

Converting Big Data into Big Knowledge

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Agenda

- **The Paradigm Shifts that “created” Big Data**
- The IBM customers that built Big Knowledge

New era of computing in a Instrumented, Interconnected, Intelligent Smarter Planet



Information from Every Instrument

44x more data and content
coming in the next decade



Complex to Connect

IT complexity doubling
every two years



Scalable Intelligence

2B+ people and
1T+ devices connected
to the web

Information from Every Entity – Machine

640 Terabytes

1 Billion Lines of Code

EACH engine generates 10 TB/30 minutes

30 Billion RFID tags
(1.3B in 2005)

- 280 flights every day
- 11 on British Airways alone
- By 2015, 2K sensors in BMW 7 series
- Intelligent Tractors

1 Terabyte of Trade information

Captured every day by the New York Stock Exchange



200 million smart meters by 2014

- Yearly Reading
- 120M Readings a Month
- 3.65B Readings a Day
- 350B Transactions/Year**

Information from Every Entity – Man

12+ Terabytes
of tweet data every day



4.6 billion Camera phones world wide

- Geospatial tagging
- Location based advertising
- Location based monitoring



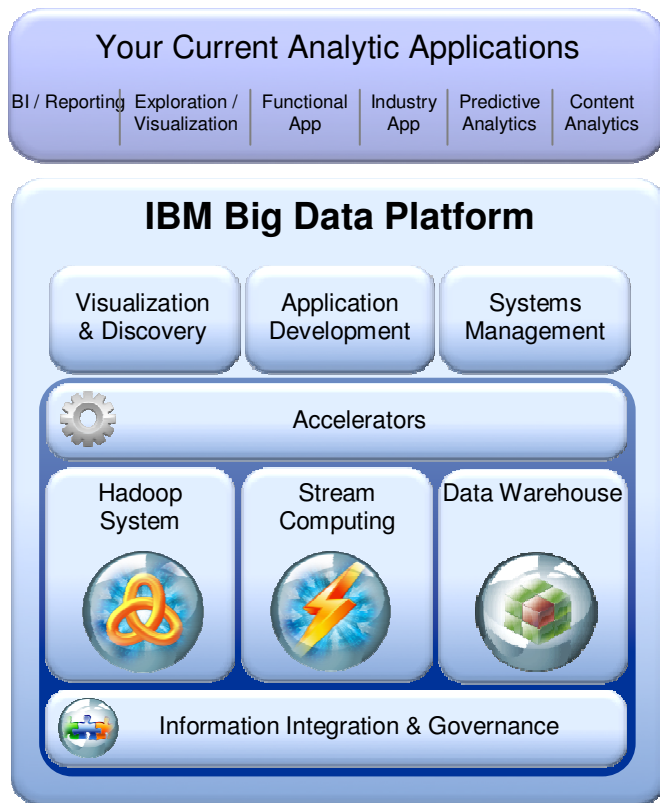
25+ Terabytes
log data every day



Big Data Paradigm Shift

<p>VOLUME & VARIETY</p> <p>Structured & Unstructured</p>	<p>REAL TIME VELOCITY</p> <p>Data in Motion Analytics</p>
<p>STOP SAMPLING</p> <p>Move to Absolute Knowledge</p>	<p>FIT FOR PURPOSE</p> <p>New Technology, New Skills</p>

IBM Big Data Platform



Analytic Knowledge Accelerators

- Text Analytics, Sentiment Analytics
- Statistical & Predictive Analytics (ML)
- Entity Integration, Entity Analytics

