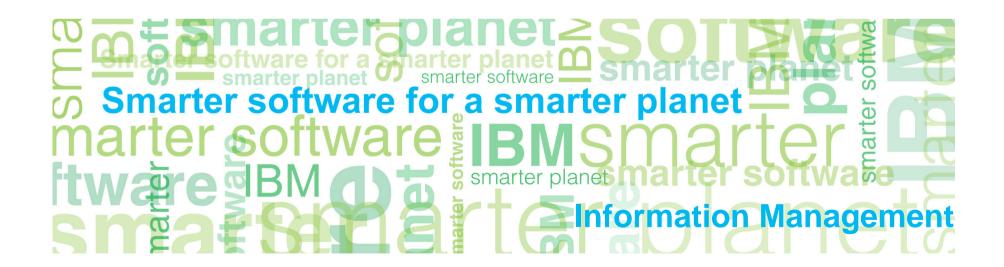
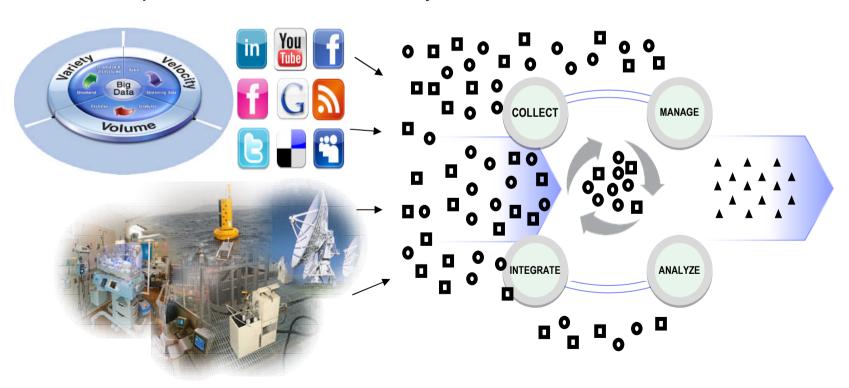


# Solutions Big Data IBM

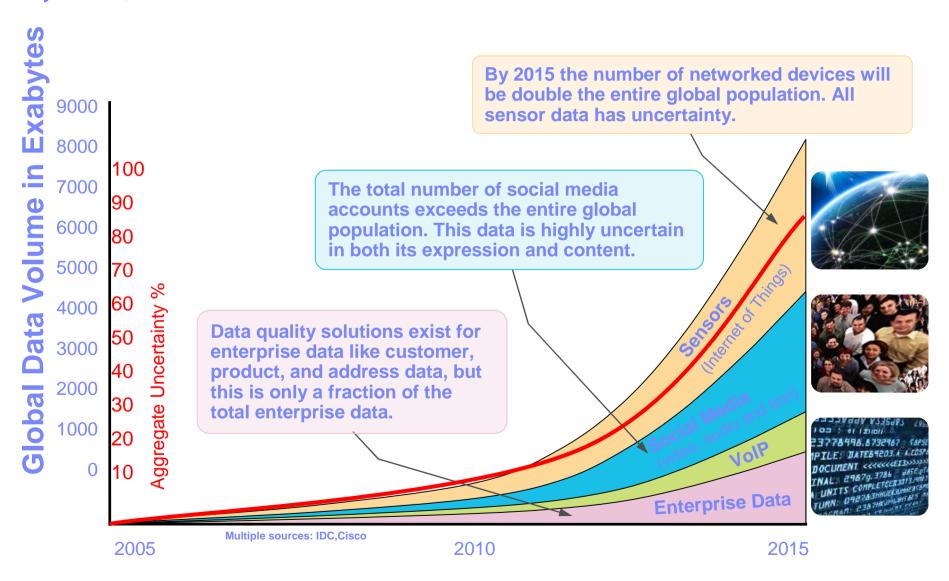


# The BIG Data Challenge

- Manage and benefit from massive and growing amounts of data
- Handle uncertainty around format variability and velocity of data
- Handle unstructured data
- Exploit **BIG Data** in a timely and cost effective fashion



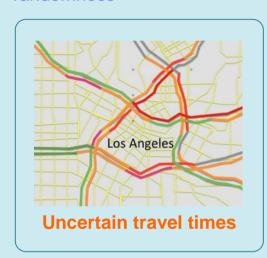
#### By 2015, 80% of all available data will be uncertain

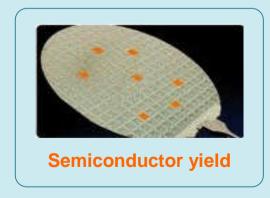


#### Uncertainty arises from many sources

#### **Process Uncertainty**

Processes contain "randomness"





