

IBM System z Forum
Data movement within the enterprise



Big Data. Analytics. And the zEnterprise®

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

Presentation Abstract

Big data, Analytics and the zEnterprise®




What does big data mean for mainframe organisations? The trend towards larger, faster and more complex data sets is as much a business challenge as a technology one. This presentation will address the new paradigm in data management and analytics, and discuss how IBM System z® fits in your big data strategy to help your organisation deliver insight.



Topics

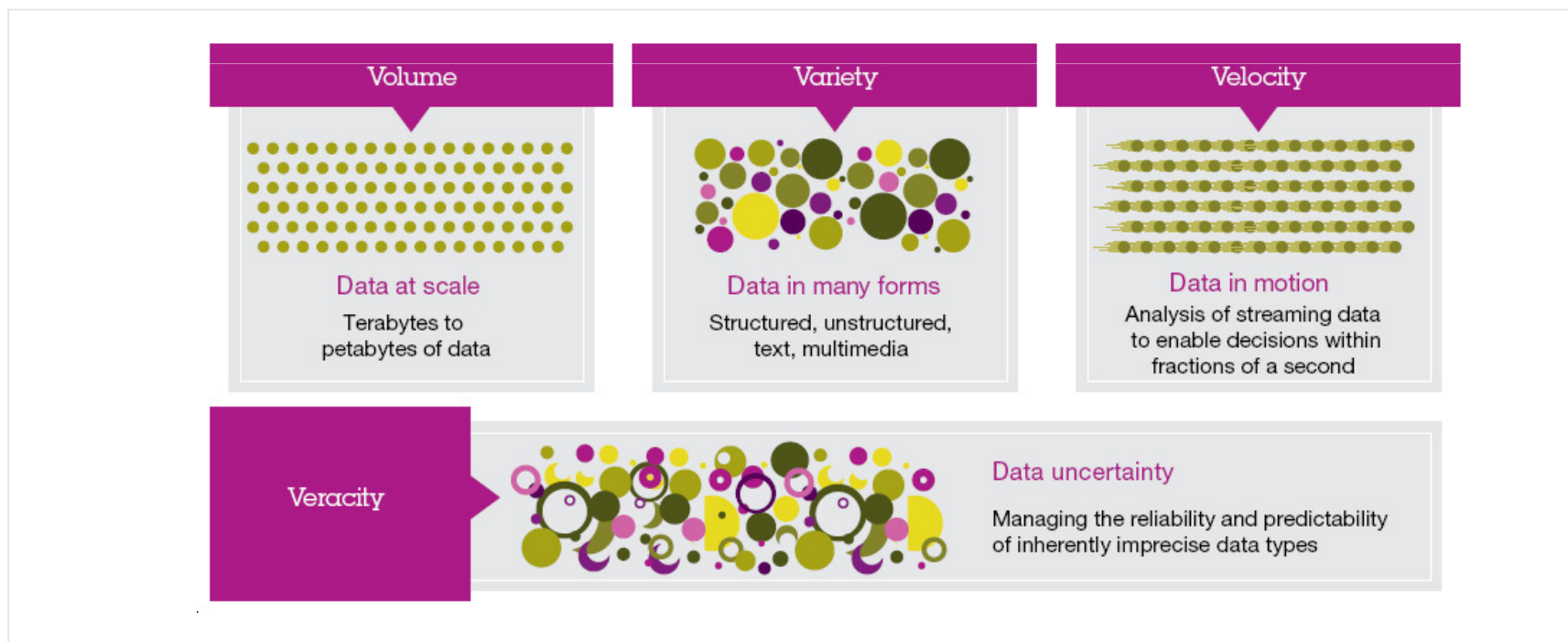
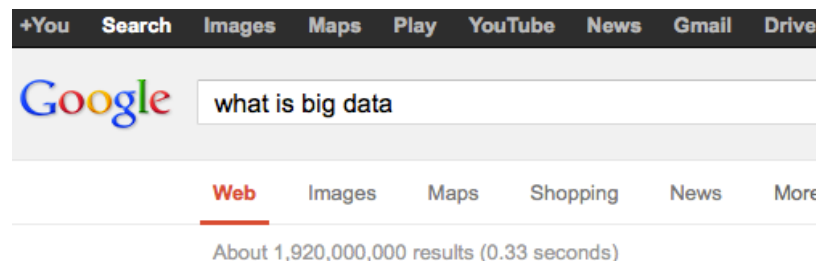
-  Big Data – it's the new natural resource
-  Big Data & System z – working together
-  Big Question – how?

