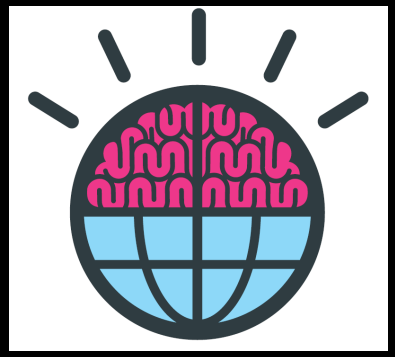
key role of the infrastructure in the data warehousing

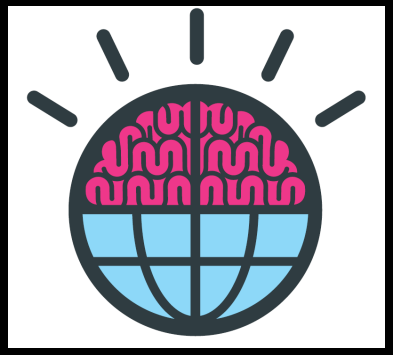


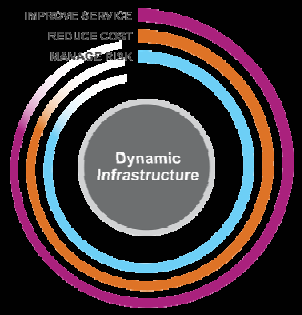
Cédrine Madera IBM
Information IT architect

Agenda

- Customer today challenges
- Dynamic Data warehousing
- Operational Business Intelligence
- Keys platform choice selection
- New Intelligence & Dynamic infrastructure in smart planet

New Intelligence





Why is it a challenge for organizations to leverage information effectively?

Information distributed in silos across the organization

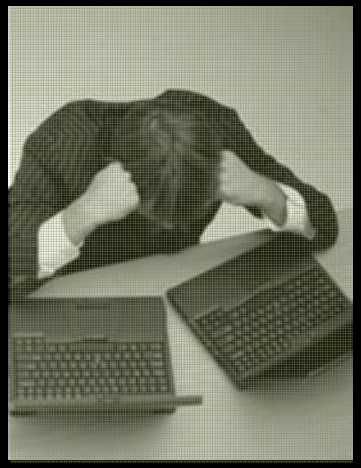
Volume and variety of information increasing

Velocity of business driving real-time requirements

Not accurate

Not complete

Not trusted
Not timely



Increased need to aggregate and analyze information dynamically

Key Drivers and Business Issues

- **Too much information and not knowing what's important**
  - Not using demand signals to drive supply chain
  - Not using customer analysis to tailor marketing and sales
  - Not leveraging valuable unstructured information

- **Multiple versions of the truth**
  - Problems managing customer, product and partner interactions
  - Regulatory compliance inhibited by poor transparency

- **Lack of trusted information**
  - Incomplete, out-of-date, inaccurate, misinterpreted data
  - Difficult to understand or control how information is used

- **Lack of agility**
  - Inability to take advantage of opportunities for innovation
  - Escalating costs due to inflexible systems and changing needs

Dynamic Warehousing
A New Approach to Leveraging Information

Information On Demand
to Optimize Real-Time Processes

Dynamic Warehousing

OLAP
to Un
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Query &
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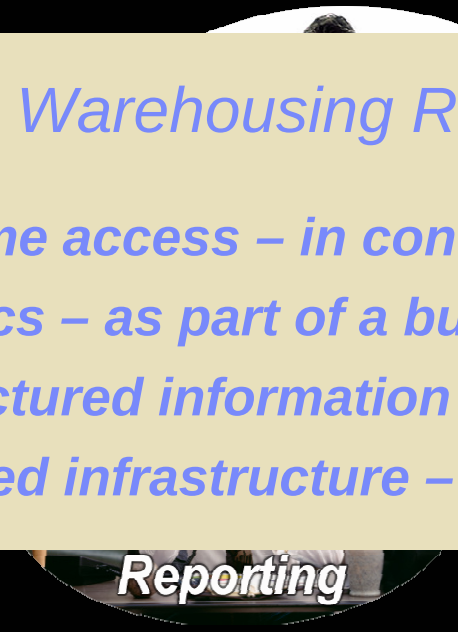
What Happened



Dynamic Warehousing Requires:

