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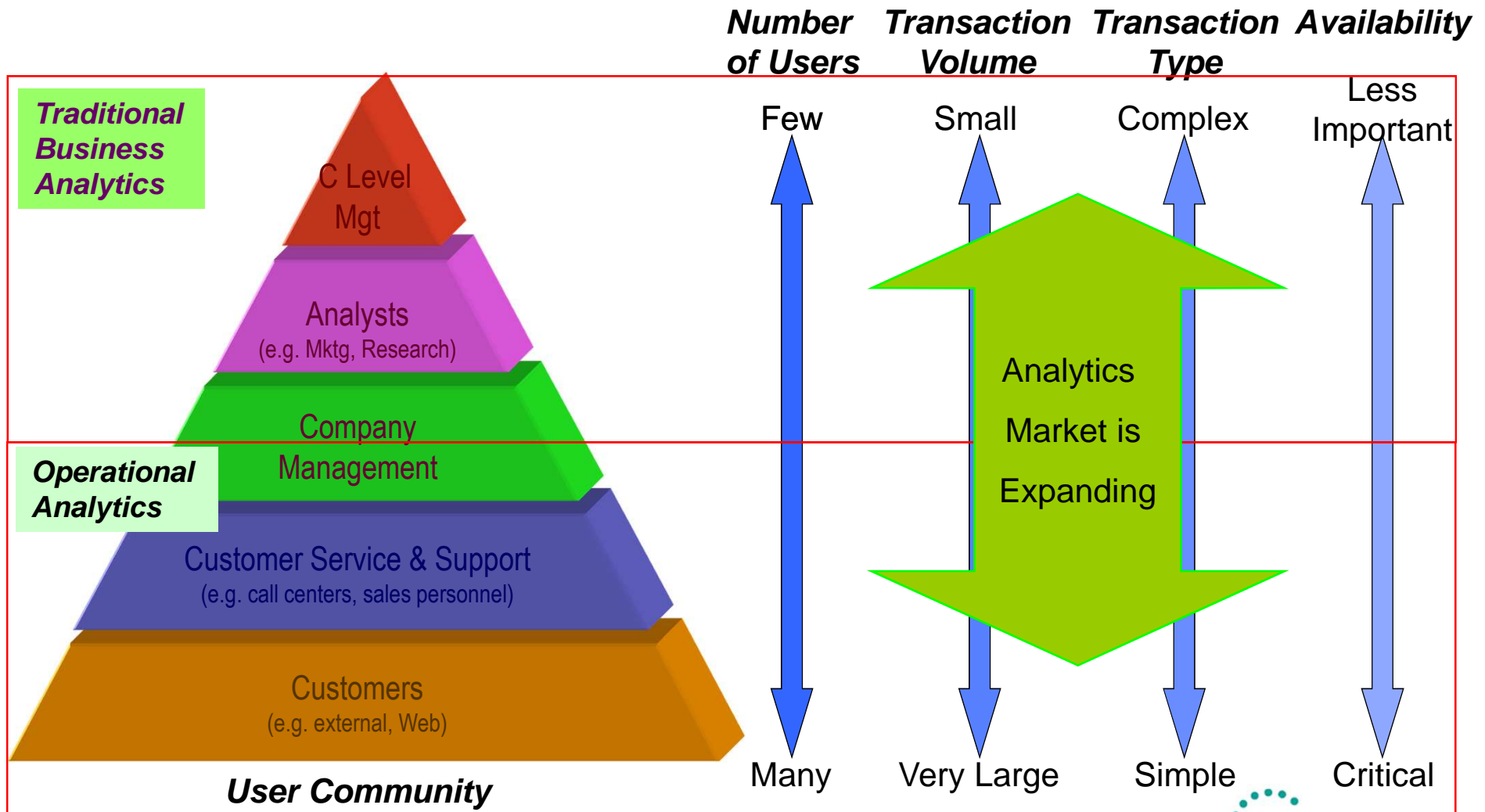
IBM Business Analytics with the Big Data Platform ... what's new and exciting!

Mike Biere
IBM

Tuesday August 7th
Session Number : 11394



Current Analytics Market is expanding



Getting analytics out to frontline workers is more critical than ever...



- More informed customer interaction = higher customer satisfaction
- Higher customer satisfaction = improved business performance



- A dissatisfied consumer will tell between 9 and 15 people about their experience. About 13% of dissatisfied customers tell more than 20 people.

Source: White House Office of Consumer Affairs, Washington, DC

- 86% of consumers quit doing business with a company because of a bad customer experience, up from 59% 4 years ago

Source: Harris Interactive, Customer Experience Impact Report

- For every customer complaint, there are 26 other customers who have remained silent

Source: Lee Resource Inc

- Happy customers who get their issue resolved tell about 4 to 6 people about their experience.

Source: White House Office of Consumer Affairs, Washington, DC

- Attracting a new customer costs 5 times as much as keeping an existing one

Source: Lee Resource Inc.

Imagine the possibilities of analyzing all available data



Faster, More Comprehensive, Less Expensive

**Real-time
Traffic Flow
Optimization**



**Fraud & risk
detection**



**Understand and
act on customer
sentiment**



**Accurate and timely
threat detection**



**Predict and act on
intent to purchase**



**Low-latency network
analysis**



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What can you do with big data?