Topics

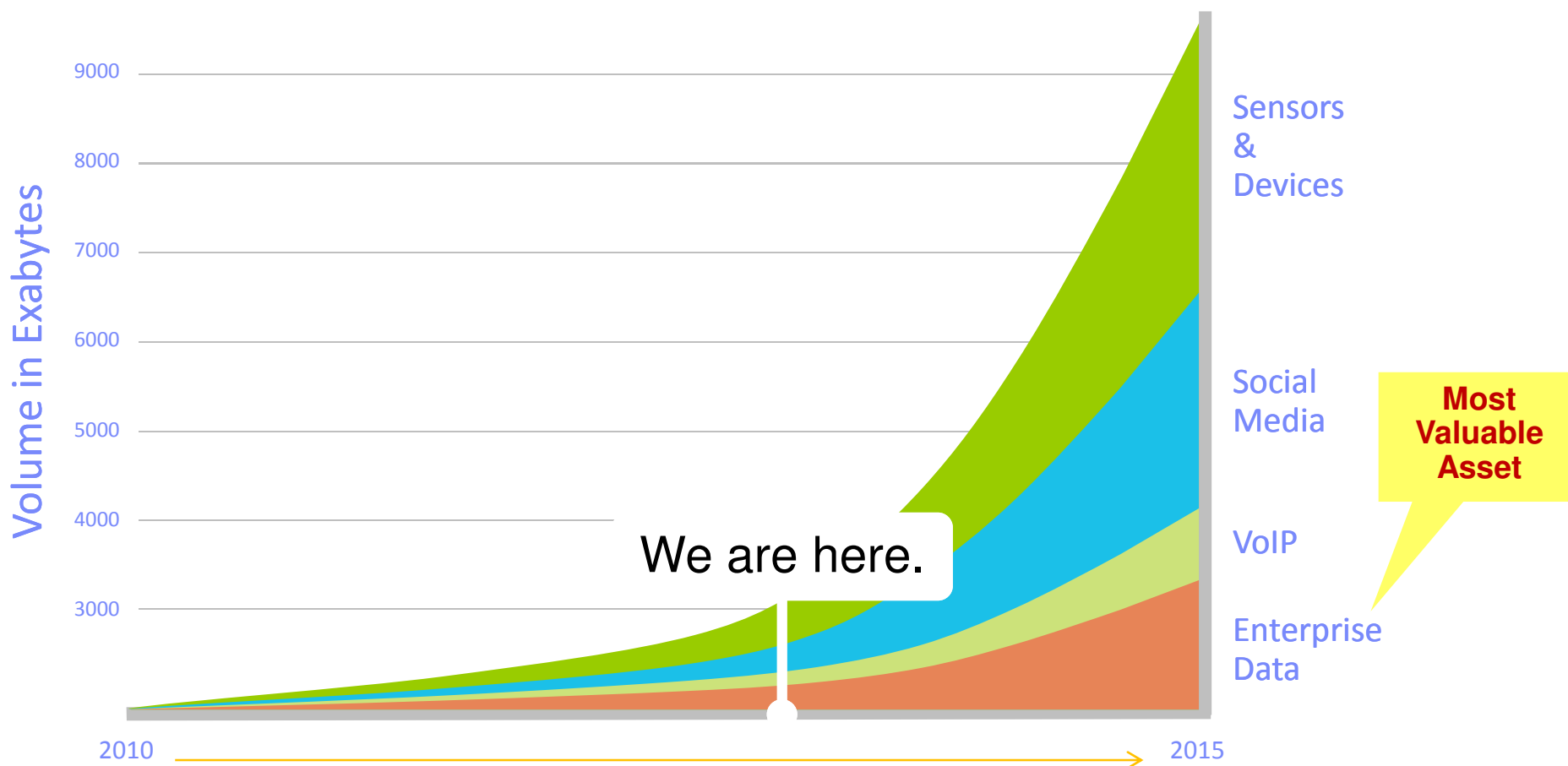
-  **Big Data – it's the new natural resource**
-  Big Data & System z – working together
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What is Big Data

- Means many things to many people
 - Google gives ~2 billion results
 - Vendors have many definitions
- Its not just about size, social media, hadoop
- Use more data, more types of data, more quickly and use uncertain data



The dawn of Big Data: The uncertainty of new information is growing alongside its complexity



IBM source data is based on analysis done by the IBM Market Intelligence Department. IBM Market Intelligence data is provided for illustrative purposes and is not intended to be a guarantee of future growth rates or market opportunity

Source: IBM Global Technology Outlook 2012

Majority of today's analytics is based on relational & structured data



- Analytics and decision engines reside where the DWH / transaction data is
- “Noise” (veracity) surrounds the core business data
 - Social Media, emails, docs, telemetry, voice, video, content
- What data are you prepared to trust?
- Where do you put your trusted data?

“Circle of Trust”

