IBM Business Analytics and Optimization

Discovering the Value of IBM Business Analytics

John Jacobson – Technology Consultant – IBM Innovation Center
Agenda

- Business Analytics and Optimization – a brief introduction
- IBM Business Analytics and Optimization Strategy
- IBM Business Analytics and Optimization Key Products
  - Where they fit in the big picture
  - How they add value
- Wrap up
  - Call to Action
  - BAO Roadmap
On a Smarter Planet, new business challenges and conditions have placed a renewed urgency on business analytics and optimization.
Before we dive in, a refresher on terminology used in this session

- **Business Intelligence (BI)** - Information used to formulate business strategy and tactics. A BI solution enables the analysis and manipulation of information to provide enterprises with easy access to relevant business data.

- **Predictive Analytics** - The practice of extracting information from existing data sets in order to determine patterns and predict future outcomes and trends. Predictive models and analysis are typically used to forecast future probabilities with an acceptable level of reliability.

- **Optimization** - Solving a mathematical representation of complex business problems in order to find the most advantageous solution

- **Realtime Analytics** - Analysis, in real time, of continuous data streams

- **Analytic Applications** - Packaged business analysis and reporting solutions that provide line-of-business professionals with actionable, cross-functional insight drawn from relevant business data.

- **Web Analytics** - Web analytics is the measurement, collection, analysis and reporting of internet data for purposes of understanding and optimizing web usage.

- **Content Analytics** - Enables organizations to derive new business understanding and visibility from the content and context of unstructured information.
CIO #1 Concern

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Source: IBM Global CIO Study, n = 2345
Why customers are adopting Business Analytics and Optimization

Generate More Revenue

Reduce Risk

Predict Future Outcomes with Greater Confidence

Lower Costs
Spectrum of Business Analytics

**Analysis & Insight**
Enhance customer insight to enable profitable growth

**Strategic Alignment**
Enterprise visibility and aligned execution

**Information Delivery**
Foster informed decision making

**Business Agility**
Drive real-time decision optimization

**Foundational Capabilities**
Trusted information and optimized systems

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- **Awareness**
- **Insight**
- **In Context**
High “Analytics Quotient” = Better Business Outcomes

20% reduction in fuel usage
Partner: Applied Analytix

$2.5 Million saved in labour costs
Partner: Acumetrics

$4 Million increase in federal sources
Partner: PerformanceG2

165 less hours to create monthly forecast
Partner: Serwise
Where we are

- Business Analytics and Optimization – a brief introduction
- **IBM's Business Analytics and Optimization Strategy**
- IBM Business Analytics and Optimization Key Products
  - Where they fit in the big picture
  - How they add value
- Wrap up
  - Call to Action
  - BAO Roadmap
BAO a major focus for IBM going forward

IBM Growth Initiatives

- Smarter Planet
- Growth Markets
- Cloud and Next Generation Data Center
- Business Analytics and Optimization

BAO Revenue
(including SW, HW and services)

Source: IBM Investor Relations, May 2010; $16B refers to cross-IBM revenue including Software, Services and Systems.

*BAO revenue growth is provided for illustrative purposes and is not intended to be a guarantee of market opportunity.
IBM Business Analytics Vision: Optimizing Business Performance

Our vision is
to empower organizations to optimize business performance

Our product strategy is
to deliver solutions & capabilities within a comprehensive Business Analytics System that empowers business users and IT and integrates an enterprise’s key analytic processes to continuously improve business outcomes while reducing TCO
IBM's BAO Leadership Strategy

1. Build Best-of-breed solutions on an integrated platform

2. Develop domain & industry expertise

3. Fund unparalleled research

4. Invest substantial capital ($20B) for inorganic growth
IDR Business Analytics Value Proposition for Partners

- Leverage IBM's investments in Business Analytics and Optimization by:
  - adding new analytics capability for their customers that will result in superior ROI in relatively short periods of time
    - attract new customers
    - upsell to existing customer base
  - updating or enhancing current analytics capabilities
  - applying domain expertise building on top of IBM analytics capabilities
Where we are