Act on Deeper Customer Insight

- Social media customer sentiment analysis
- Promotion optimization
- Segmentation
- Customer profitability
- Click-stream analysis
- CDR processing
- Multi-channel interaction analysis
- Loyalty program analytics
- Churn prediction



Create Innovative New Products

- Social Media - Product/brand Sentiment analysis
- Brand strategy
- Market analysis
- RFID tracking & analysis
- Transaction analysis to create insight-based product/service offerings



Optimize your Operational Processes

- Smart Grid/meter management
- Distribution load forecasting
- Sales reporting
- Inventory & merchandising optimization
- Options trading
- ICU patient monitoring
- Disease surveillance
- Transportation network optimization
- Store performance
- Environmental analysis
- Experimental research



Prevent Fraud and Reduce Risk

- Multimodal surveillance
- Cyber security
- Fraud modeling & detection
- Risk modeling & management
- Regulatory reporting

Proactively Maintain your Assets

- Network analytics
- Asset management and predictive issue resolution
- Website analytics
- IT log analysis

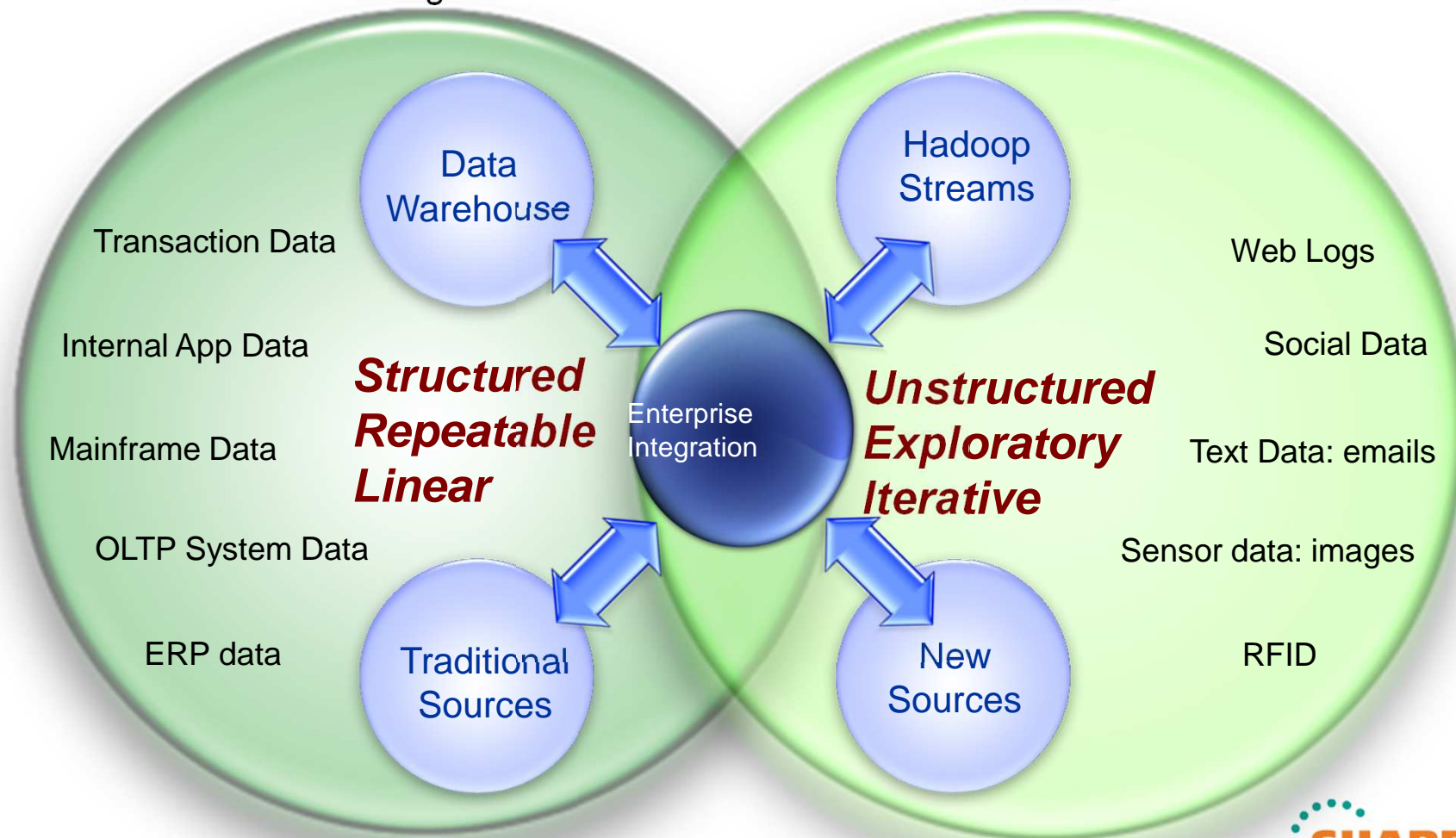
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Complementary approaches for different use cases