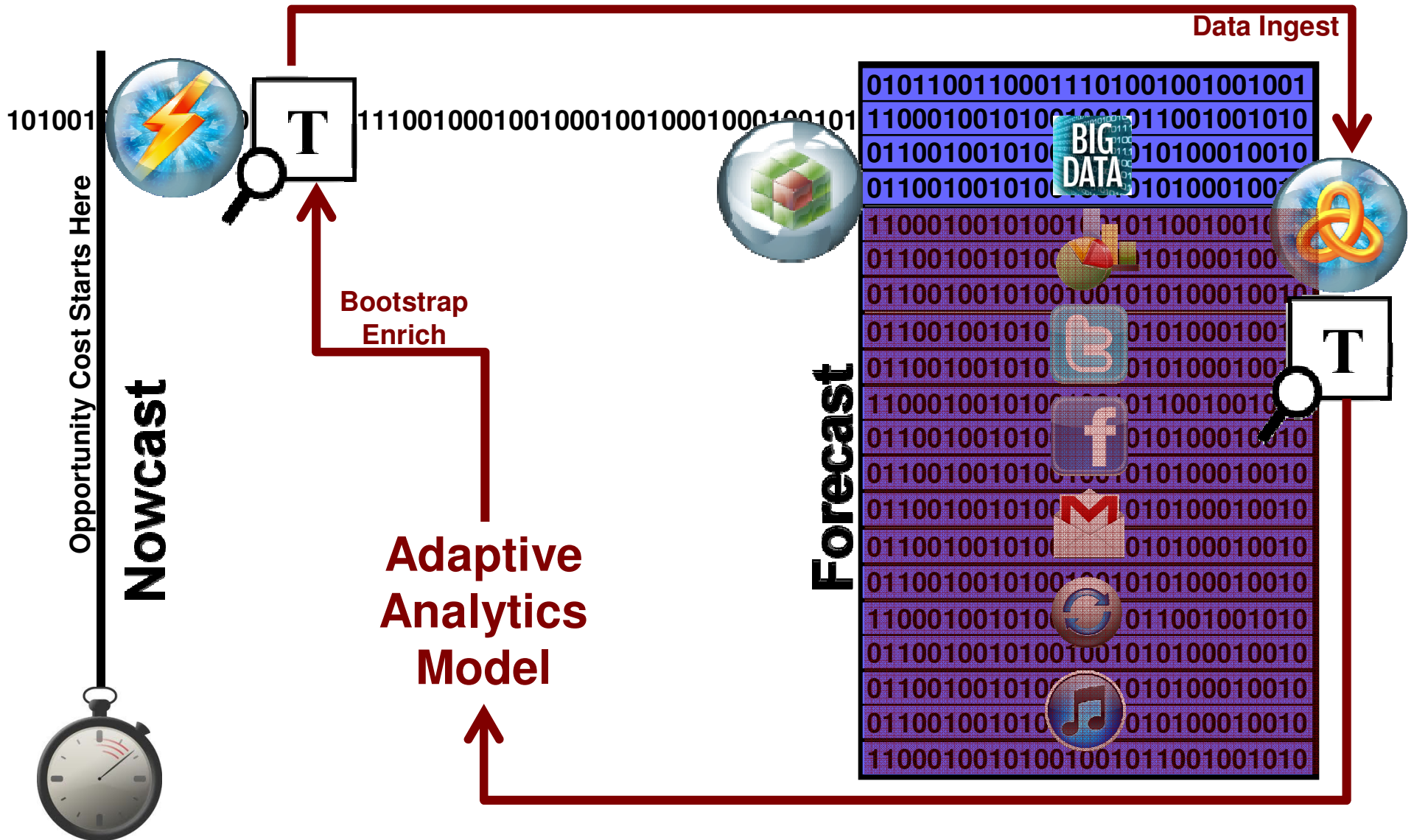
Enterprise Robustness

- Visualization & Application Tools
- Cluster and Workload Management
- Security & Governance

Integration

- With current sources
- With new Big Data sources

The Big Data Knowledge Factory, just add your Big Data Brain People



Big Data Analytic Accelerators Designed for **Big Knowledge**



Telecommunications

CDR streaming analytics
Deep Network Analytics



Retail

Enhanced 360 Degree view with
Big Data Customer Sentiment &
Social Exhaust



Finance

Counter Party Risk
Streaming new Big Data
sources into decision engine



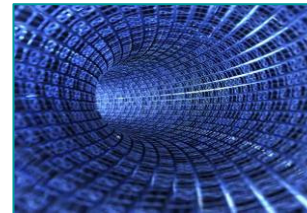
Social Media Analytics

Sentiment Analytics, Intent to
purchase



Public

Real-time monitoring and
routing optimization
Multi-format monitoring (audio,
image, text. . .)



Energy & Utilities

Streaming statistical analysis
Enabling & Accelerating Big
Math

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Why Didn't We Use All of the Big Data Before?



