UNIFY YOUR (BIG) DATA ANALYTIC STRATEGY
GIVE ANY USER ANY ANALYTIC ON ANY DATA

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Unify Your (Big) Data Analytic Strategy

- **Technology excitement**: Hadoop, MapReduce, NoSQL, in-memory
- **Deliver value from big data**: lower end-user and IT barriers
- **Bridge skills gap**: achieve maximum insights and value
- **Harness value**: reference architectures and use cases
Big Data is Not a Technology

Big Data is Not an Architecture

Big Data is a Movement Demanding *More Analytics on All Data*

What is Big Data?

The shortest path between big data and insight is through a unified data architecture
Big Data Comes with BIG HEADACHES

“Even free software like Hadoop is causing companies to spend more money...Many CIOs believe data is inexpensive because storage has become inexpensive. But data is inherently messy—it can be wrong, it can be duplicative, and it can be irrelevant—which means it requires handling, which is where the real expenses come in.”

“Through 2015, 85% of Fortune 500 organizations will be unable to exploit big data for competitive advantage.”

Source: Gartner. "Information Innovation: Innovation Key Initiative Overview”. April 2012
Shift from a Single Platform to an Ecosystem

"Logical" Data Warehouse

"We will abandon the old models based on the desire to implement for high-value analytic applications."

"Big Data requirements are solved by a range of platforms including analytical databases, discovery platforms, and NoSQL solutions beyond Hadoop."

The Evolution of Data Warehousing and BI

...But Don’t Forget the Discovery ‘Roots’

- Analysis of OLTP/ERP systems
  - New Tools
  - ‘Aha! Moments’

- Data Marts
  - Replicable use cases
  - Differentiated Value

- Integrated Data Warehouse
  - Enterprise Value
  - Business Critical

- Active Data Warehouse
  - Real time Delivery
  - Production Service Levels

Aha Moments!!
WHAT ARE THE OBSTACLES TO BIG DATA?

Make it easier to utilize

**EXISTING SKILL SETS**

Increase enterprise-wide adoption &

**ACCELERATE ANALYTIC INNOVATION**

Eliminate data silo’s to use ALL data

**UNIFIED DATA ARCHITECTURE**
Unified Data Architecture for the Enterprise

Any User, Any Data, Any Analysis

Data Discovery

Integrated Analytics & BI

Capture, Store, Refine

Java, C, Python, R, SAS, SQL, SQL-MapReduce, Excel, BI, Visualization, etc.

Audio/Video Images Text Web & Social Machine Logs CRM SCM ERP
Unified Data Architecture – Requirements & Benefits

**TECHNICAL REQUIREMENTS**

**Integrated Analytics & BI**
- Integrated data environment
- Access by execs and analysts
- Mission-critical uptime & security
- Robust workload management

**Data Discovery**
- Rapid exploration capabilities
- Variety of analytic techniques
- Pre-packaged analytics
- Accessible by business analysts

**Data Staging**
- Loading, storing, and refining data in preparation for analytics
- No up-front ETL required for loading

**BUSINESS BENEFITS**

**Pervasive Intelligence**
- 360° view of operations
- Strategic & operational intelligence
- Trusted to manage the business
- Extend throughout organization

**New Iterative Insights**
- Faster time to value
- Exponentially deeper insights
- More users can leverage (without hiring as many specialists)

**New Data Access**
- Effective, low-cost technology for loading, storing, and refining data
The Lytro and Big Data
“Interactive, Living Pictures”
See Your Business in High-Definition

- Big Analytics & Discovery Unlocks Hidden Value

**Business** determines what questions to ask

**IT** delivers a platform for storing, refining, and analyzing **all data sources**

*"Capture in case it's needed"*

**Classic BI**
Structured & Repeatable Analysis

**IT** structures the data to answer those questions

*"Capture only what’s needed"*

**Big Data Analytics**
Multi-structured & Iterative Analysis

**Business** explores data for questions worth answering
Choose the Right Discovery Platform

3 Key Questions to Ask

1. How many people in your organization can directly ask big data questions?
2. How much time does it take to answer a new question with big data?
3. Is it hard to find the right people and budget to tackle new big data problems?

Need right technologies to realize business value of big data
Iterative Analytics Accelerates Discovery
Accelerate and Operationalize New & Supplemental Insights

Operational DB or EDW

Analytical Idea

Operationalize or Move On

Zero-ETL Data Load/Integration

5x Faster Discovery Process

Faster Process

Hours vs. Days

SQL and non-SQL Analysis

Teradata Proprietary

March 2013
**Discovery Platform for Complete Analytics**

Multi-Analytic Techniques for Exponential Value

<table>
<thead>
<tr>
<th>Analysis Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TIME SERIES ANALYSIS</strong></td>
<td>Discover Patterns in Rows of Sequential Data</td>
</tr>
<tr>
<td><strong>TEXT ANALYSIS</strong></td>
<td>Derive Patterns and Extract Features in Textual Data</td>
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<tr>
<td><strong>STATISTICAL ANALYSIS</strong></td>
<td>High-Performance Processing of Common Statistical Calculations</td>
</tr>
<tr>
<td><strong>GRAPH ANALYSIS</strong></td>
<td>Discover Natural Relationships of Entities</td>
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<tr>
<td><strong>SQL ANALYSIS</strong></td>
<td>Report &amp; Analyze Relational Data</td>
</tr>
<tr>
<td><strong>MAPREDUCE ANALYTICS</strong></td>
<td>Custom-built, domain-specific analysis</td>
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1 + 1 = 3  Unified Analytics on ALL of the data

What do you want to discover?

Business Value

Log Analytics
Log Reduce
Predictive Event Analysis
Social Analytics
Supply chain optimization
Location Analytics
Geo Spatial
SQL
Map Reduce
Statistics
Graph
Time Series
Statistics
Network Security

Detecting network threats with MapReduce Analytics

**Application Characteristics**
- Millions of PCs, files and URLs translate into 100s of billions of potential paths
- Full network detail required for analysis
- *Near-real-time scoring of every network node* required for fast response

**Examples**
- Security event management
- Zero day attack identification
- Data loss prevention
- Data packet inspection

**What this Means for Analytics?**
- Recognize the pattern of activity that threat represents
- Off-line models not sufficient to keep up with quickly morphing attack behaviors
- Requires behaviorally-based system to automate analysis, threat identification, & rapid response

**Advanced Analytics**
- Constant analysis of all connections and traffic
- Interactive root cause analysis
- Rapid attack identification, validation, and response
Other Examples of Unified Data & Analytics
Summary: Unified Data Architecture

Gives *Any User Any Analytic on Any Data*

1. Give business analysts in your organization the right analytical tool to apply against all existing and new data

2. Unified Data Architecture™ leverages best-of-breed technologies on the corresponding analytical problems

3. **Big Data Analytics** – Every company needs *both* a Data Warehouse and a Discovery Platform to maximize big data business value
   - **Big Data Management** – Hadoop for landing, storing, and refining data

Maximize Value from ALL Your Data from Unified Architecture
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