

Transformation For Growth

2014 Consultants &
System Integrators Interchange

Compete in
the Era of
SMART.

IBM Big Data and Analytics Vision and Futures

Anjul Bhambhri

IBM Vice President, Big Data, Information Management
September, 2014



IBM

Transformation For Growth

2014 Consultants &
System Integrators Interchange

Compete in
the Era of
SMART.

Big Data is All Data and All Paradigms

Transactional & Application Data



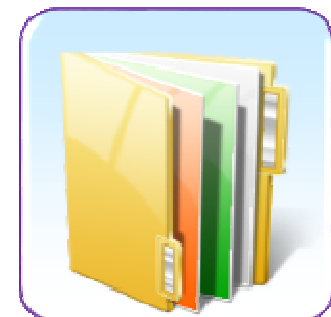
Machine Data



Social Data



Enterprise Content



Volume
Structured
Throughput

Velocity
Structured
Ingestion

Variety
Unstructured
Veracity

Variety
Unstructured
Volume



Transformation For Growth

2014 Consultants &
System Integrators Interchange

Compete in
the Era of
SMART.

New era of computing requires



**Information
from Everywhere**



**Radical
Flexibility**



**Extreme
Scalability**

Volume

12 terabytes
of Tweets created daily



Velocity

5 million
trade events per second

Variety

100's video feeds
from surveillance cameras

IBM

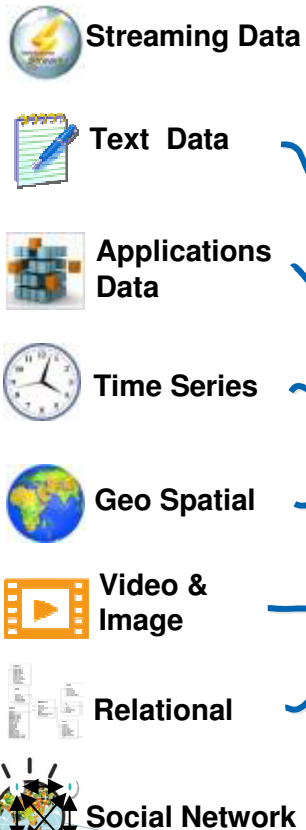
Transformation For Growth

2014 Consultants &
System Integrators Interchange

Compete in
the Era of
SMART.

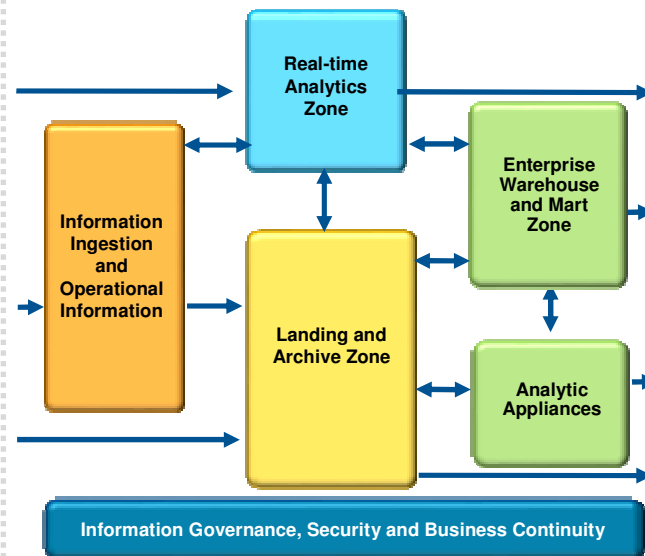
IBM Big Data Vision

All Data Sources

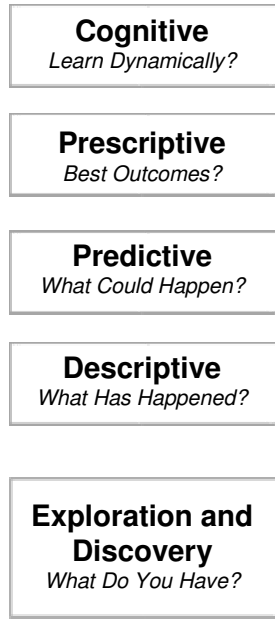


Big Data Platform Capabilities

- Information Ingest
- Real Time Analytics
- Warehouse & Data Marts
- Analytic Appliances