Vestas®

*“IBM had **experts** within **data mining**, **Big Data**, and **Apache Hadoop** and it was clear to use from the beginning we wanted to improve our business, not only today, but **also prepare for the challenges we will face in three to five years, we had to go with IBM.**”*

– Lars Christian Christensen VP Plant Siting & Forecasting

Cisco automates Big Knowledge with Big Data Analytics



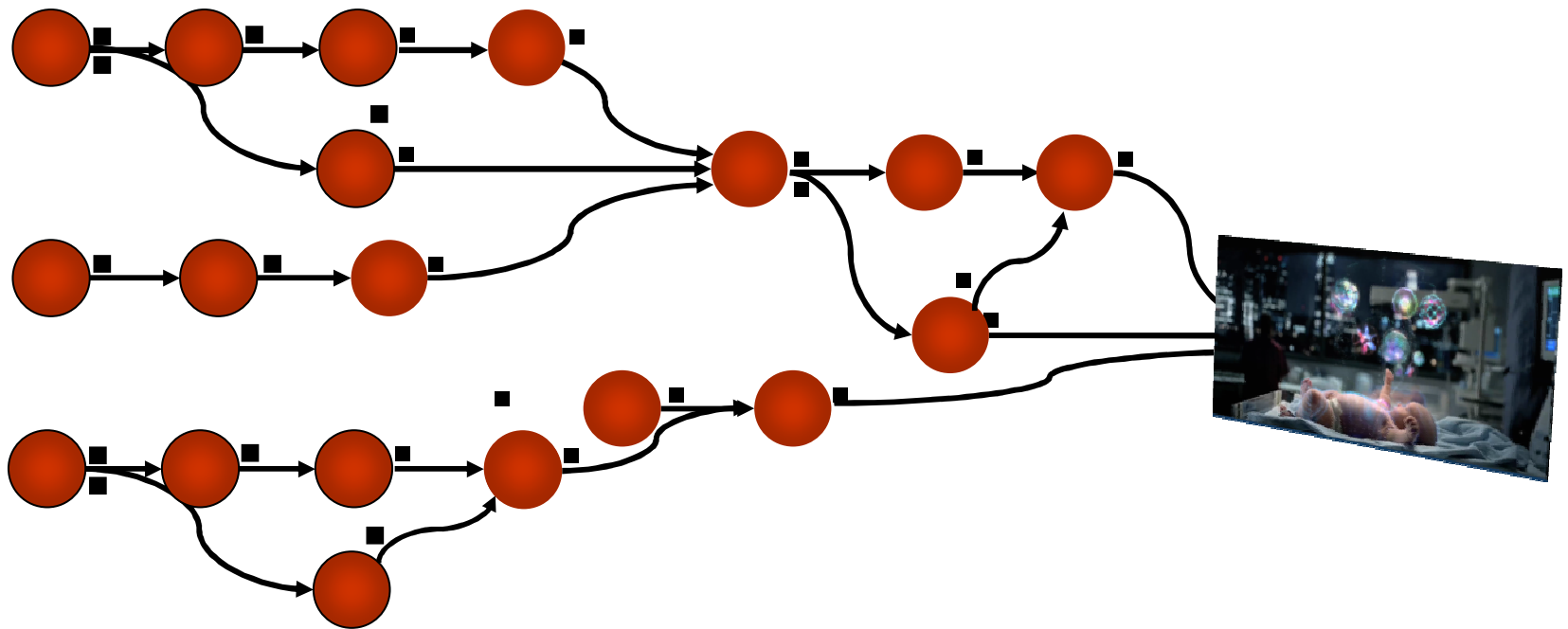
Automates monitoring, preventive and corrective maintenance of building corrective systems



Big Data In Motion brings Big Knowledge to Doctors & Nurses



- Analyzing 1000 pieces of unique medical diagnostic information per second and stored in a dynamic model
- Perspective: 20% drop in mortality of control group in trials

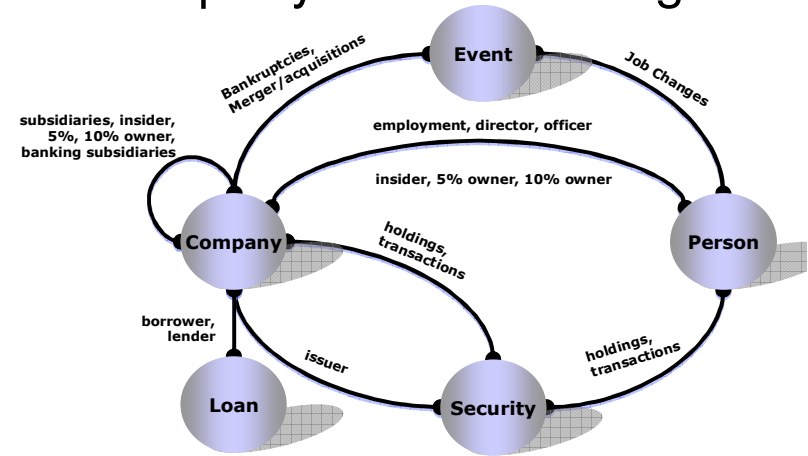


Big Data for Diabetes uncovers “MUSIC” new Big Data Knowledge



“Big Data for Diabetes” is a collaborative initiative undertaken by WMG, Warwick Medical School, the University of Warwick, IBM, Maverick TV, NHS Local, the University Hospitals of Coventry and Warwickshire and Experian.