Traditional Approach
Structured, analytical,
logical

New Approach
Creative, holistic thought,
intuition



Pains addressed by a Big Data platform



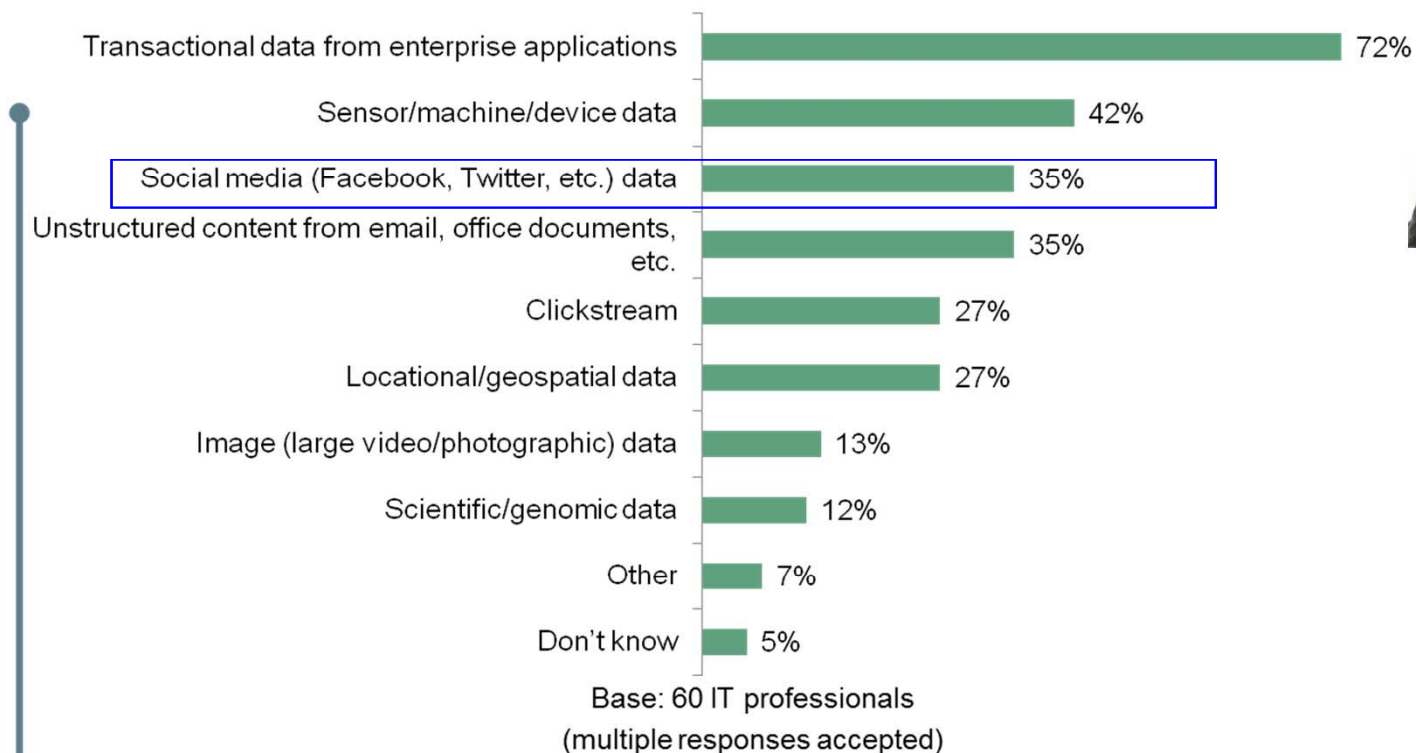
- High cost of storing and analyzing data combined with data growing volumes
- Cost and performance of enterprise data warehouse - single DW cannot meet everyone's needs
- Inability to exploit new sources of data – need to explore, prove value, and extract it cost effectively
- Loss of fidelity and huge time/cost to convert unstructured data (video, audio, textual content) to structured format for analysis
- Inability to act and high cost of acting on data in real-time leads to lost opportunities
- High cost to maintain data online when it could exist in an online archive – query-able archive

Where to start - reality check...

- What data can you manage / analyze today?

Big data: across diverse subject domains

“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.

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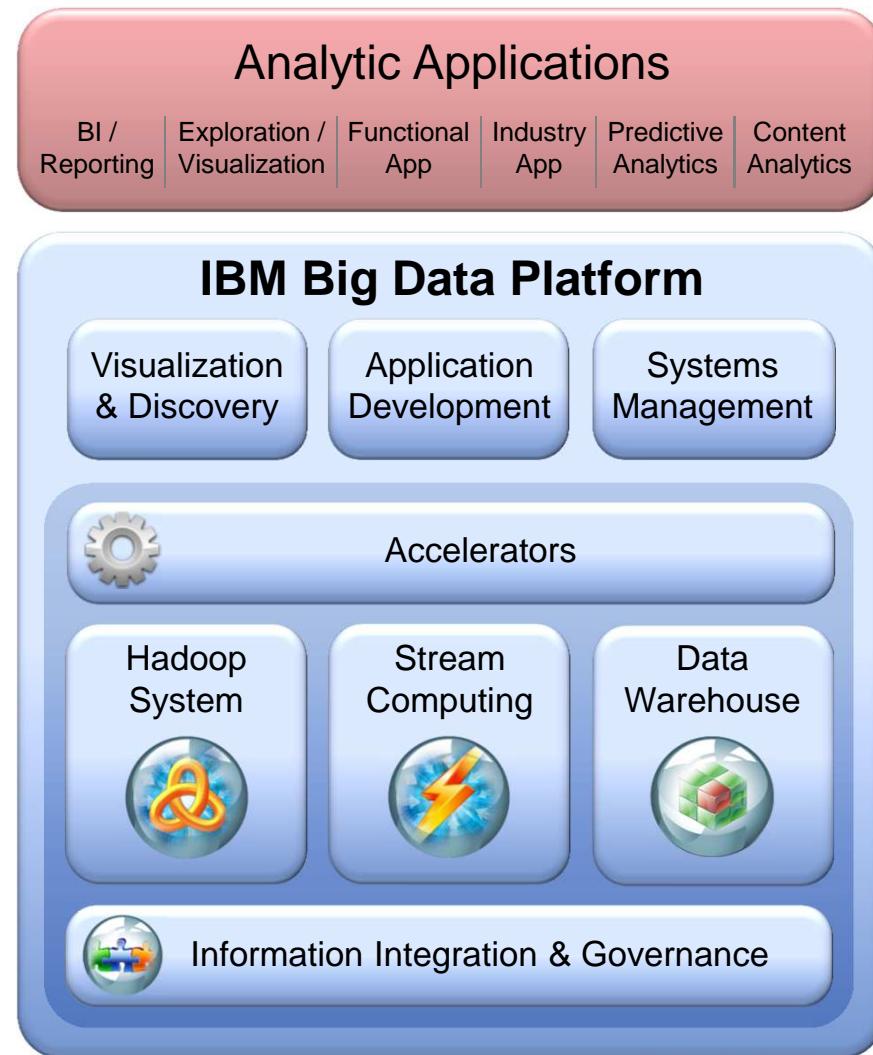
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Source: June 2011 Global Big Data Online Survey

