Chicago SAP BusinessObjects User Group

Paul Hearmon
Strategic Technology Group, Solution Engineering
Chicago

What I'm going to tell you about - Make sure you listen or else...

Data Exploration with Explorer

- The Nuts and Bolts
- Best Practices (Un-accelerated version)

Data Acceleration with BWA

- Current Design
- Future Plans

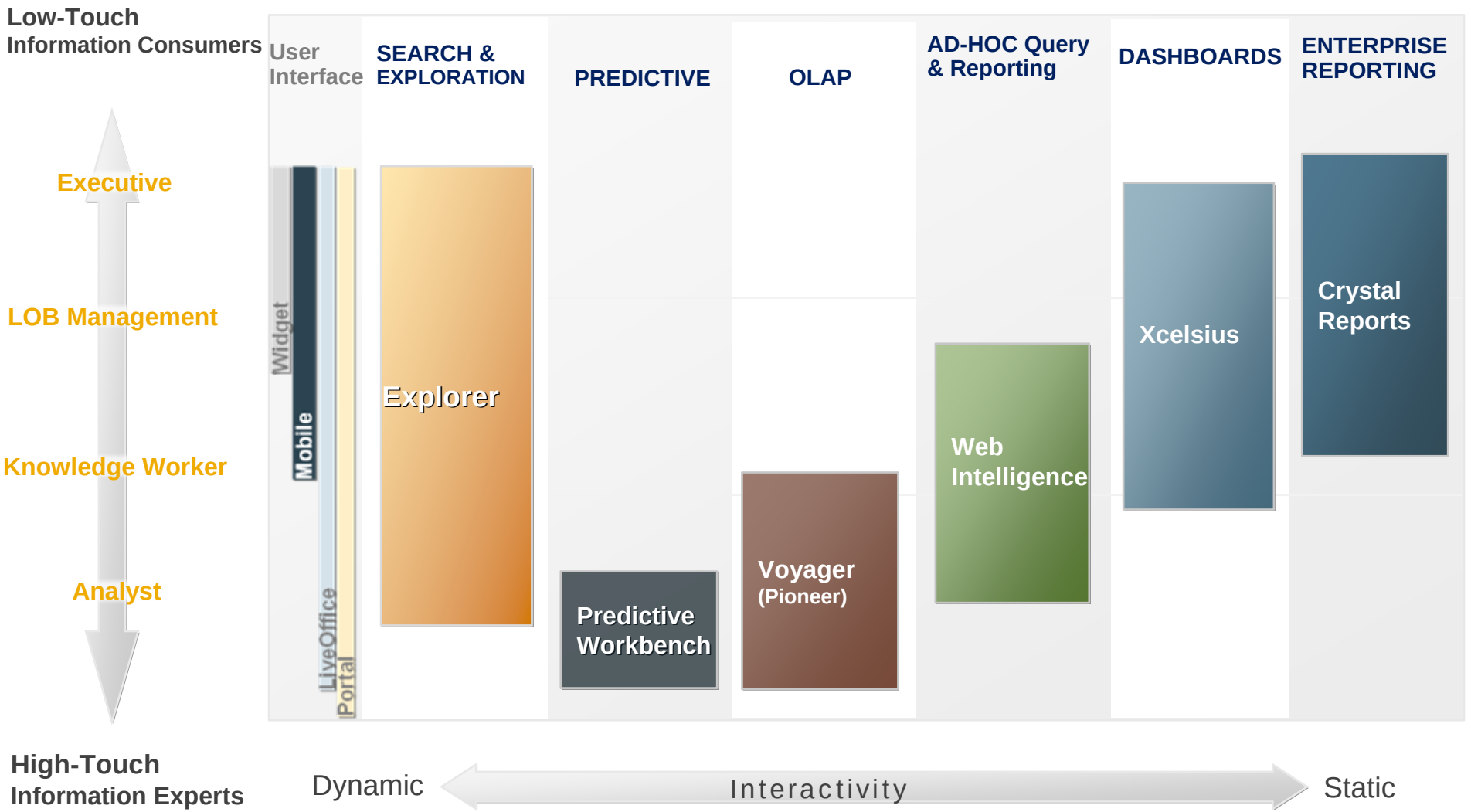
Data Federator

- What it is
- How to take advantage of it

OLAP Data Analysis with Voyager(/Pioneer)