Big Data Analytics enables Banks with better Counterparty Risk Knowledge

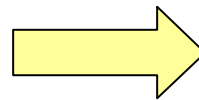


Annual Report

Loan Agreement

Proxy Statement **Insider Transaction**

Unstructured, Data spread over many documents!



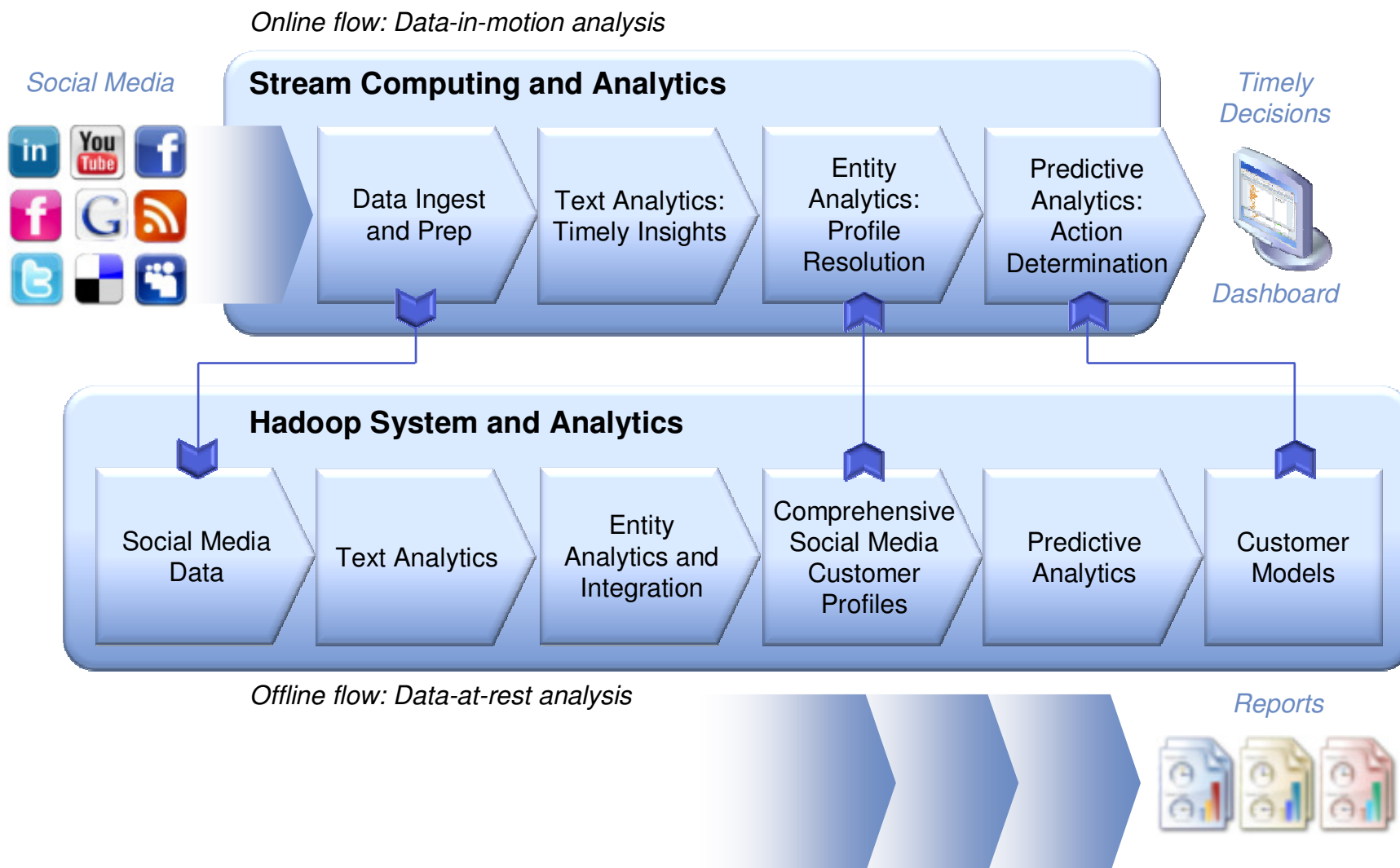
Counterparty Relationships

Loan Exposure

Integrated Entities and Relationships

Counterparty exposure, Investment decisions, Credit risk and Systemic risk analysis

