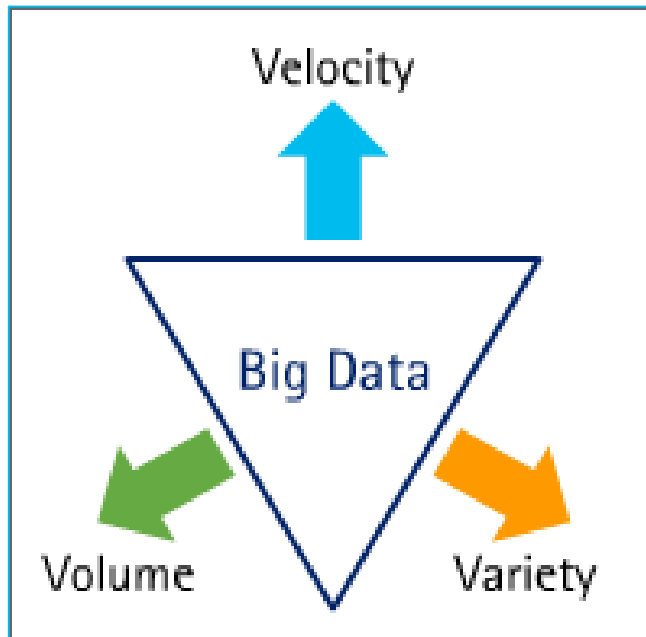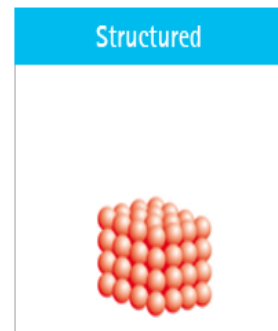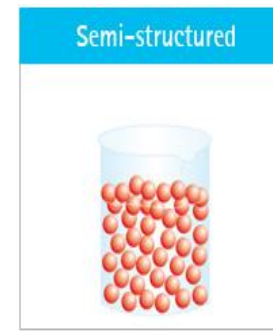Big data in general has context in three Vs:

- Sheer quantity of data

- Speed with which data is produced, processed, and digested

- Diversity of sources inside and outside

.

The different types of data that contribute to this are:

Structured	Semi-structured	Unstructured

- Fields/Tables /Columns
- RDBMS/Spreadsheet

- Markers/Tags to separate elements
- XML/HTML
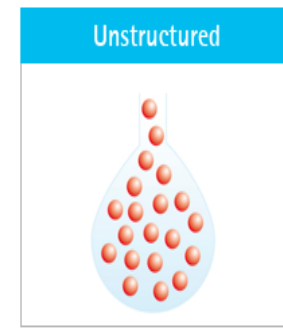
- No fields/attributes
- Free form text (email body, notes, articles)
- Audio, video, and image
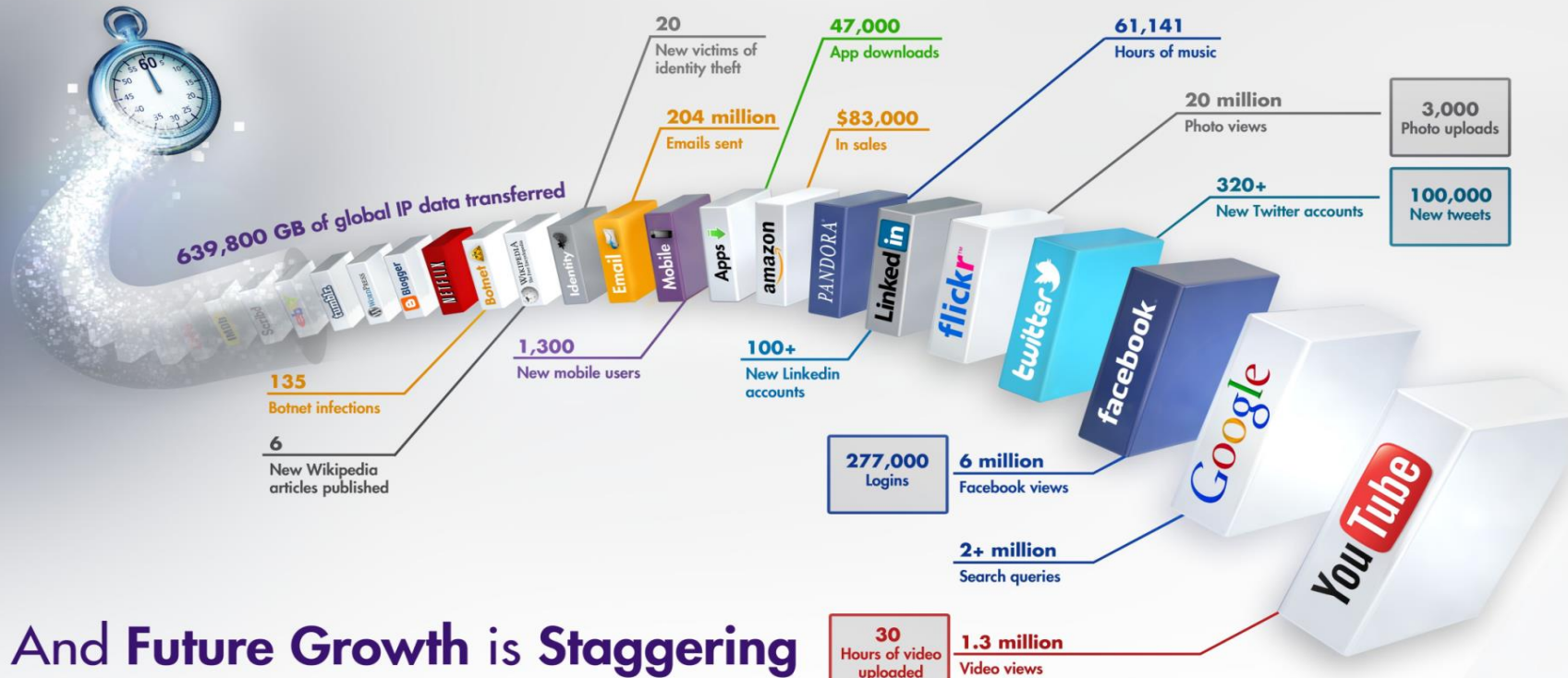
Separating the signal from the noise[1] becomes really relevant

1 http://techcrunch.com/2012/11/25/the-big-data-fallacy-data-≠-information-≠-insights/
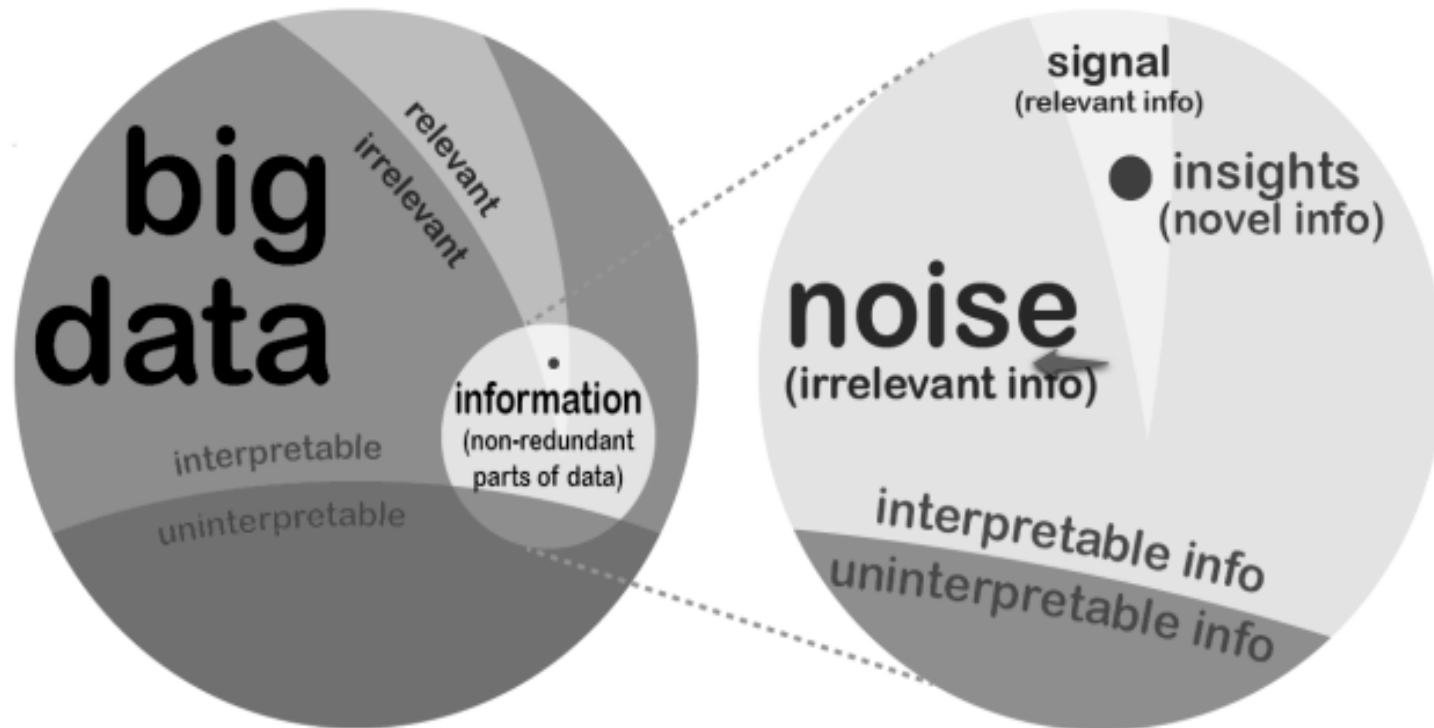
Big Data: Key Concepts
Macro Trends