- Comparing and Contrasting it with other tools

Right Tool, Right Job



Explorer - Unacelerated

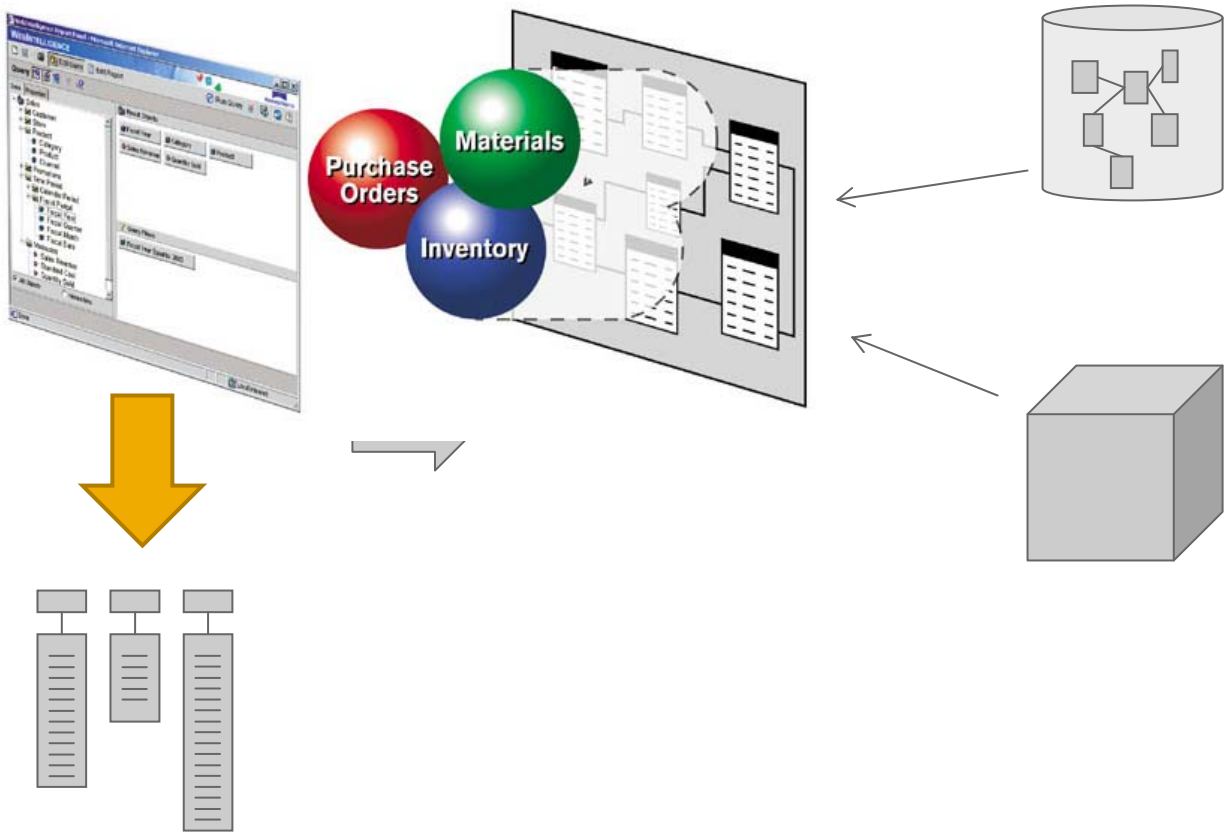
Discovery tool (rather than WebI)

- Simplicity and speed of search
- Intuitive data exploration and visualization
- Fast response across mountains of data

Explore at the speed of thought

Technical Architecture – InfoSpace Creation

- Works against any Universe source
  - OLAP & Relational
- Build a query from the Universe (Information Space)
- Turns it into a Lucine Index



Inverted Index Creation

Doc 1
I did enact Julius Caesar: I was killed
i' the Capitol; Brutus killed me.

Doc 2
So let it be with Caesar. The noble Brutus
hath told you Caesar was ambitious:

Complex Searching

	Antony and Cleopatra	Julius Caesar	The Tempest	Hamlet	Othello	Macbeth	…
Antony	1	1	0	0	0	1	
Brutus	1	1	0	1	0	0	
Caesar	1	1	0	1	1	1	
Calpurnia	1	0	1	1	1	1	
Cleopatra	1	0	0	0	0	0	
mercy	1	0	1	1	1	1	
worser	1	0	1	1	1	0	
…							

To answer the query

Brutus AND Caesar AND NOT Calpurnia

we simply AND the results together (a NOT is complemented, then ANDed)

110100 AND 110111 AND 101111 = 100100

The answers for this query and therefore

Antony and Cleopatra and *Hamlet*

Explorer Un-accelerated: Best Practices

- How do I hide the Information Spaces listed in InfoView?
  - Information Spaces created in Explorer are listed in InfoView as well
  - Information Spaces can be located in a specific folder that is hosted in an hidden folder

- Is *Personalization* now possible?
  - In SP2, an additional "Reference" Information Space need to be maintained (to map user logins against the object values that they are allowed to view)
  - Likely done in an Excel .xls spreadsheet (then Indexed)

- Why are sum OLAP Measures unavailable?
  - When you are dealing with OLAP universes, only measures that are fully additive will be available for display
  - Only those with a default aggregation like SUM
  - never "Database delegated" nor "None"

- Can you pass parameters FROM Explorer to WebI or Crystal?
  - No way to do it yet
  - Can only create a new webi doc from the filtered result set

Explorer Un-accelerated: Best Practices

- Can I control the order of the navigation Facets?
  - With Explorer Accelerated 1.0 facet ordering and "best guess" were based on algorithms that are primarily heuristic in nature. This makes it impractical for customers to try to influence.
  - With Explorer Accelerated 2.0, (in beta), the plan is to allow administrators to explicitly specify the ordering of the facets.