- Business Analytics and Optimization – a brief introduction
- IBM's and IDR's Business Analytics and Optimization Strategy
  - IBM Business Analytics and Optimization Key Products
    - Where they fit in the big picture
    - How they add value
- Wrap up
  - BAO roadmap
  - Call to Action
Business Analytics & Optimization Solutions

Industry Solutions
- Financial Services
- Public
- Distribution
- Industrial
- Communications

Cross-Industry Solutions
- Finance
- Human Capital
- Supply Chain / Operations
- Customer

Business Analytics
- Business Intelligence
- Predictive & Advanced Analytics
- Financial Performance & Strategy Management
- Governance, Risk & Compliance
- Analytic Applications

Information Management and Governance
- Information Integration & Master Data Management
  - Data Warehousing
- Content Management
- Data Management

Workload Optimized Systems
Industry specific examples of Business Analytics and Optimization

Retail
- Store Operations (P&L) Performance
- Merchandise Performance Management
- Promotions Planning

Healthcare & Life Sciences
- Provider Performance
- Clinical Analytics
- Sales Quota Allocation

Banking
- Risk Insight and Optimization
- Branch Insight and Performance
- Customer Care and Insight

Manufacturing
- Supply Chain Performance
- Sales and Operations Planning
- Demand Planning
Business Analytics & Optimization Solutions

Industry Solutions
- Financial Services
- Public
- Distribution
- Industrial
- Communications

Cross-Industry Solutions
- Finance
- Human Capital
- Supply Chain / Operations

Information Management and Governance
- Information Integration & Master Data Management
- Data Warehousing

Content Management

Data Management

Workload Optimized Systems
IBM Business Analytics and Optimization Portfolio – Key Products

- Cognos Portfolio, Open Pages, Clarity Systems
- SPSS
- ILOG Optimization
- IBM Content Analytics
- InfoSphere Streams, InfoSphere BigInsights
- IBM Smart Analytics System, Netezza, InfoSphere Warehouse
- Coremetrics, Unica, Initiate, Guardium
Cognos Portfolio, SPSS, Clarity, OpenPages - where they fit
Business Intelligence & Performance Management

Answer three important questions that drive better performance

1. How are we doing?
   Scorecards and Dashboards

2. Why?
   Reporting & Analytics

3. What should we be doing?
   Planning, Forecasting and Budgeting
IBM BI and Performance Management Capabilities Help Decision Makers Find the Answers

**How are we doing?**

**Why are we on/off track?**

**What should we do next?**

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**Cognos software**

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**Executive**

**Business Manager**

**Casual Business User**

**Line Manager**

**Business Analyst**

**Financial Analyst**
Introducing Cognos BI 10

- **Full range of BI capabilities**
  - Query, reporting, analysis, scorecarding, dashboarding

- **Delivers information where, when and how it is needed**
  - Self-service reporting and analysis
  - Automated delivery of information in context
  - Author once, consume anywhere

- **Purpose-built SOA platform**
  that fits client environments and scales easily
Cognos BI in action - Demo

- 3 features demonstrated
  1. Business Insight
  2. Mobile access
  3. Collaboration

View the demo
Imagine you could gain new insights to….

...predict regions where doctors prescribe high volume of medication?

...apply social relationships of customers to prevent churn?

...adjust credit lines as transactions are occurring to account for risk fluctuations?

...determine discount levels for select people at time of sale instead of offering to all?

Pharma Sales Manager

Telco Call Center Rep

Loan Officer

Retail Sales Associate
• Full breadth of predictive analytics
  • Data collection, statistics, data mining, predictive modeling, deployment services…

• Putting prediction in hands of the business
  • Decision Management

• Driving better business outcomes
  • Attract and retain more profitable customers
  • Detect and prevent fraud
  • Improve resource allocation
SPSS Enables New Solution Value for IBM Cognos Customers

**How are we doing?**

**Why are we on/off track?**

**What should we be doing?**

**Addition of KPPs (Key Performance Predictors)**

**New customer insight through Data Collection**

**Broad distribution of statistical results**

**Time series forecasting**

**Predictive analytics for deeper understanding of the data**

**Executional**

**Business Manager**

**Casual Business User**

**Line Manager**

**Business Analyst**

**Financial Analyst**
• Simplify, structure, and automate dynamic and sustainable FP&SM practices

• Close the books, consolidate results and report performance.