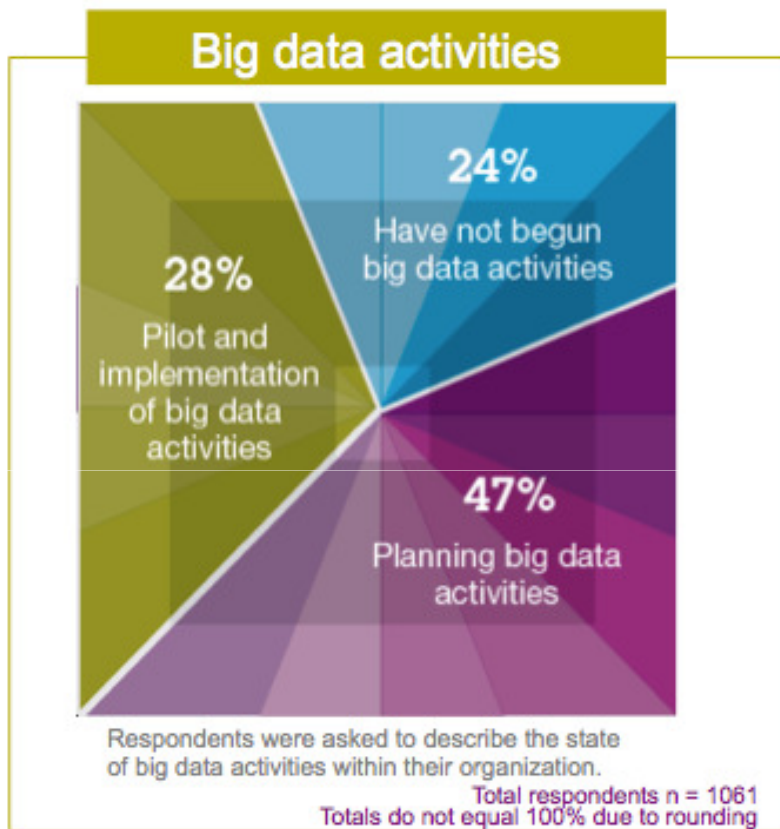
Demand for “differently structured” data to be seamlessly integrated to augment analytics and decisions



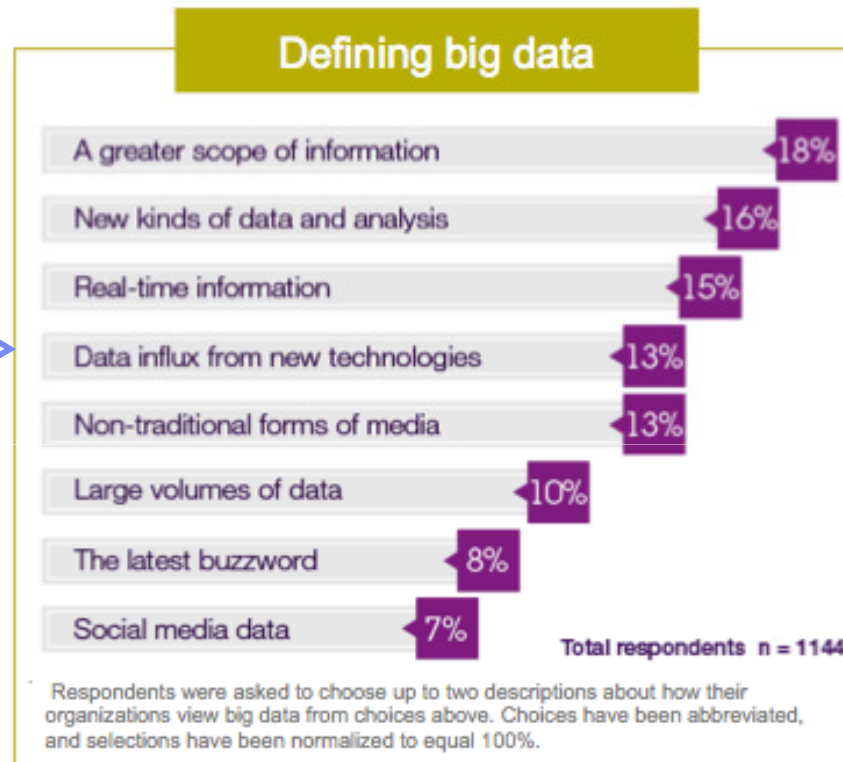
- Analytics and decision engines reside where the data is
- Sense and reliability derived from non-traditional sources
- Expanding our insights – getting closer to the “truth”
 - Lower risk and cost
 - Increased profitability

“Circle of Trust” widens

Where are organisations at with Big Data?



Three out of four organisations have big data activities underway; and one in four are either in pilot or production