- How is Apache Lucine used? (in both the accelerated and un-accelerated versions)
  - Explorer Un-Accelerated leverages the Apache Lucene search library for both search and indexing.
  - Explorer Accelerated leverages the Apache Lucene only for search because BWA handles the indexing (via TREX).

Explorer Un-accelerated: Limitations

No ‘OLAP’ scenario

- Polestar is not addressed to BI power users
- It does not provide sophisticated analytic capabilities to reduce the training efforts
  - Calculated measures/key figures
  - Key figures with exception aggregation cannot be displayed
  - Hierarchies are not supported
- The plan is to **keep Explorer simple**

What’s are the Index limitations?

- Various documents mention the million row threshold from which performance degrades.
- Performance degradation applies to all stages of the Explorer lifecycle where the manipulation of data is occurring, but it is most pernicious during the end-user functions of search and exploration.

Modeling non-additive measures in Explorer is hard

- Suppose I have weekly ending inventories: W1 100, W2 200, W3 150, W4 100
- Modeling this in Explorer, the monthly ending inventory would show up as 550, not as 100 (the last ending inventory of the month).

Explorer Un-accelerated: Limitations

What exactly is searchable?

- Explorer cannot search within the description of a universe object (nor the data lineage)

How can I make use of SAP SSO?

- Currently Explorer only accepts session token, AD and LDAP for SSO
- Must go via BOE Platform to SSO into Explorer
  - SAP SSO into InfoView, Hyperlink into Explorer
  - SAP SSO into OpenDocument

One down, three to go...

Data Exploration with Explorer

- The Nuts and Bolts
- Best Practices (Un-accelerated version)

Data Acceleration with BWA

- Current Design
- Future Plans

Data Federator

- What it is
- How to take advantage of it

OLAP Data Analysis with Voyager(/Pioneer)