• Set performance targets, align resource plans and forecast business results to meet or beat expectations

• Define, understand and lead your company's decision-making for better performance management.
Introducing Cognos TM1

- Enterprise planning software used to implement collaborative planning, budgeting and forecasting solutions, as well as analytical and reporting applications
- Stores and represents data as multidimensional OLAP cubes
  - Blazing fast performance
  - Scalability for large data volumes
- Calculations are performed in real-time, so that dynamic analysis is possible
- Tight integration to Excel enables users to work without stepping outside of traditional comfort zones
- Flexible Web delivery includes dashboards and scorecards, self-service analytics, Excel-authored reports and ad-hoc analysis
- Deployable in a stand-alone configuration or integrated with dedicated Cognos planning, consolidation, analysis and reporting products
Cognos TM1 Capabilities in a Nutshell

- Read/write at speed of thought for Planning and Budgeting
- What-if scenario modeling for Forecasting
- In-memory multi-dimensional cubes for Analysis and Reporting
- Centrally-managed business hierarchies, rules and calculations
- Built-in data and metadata integration
- Leverages Excel functionality and skills
IBM Cognos Planning

- Cognos Planning is a fully integrated, state-of-the-art, highly scalable solution for planning, budgeting, and forecasting.
- Integrates operational and financial planning in on demand for immediate visibility into resource requirements and future business performance.
- Enables access to current actual data to assess fiscal performance, and proceed from what-is to evaluate the what-if scenarios.
- Enables the building of enterprise-wide budgets and forecasts faster and more efficiently.
- Platform that serves as the foundation for a company's enterprise risk management efforts
- Unifies enterprise wide risk and compliance initiatives into a single management system
- Provides synergy with Information and IT Governance, Risk Management, and Security
Financial governance software that automates financial reporting, improving efficiency and data quality for SEC filings (including XBRL), 10Qs and Ks, board reports, etc.

- Automated external reporting
- Business rules
- Reconciliation Management
- Internal Controls, Work Flow and Audit Trail

- Solutions enable organizations to collect, prepare, certify and control the delivery of financial documents

- Meet electronic filing mandates (including XBRL) from stock exchange and other regulatory bodies
- Ready-made packaged reporting and analyses based on the best practices
- Encompasses a comprehensive portfolio
- Workforce, customer, finance & supply chain
- Adaptable & extensible
- Adaptive Application Framework
- Source data from multiple transaction systems
Mid-market: IBM Cognos Express

The **only** integrated Reporting, Analysis and Planning solution purpose built for midsize companies
IBM Cognos Performance Blueprints

- Pre-built data, process, and policy software models
- Developed in partnership with leading academic institutions, industry leaders, and customers.
- Proven best-practices
- Increase time to value; reduce risk; customizable
- Targeted at key business processes
- IBM customers can download & implement at no extra cost

Industries
- Banking & financial services
- Manufacturing
- Oil & gas
- Life sciences & healthcare
- Public sector
- Retail

Functional Process Area
- Enterprise planning
- Financial management & control
# Cognos Portfolio Product Names (Summary)