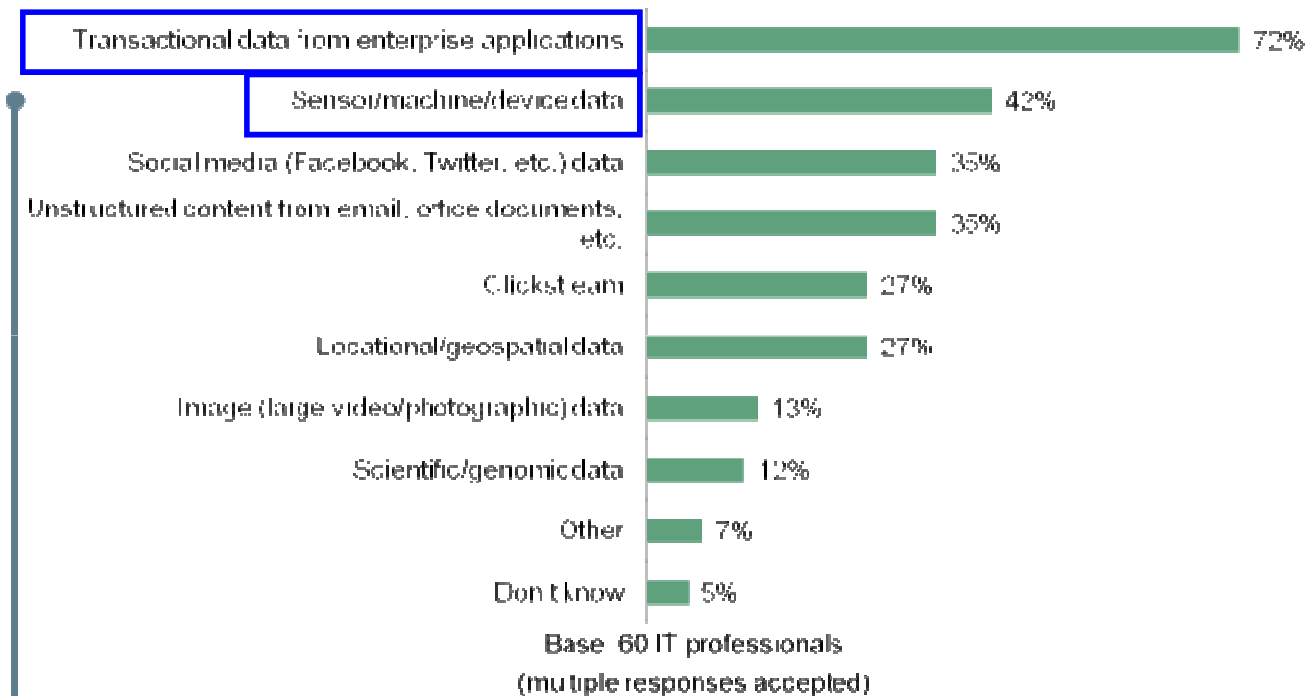
Organisations define big data by the opportunities it creates

Source: *Analytics: The real-world use of big data*, a collaborative research study by the IBM Institute for Business Value and the Saïd Business School at the University of Oxford. © IBM 2012

Big Data starting point

Where are organisations getting most return on Big Data projects?




“What types of data/records are you planning to analyze using big data technologies?”



! Most big data use cases hype its application for analysis of new, raw data from social media, sensors, and web traffic, but we found that firms are being very practical, with early adopters using it to operate on enterprise data they already have.

Source: 2012 IBM Global Big Data Online Survey

Topics

-  Big Data – it's the new natural resource
-  **Big Data & System z working together**
-  Big Question – how?

Big Data & Analytics on IBM zEnterprise

A significant data source for today's business critical analytics
 Improves Experience → Increases Adoption → Drives greater insight



What sets zEnterprise apart for Big Data & Analytics Infrastructure



Today's Non-Functional Requirements

Timely, accurate and secure information	Superior availability, scalability and performance	Rapid deployment and expansion	Reduced costs and complexity
<ul style="list-style-type: none"> • Co-location of data warehousing, business analytics, transactional data • Reduced data movement • Lower latency and near real time data • Rapid acceleration of complex queries • High security (EAL5+) 	<ul style="list-style-type: none"> • High availability (99.999%) • Performs at 100% capacity • Prioritization of critical queries & workloads • Integrated disaster recovery 	<ul style="list-style-type: none"> • Centralized, scalable infrastructure • Virtualization • Start with your final architecture 	<ul style="list-style-type: none"> • Processors, disk, memory added dynamically without outage • Pre-install then activate as needed • Flexible deployment options




Why Big Data on z?