- Comparing and Contrasting it with other tools

BWA

Hardware appliance

- Really just a SUSE Linux blade

Renamed many, many times

- BIA
- BWA
- Open Accelerator

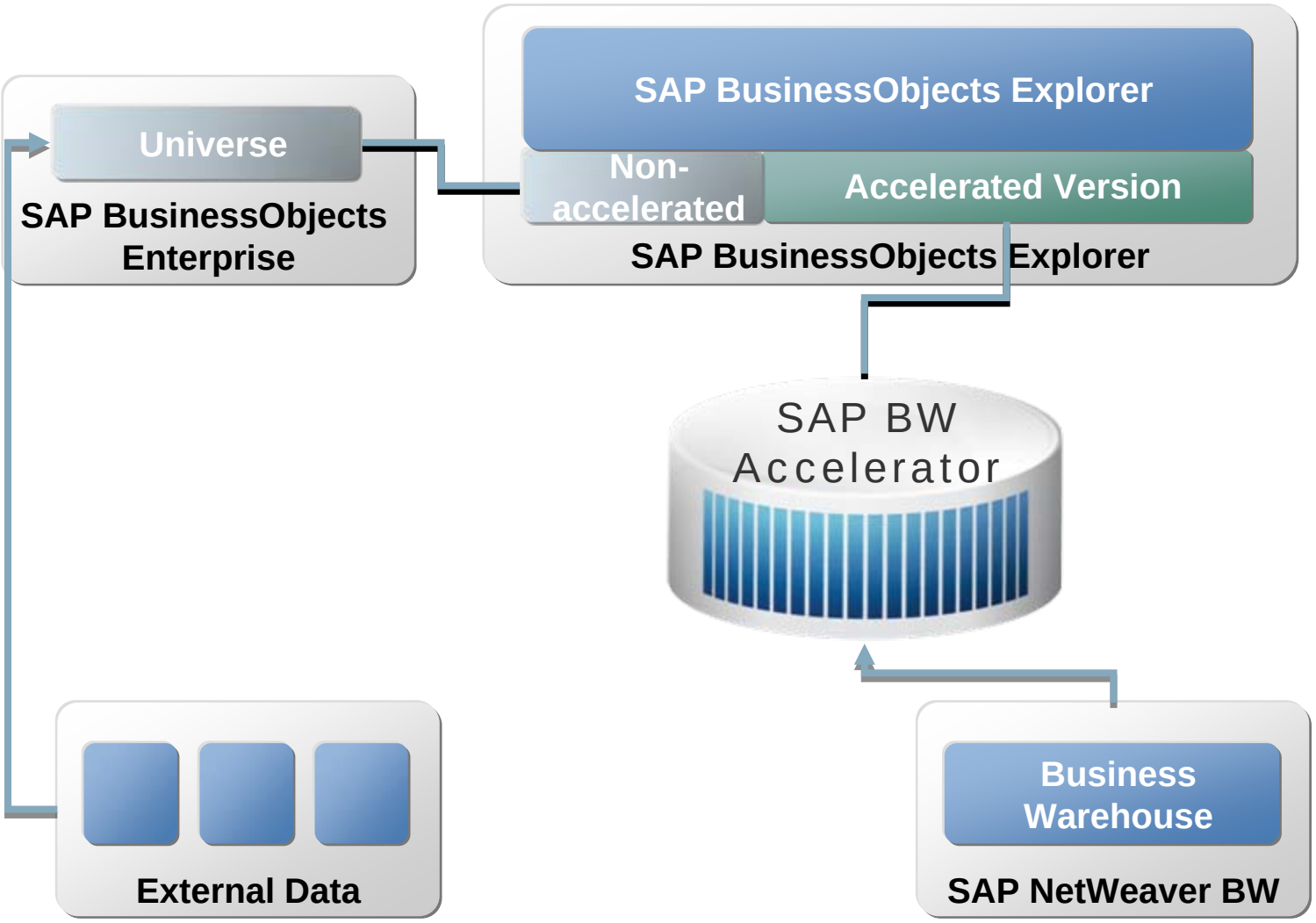
Speeds up BEx BW queries

- But how?

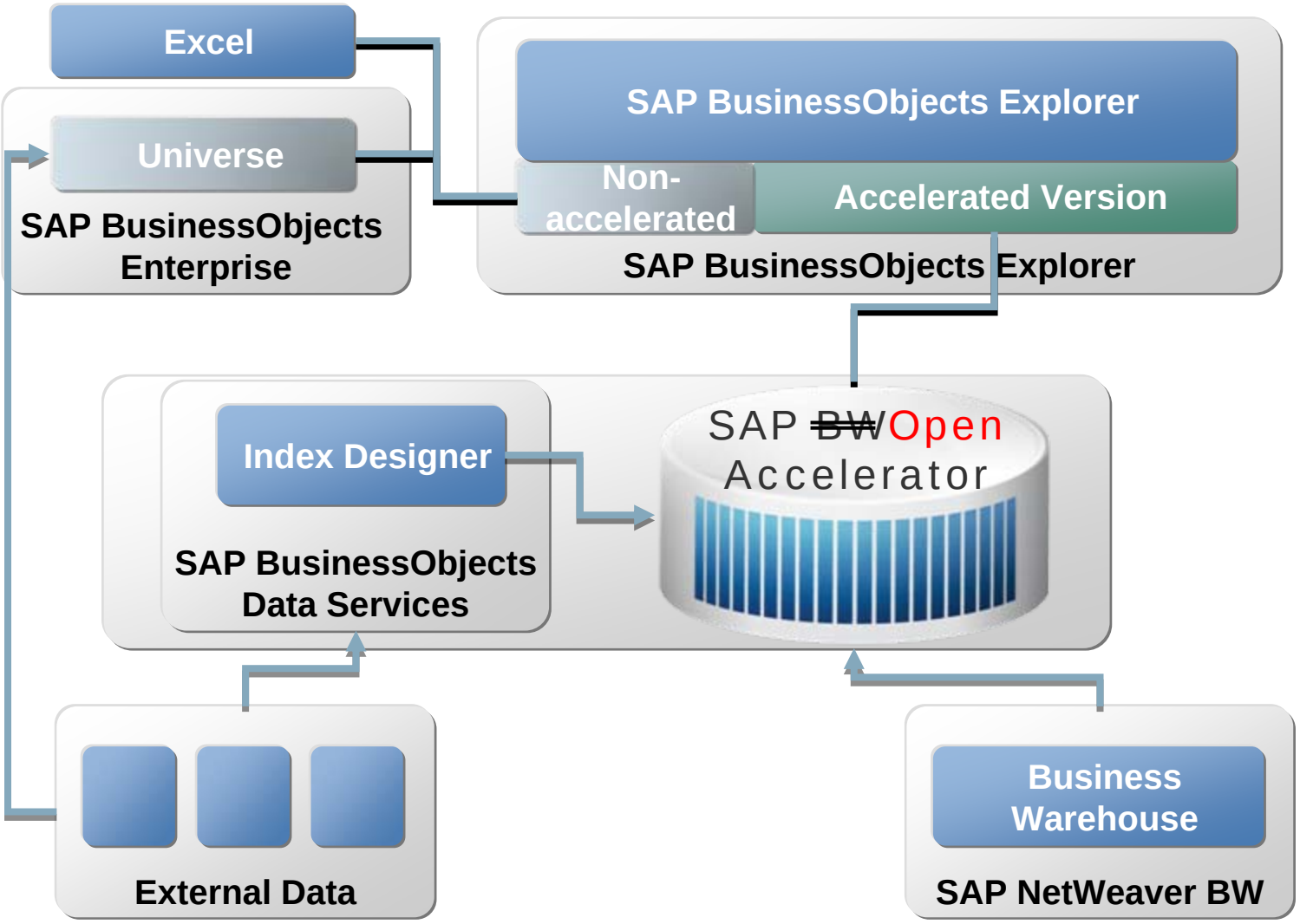
Client tools?