Many organizations carry out business based on insights gained from data analysis. There has been a shift in the size, type, and form of data and in the way data is analyzed.

Data Explosion

- Unstructured data is doubling every 3 months
- 2011 saw 47% growth overall
- By 2015, number of networked devices will be 2x global population

Data-led Innovation

- De-coupling data from applications
- Disparate external data shaping context
- Cost effective mobilization of massive scale data

Technology

- Commodity priced storage and compute
- Emergence of open source and big data technologies solving production problems at scale

Monetization

- Growth of enterprise data monetization services
- Large retailers monetizing own data to provide insights to suppliers

Social Media

- Emergence of companies that scrub and aggregate data from social media and blogs
- Greater focus on data that provides insight in a customer's digital persona

Data Mobilization

- Novel approaches to analyze unstructured data creating shorter time from data to insight
- Shift towards data consumption in multiple environments (business apps, mobile, social)

Trends Driving Fundamental Shifts (1/2)

Data volumes are growing, infrastructure is stressed to the breaking point and Big Data offers the opportunity to address these challenges.

Bringing the Data to the Analytics

- Focus on structuring data for storage
- Serial approach to mobilizing new data sources
- Episodic analytics
- Pre-defined reports and dashboards
- Data sampling to fine tune algorithms
- Data silos tethered to applications
- Quantitative vs Qualitative Data

Bringing the Analytics to the Data

- Focus on mobilizing data for analysis
- Immediate ingestion of new data sources
- Continuous data discovery
- Agile, self-service data visualization
- "Data trumps algorithms"
- Data as a platform
- Derive insight from structured and unstructured data

Trends Driving Fundamental Shifts (2/2)