- **For all the NFRs mentioned earlier**

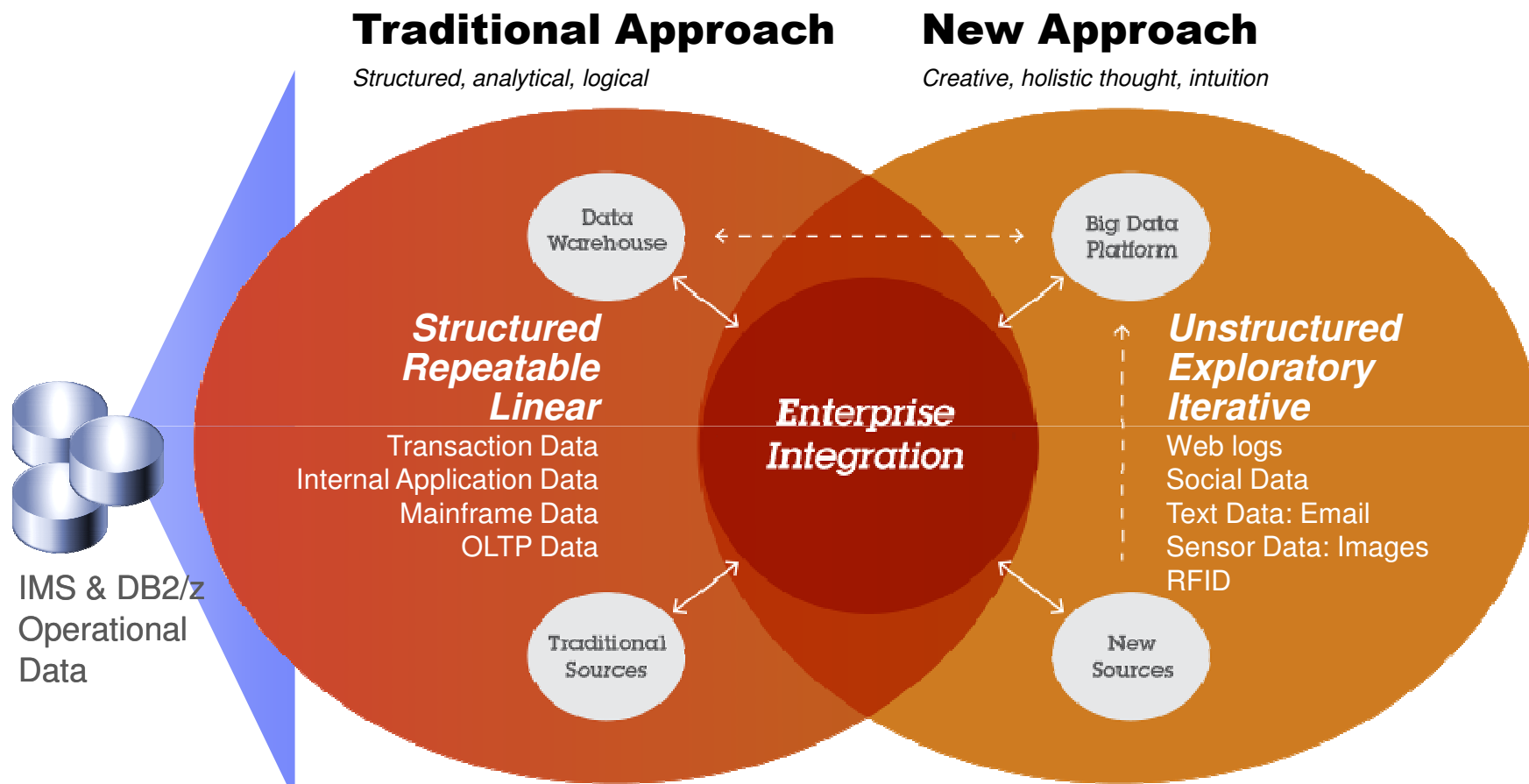
- **Emerging “hot” analytics area**
 - The HADOOP ecosystem is rapidly expanding
 - Environment is maturing, moving to more general acceptance
 - Growing zLinux integration platforms – Data Integration and Business Analytics
 - More and more analytic workloads on mainframe made available through ISAS
 - Need the ability to combine “new analytics” with traditional warehousing and OLAP

- **But there are considerations...**
 - z Platform not suited as a landing zone for Raw Data
 - Sheer volume and format (Mostly unstructured)
 - HADOOP and MapReduce best suited to manage and analyze data
 - Traditional warehouse/OLAP platforms still require Big Data Analytics result sets for further combined analysis.

Topics

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-  **Big Question – how?**

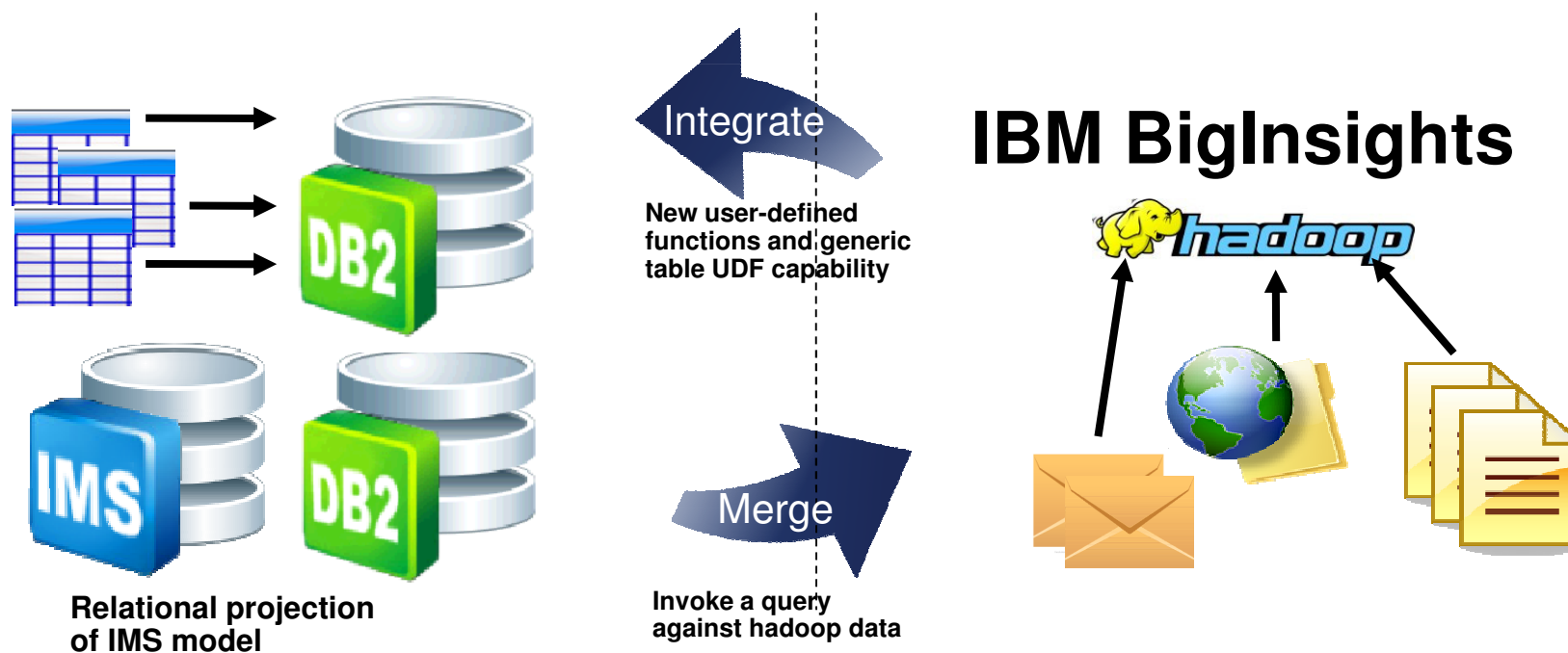
Big Data Analytics is merging traditional and new approaches