- Explorer – directly
- Others – via Data Federator

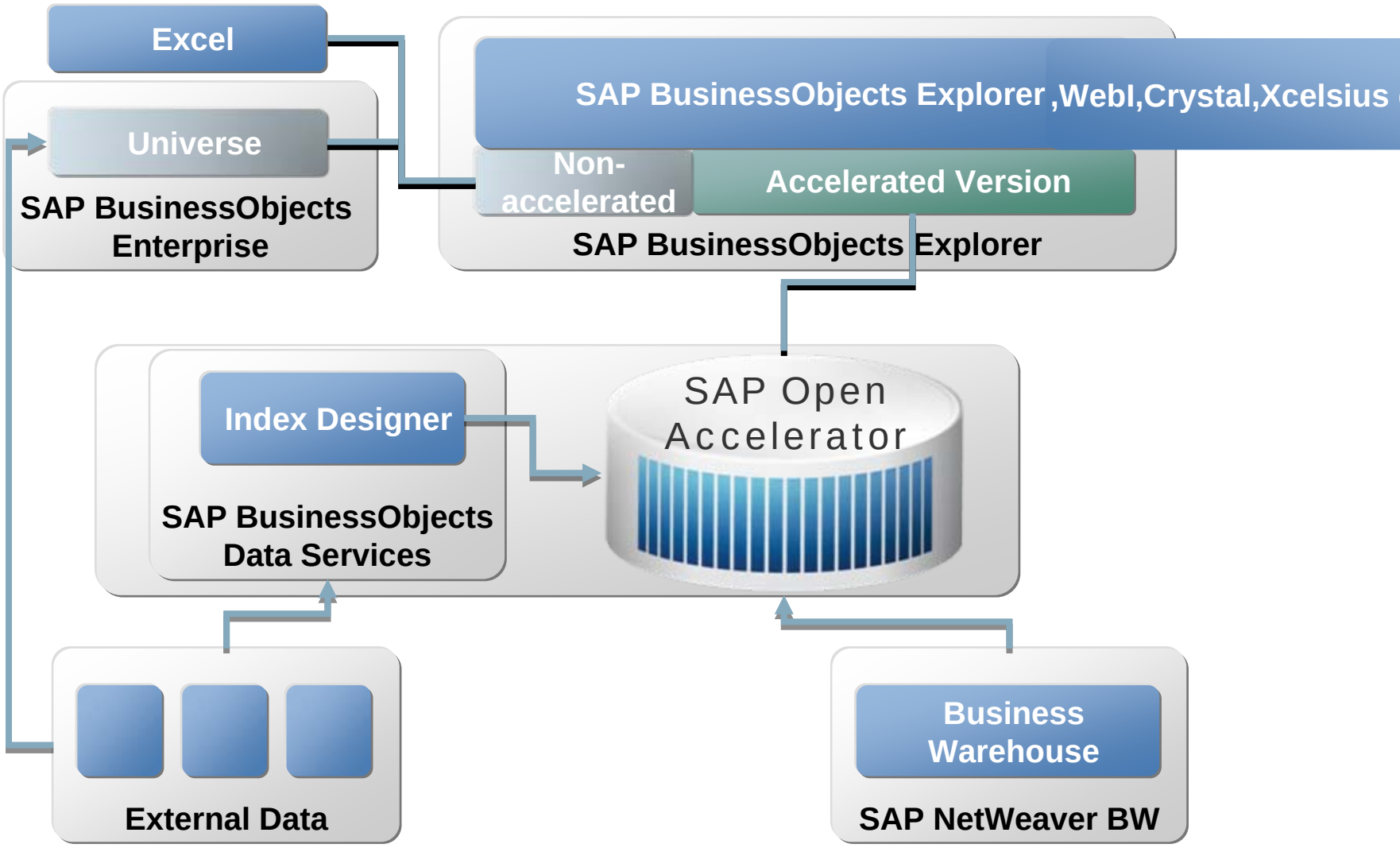
Previous Release - SAP BusinessObjects Explorer, accelerated version for SAP NetWeaver BW



SAP BusinessObjects Accelerator and SAP BusinessObjects Explorer XI 3.2 Integration



FUTURE SLIDE!
SAP BusinessObjects Accelerator “Wave 3”



How to wash your cat

Data Exploration with Explorer

- The Nuts and Bolts
- Best Practices (Un-accelerated version)