Traditional Approach
Structured & Repeatable Analysis

Business

Determine what question to ask

IT

Structures the data to answer that question

Big Data Approach
Iterative & Exploratory Analysis

IT

Delivers a platform to enable creative discovery

Business

Explores what questions could be asked

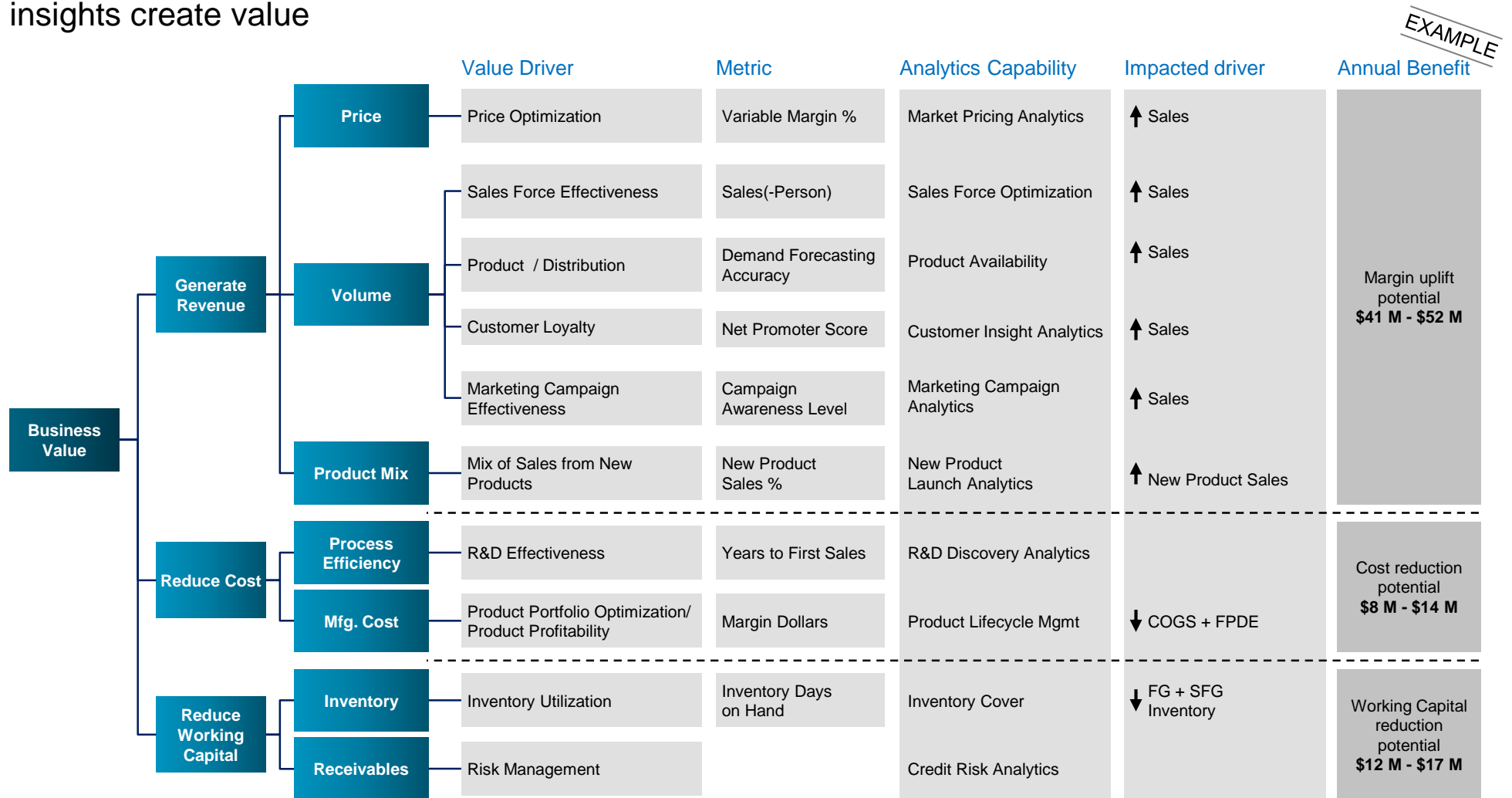**Big Data** is the next generation of data warehousing, business analytics and business intelligence. It's poised to deliver top line revenues cost efficiently for enterprises based on new technologies (In-database, MPP, In–memory,…), more agile analysis (runtime, on time,..) and more deep analytics (new data mining predictive algorithm, and optimization modeling)