Advanced Analytics / New Insights



New / Enhanced Applications

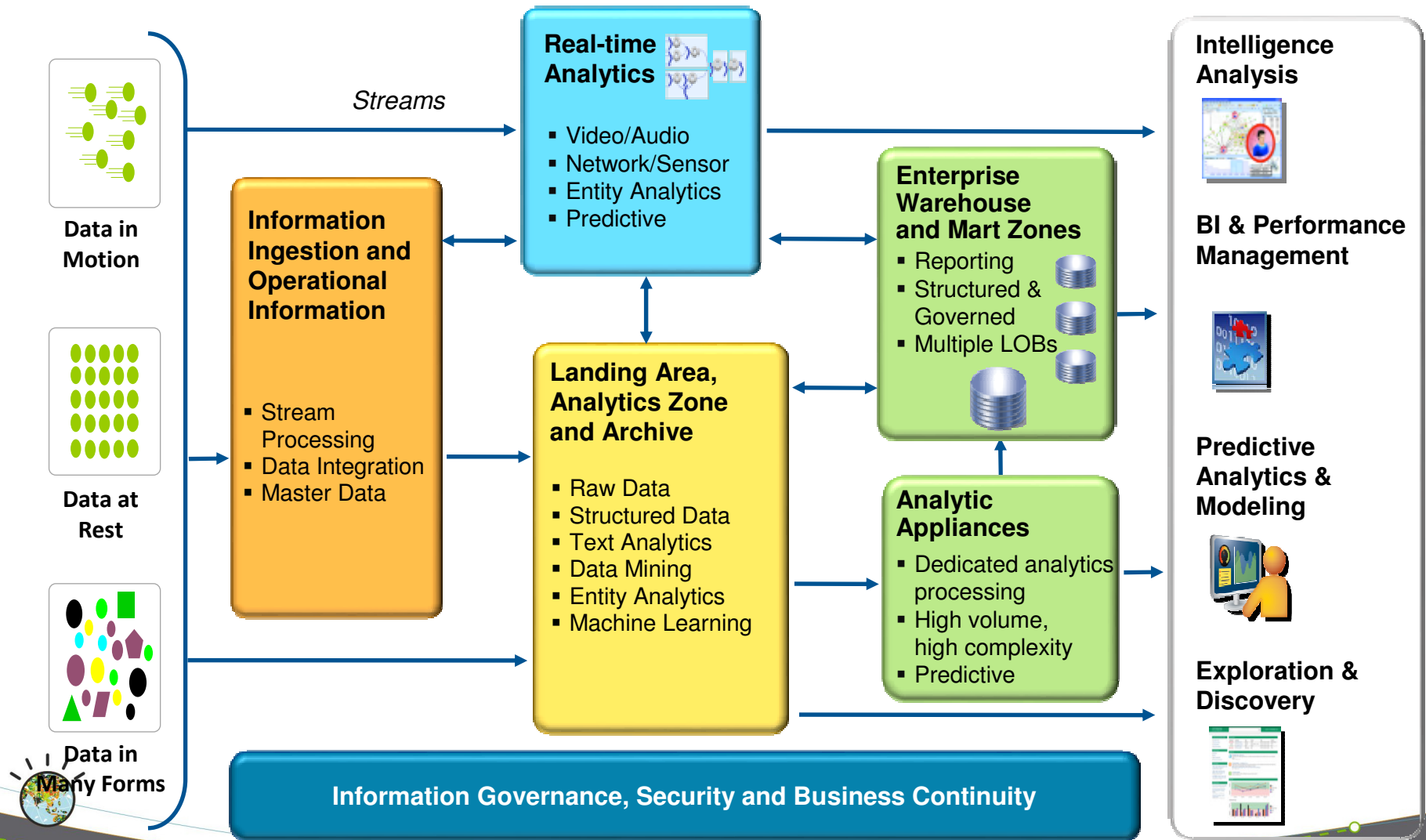


Transformation For Growth

2014 Consultants &
System Integrators Interchange

Compete in
the Era of
SMART.