Data Acceleration with BWA

- Current Design
- Future Plans

Data Federator

- What it is
- How to take advantage of it

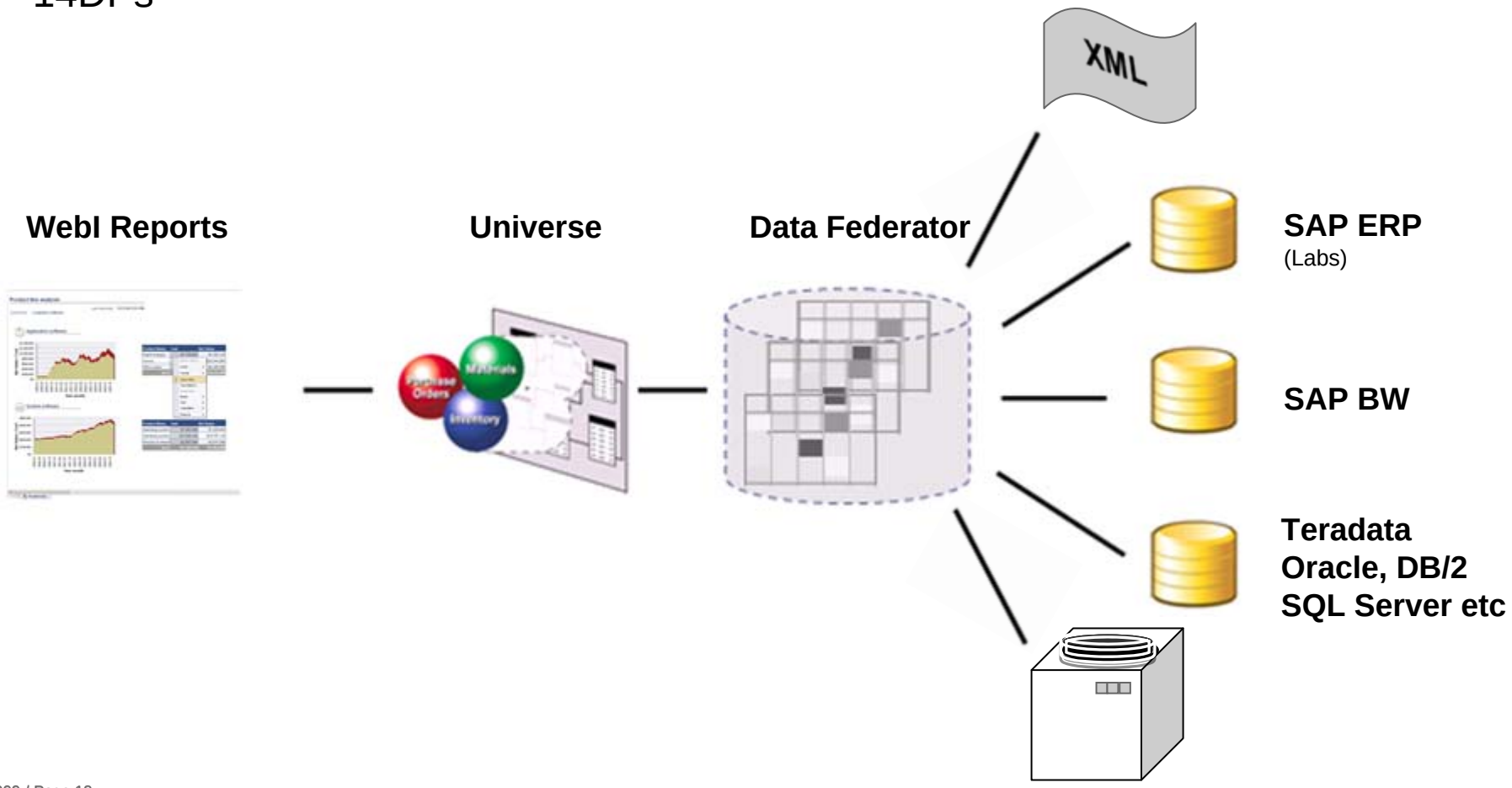
OLAP Data Analysis with Voyager(/Pioneer)

- Comparing and Contrasting it with other tools

DATA FEDERATOR

- Combine SAP with other sources (SAS, Teradata…) *at the Data Source level*
  - Multi-source Universes

- But why not Webi?
  - 14DPs



DATA FEDERATOR KEY CONCEPTS

AGILE DATA INTEGRATION

Design

- **Flexible data modeling**
  - Unified view (Design Multi-Source Data Foundation)
  - Connect to your existing information systems
  - Transform data on the fly (function, mapping rules…)

Runtime

- **Query any sources uniformly**
  - Multi-Source SQL Query engine
    - Including multi-source join operators
    - Pull required data at runtime (access information on demand)
    - Parallel query execution
  - Query optimizer
    - Generate an optimal global execution plan according to the underlying sources
    - Delegate dynamically computations to sources
  - Rewrite SQL statements
    - Generate native queries (SQL, Xquery …)
    - Can generate non relational statements (program and function calls…)

SAP BUSINESS OBJECTS ARCHITECTURE

Information Democracy

BEX / Pioneer
(OLAP metaphors)

Web Intelligence
(uses for analysis and reporting – relational metaphor)

OLAP Universes
(business objects defined using MDX)

Relational Universes
(business objects defined using SQL)