IBM Big Data strategy: *move the analytics closer to the data*

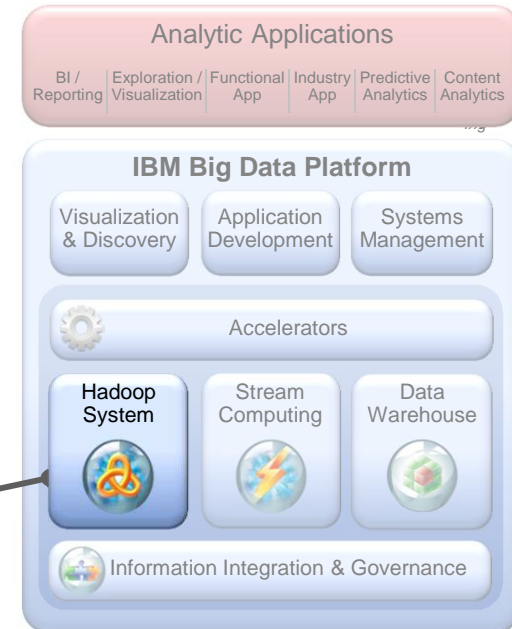
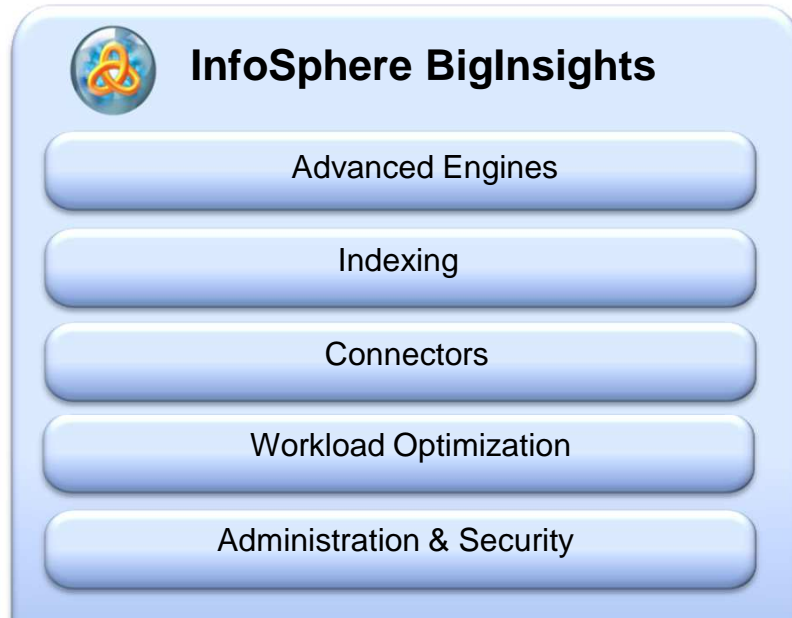
New analytic applications drive the requirements for a big data platform

- Integrate and manage the full variety, velocity and volume of data
- Apply advanced analytics to information in its native form
- Visualize all available data for ad-hoc analysis
- Development environment for building new analytic applications
- Workload optimization and scheduling
- Security and Governance

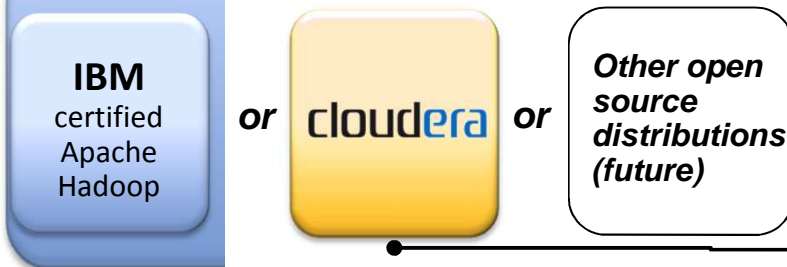


IBM's Big Data platform will support open source distributions

Enterprise capabilities



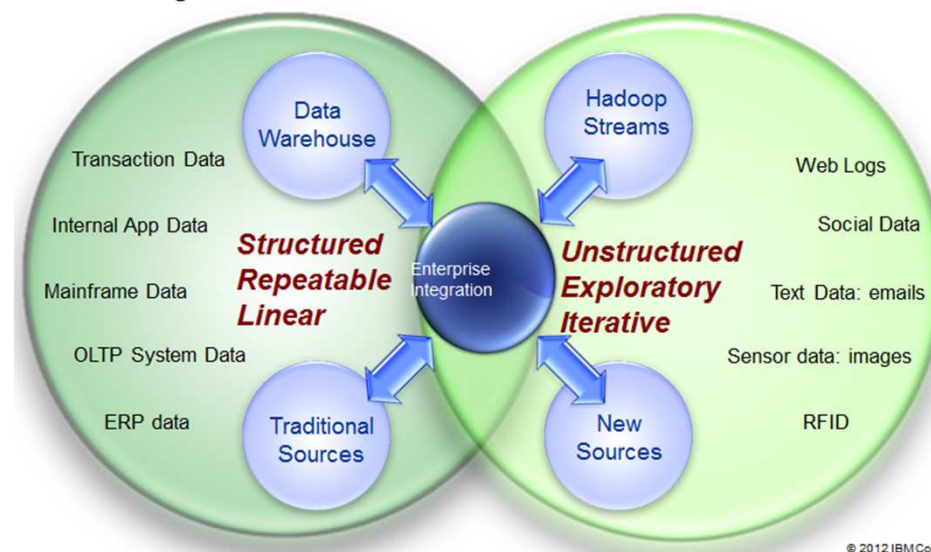
Open source based components



1. Hadoop (file system)
2. Map Reduce (parallel processing)
3. Hbase (database)
4. Oozie (workflow)
5. Zookeeper (distributed coordination)

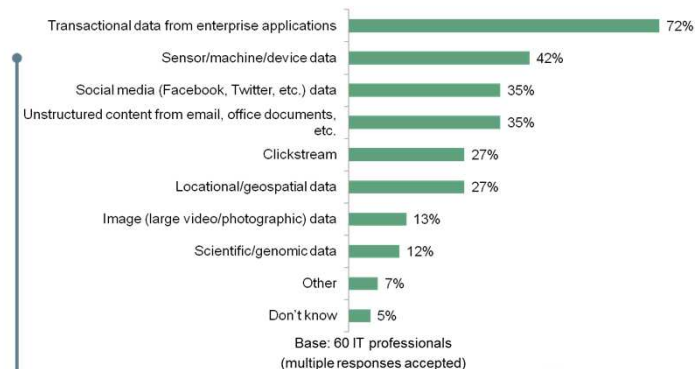
The data challenge for business analytics development in IBM

- How to effectively transition from 'traditional' data sources to embrace the new formats?
- Can it be done efficiently or will it alter the basic design points of the solution?
- Which data sources are most critical to embrace today per our customer feedback?