1. Real-time access – in context

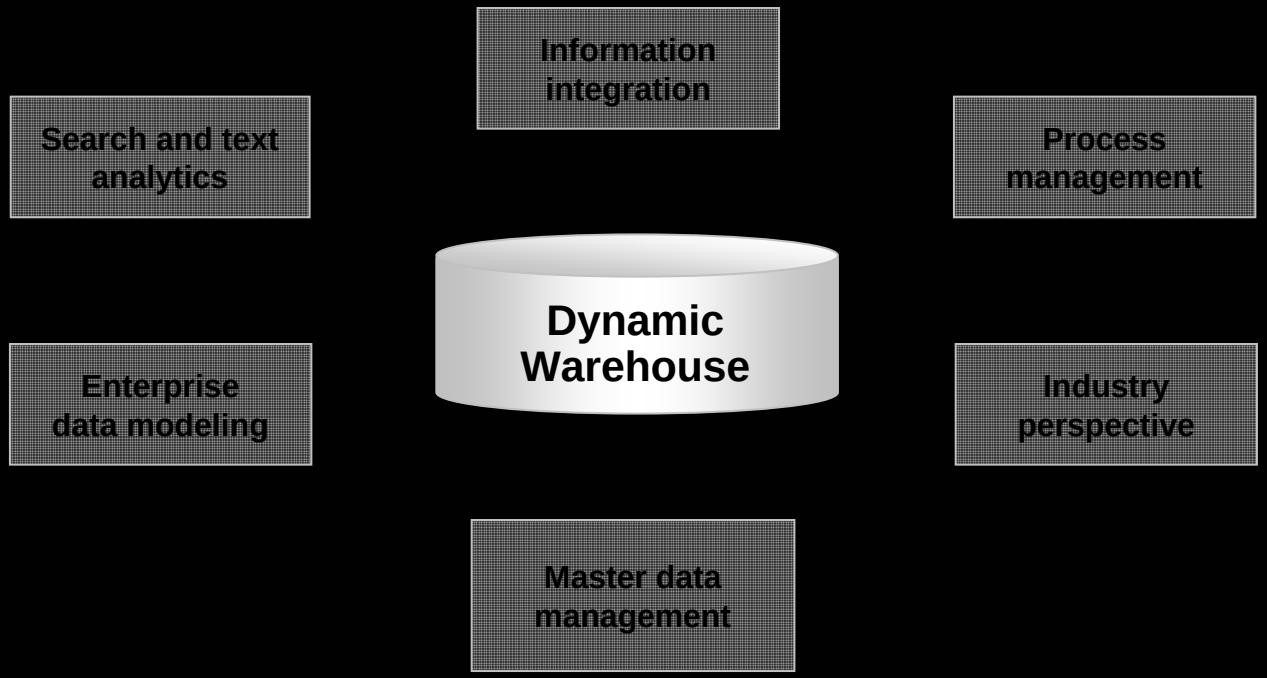
2. Analytics – as part of a business process

3. Unstructured information – extracted knowledge

4. Extended infrastructure – tightly integrated

Dynamic warehousing

Extending beyond the warehouse to enable information on demand



More Examples of Dynamic Warehousing in Action

Enabling Information On Demand for Business Advantage

Traditional warehousing		Dynamic warehousing
Insurance fraud analysis and reporting	▶	Identifying potentially fraudulent claims prior to approval and payment ***Transforms healthcare***
Reporting on customer issues	▶	Identifying possible related issues, churn risk and cross-sell opportunities while engaged with the customer ***Transforms customer service***
Historical sales analysis and reporting	▶	Discovering relevant customer information to identify cross sell opportunities and improve negotiating position at the point of sale ***Transforms sales effectiveness***

Creates challenges for traditional warehousing
Not just for traditional query and reporting purposes anymore

Warehouses must now:

- Address expanding needs for **analytics** and information on demand
- Leverage ALL types of information, including **unstructured**
- Serve **increasing numbers and types of applications** and users, with varying service level demands

Increasingly **mixed workload environments** and the **constantly changing needs** of different business constituents require more **dynamic warehousing** capabilities

How to Address the Challenge?

Take care about the platform selection!

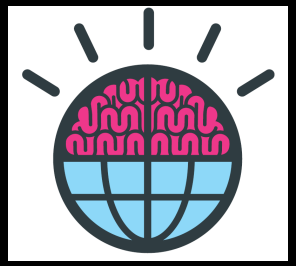
What are the keys points for the platform selection ?

Platform key points

- Performance
- Scalability
  - Scale UP or OUT
- Reduced Costs through Server Consolidation
- Green
- TCO in database serving
- Work Load Management
- Reliability & availability
  - **BI is mission critical.**

Operational Business Intelligence

What it is?