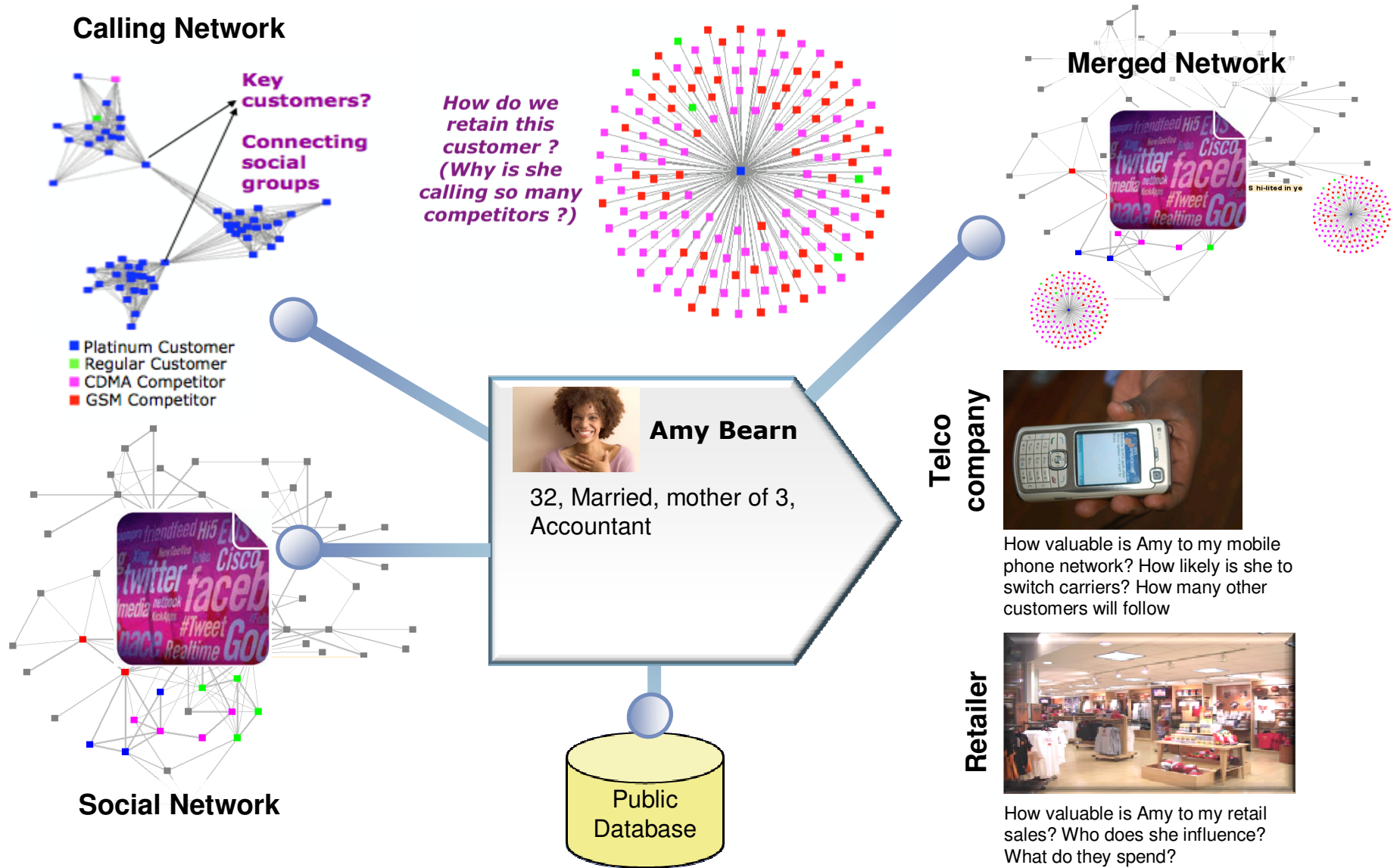
Solution Architecture – Social Media Big Data Analytics



Visualization -- Social Media Big Data Analytics



Adding Big Data Knowledge to Improve Monetization of Relationships



Big Data Platform Directions

Enterprise capabilities
Ecosystem & Skills
Accelerators to time to value

IBM can help you ingest,
manage and discover AND
enable big data analytics to
move you from
Big Data
to
Big Knowledge