- IMS applications for Big Data Analytics include Finance, Manufacturing, Telecom, Retail, Log Analysis, Fraud and Risk.
- IMS manages a high percentage of the world's operational mission-critical data.
- Integrate IMS structured data with new forms of unstructured data for more **comprehensive** analytics.

Enhancing Big Data Analytics with IMS and DB2 for z/OS

- **Much of the world's operational data resides on z/OS**
- **Unstructured data sources are growing fast**
 - Two significant needs:
 - Merge this data with trusted OLTP data from zEnterprise data sources
 - Integrate this data so that insights from Big Data sources can drive business actions
 - IMS & DB2 - connectors allow BigInsights to easily/efficiently access data
 - DB2 connectors to allow DB2 apps to easily and efficiently access hadoop data sources



Leverage the Right Technology

Streamlining a multi-platform infrastructure for Big Data

Integrated

Integrate insights from various forms of data, into your business processes.
Bring analytic applications to the data

Insight-rich
 DB2 Analytics Accelerator
Secured data for real-time analysis



Insight-rich operational data

DB2 Analytics Accelerator

Analytic applications

Secured data warehouse for operational data

zEnterprise



Analytic tools

Analytic Tools
 Centrally deploy analytic tools for easy management

zBladeCenter

PureData for Hadoop
BigInsights



Unstructured data

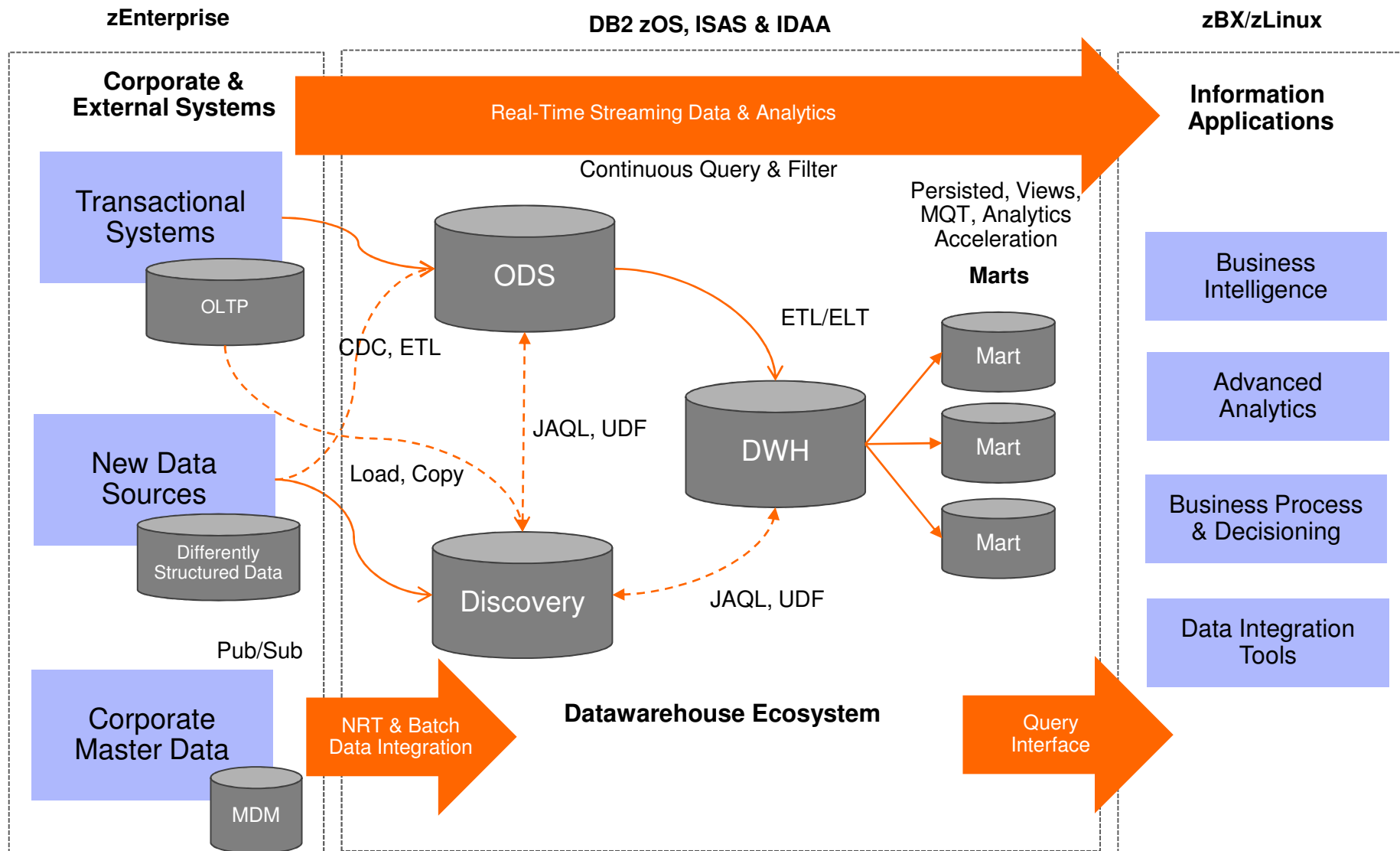


InfoSphere Streams

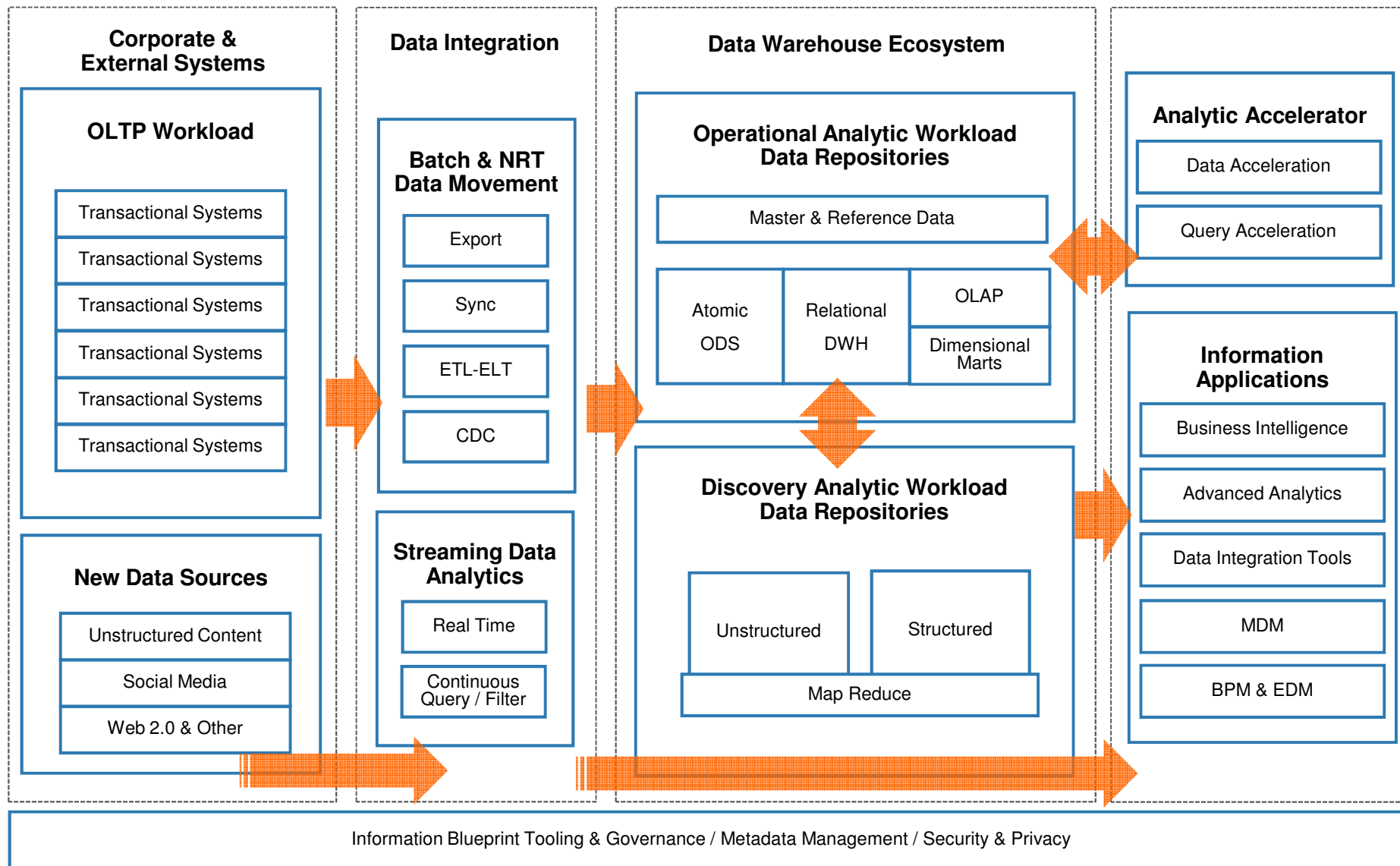
Unstructured, Streaming Data

PureData for Hadoop - for external data insights
InfoStreams monitors data streams, extracting valuable information