<table>
<thead>
<tr>
<th>Business Intelligence</th>
<th>Cognos Business Intelligence</th>
<th>Cognos Real Time Monitoring</th>
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<td>Cognos for Microsoft Office</td>
<td>Cognos Mashup Service / SDK</td>
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<td>Cognos Mobile</td>
<td>Cognos Statistics</td>
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<td>Cognos Analysis for Microsoft Excel</td>
<td>Cognos Business Viewpoint</td>
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<tr>
<th>Financial Performance &amp; Strategy Management</th>
<th>Cognos TM1</th>
<th>Cognos Controller</th>
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<td>Cognos Planning</td>
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<th>Analytic Applications</th>
<th>Cognos Customer Performance Sales Analytics; Cognos Consumer Insight; Cognos Financial Performance: • General Ledger Analytics • Payables Analytics • Receivables Analytics Cognos Banking Risk Performance - Credit Risk;</th>
<th>Cognos Supply Chain Performance Procurement Analytics; Cognos Workforce Performance • Talent Analytics</th>
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<td>Analytic Applications</td>
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<td>• Customer Interactions</td>
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<td></td>
<td>• Claims (Insurance)</td>
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SPSS Predictive analytics in action - Demo

• 3 examples
  1. Optimize marketing campaigns
  2. Understand the right product mix
  3. Proactive customer retention

Using what you know about today’s customers… to grow tomorrow’s profits
ILOG Optimization - Where it fits

![Business Analytics & Optimization Solutions Diagram]

- **Industry Solutions**
  - Financial Services
  - Public
  - Distribution
  - Industrial
  - Communications

- **Cross-Industry Solutions**
  - Finance
  - Human Capital
  - Supply Chain / Operations
  - Customer

- **Business Analytics**
  - Business Intelligence
  - Financial Performance & Strategy Management
  - Governance, Risk & Compliance
  - Analytic Applications

- **Information Management and Governance**
  - Information Integration & Master Data Management
  - Data Warehousing

- **Workload Optimized Systems**
  - Content Management
  - Data Management
Optimization & Analytics

Degree of Complexity

- What happened?
- How many, how often, where?
- What exactly is the problem?
- What actions are needed?
- What if these trends continue?
- What will happen next?
- What's the best that can happen?
- What's the best that can happen including the effects of variability?

Descriptive

- Std Reports
- Ad Hoc Reports
- Query/Drill Down
- Statistical Analysis
- Forecasting
- Predictive Modeling
- Optimization
- Stochastic Optimization

Predictive

- Predictive Modeling
- Forecasting
- Statistical Analysis

Prescriptive

- Stochastic Optimization
- Optimization
- Predictive Modeling
- Forecasting
- Statistical Analysis

Based on: Competing on Analytics, Davenport and Harris, 2007
IBM Optimization

The science of better decisions

Determine the best outcome, to make the best decision, fast

- Model a business to quickly determine the BEST allocation of limited resources
- While automatically balancing trade-offs and business constraints

Optimization helps businesses:

- Create the best possible plans
- Explore alternatives and understand trade-off
- Respond to changes in business operations

What to build, where and when?

Risk vs. potential reward?

Cost vs. carbon emission?

Inventory cost vs. customer satisfaction?

How to best allocate aircrafts and crews?
What is ILOG Optimization?

- A software based solution that enables enterprises to create the best possible plans, explore alternatives, understand tradeoffs and respond to changes in the business environment
  - IBM ILOG optimization maximizes resource efficiency
    - By helping companies make Decisions
    - To reach a Goal
    - While observing Requirements
    - Determined by Analyzing Data

- Using powerful, robust, scalable and diversified optimization software and services
What does IBM provide?

- When to start/shutdown each production unit?
- How to minimize fuel cost?
- How to reduce carbon footprint?
- How to reduce non used energy amount?
- How to satisfy customer demand?

**Real Life Problem**

**Mathematical model**

```plaintext
minimize FuelCost+StartUpCost+EndologicalCost;
subject to {
    // Hard Constraints 
    forall(u in Units; u.initProdLevel > 0) {
        // if unit u is already on when this act
        turnOn[u][1] == 0;
        // if unit u is already on when this act
        turnOff[u][1] + inUse[u][1] == 1;
    }
    forall(u in Units; u.initProdLevel == 0) {
        // if unit u is off when this scheduling
        turnOn[u][1] == 0;
        // if unit u is off when this scheduling
        turnOff[u][1] + inUse[u][1] == 1;
    }
    forall(u in Units) {
        forall(t in 1..nbPeriods-1) {
            // if machine u is off at time t and c
            inUse[u][t+1] = inUse[u][t] <= turnOn;
            // Define turnOff variables
            turnOff[u][t+1] == turnOn[u][t+1] + 1;
        }
    }
}
```