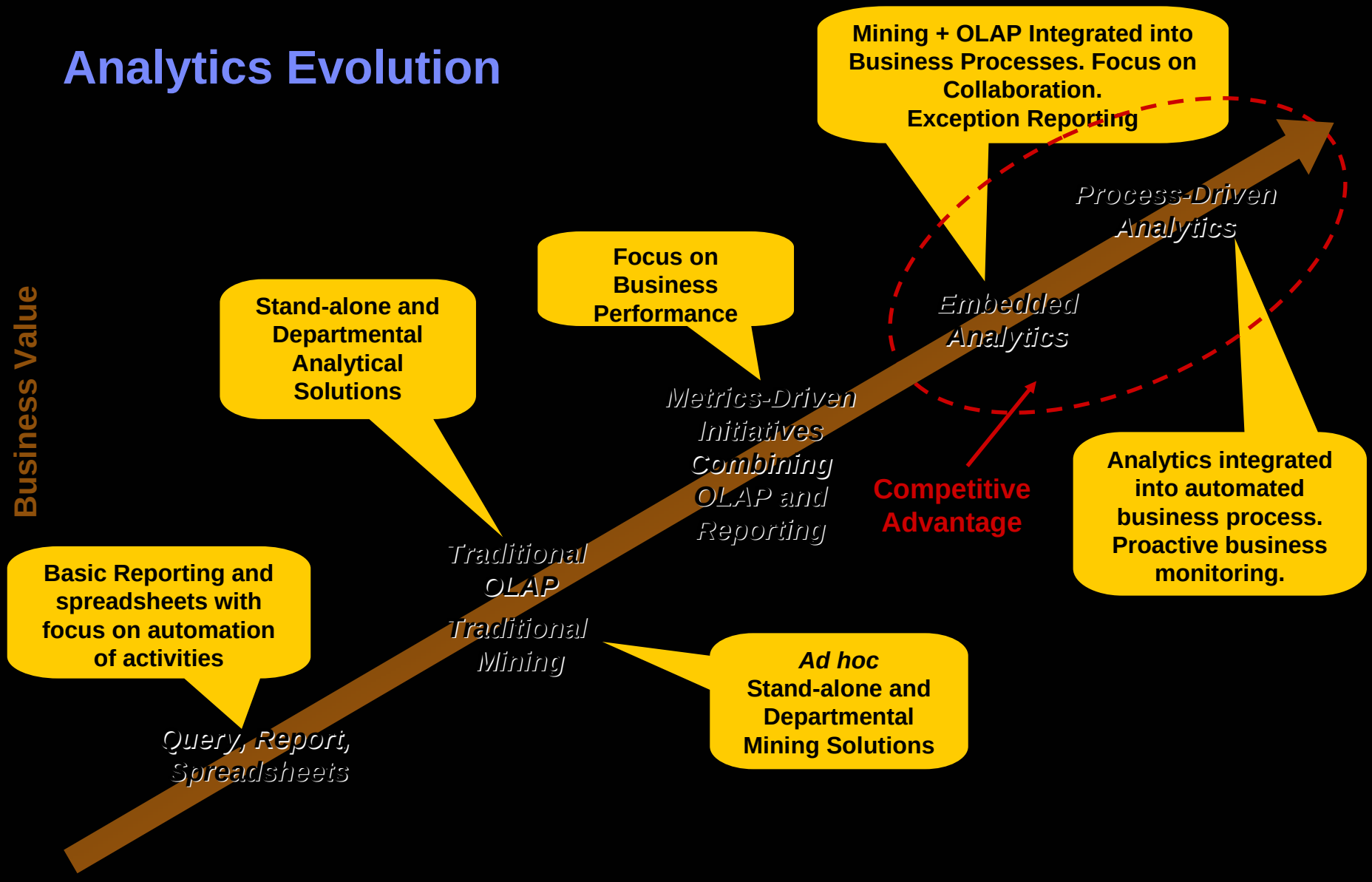
Business Intelligence (BI): what it is?

BI is the process of gathering, consolidating, and analyzing data from multiple sources for strategic decision making.

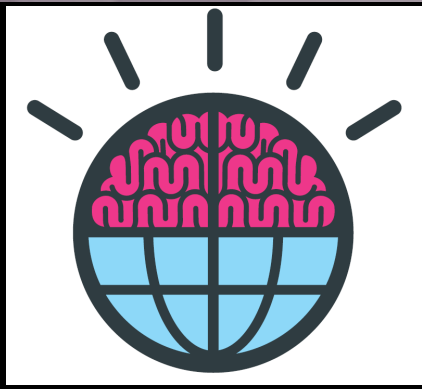
- BI derives new value from your transactional data
- BI supports strategic planning, monitoring, and efficiency
- BI delivers *knowledge* of the customer, suppliers, and channels
- BI unifies the enterprise with a single version of the truth
- BI develops the insight and understanding needed to make informed decisions