#### **Data Uncertainty**

a smarter planet M

Data input is uncertain



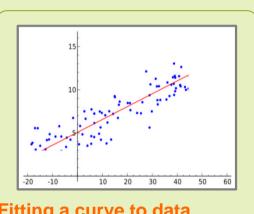






#### **Model Uncertainty**

All modeling is approximate



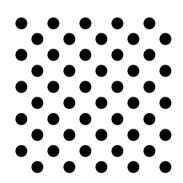
Fitting a curve to data



Forecasting a hurricane (www.noaa.gov)

#### The fourth dimension of Big Data: Veracity – handling data in doubt

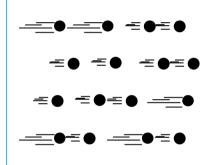
#### Volume



#### **Data at Rest**

Scale from terabytes to petabytes (1K TBs) to zettabytes (1B TBs)

#### **Velocity**

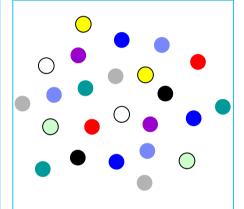


#### **Data in Motion**

Streaming data, milliseconds to seconds to respond

Often time-sensitive, streaming data and large volume data movement

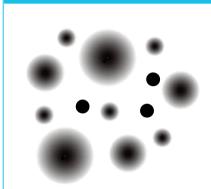
#### **Variety**



# Data in Many Forms

Structured, unstructured, text, multimedia

#### **Veracity\***

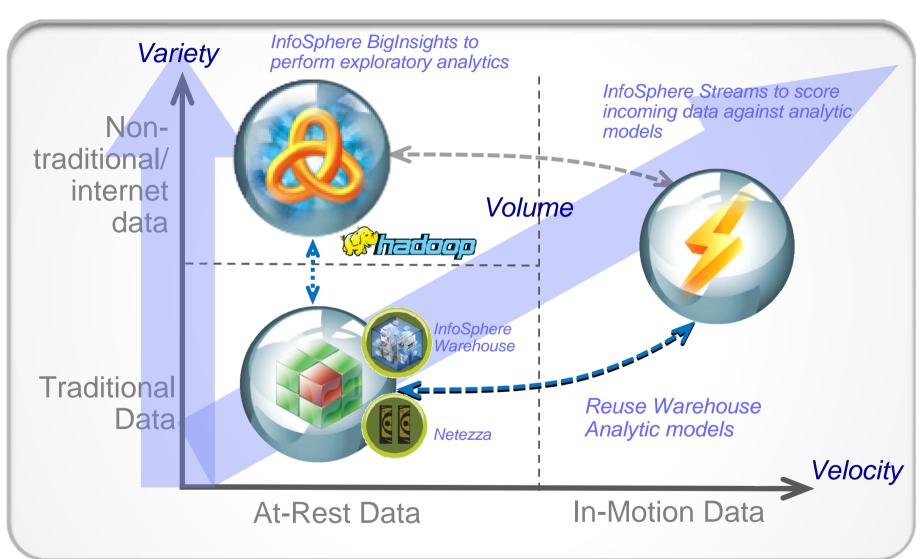


#### **Data in Doubt**

Uncertainty due to data inconsistency & incompleteness, ambiguities, latency, deception, model approximations

<sup>\*</sup> Truthfulness, accuracy or precision, correctness

# Big Data Technologies



#### Marketeer's objectives

### **Platform Capability**

1 Single view of customer



Consolidation



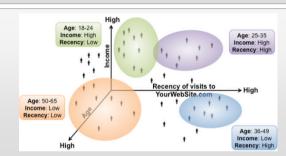
Clickstream Transactions Events CRM Support calls

All in one place

2 Increased Targeting Precision



Segmentation



Clustering
Scoring
Feature Selection
Associations

3 Improved Relevance



Matching



Personalized message Matching algorithms Matrix computations Single Value Decomp.

4 Higher campaign profitability



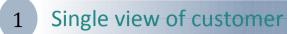
| Page 7



Forecasting
Predictive algorithms
Decision trees
Linear Regression

### Marketeer's objectives

**Platform Capability** 





Clickstream N Transactions **Events** CRM Support calls

Consolidation

Matching

All in one place

**Increased Targeting Precision** 



Big Received takering Segmentation Scoring **Feature Selection** Associations

Improved Relevance



Personalized message Matching algorithms Matrix computations Single Value Decomp.