Data Federator

MDX Queries

SQL Queries

SAP NetWeaver 7.01 – BW OLAP Engine

SAP NetWeaver 7.01 – Enterprise Data Warehouse

NetWeaver BI

BOBJ/SAP End-to-End Solution

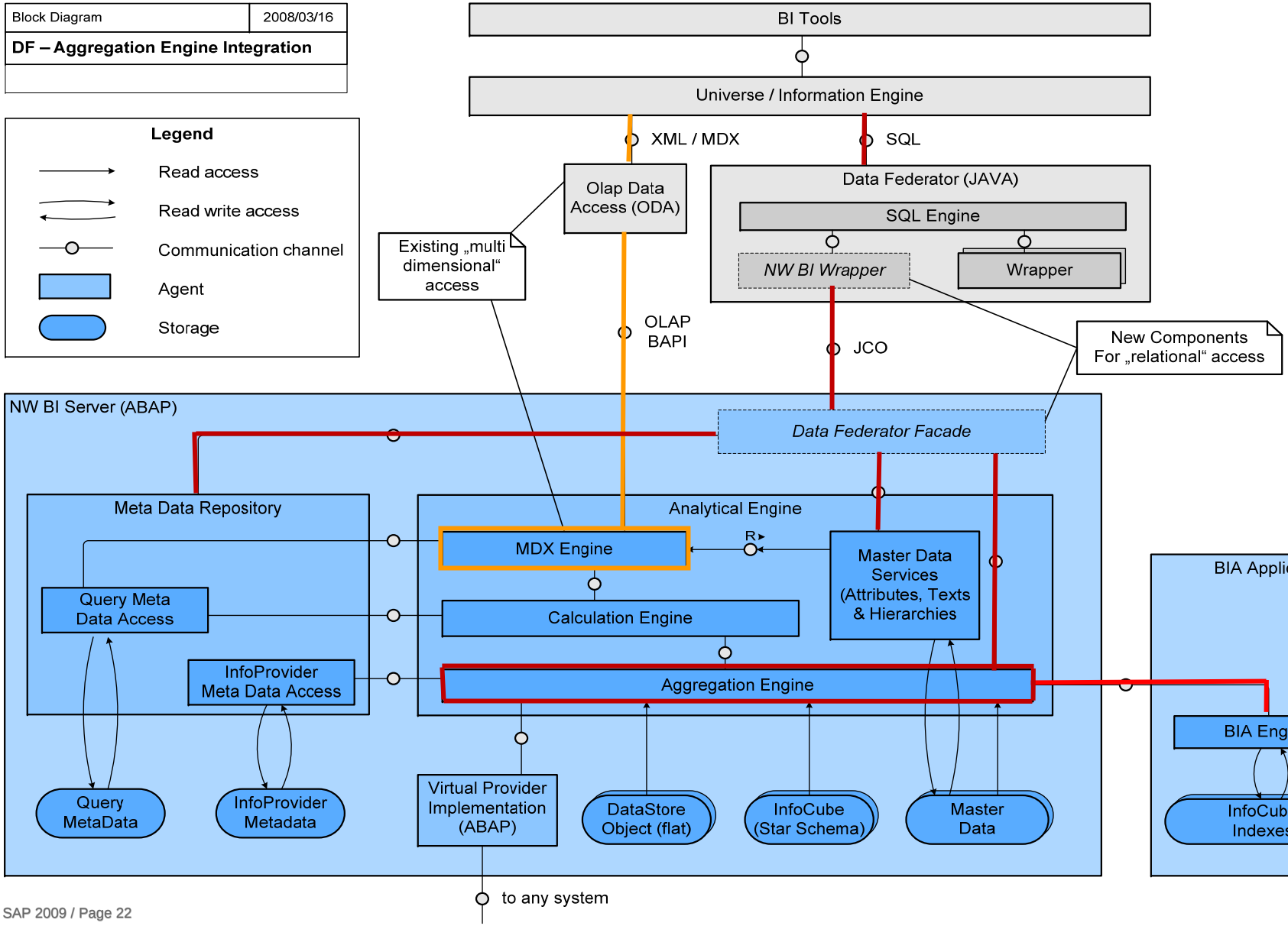
Open Accelerator - FUTURE

Explorer is the only tool that can currently connect to BWA *natively*

DF can be used to connect other tools (WebI) via ‘SQL Façade’

- **Scalable WebI reporting for SAP BW**
  - Bypass the BW OLAP engine
    - Connect to `InfoCube`, `Multiprovider`, `DSO` and retrieve associated metadata
  - Query BW using SQL (performance breakthrough)
  - Generate ready to use relational Universes