**Optimal Solution**

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**Engines to find solution**

**Graphical interface to visualize solutions**

Tools to model the problem
Optimization based problems

They exist in all industries…

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<tr>
<th>MANUFACTURING</th>
<th>TRANSPORTATION &amp; LOGISTICS</th>
<th>FINANCIAL SERVICES</th>
<th>UTILITIES, ENERGY &amp; NATURAL RESOURCES</th>
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<td>Depct/warehouse location</td>
<td>Portfolio optimization</td>
<td>Supply portfolio planning</td>
<td>Network capacity planning</td>
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<td>Advertising scheduling</td>
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<td>Distribution planning</td>
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<td>Water reservoir management</td>
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<td>Shipment planning</td>
<td>Vehicle routing &amp; delivery</td>
<td>Loan pooling</td>
<td>Mine operations</td>
<td>Antenna and concentrator location</td>
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<td>Product/price</td>
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Optimization based problems

... and are critical for the companies!

<table>
<thead>
<tr>
<th>COMPANY</th>
<th>BUSINESS PROCESS</th>
<th>ROI</th>
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<tbody>
<tr>
<td>UPS</td>
<td>Air Network Design</td>
<td>$87m/2yrs + 10% fewer planes</td>
</tr>
<tr>
<td>Motorola</td>
<td>Procurement Mgmt</td>
<td>$100-150 mil/year</td>
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<tr>
<td>Samsung Electronics</td>
<td>Semiconductor Mfg</td>
<td>50% reduction in cycle times</td>
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<tr>
<td>Continental Airlines</td>
<td>Crew Re-scheduling</td>
<td>$40 mil in one year</td>
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<td>AT&amp;T</td>
<td>Network Recovery</td>
<td>35% reduction spare capacity</td>
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<td>Force/Equip Planning</td>
<td>$1.1 bil/year</td>
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<tr>
<td>SNCF (French RR)</td>
<td>Scheduling &amp; Pricing</td>
<td>$1.1 bil/year</td>
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<tr>
<td>Grant Mayo van Otterloo</td>
<td>Portfolio Optimization</td>
<td>$4 mil/year</td>
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Success Story – Unit Commitment at REE

Business Problem – Use exact mathematical methods to replace the approximate, heuristic methods Red Eléctrica de España, in charge of managing the Spanish national power grid, had been using for the last 20 years

The methodology applied until now ... was an interactive methodology, which did not guarantee an optimum solution. There were many difficulties in the smaller systems and it was hard to find the most viable solution. Thanks to the new methodology, we have resolved this type of problem.

- Mr. Mustafa Pezic, REE Project Director
Benefits

- The implementation of the ILOG based solution has provided great operational advantages to company’s managers and engineers
  - “The new tool allows us to simplify all maintenance tasks and any changes made to the model, which in our particular case, are very frequent.”
  - “From a user viewpoint, it has brought greater trust in the solution and a significant reduction in planning time required by users. In parallel with this, from a development and maintenance viewpoint, there has been a significant reduction in associated costs, as well as in the duration of the processes.”

- The bottom line:
  - REE reduced production costs by between €50,000 and €100,000 per day.
  - REE has reduced its carbon emissions by approximately 100,000 tons of CO₂ annually.
IBM Content Analytics - Where it fits
What Is Content Analytics?

- Content Analytics delivers **new business understanding** and **visibility** from the content and con information.
- Leverages the information inside unstructured content to expose new business insight:
  - Surfaces the business value of content.
  - Identify aggregate patterns, trends over time, unusual correlations or anomalies.
  - Explain **why** events are occurring, and find new opportunities, by aggregating the voices of customers, suppliers, and the market.
  - Track and drive improvement in non-quantitative business metrics through content dashboards, reports, and scorecards.
- And helps reduce cost by exposing irrelevant or obsolete content for decommissioning.
- Brings the power of business intelligence to all enterprise information.
IBM Content Analytics

A complete solution that provides organizations with the necessary tools to unlock the business value contained within unstructured content. IBM Content Analytics can:

- **Discover**: Automatically identify and tag key attributes and entities within content by crawling almost any content source and identifying key words and phrases.