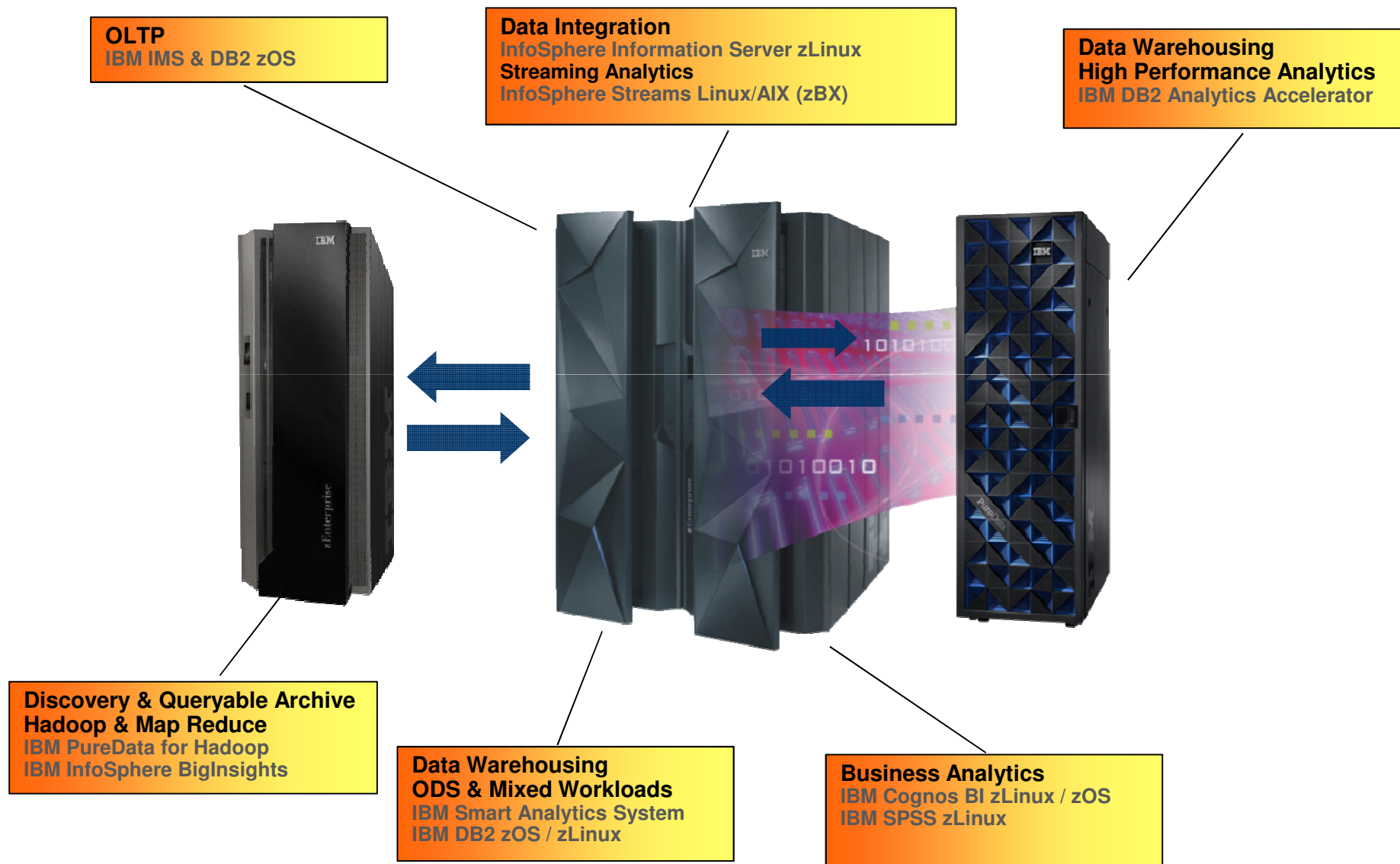
Architecture Pattern



Architecture Framework



End to End Big Data Analytics for the zEnterprise



THINK

BIG

THINK

Z

Z

Resources

- For additional information including whitepapers and demos, please visit:

Big Data on System z

<http://www-01.ibm.com/software/data/bigdata/z>

IBM Big Data in the Enterprise

<http://www-01.ibm.com/software/au/data/bigdata>

IBM Big Data Study

www.ibm.com/2012bigdatastudy

- **Big Data University Education**

- Free online education at bigdatauniversity.com
- 99,900+ registered students

Thank You!



- **IBM Information on Demand**
 - Nov 3-7 2013
 - Mandalay Bay, Las Vegas

- **Develop your own zEnterprise big data strategy**
 - Contact your local IBM account representative to get started

- **Connect with me @fooisms on Twitter**
 - <http://twitter.com/fooisms>