IBM Big Data Architecture



Transformation For Growth

2014 Consultants &
System Integrators Interchange

Compete in
the Era of
SMART.

IBM BigInsights – Opensource and IBM Value Adds



BigMatch - MDM Entity Resolution at Extreme Scale

Fast matching, Accurate results at scale

- Match billions of entities 8X faster



GPFS - Runs on IBM Big Insights

Distributed shared-nothing POSIX compliant file system



BigSQL – SQL on Hadoop

- 6X-14X faster than Hive
- ANSI SQL 2010 compliant
- Access data from Hadoop HDFS, Hive, Hbase



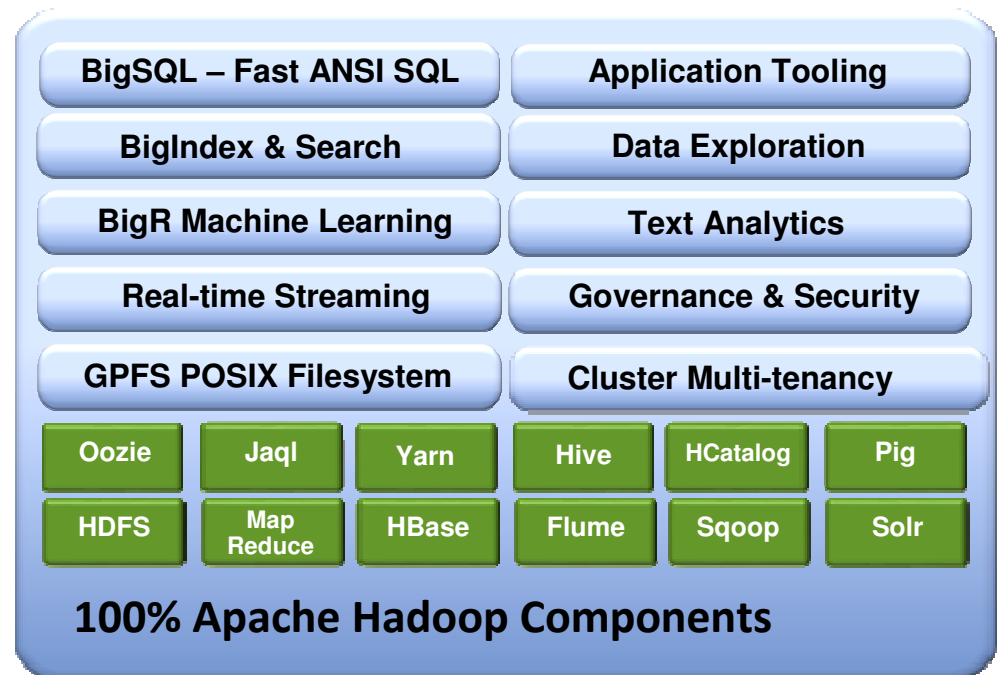
BigR – Machine Learning at Parallel Scale

- Explore, visualize, transform, and model using R syntax and paradigm
- Out-of-the-box and customizable algorithms



In-Hadoop Text Analytics with Tooling

- Extract information in-context without programming
 - Drag and drop assembly
 - Rapid test and refine
 - Easy deployment
- Pre-built library of standard extractors and the ability to customize