- **Visualize**: Use advanced visualization to enable exploratory mining and highlight deviations and anomalies for more informed business decisions.

- **Deliver**: Facilitate broad delivery of information to other processes and applications such as ECM repositories or CRM applications.

Crawl Source Content → Analyze and Discover → Operational Reporting → Act on information
Smart is: **breakthrough content analysis**  

---

**IBM Watson (Jeopardy)**

**Business Challenge**  
Advance the state of the art in broad domain Question Answer (QA) systems to enable breakthrough applications in many different industries.

**What’s Smart?**  
Uses **IBM Content Analytics (LanguageWare)** in conjunction with other technologies to read, analyze and understand vast sources of unstructured content. Runs many algorithms in parallel to create, compare and determine confidence in candidate answers. Presents answers with a confidence level attached.

**Smarter Business Outcomes**  
Coming to your industry soon! Will deliver value in limitless applications starting with clinical healthcare, customer care, government intelligence and beyond.

“... an information seeking tool that’s capable of understanding your question to make sure you get what you want and then deliver’s that content through a naturally flowing dialog”

Dr. David Ferrucci  
Principal Investigator  
Watson project
IBM Content Analytics in Action - Demo

- 3 Industry examples
  1. Healthcare
  2. Automotive manufacturing
  3. Insurance
InfoSphere Streams/BigInsights - Where they fit
Need for Real Time Analytic Processing is Everywhere…

Stock market
- Impact of weather on securities prices
- Analyze market data at ultra-low latencies

Energy
- Demand management
- Smart metering at scale
- Integration of Renewables
- Securing the Smart Grid

Fraud prevention & Security
- Detecting multi-party fraud
- Real time fraud prevention
- Intelligence (Federal Gov’t)

Radio Astronomy
- Detection of transient events

Transportation
- Intelligent traffic management

Natural Systems
- Seismic monitoring
- Wildfire management
- Water management

Health & Life Sciences
- Neonatal ICU monitoring
- Epidemic early warning system
- Remote healthcare monitoring

Manufacturing
- Process control for microchip fabrication

Telecom
- Processing of Call Detail records
- Real-time services, billing, advertising
- Business intelligence
- Churn Analysis, Fraud Detection
Evolution of Stream Computing

IBM’s history of innovation

Real Time Analytic Processing (RTAP) to improve business response

Data at rest

Analysis of historic data to improve business transactions

Data in Motion

Reporting and human analysis on historical data

Operational Databases

1968
Hierarchical database

1970
Relational database System “R”

1983
DB2 v1

OLTP

OLAP

RTAP

Data Warehousing

2002
System “S”

2009
InfoSphere Streams

IBM’s history of innovation
InfoSphere Streams: In-Motion Vs Traditional Analytics

- Non-Traditional / Non-Relational Data Sources
  - Audio, Video, emails...

- In-Motion Analytics
  - Millions of events or Terabytes of data per second
  - Results with Microsecond latencies

- Ultra Low Latency Results

- Traditional / Relational Data Sources
  - (Alpha)Numeric, text...

- Traditional Analytics
  - OLAP / OLTP
  - Warehouse

- At-Rest Data Analytics
  - Results

- Streams DOES NOT store data for analysis
- Traditional data is finite, saved and known. Streaming data is NONE of these
InfoSphere Streams

Development Environment

- Eclipse IDE
- StreamSight
- Stream Debugger
- Over 50 samples

Runtime Environment

- RHEL v5.3 or v5.4
- x86 multicore hardware
- InfiniBand support
- Up to 125 servers

Toolkits & Adapters

- Connectors to data sources
- Operator Library
- Financial Toolkit
- Mining Toolkit
What is Big Data?