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Source: June 2011 Global Big Data Online Survey

IBM Business Analytics for Big Data

- **IBM Big Data Business Analytics portfolio**
 - **IBM Cognos for Linux on z/OS ***
 - **IBM Cognos for z/OS ***
 - **IBM Query Management Facility ***
 - IBM BigInsights
 - **IBM SPSS ***
 - IBM iLog
 - InfoSphere Streams
 - IBM Vivisimo
 - **IBM Collaboration and Mobile solutions (part of the Lotus brand) ***
* These are my domain and I will cover today
- **BA product Suite will be supported with a set of solutions that run on System z as well as in a hybrid environment to support:**
 - Structured data analysis
 - Semi-structured data analysis (e.g. Lotus Notes applications)
 - Unstructured data (emails, video, and more)
 - Business analysis information delivery to a wide range of devices (e.g. PCs, Laptops, iPads, and other mobile devices)
- **Purpose: to apply modern BA solutions to the many data formats and sources within the Big Data infrastructure. An evolutionary process as not all tools support all data formats/sources within the Big data initiative.**



Continuous enhancements for IBM's Business Analytics solutions ... for example

Configuring IBM Content Analytics to generate IBM Cognos BI reports

If you use IBM® Cognos® Business Intelligence (IBM Cognos BI) with IBM Content Analytics, users can generate reports about text mining results, such as results that include facet values, frequency counts, and correlation values, and open the reports with IBM Cognos BI.

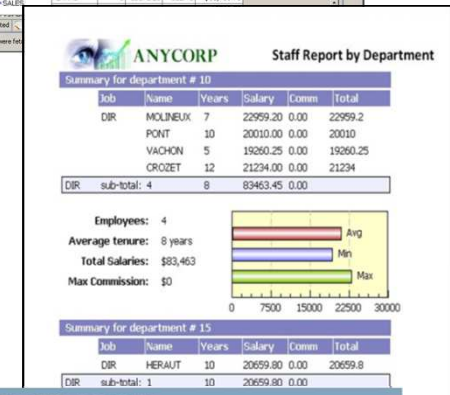
The generated reports are saved on the IBM Cognos BI server and they are accessible from the Reports view of the text miner application. The generated reports have a hypertext link that allows users who analyze the report to return to the text miner application with the search conditions that were applied when the report was created. The user can continue to mine the content of the collection or, for example, open documents that match the search conditions.

QMF 10 WYNTK



- Business Analytics is a key area of interest to any enterprise - QMF now offers:
 - Graphical queries, reports
 - Dashboards and KPIs
 - Advanced analytic functions and analysis
 - JDBC access to any RDBMS (zAAP eligible for System z), JDBC access to IMS
 - Multi-dimensional analysis and OLAP support via XMLA
 - Operational Business Analytics
 - Unstructured data access project underway
 - Heterogeneous database access
 - Federated data
 - Mobile device support
- Enhanced and easier installation, maintenance, administration.
- Enhanced ease of use and compatibility with existing QMF infrastructure, objects and workflows.

1	2	3	4	5	6	7
DEPT	JOB	NAME	YEARS	SALARY	COMM	TOTAL
10	DIR	DANIELS	12	21234.00	0.00	\$21,234.00
10	MGR	LU	10	20010.00	0.00	\$20,010.00
10	MGR	MOLNARE	7	22959.20	0.00	\$22,959.20
All values for 10						89463.45
15	MGR	HAMES	10	20659.80	0.00	\$20,659.80
15	MGR	ROTHMAN	7	16002.83	1152.00	\$17,054.83
All values for 15						20659.80
20	MGR	SANDERS	7	18257.50	0.00	\$18,257.50
20	SALES	PERRAL	8	18171.25	0.12-45	\$18,783.70



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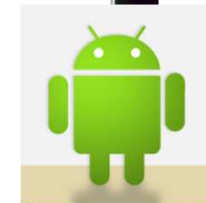


QMF on the Web and enhanced mobile support



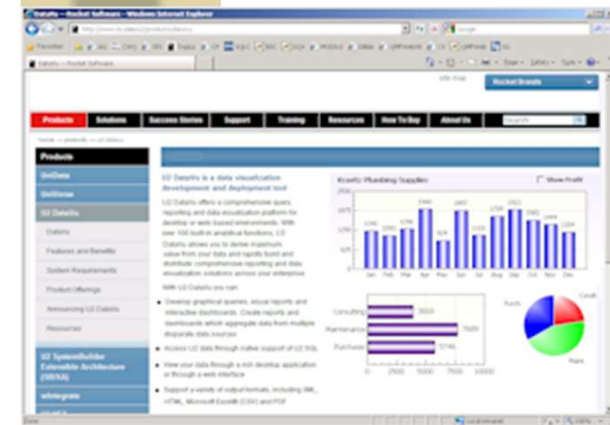
- QMF for WebSphere

- Disseminate queries, reports and dashboards to users across the enterprise for all browsers and platforms
- Create, run and share queries on the Web
- Run and share reports on the Web
- Deploy dashboards to business end users as stand-alone solutions or embedded within web pages and web applications
- Deploy to mobile devices (iPad, Android)



- Ability to render content in

- Pure HTML & JavaScript*
- Adobe Flash Player
- PDF
- Excel



Real time scoring with DB2 for z/OS and SPSS Modeler 15 (NEW!)