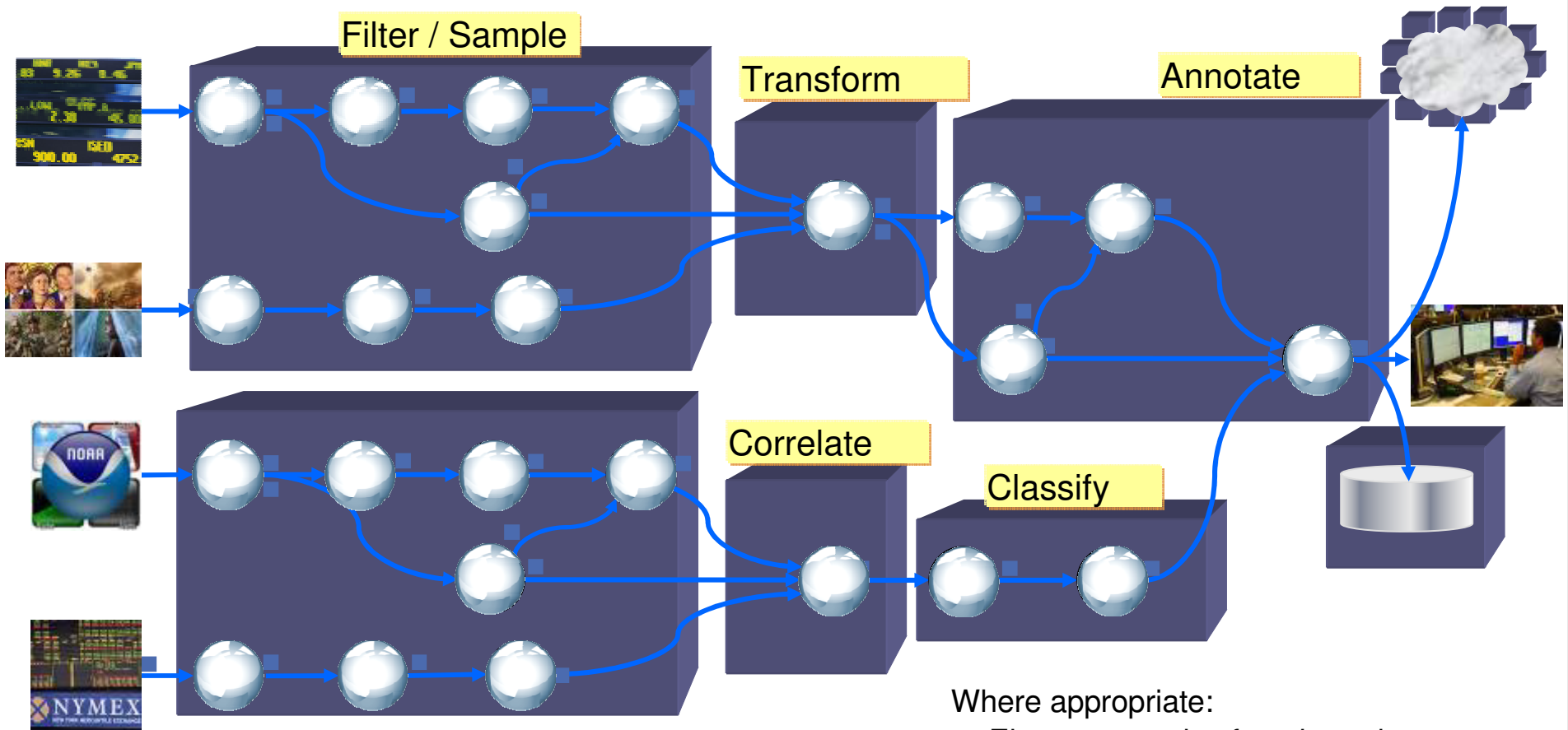


Transformation For Growth

2014 Consultants &
System Integrators Interchange

Compete in
the Era of
SMART.

Real-time Analytics with Streams.....How does It Work?



Achieve scale:
By partitioning applications into software components
By distributing across stream-connected hardware hosts

Where appropriate:
Elements can be *fused* together
for lower communication latency



Transformation For Growth

2014 Consultants &
System Integrators Interchange

Compete in
the Era of
SMART.

Big Data Use Cases



Big Data Exploration

Find, visualize, understand
all big data to improve
decision making



Enhanced 360° View of the Customer

Extend existing customer
views (MDM, CRM, etc) by
incorporating additional
internal and external
information sources



Security/Intelligence Extension

Lower risk, detect fraud
and monitor cyber
security in real-time



Operations Analysis

Analyze a variety of machine
data for improved business
results



Data Warehouse Augmentation

Integrate big data and data warehouse
capabilities to increase operational
efficiency



IBM

Transformation For Growth

2014 Consultants &
System Integrators Interchange

Compete in
the Era of
SMART.