The processing of an immense volume and variety of data for the purpose of analytics (generating insight), at a velocity that was previously impossible.

Volume
- Scale from terabytes to zettabytes

Variety –
- Variable structures, structured and unstructured

Velocity -
- Streaming data and large volume data movement

To derive insight from previously untouched data and integrate that insight into your business operations – data warehouses, business processes, and applications.
What Is Apache Hadoop?

- An open source framework for running applications (aka jobs) on large clusters built on commodity hardware capable of processing petabytes of data.
- A framework that transparently provides applications both reliability and data motion. It ensures data locality.
- It implements a computational paradigm named Map/Reduce, where the application is divided into self contained units of work, each of which may be executed or re-executed on any node in the cluster.
- It provides a distributed file system (HDFS) that stores data on the compute nodes, providing very high aggregate bandwidth across the cluster.
- Node failures are automatically handled by the framework.

Emerging as the preferred way of handling Internet-scale structured and unstructured information volumes need to be understood.
Introducing The InfoSphere BigInsights Portfolio

- The new offerings are powered by **Apache Hadoop**, an open source technology designed for analysis of big volumes of data. With the new portfolio, IBM is building on this open source technology with its software expertise to deliver business solutions for the analysis of terabyte and petabyte sized quantities of data.

- The new portfolio consists of specific Big Data analytics solutions that can be used by business professionals and easily be deployed by IT professionals in data center and cloud configuration and includes:
  
  - **A package of Apache Hadoop software and services** designed to help IT professionals quickly get started with Big Data analytics including design, installation, integration and monitoring of this open source technology. The package helps organizations quickly build and deploy custom analytics and workloads to capture insight from Big Data that can then be integrated into existing database, data warehouse and business intelligence infrastructures.

  - **A software technology called BigSheets** designed to help business professionals extract, annotate and visually uncover insights from vast amounts of information quickly and easily through a Web browser. BigSheets includes a plug-in framework extension for analytic engines and visualization software such as ManyEyes.
Integration of Streams and BigInsights
Typical data flow
InfoSphere Streams - Demo

“IBM Stream Computing for Healthcare”
http://www.youtube.com/watch?v=0lt0hTNtjrY

InfoSphere BigInsights in action - Demo

“Analyzing Twitter data with IBM BigSheets”
http://www.youtube.com/watch?v=PSq7hZ0shLs
IBM Smart Analytics, Neteeza, InfoSphere Warehouse – Where they fit
Leaders in All Industries are Optimizing Business Results

Analytics powered by a Data Warehouse are used to...

- Lower cost of improving patient health
- Improve portfolio performance
- Increase customer loyalty and sales revenue
- Reduce inventory cost

<table>
<thead>
<tr>
<th>Health Care Providers</th>
<th>Financial service Providers</th>
<th>Retail Sales Managers</th>
<th>Purchasing Agents</th>
</tr>
</thead>
<tbody>
<tr>
<td>...predict and treat high-risk patients to proactively intervene at time of visit</td>
<td>...identify market trends and assess and minimize portfolio risk</td>
<td>...provide targeted cross sells that drive additional sales when offered at time of sale</td>
<td>...predict correct order levels at time of purchase</td>
</tr>
</tbody>
</table>
What is a Data Warehouse?

• A Data Warehouse manages the data used for business analytics

• The Data Warehouse must be designed, configured and maintained to deliver required performance and levels of:
  – Data  (Scale)
  – Users  (Concurrency)
  – Queries  (Complexity)
Transactional Workloads vs. Analytic Workloads

Two VERY different requirements for storing and processing data

**Customer**

Transaction

**Business Transaction**

Simple Query

Item: ‘Shoes’
Cost: ‘$34’
Cust: ‘James’

**Transactional Database**

2011 Sales

<table>
<thead>
<tr>
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<td>$34</td>
<td>James</td>
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</table>