- **Delivers better, more profitable decisions, using the latest data, at the point of customer impact**
 - Enables more informed customer interaction
 - Improves fraud identification and prevention
- **With improved accuracy, speed and performance while reducing cost and complexity**
 - Improves accuracy by scoring new and relevant data directly within the OLTP application
 - Scales to large data volumes to improve accuracy of data models
 - Delivers the performance needed to meet and exceed SLAs of OLTP applications
 - Minimizes demand on network, HW, SW and resources



Part of an extensive
Business Analytics solution
on System z!

Predictive customer analytics: growth from inbound contacts



*“I’m calling to get my information on my **download limit**”*

“Mr. Watson, you currently close to your 10GB monthly limit however, as a valued long-term customer, we’re able to make you an offer on unlimited broadband”

“Certainly, Mr. Watson. I’ll just get that for you right now...”

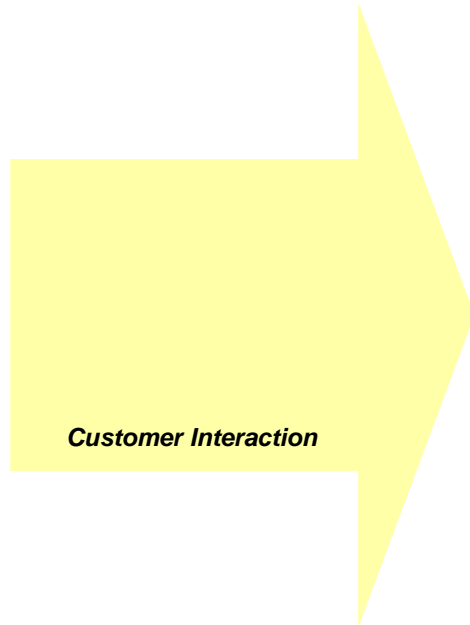
Next Best Action: Recommend Broadband Unlimited

Campaign	Market Segment	Predicted Satisfaction	Eligible	Likelihood	Predicted ARPU	Predicted Margin
Retention	1	64%	NO	12%	10	2.3
Broadband Unlimited	2	68%	YES	68%	13	5.2
Anywhere Smartphone	2	68%	YES	72%	23	4.3

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In-database scoring of DB2 for z/OS represents a unique opportunity



Business Application - Operational/Transactional System

- **OLTP System built on DB2 for z/OS**
- **On-line transaction processing (OLTP) systems, often referred to as transactional systems are designed to process small, quick, interactive workloads for which users expect fast response times.**

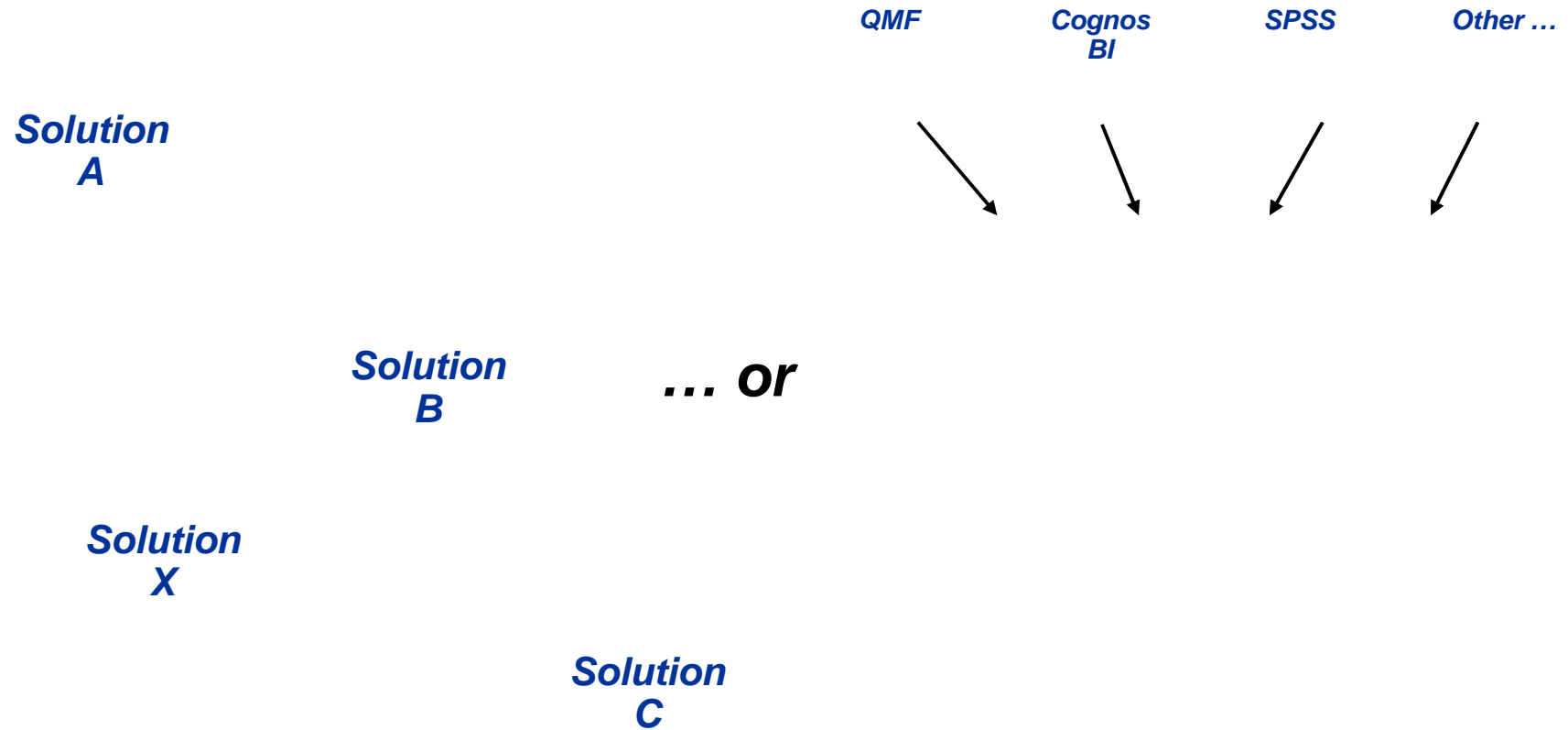
Data Repository

- **Data Warehouse**
- **Operational Data Store**
- **Data Mart**

***Data moved to data warehouse
for long term analysis**

One dashboard or 20?