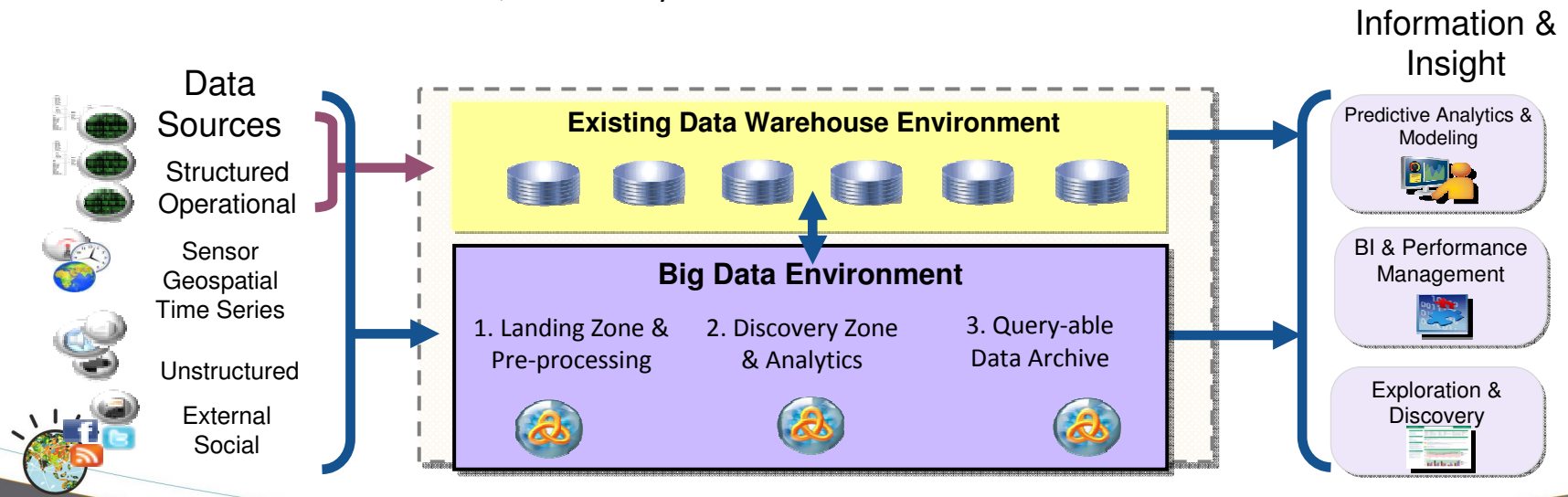
Big Data Analytics deliver improve customer insights, quality and operational efficiency to the world's largest auto maker

The Big Data challenge:

- Manufacturing equipment and assembly line data
- Warranty and services data from dealers
- Telemetry data from vehicles
- Customer services and social media data

Next generation of Enterprise Data Warehouse with Big Data Analytics:

- Hadoop landing and analytic zone for 10 years of data
- Warehouse reporting zone for high performance reports
- Hundreds of thousands of users, and Petabyte of data



IBM

Transformation For Growth

2014 Consultants &
System Integrators Interchange

Compete in
the Era of
SMART.