Transform data to information

Analytics Evolution



Operational BI



- Operational BI
  - Framework where **key operational business events** are **monitored** for changes or trends
  - Enables **business** users to take corrective **actions**
- **Event-driven**
  - As operational events happen, they are registered and reported upon
- **Push** technology
  - Monitors key events for proactive interactions

Operational BI is a way to speed up business decisions

Key Operational BI Requirements

- Continuous availability of operational data
  - Current information from operational systems
  - Integrated on demand
  - Minimal impact on operational systems performance
- Presented in a proactive manner
  - **Make decisions – act on information presented**
  - Easy to understand and use
- Combination of structured and contextual data
  - Data without context is meaningless
- **Dynamic** modeling
  - Ability to change business rules on the fly
  - Show different set of metrics depending on the situation

The Three Levels of Business Intelligence

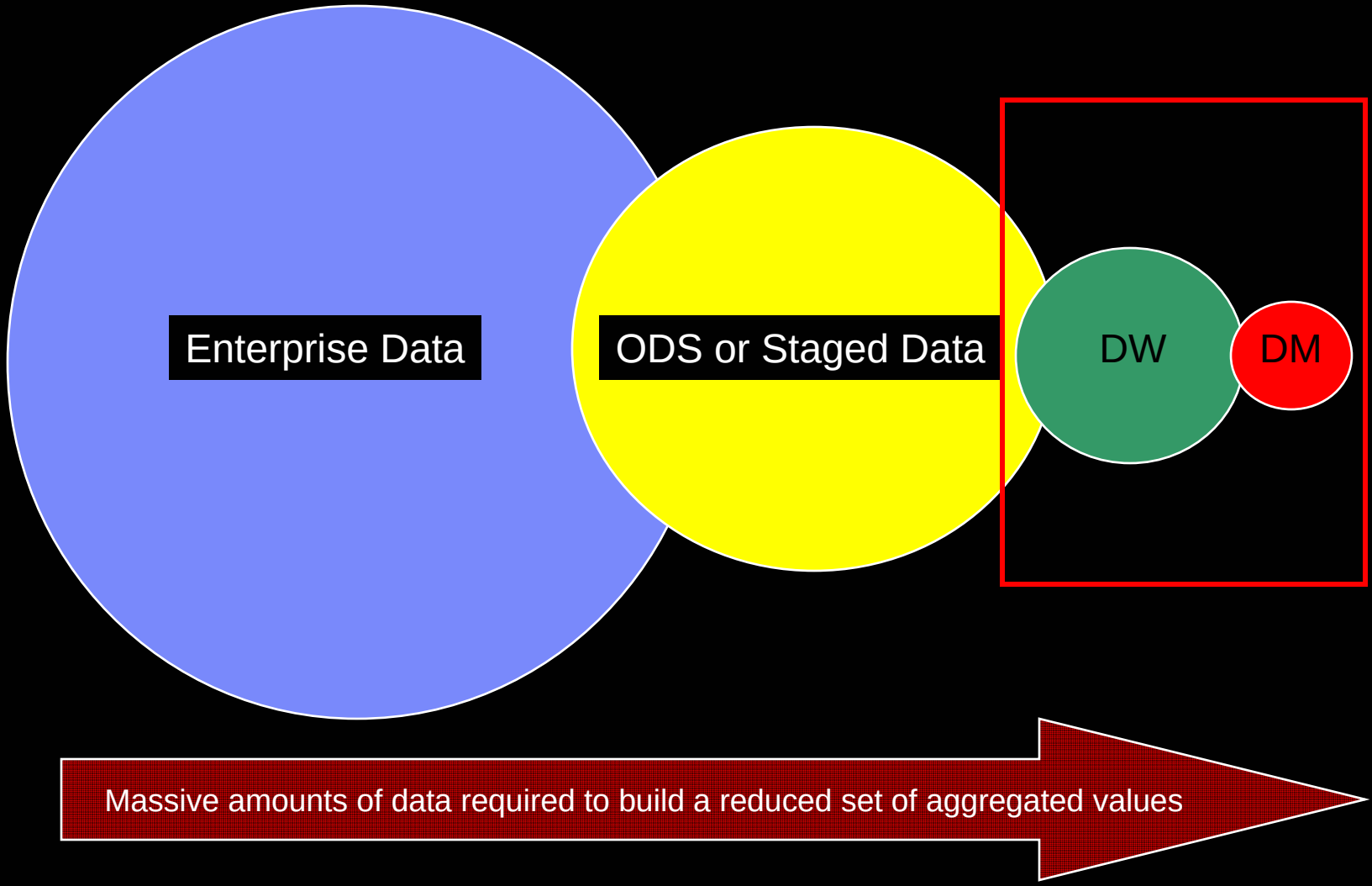
	Strategic BI	Tactical BI	Operational BI
Business focus	Achieve long-term business goals	Manage tactical Initiatives to achieve strategic goals	Manage and optimize daily business operations
Primary users	Executives and business analysts	Executives, analysts, and LOB managers	Analysts, LOB managers and users, and operational processes
Time-frame	Months to years	Days to weeks to months	Intra-day
Data	Historical data	Historical data	Real-time, low-latency and historical data