Should every solution provide its own dashboard and analytics?



Deep Analytics Appliance – Revolutionizing Analytics

Purpose-built analytics appliance

Speed: 10-100x faster than traditional systems

Dedicated High Performance Disk Storage

Simplicity: Minimal administration and tuning

Scalability: Peta-scale user data capacity

Blades With Custom FPGA Accelerators

Smart: High-performance advanced analytics

IBM Mobile Strategy

Enabling users to participate in social business on the move

- A **comprehensive solution** for social business delivered as first-class mobile **platform** experiences
- Made **available on leading devices** through the device platforms' associated distribution channel or enterprise 'app stores'.
- ***Wide support for business analytics capabilities such as event detection and notification, reports, charts, dashboards etc.***
- Supported by **application development tools** to help partners and customers reach their mobile user base by mobilize their information and applications
- Complete with **enterprise governance capabilities** that are easily managed on premises, hosted, or in the cloud

IBM Connections 3.0.1 - Mobile application

Automatically log in to your IBM Connections Server if Mobile Connect integrated

Connections 3.0 mobile web functionality delivered in an app

Upload and share pictures on Connections directly from your mobile device

IBM Sametime Mobile Meetings

- Access to online meetings on mobile devices
 - Participate in online meetings
 - View content, add comments

- Available today
 - Lotuslive meetings today (RIM Blackberry and iOS)
- Presentation, Desktop App Sharing (Zoom in/out) ... Sametime Meetings 8.5.2
 - RIM BlackBerry mobile application
 - Web browser meetings access from iPhone/iPad/Android devices

New ... you may find it interesting

Vivisimo Overview – Value Proposition & Differentiators

Value Proposition

Accuracy – more relevant results due to position-based indexing

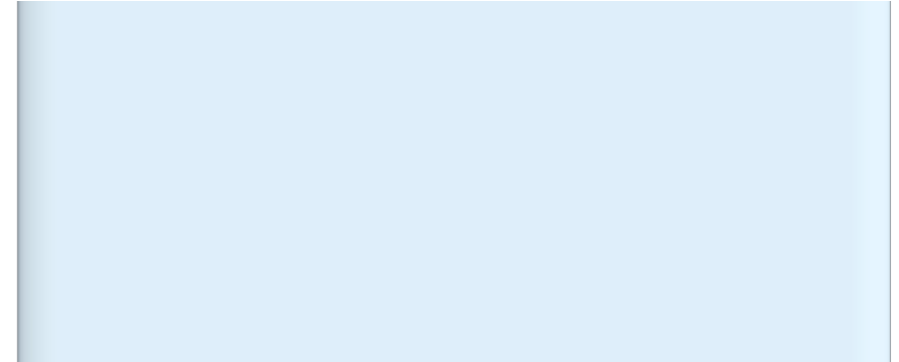
Security – respects the security rights of underlying systems

Scalability – scales to trillions of records

Differentiators

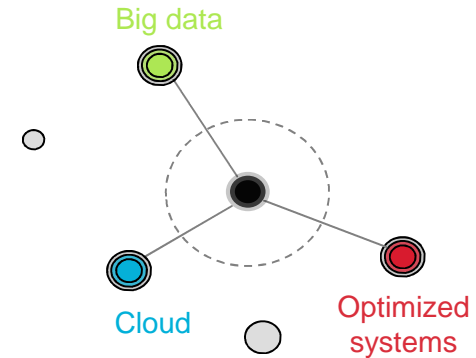
- **Unique Federated Discovery and Navigation Technology**
 - Position-based vs. vector-based index
 - Clustering and faceting to navigate data results
- **Scalable Architecture**
 - Fully distributed, fault-tolerant , unlimited scalability
- **Advanced On-the-Fly Analytics**
 - State-of-the-art real-time text and meta-data analytics
- **Secure Connectivity**
 - Secure data integration of multiple repositories in complex IT environments
- **Powerful Development Tools**
 - Easy-to-deploy applications across varied and large data sets & sources
- **Fast Time to Value**
 - Rapid deployments from POCs to production

Vivisimo Product Overview



InfoSphere BigInsights on zEnterprise

Exploration:



IBM Software Group, responsible for Big Data Development, is actively working alongside zEnterprise Development in Poughkeepsie and Technical Sales Support to explore and validate a suitable IBM InfoSphere BigInsights offering that will run within the zEnterprise BladeCenter Extension (zBX) frame on virtualized HX5 Blades.