Connected Vehicles – Telematics Data Services



Telematics Data Analysis for Automotive and Insurance Companies – “Connected Cars”

Need

- A cost effective approach to store and analyze telematics data
- Determine drivers' behavior and urban Mobility
- Preventive maintenance to improve car reliability and customer sat
- Provide value added services such as accident and weather alerts

Benefits

- Significant performance improved in processing telematics data in Hadoop – up to 100x
- Enable data enrichment with public and commercial datasets (geospatial, weather)

IBM

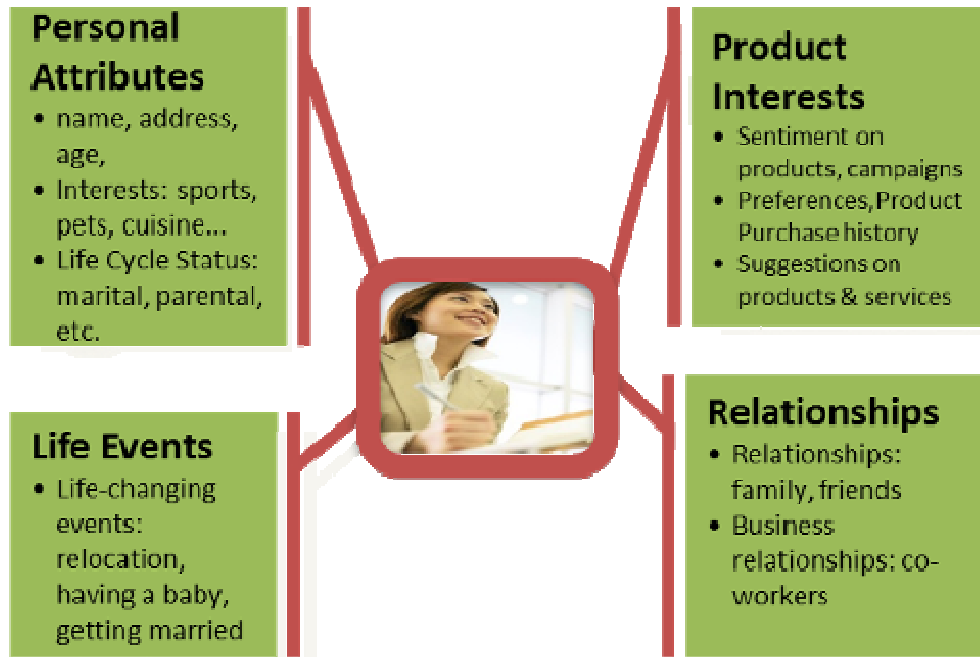
Transformation For Growth

2014 Consultants &
System Integrators Interchange

Compete in
the Era of
SMART.

2.7M

leads for upsell based on
customer profiles



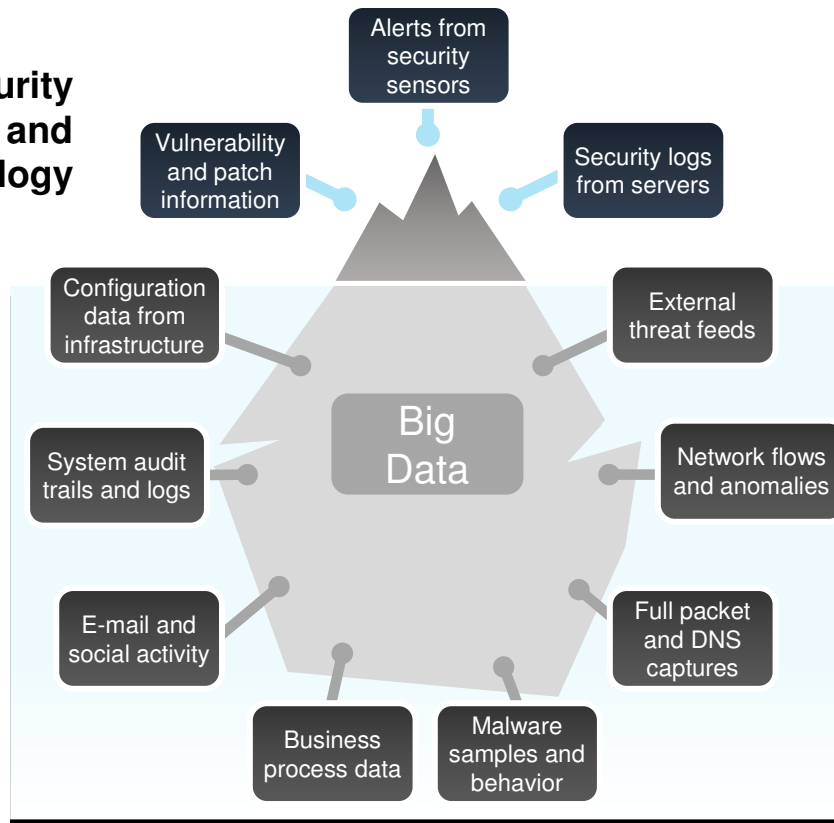
- Better accuracy in targeted marketing activities based on individual interests, intentions and goals
- Protect individual privacy in profiles