Traditional vs. Operational BI

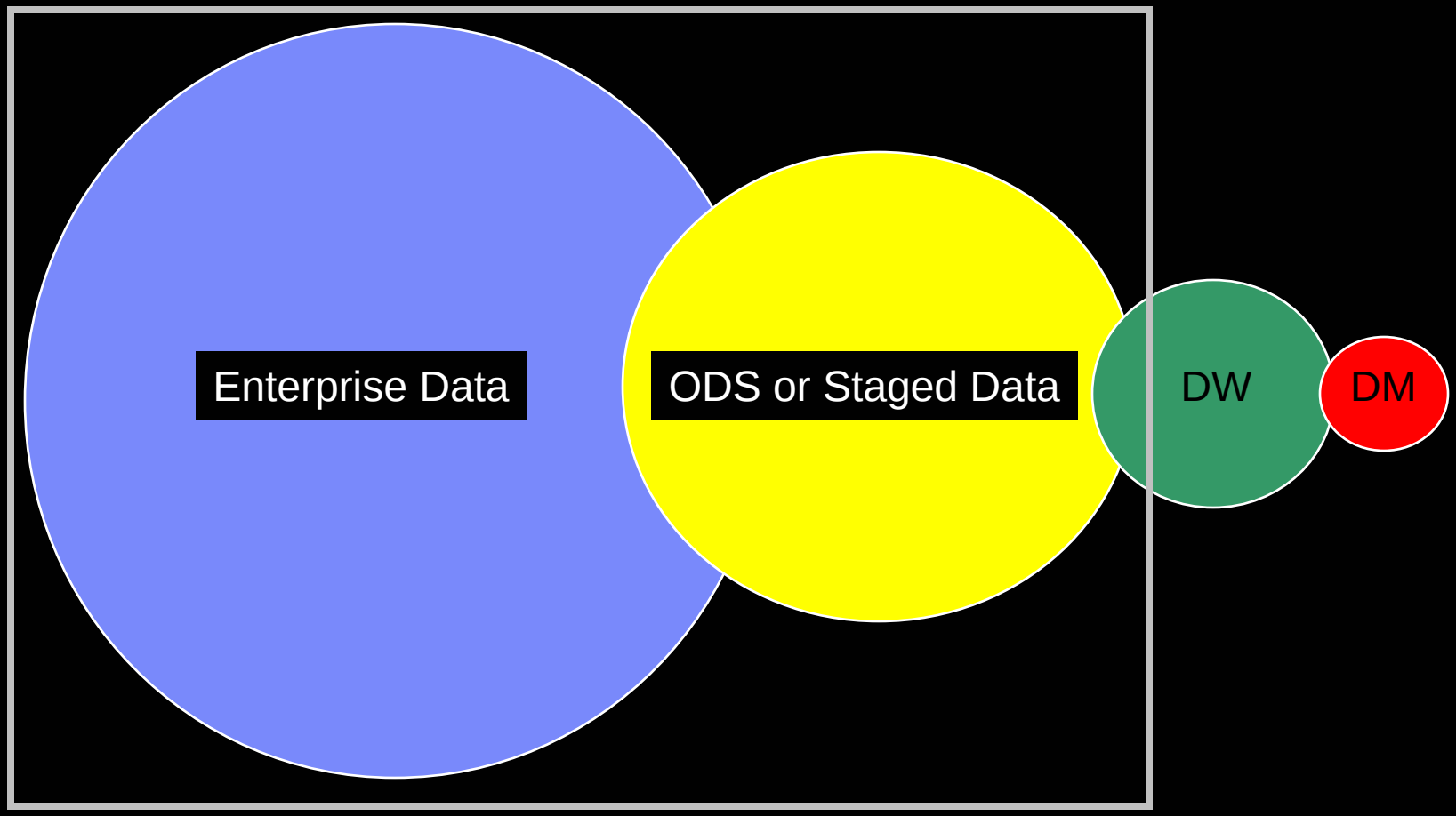
Traditional BI	Operational BI
Aggregated data fed by large volumes of captured information	Detailed information with smaller sets of data and delivered right-time
Targeted toward management and executives	Targeted toward operational staff who interact with customers
Significant investment in end user technical skills to create BI output and deliverables	Minimal skills required by the end users
Historical view within the analytics (e.g. what happened last year compared to this?	What's happening now? Contextual information for optimizing customer interaction

