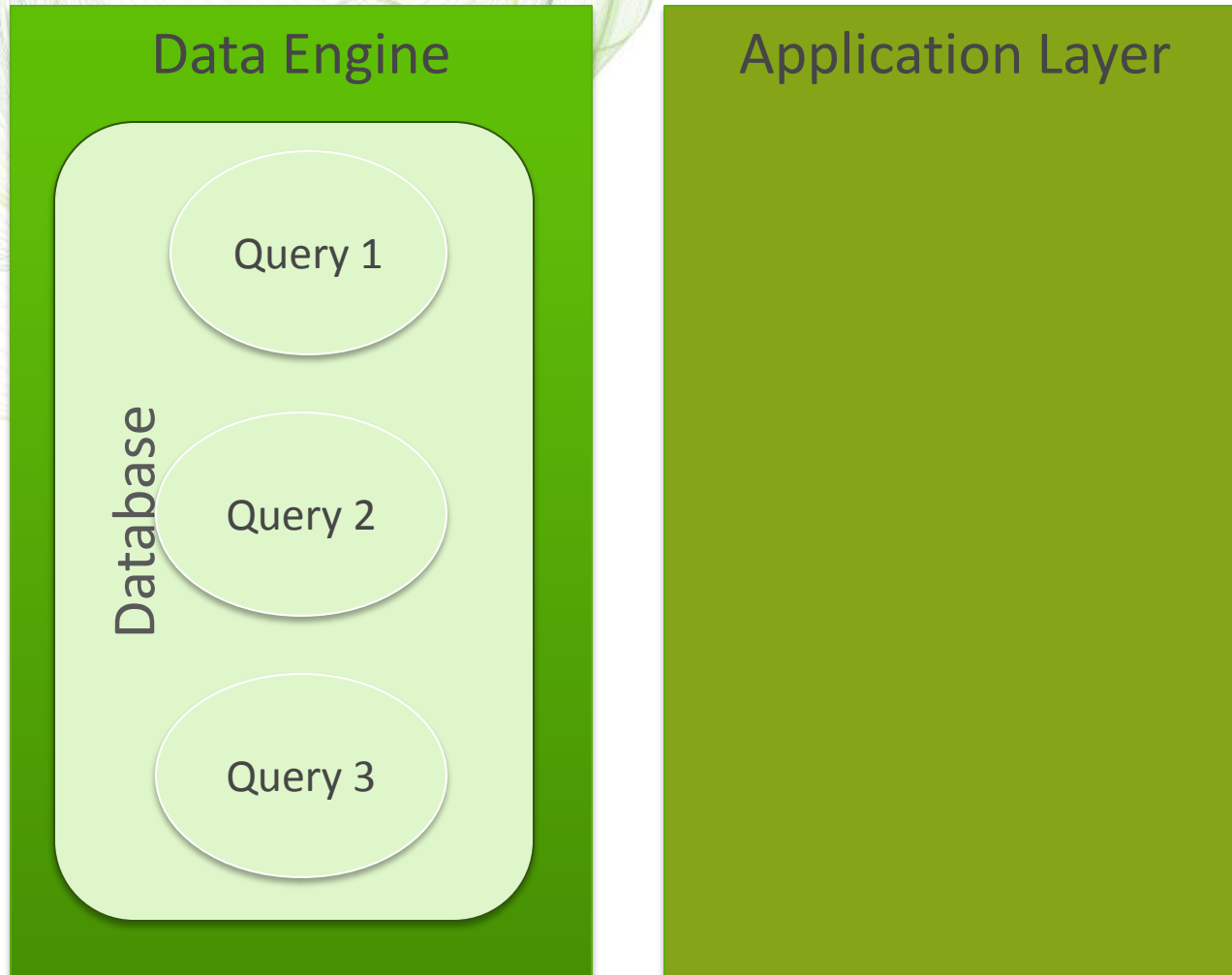
What is Associative?

Quite simply, associative architecture is an architecture where at the data engine level, all data points, including aggregates, always retain their associations back to all other data points including other aggregates.