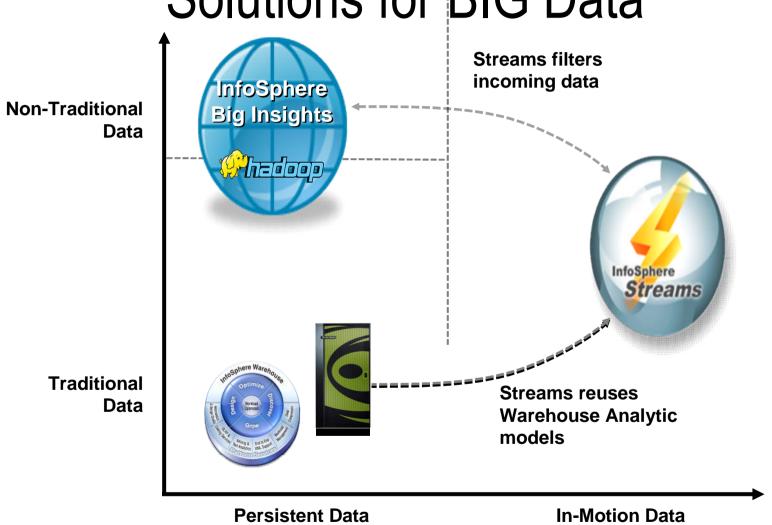
Higher campaign profitability





Purchase

# IBM Offers a Comprehensive Set of Solutions for BIG Data





# Un nouveau mode d'exploration des données

#### **Traditional Approach**

Structured & Repeatable Analysis

#### **Business Users**

Determine what question to ask





#### IT

Structures the data to answer that question



Monthly sales reports
Profitability analysis
Customer surveys

## Big Data Approach

Iterative & Exploratory Analysis



#### IT

Delivers a platform to enable creative discovery

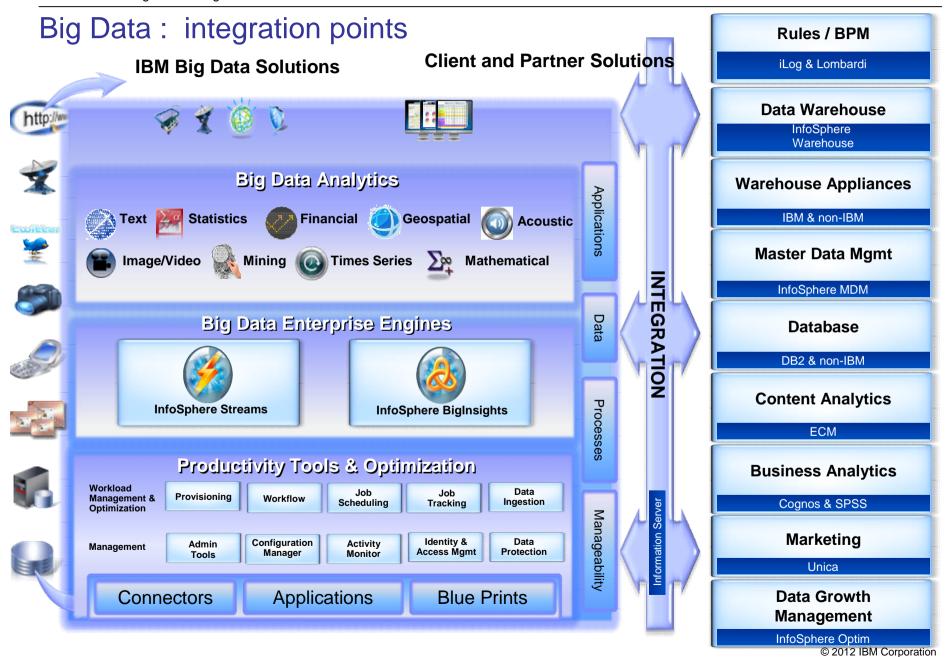


#### **Business**

Explores what questions could be asked

Brand sentiment
Product strategy
Maximum asset utilization





## Typical IBM Big Data Solution Use Cases









Create context (classification, text mining)

Analyze





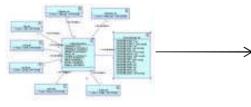




Semi-structured data

Parse, aggregate

Analyze, report







Structured data

Analyze, report

Active archival Long running queries



Big Data Use Case Customer Experience (Call Center)



# Business Value Hypotheses - Summary

Analyze Customer Survey Data to Advocates vs. Antagonist

Analyze Customer Complaint Data to Understand Key Customer Issues

Understand Impact of Social Networks on Customer Behavior & Influence

Analyze Agent-to-Agent Internal Memos

Analyze Customer Interaction Notes (i.e. emails, etc.)