New Intelligence

Uses of Data and Volumes by End User Type

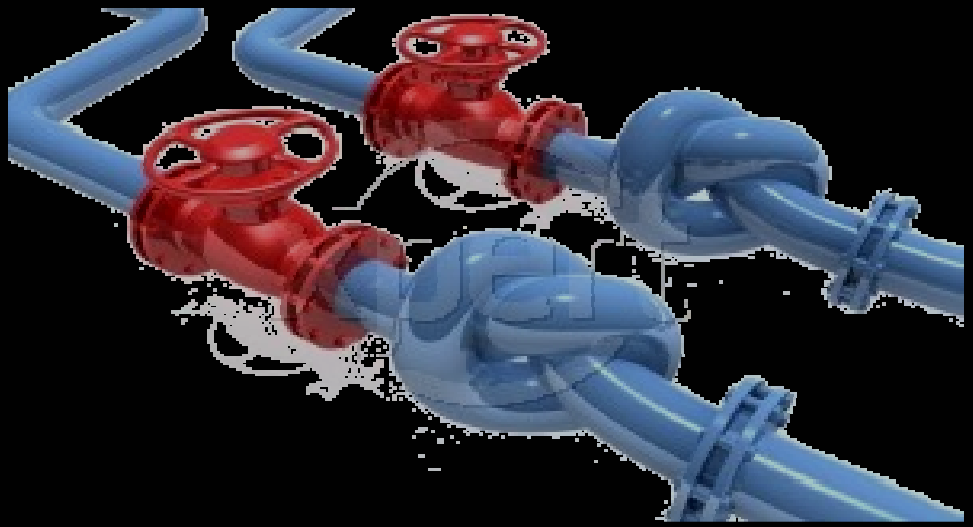


Uses of Data and Volumes by End User Type



Operational BI is targeted toward the use of data at the granular level … often at near real-time moments

Issues around Business Intelligence ….



- Query performance
- Large data volumes
- Data quality
- Varying service level demands

- Companies locked into “Excel culture”
- Information distributed across silos in the enterprise
- Need for analytics and information on demand
- Need to leverage ALL types of information
- Increasing numbers and types of applications and users

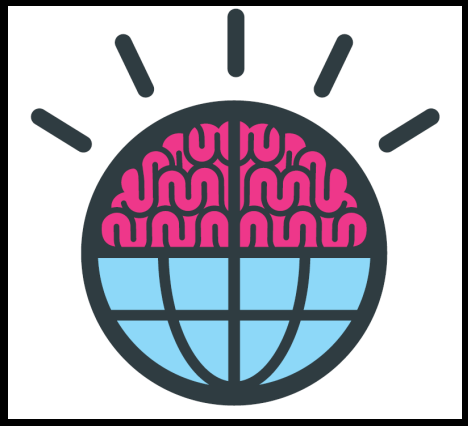
The new challenges

Propose smart approach to solve these real problems

Complex data integration

Increased data volume/variety

Timely data



A global approach must include innovative infrastructure
New intelligence in Dynamic infrastructure
in action!

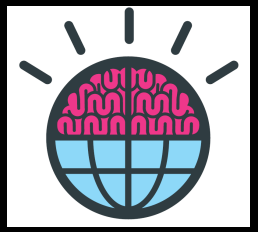
Summary : Platforms requirements

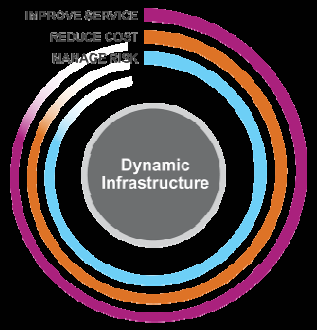
- **Qualities of Service**
  - Availability
  - Security and Regulatory Compliance
  - Scalability
  - Backup and recovery
- **Positioned for the future**
  - Web-based applications
  - XML support
  - Service Oriented Architecture (SOA)
- **Supported by research Features**
  - Super fast
  - Improved efficiency, resiliency and storage scalability
  - Just in Time capacity deployment
  - …and more

- **Operational data and the ODS together means**
  - Reduced complexity
  - Reduced cost
  - Shared processes, tools, procedures
  - Streamlined compliance and security

- **Specialty engines improve TCO**
- **Better leverage hardware skills and investment**
- **Global BI solution product coverage on one platform**