IBM

Collect and store massive amounts of security data

**Traditional Security
Operations and
Technology**



- **For Large FSS Customer**

- **250,000** managed firewalls
- **30,000** network devices
- **500,000** open port combinations
- **410,455** Windows client systems
- **36,109** Windows servers
- **24,000** *NIX servers
- **1200+** products for vulnerability assessment

- **Size estimates of large scale and high volume of events and logs**

- **1.5 – 2 TB** per month per major security service
- **200 – 750GB** total per minor security service



Transformation For Growth

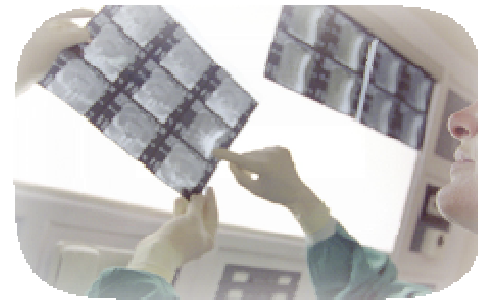
2014 Consultants &
System Integrators Interchange

Compete in
the Era of
SMART.

24 hour

Earlier detection of infections

Reduce treatment's lifestyle impact
to patient



- Real-time insight into condition of neonatal infants in ICU
- Provide proactive care for patients with traumatic brain injuries
- Analyze electronic medical records, pharmacy records, etc. to recommend physician with best treatment options



IBM

Transformation For Growth

2014 Consultants &
System Integrators Interchange

Compete in
the Era of
SMART.

IBM Big Data Platform New and Enhanced Offerings

InfoSphere BigInsights

For exploration, analysis & archiving large volumes and variety of data

InfoSphere Streams

For real-time analysis of data in motion

InfoSphere Identity Insight

For finding relationships in real-time

Information Server, Guardium, Optium

Information Management, Governance, Security



Cloudant

Pure Data//Blu Acceleration

For SQL & NoSQL reporting, analytics, operational analytics and transaction systems

Informix

For SQL & TimeSeries reporting and operational analytics

and transaction systems

CONSULTING and IMPLEMENTATION SERVICES

SOLUTIONS

Sales | Marketing | Finance | Operations | IT | Risk | HR



ANALYTICS

Performance Management

Risk Analytics

Decision Management

Content Analytics

Business Intelligence and Predictive Analytics

BIG DATA PLATFORM

Content Management

Hadoop System

Stream Computing

Data Warehouse

Information Integration and Governance

SECURITY, SYSTEMS, STORAGE AND CLOUD

The Whole is Greater than the Sum of the Parts

- Almost all big data use cases require an integrated set of big data technologies to address the business pain completely
- Reduce time and cost and provide quick ROI by leverage pre-integrated components
- Provide both out-of-the-box and standards-based services
- Start small with a single project and progress to others over your big data journey

IBM

Over 300 ISVs and Tool Vendors have enabled to IBM's Big Data Platform

te in
x of
RT.