**Business Analyst**

Complex Query

Sales & Profit for Shoes & Belts
Year >= 2005

**Data Warehouse**

**BI Reports & Dashboards**

SALES
2010
2009
2008
2007
2006
2005
Simplicity, Flexibility, Choice
IBM Data Warehouse & Analytics Solutions

IBM
Netezza

IBM
Smart Analytics System

IBM
InfoSphere Warehouse

True Appliance

Flexible Integrated System

Custom Solution

Warehouse Accelerators

Information Management Portfolio
(Information Server, MDM, Streams, etc)

Simplicity
The right mix of simplicity and flexibility

Flexibility

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Simplicity, Flexibility, Choice
IBM Data Warehouse & Analytics Solutions

IBM Netezza
True Appliance
- IBM investment in solution design, integration and upgrades
- Speed and ease of deployment and administration
- Optimized performance for a specific workload range

IBM Smart Analytics System
Flexible Integrated System
- IBM investment in solution design, integration and upgrades
- Flexibility of multiple options - platform, capacity, and integrated software
- Customizable to optimize for a range and mix of workloads

IBM InfoSphere Warehouse
Custom Solution
- Client investment in solution design, integration and upgrades
- Complete flexibility to mix and optimize software, servers and storage for the complete range and mix of workloads

Simplicity, The right mix of simplicity and flexibility, Flexibility
Coremetrics, Unica, Initiate, Guardium - Where they fit
What they do

• Helps companies measure and improve the effectiveness of online marketing programs. Coremetrics offers advanced online analytics and integrated marketing optimization applications.

• Helps clients deliver more targeted, consistent marketing efforts across multiple channels to influence customer buying behavior.

• Protects client databases to meet their needs for trusted information and regulatory compliance.

• Enables information sharing among healthcare and government organizations.
Where we are

- Business Analytics and Optimization – a brief introduction
- IBM's and IDR's Business Analytics and Optimization Strategy
- IBM Business Analytics and Optimization Key Products  
  – Where they fit in the big picture  
  – How they add value

- Wrap up  
  – Call to Action  
  – BAO Roadmap
Call to action

- Embrace analytics for growth
- Pick a starting point
- Use analytics as a platform for new opportunity
- Contact us to get started iic_waltham@us.ibm.com

The Opportunity of a Lifetime!
Roadmap for Business Analytics Partners

• Project Support via VIC
• Recruit/Awareness
• Technical Enablement
  – Training
  – Architectural Consultation
  – Develop and Test
• Go to Market
what's your AQ?
Target Outcome: Deliver a solution leveraging IBM Business Analytics and Optimization technologies and offerings

Project Support
- Register on VIC and contact Project Resource Manager for project support - https://www-304.ibm.com/partnerworld/wps/servlet/ContentHandler/lsx/vic_tech

Recruit/Awareness
- Participate in Maximize Your Relationship Seminar or Discovering the Value of Business Analytics Seminar at IIC
- Contact local IIC for on-site visit:
  - Gain general awareness of IBM Business Analytics technology and offerings - http://www-01.ibm.com/software/analytics
- Access and consult Innovation Center for Business Analytics Community - https://www.ibm.com/developmenters/mydevelopmenters/groups/service/html/communityview?communityUuid=60571591-fcf5-4fc4-bf5a-1556d091123d
- Leverage Training General IBM | IBM Innovation Center
  - IBM Redbooks - link

Technical Enablement
Training
- Leverage Training General IBM | IBM Innovation Center
  - IBM Redbooks - link

Architecture Consultation
- Request Architecture Consultation - link

Develop and test
- Access Software - Software Access Catalog
- Leverage the IBM Virtual Loaner Program - http://ibm.com/systems/vlp
- Leverage the IBM Innovation Center - link
- Virtual Innovation Center Technical Enablement - Cognos | ECM | InfoSphere

Go to Market
- Take advantage of marketing support - http://www-304.ibm.com/isv/spc/resources_mkt.html
- Virtual Innovation Center Sales Enablement - Cognos | ECM | InfoSphere
- PartnerWorld Sales plays kits - link

Solution Complete