Dynamic infrastructure & New Intelligence





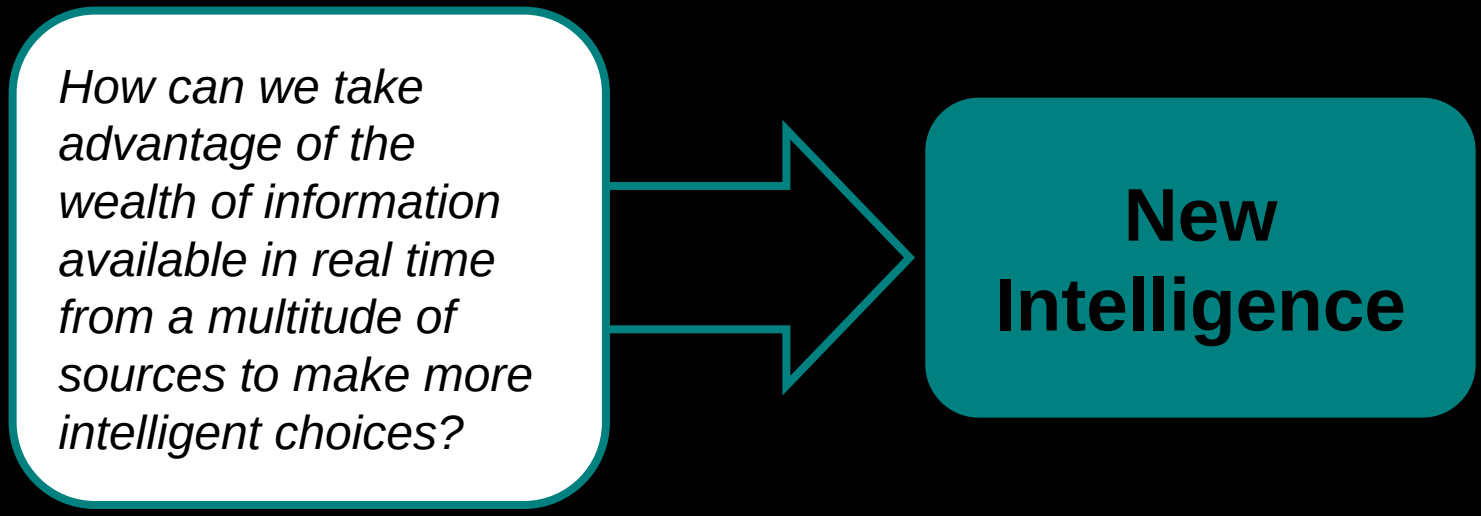
Build a smart planet….

For us to make sense of this new world, we must consider four critical questions

"Data is exploding and it's in silos"	"New business & process demands "	"My infrastructure is inflexible and costly"	"Our resources are limited"
I Need Insight	**I Need to Work Smart**	**I need to respond quickly**	**I Need Efficiency**
How can we take advantage of the wealth of information available in real time from a multitude of sources to make more intelligent choices?	*How can we work smarter supported by flexible and dynamic processes modeled for the new way people buy, live & work?*	*How do we create an infrastructure that drives down cost, is intelligent and secure, and is just as dynamic as today's business climate ?*	*How do we drive greater efficiencies, compete more effectively, and respond more quickly by taking action now on energy, the environment, and sustainability?*
New Intelligence	**Smart Work**	**Dynamic Infrastructure**	**Green & Beyond**

Enterprise data is projected to explode at 57 percent CAGR through 2010.

Managers spend 2 hours a day searching for information – 50 percent of what they find is useless and 42 percent of them accidentally use the wrong data weekly.



Businesses are under pressure to consume and analyze the data explosion with “New Intelligence”

Volume of Digital Data

By 2010, the codified information base of the world is expected to double every 11 hours. Data is exploding, and its nature is changing to machine-generated – from sensors, RFID, meters, GPS systems and more.

Variety of Information

With the expansion of information comes large variances in the complexion of the available data – very noisy with lots of errors and no time to cleanse in a world of real-time decision making.

Velocity of Decision Making

The market demands that businesses optimize decisions, take action based on good information and use advanced predictive capabilities – all with speed and efficiency.

Shift in WHAT We Analyze

Enterprises need a broader, systems-based approach to what they examine and optimize. Stream computing and event processing capabilities are enabling the analysis of extreme volumes.

What must be made smarter for us to create new intelligence?

Do we treat information as a strategic asset with the same level of focus as cash or human resources?

Do we know what kind of insight is critical to our future growth?

Do we have our people, processes and information technology aligned to fully exploit information and gain new levels of intelligence across the organization?

Do we have a clear and decisive plan to instrument, connect and invest in the things we must to gather that insight?

Do we have results-driven business processes that allow us to turn insight into action?