2014 Consultants &
System Integrators

Infrastructure

Cloud



RIGHT SCALE
CLOUD MANAGEMENT



Applications



tresata
make • data • work



Analytics

Analytics & Visualization



Analytics Solutions



Statistical Computing



Social Media



Connecting Communities through Search



Data Sources



Hadoop Related



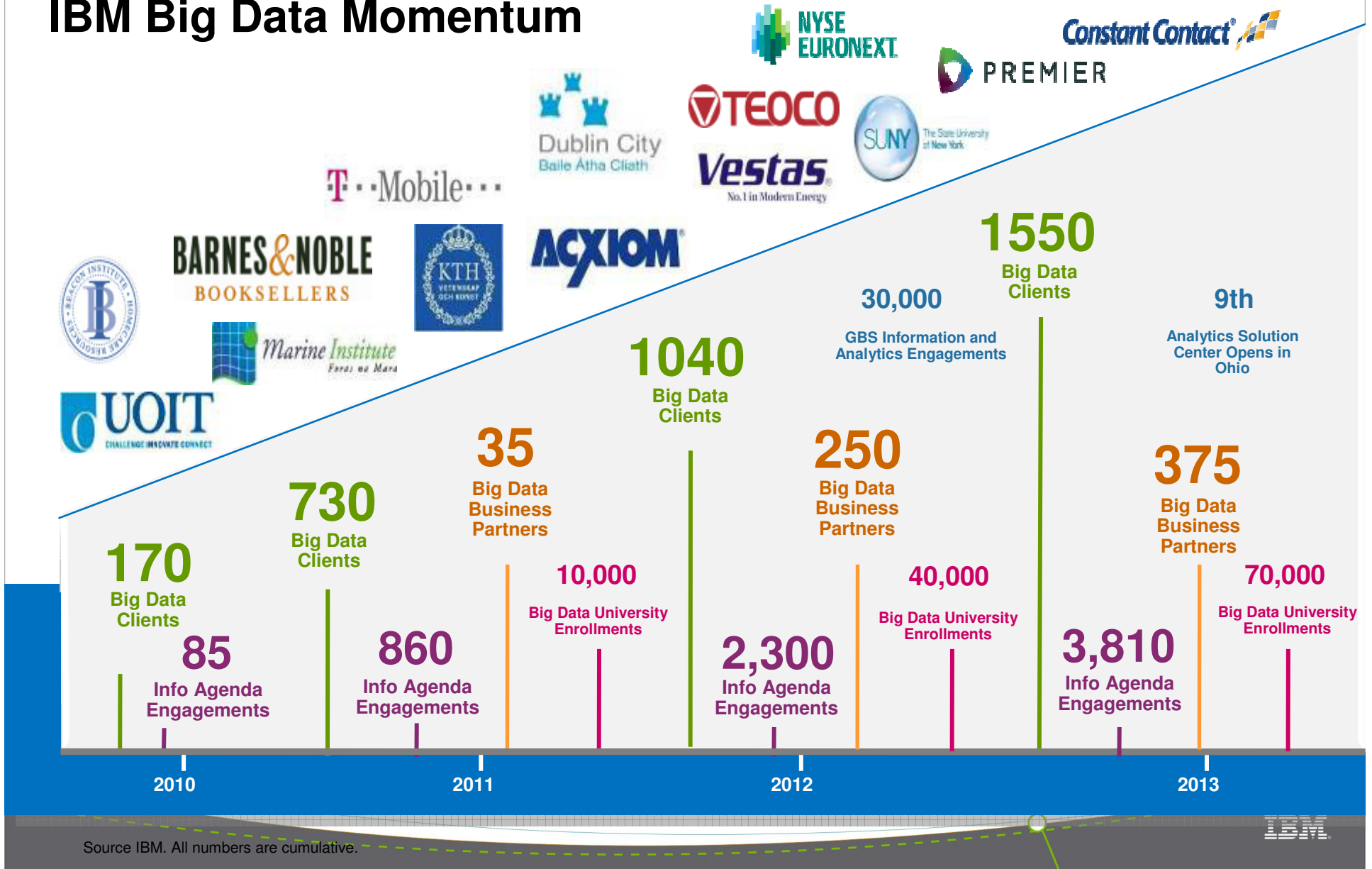
Transformation For Growth

2014 Consultants & System Integrators Interchange

Compete in the Era of SMART.

Sample Clients

IBM Big Data Momentum



Source IBM. All numbers are cumulative.



Transformation For Growth

2014 Consultants &
System Integrators Interchange

Compete in
the Era of
SMART.

Thank You



IBM