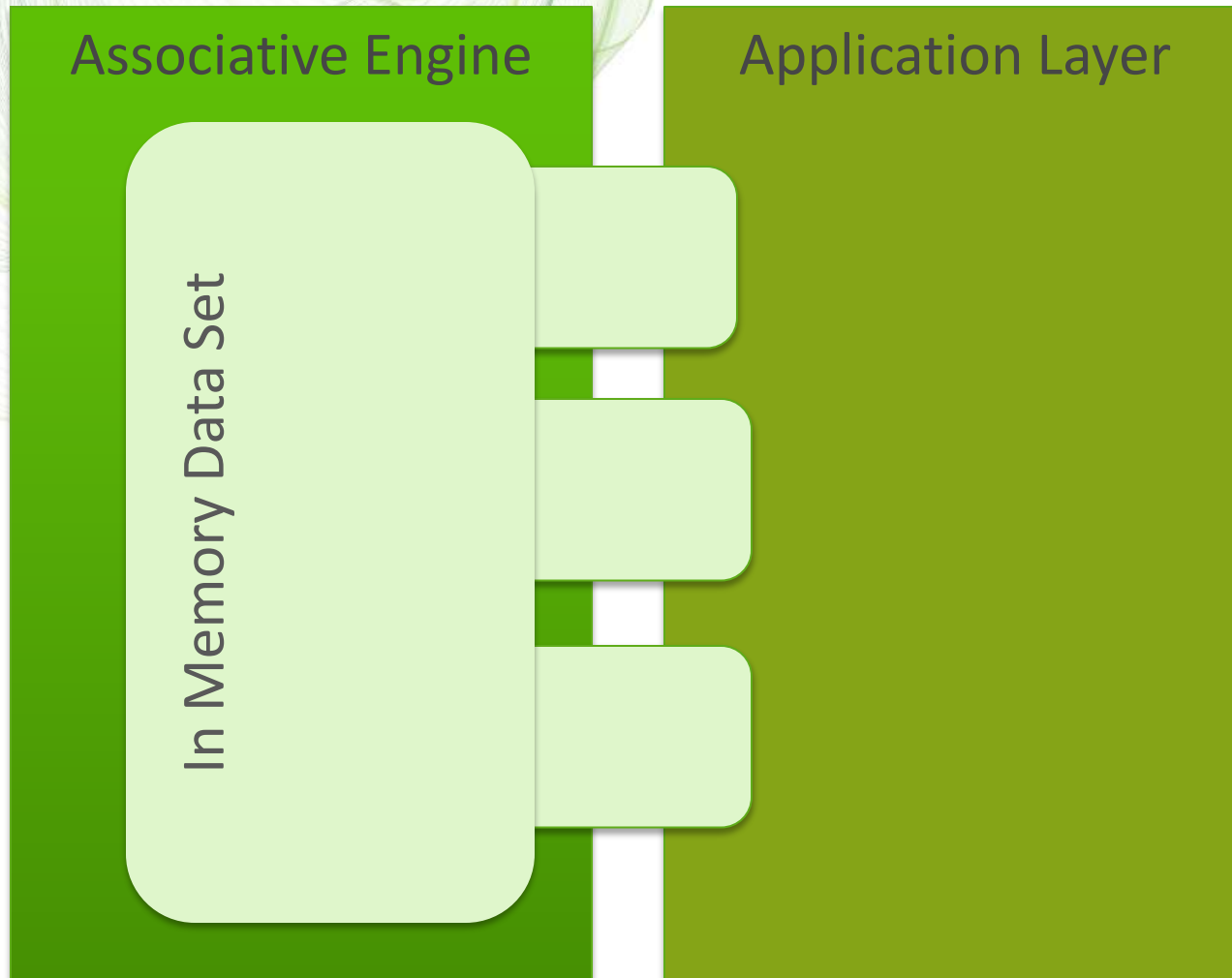


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Query Based Architecture – Example



Associative Architecture - Example



Business Benefits of Associative

QlikView's associative architecture does not need to be reconfigured to answer new business questions. This makes QlikView fast to deploy.

Because QlikView's associative architecture preserves all of the associations between all fields being analyzed, end users find QlikView easy to use and intuitive.

But most importantly, because QlikView allows the decision maker the ability to interact with their data as a holistic unified whole, and not in fragmented isolated chunks, better business decisions are reached.



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An Example

Imagine what you need to understand is how an internal combustion engine works (even though we all know your business data is many times more complex).

With all the query based architectures you are allowed to see one piece at a time, isolated and completely separated from it's context.

Like this...



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Business Value – Query Based



Business Value – Query Based

How difficult would that be to understand how the engine worked?

This is what is happening when you are attempting to use a query based tool (any query based tool) to understand your business data.

Now what about and associative architecture?...



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Business Value - Associative



Using QlikView's Associative Technology we have access to the entire functioning engine with each part in its correct relationship (or association) with all of the other parts.

We can tweak the throttle (execute a selection) and see how that affects the fuel intake, the carburetor, and the exhaust.

We can watch the pistons pump and turn the crankshaft. We can decompose the engine at our leisure and look at each individual part in context with the part next to it.



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Query Based Associations

Application Layer

Query 1



Query 2



Query 3

Because associations provide so much business value vendors of query based tools have always attempted to provide them.

This is possible, but it only works when the developer for the application layer knows what the queries will be in advance.

This severely constrains the flexibility of the solution and thus limits the business value provided by the solution.

This is normally only seen in niche solutions, where the business question and the exact queries are known in advance.



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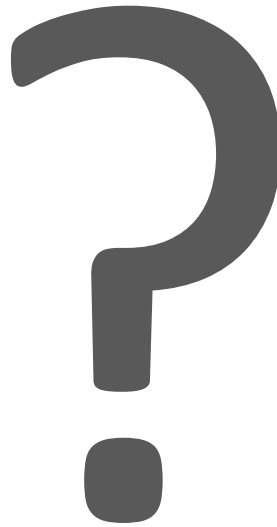
Summary

- In-memory is a red-herring. It is just an enabling technology.
- QlikView is both fast and flexible while most competing tools offer one or the other. This, however, does not sufficiently explain QlikView's true differentiator.
- All query based tools (basically all other tools on the market besides QlikView) show query results that are disconnected and separated from the associations back to the other data points in the dataset.
- QlikView's associative architecture is the "secret sauce" that allows all data being analyzed to always be connected to all other data in the dataset.



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Questions



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Thank You! Gracias! Obrigado!

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