What must we change about our leadership, organization, and governance approach to drive the maximum result from this new kind of intelligence?

IBM helps to make the planet smarter

IBM helps clients work smarter supported by flexible and dynamic processes modeled for the new way people buy, live & work.

Smart Work

IBM helps clients bring together deep customer insights with advanced technology and research to create new business models.

New Intelligence

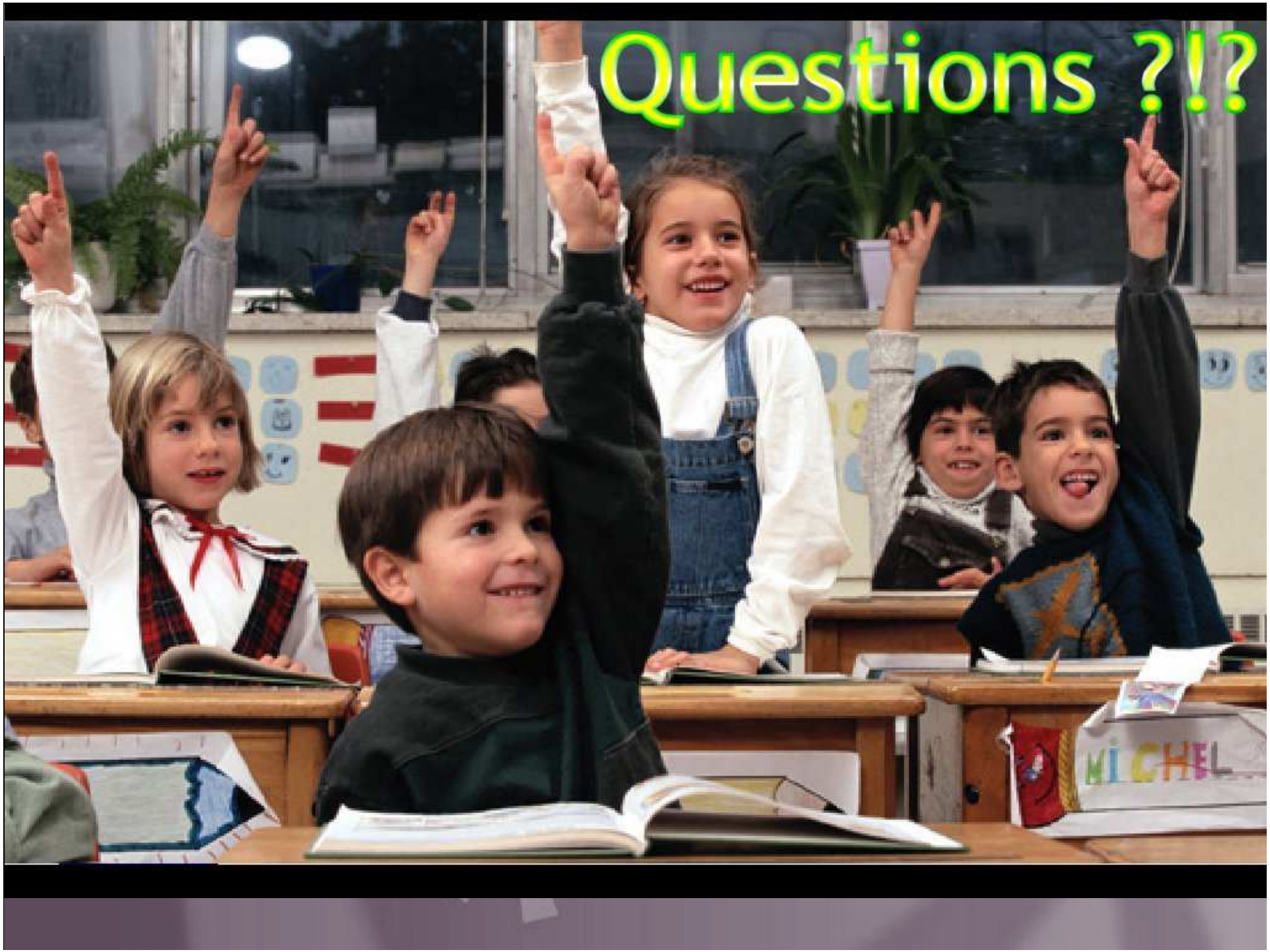
Green & Beyond

IBM helps clients reduce energy costs, meet legal requirements, develop new business processes that fit their operations, and helps them offer a new portfolio of green services and products.

Dynamic Infrastructure

IBM helps clients create an intelligent infrastructure that drives down cost, is secure, and is just as dynamic as today's business climate

MERCI
Anne & Maguelonne


Questions ?!?
MICHEL