CONNECTOR ARCHITECTURE



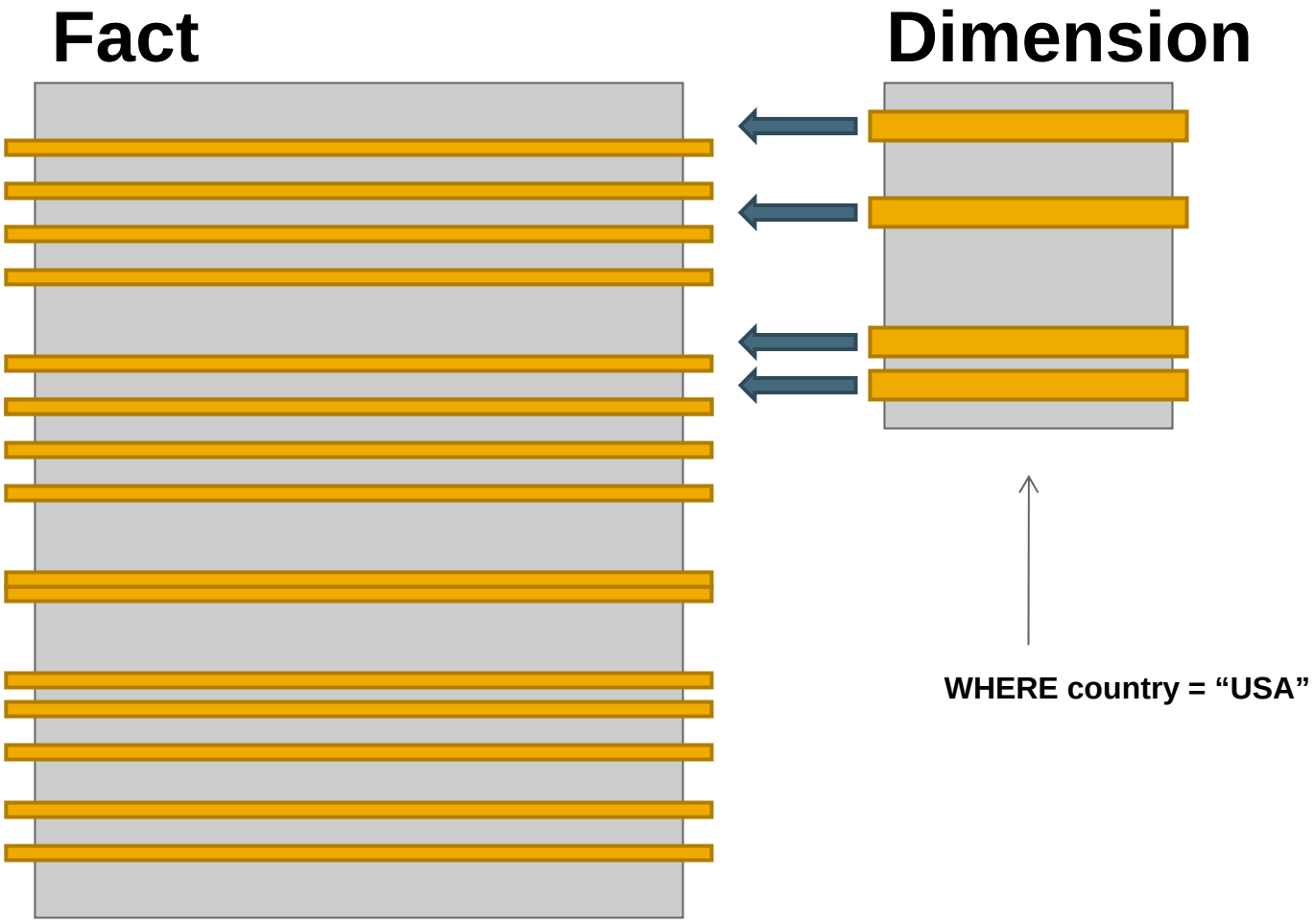
SOLUTION COMPARISON

BW Server Feature	MDX	SQL
BW Hierarchies	■	
Restricted and Calculated Key Figures	■	
BEx Queries	■	
BW Variables	■	
Currency and Unit Conversion	■	
Exceptions, Conditions	■	
Security	■	■
AVG, COUNT, SUM, MIN, MAX Aggregations	■	■
Navigational Attributes	■	■
Mass Data Enabled	□	■
Ad-hoc Reporting		■
Federation (e.g. BW – RDBMS)		■

■ = fully supported

□ = limited support / workaround

Bind Join



One final push...

Data Exploration with Explorer

- The Nuts and Bolts
- Best Practices (Un-accelerated version)

Data Acceleration with BWA

- Current Design
- Future Plans

Data Federator

- What it is
- How to take advantage of it

OLAP Data Analysis with Voyager(/Pioneer)

- Comparing and Contrasting it with other tools

Voyager - what's it all about, eh?

Designed where, by whom?

- Uh, huh!

Designed, why?

- Safe Harbour
- "Best OLAP Experience"
- No Universe?
  - What are WebI's strengths?...
  - USL → DSL

Voyager – misc. tips

Lowering the heap size allows the GC to kick off earlier

- Caution setting too low could starve java rich portion of Voyager such as charting and print to PDF
- Initial Heap Size of 32MB and Max of 64MB worked effectively

Users MDAS can support depends upon query size and OLAP Vendor

- 1 user with 14.5 million cell query off MSAS2005
- 50 users with 1 million cell query off MSAS2005

Questions?