Summary

- ✓ IBM business analytics are in transition as we embrace more of the Big Data initiative
 - ✓ Access more data in new forms
 - ✓ Analyze
 - ✓ Auto-analyze & predict
 - ✓ Collaborate
 - ✓ Deploy
- ✓ Solution elements that offer traditional query, reporting, charts, and dashboards are working on extensions to their data access (e.g. Cognos, QMF)
- ✓ IBM DB2 for z/OS is being significantly enhanced for a variety of new analytic uses (IDAA, in-DBMS scoring, temporal support)
- ✓ New deployment options are being added and extended such as mobile device support for QMF
- ✓ ... and much more to come

Additional Information

Big Data Platform

Initial OI at platform level

Data drives the elements

Expand Use Case for BD product x-sell

Big Data Platform

Data Warehouse

Data Warehouse Use Case

BD Platform

BigInsights

Big Insights Use Case

BD Platform

Streams

Streams Use Case

BD Platform

Federated Discovery & Navigation

FDN Use Case

BD Platform

Big Data Platform customer concerns and IBM elements

Questions to ask yourself	Pain	IBM solution
<ul style="list-style-type: none"> • Do you have performance challenges with your DW? High number of concurrent users/queries? • Do you expect your query/user volume to grow? • Is the volume in your DW increasing (TBs and PB)? 	<ul style="list-style-type: none"> • Too much latency for user queries to DW • Volume of structured information is growing and straining performance 	Data Warehousing
<ul style="list-style-type: none"> • Do you want to analyze both structured and unstructured data together, without converging them to one schema? • Are there any projects where you do not analyze the full volume of data available to you? Why not? • Are you concerned with the cost of managing growing data volumes in traditional technology? 	<ul style="list-style-type: none"> • Inability to analyze a variety of data in its native format • Persisting and analyzing all available data results in poor performance or huge costs 	InfoSphere BigInsights
<ul style="list-style-type: none"> • Do you have the need to analyze data in real-time? • Would you like to analyze a body of data that is simply too large to persist in any technology? 	<ul style="list-style-type: none"> • Inability to analyze data in motion resulting in too much latency in insight • Too costly to store and analyze all available data 	InfoSphere Streams

Big Data Platform – Data Warehouse

Initial Opportunity at platform level

Determine Pain and Lead Product

Expand Use Case for BD product x-sell

Big Data Platform opportunity

Data Warehouse opportunity

Data Warehouse Use Case

BD Platform X-Sell

BigInsights opportunity

Big Insights Use Case

BD Platform X-Sell

Streams opportunity

Streams Use Case

BD Platform & X-Sell

Federated Discovery & Navigation OI

FDN Use Case

BD Platform & X-Sell

Netezza Use Cases

Distribution Sector/Retail	Financial Services and Insurance	Healthcare and Life Sciences	Telco and Utilities	Digital Media and Entertainment
<ul style="list-style-type: none"> • Sales Reporting • Inventory Optimization • Merchandising Reporting • Promotion Optimization • Customer Segmentation • Store Performance • Market Basket • Fleet Optimization • Loyalty Programs • Demand Signal Repository 	<ul style="list-style-type: none"> • Risk Analysis and Management • Regulatory Reporting and Compliance • Fraud Detection • Quantitative Analytics • Customer, Intelligence • Customer Profitability 	<ul style="list-style-type: none"> • Provider Analytics • Claims Analytics • Risk and Liability Analysis • Pharma Sales Reporting and Analytics • Pharma Marketing Research and Analytics • Pharma Sales Segmentation and Incentive Compensation Analytics 	<ul style="list-style-type: none"> • Churn Management • Customer Profitability Analytics • Network Analytics • End-to-End Revenue Assurance • Quality of Experience Analytics 	<ul style="list-style-type: none"> • Ad Targeting • Website Optimization • Yield Optimization • Click-thru / View-thru Analysis • Ad Sales Analysis and Inventory Forecasting • Click Fraud Analysis • SEM Keyword Portfolio Bid Price Optimization • Network Usage Analysis

Data Warehouse Use Cases

Act on Deeper Customer Insight

- Social media customer sentiment analysis
- **Promotion optimization**
- **Segmentation**
- **Customer profitability**
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- CDR processing
- Multi-channel interaction analysis
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Optimize your Operational Processes

- **Smart Grid/meter management**
- **Distribution load forecasting**
- **Sales reporting**
- **Inventory & merchandising optimization**
- Options trading
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Create Innovative New Products

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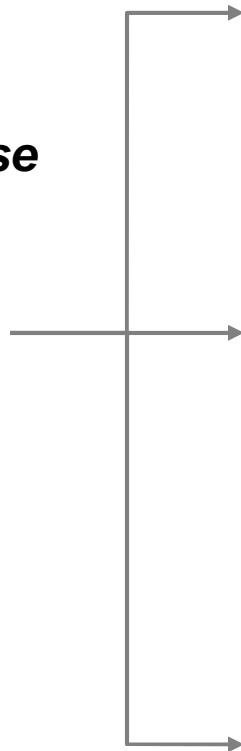
- Multimodal surveillance
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- **Risk modeling & management**
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Proactively Maintain your Assets

- **Network analytics**
- Asset management and predictive issue resolution
- **Website analytics**
- IT log analysis

Data Warehouse + the Big Data Platform

**Data
Warehouse**



Product: Information Server

Use Case: Required for every DW use case

Differentiator: Performance – proven benchmarks
Comprehensive integration platform

Product: BigInsights

Use Case: Augment DW with analysis of unstructured data
Analyze/Pre-process unstructured data for the DW

Differentiator: Value-add on top of open source – analytics,
development, visualization

Product: Streams

Use Case: Real-time analytics (streams) + historical analysis
(DW)

Analyze/pre-process data in motion to determine
data to store in DW

Differentiator: Performance & scalability
Multiple analytics engines
Unique capability in the market

InfoSphere BigInsights – best fit solution elements

- Very large data sets (TBs to PBs)
- Schema-less data in native format
- Low user concurrency
- Open source, non-proprietary solution
- Support for non SQL development tools (MapReduce, R)
- Need to explore data with questions you can't anticipate
- Analytics across and match unstructured and non-standard data types
- Store data once but “look at in multiple ways” – i.e. multiple data structures
- Desire to analyze data in place, without moving it or loading it
- Analytical sandbox to explore data, outside the organization's “official” restricted-access data management platforms
- Large data archive that you want available for occasional query and reporting access, but which is not valuable enough to host in a warehouse

BigInsights Big Data Use Cases

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