Analyze Policy & Procedures

- Cost Efficiencies
- Performance
- Revenue Lift
- Regulatory Compliance





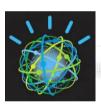
# Addressing the Customer Experience Issues

CSR Agent asks customer questions to understand situation and customer need

CSR Agent researches question by consulting policies & procedures, looking up data, consulting other agents, or transfers the call to another agent

CSR Agent spends time clarifying question based on research and providing best possible answer.

CSR Agent ensures customer is satisfied & probes for other needs before closing inquiry



Search Highly Organized Knowledge, Better Predict Customer Needs & Drive Differentiated Experience

#### Future State Knowledge Management Solution

#### Phase 1

Establish a searchable knowledge base database organized by need with structured actions and procedures for CSR to follow

#### Phase 2

Watson: Incorporate transactions and interactions into generating a list of potential reasons for call and prioritize potential next best actions

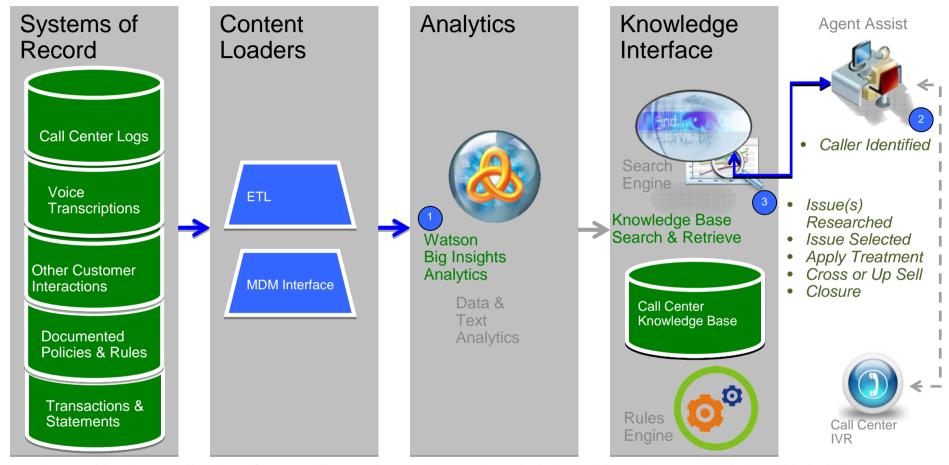
#### Phase 3

Watson 2: Automatically provide suggestions for specific customer inquiries, as well as suggestion for customer treatments based on transaction & interaction history





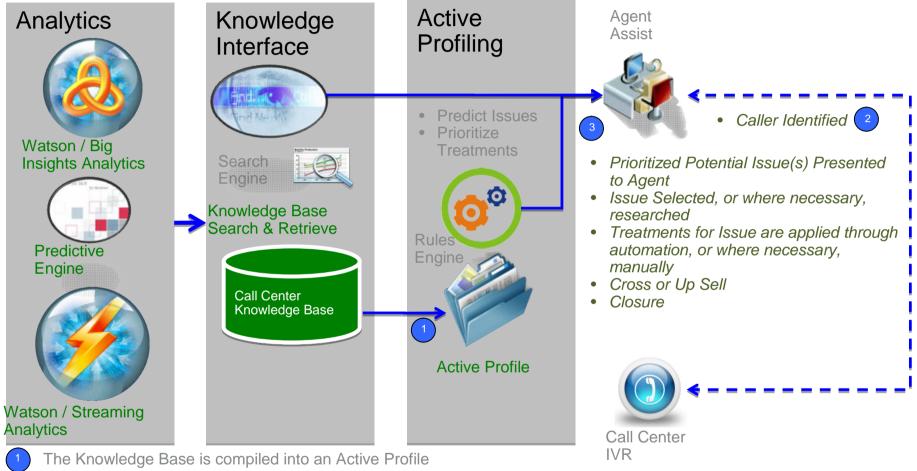
## Phase 1: Establish Knowledge Base



- Account / Product specifications, Customer Transactions and Interactions, Policies and Procedures are loaded into Big Insights and relevant information context linkages are established in an indexed Knowledge Base (KB). The KB has natural language capabilities to link issues with treatments.
- A customer transfers from IVR to an Agent, and gets identified
- A customized UI helps the agent access the Content search engine to research the customer's issue, locate appropriate treatment and apply it.



#### Phase 2: Automate Issue Detection & Treatment



- Customer transfers out of IVR to the call center and gets identified
- Agent is provided with prioritized potential issues by the Rules Engine, together with treatments. Where needed the agent can research the Knowledge Base. Treatment application is automated where possible, reducing manual time required