Bring together a large volume and variety of data to find new insights

The Business Value of Big Data
The Value Tree

The business value drivers are beginning to follow familiar patterns – more data and better insights create value
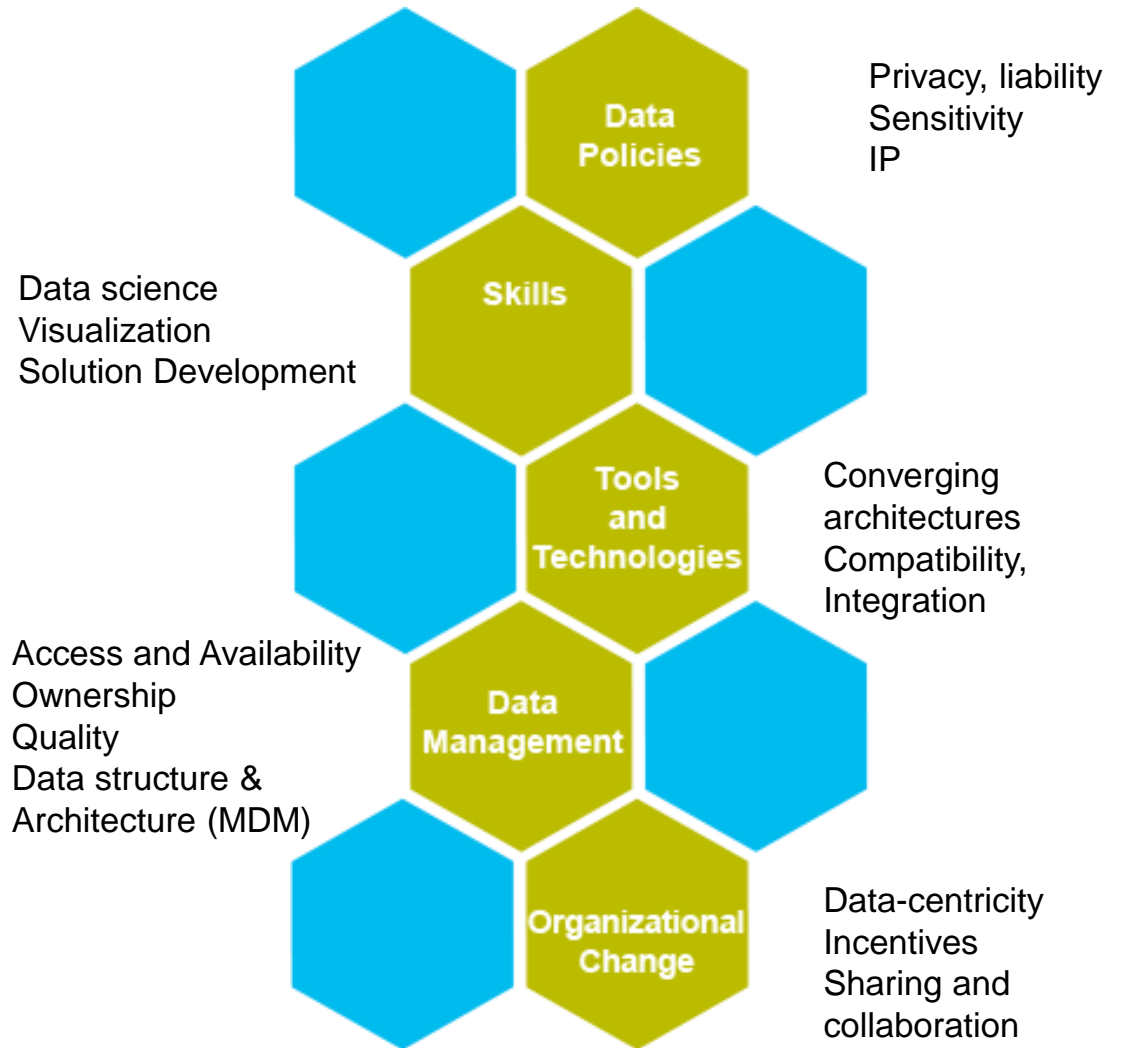
EXAMPLE

		Value Driver	Metric	Analytics Capability	Impacted driver	Annual Benefit
Generate Revenue	**Price**	Price Optimization	Variable Margin %	Market Pricing Analytics	↑ Sales	Margin uplift potential $41 M - $52 M
	Volume	Sales Force Effectiveness	Sales(-Person)	Sales Force Optimization	↑ Sales	
		Product / Distribution	Demand Forecasting Accuracy	Product Availability	↑ Sales	
		Customer Loyalty	Net Promoter Score	Customer Insight Analytics	↑ Sales	
		Marketing Campaign Effectiveness	Campaign Awareness Level	Marketing Campaign Analytics	↑ Sales	
	Product Mix	Mix of Sales from New Products	New Product Sales %	New Product Launch Analytics	↑ New Product Sales	
Reduce Cost	**Process Efficiency**	R&D Effectiveness	Years to First Sales	R&D Discovery Analytics		Cost reduction potential $8 M - $14 M
	Mfg. Cost	Product Portfolio Optimization/ Product Profitability	Margin Dollars	Product Lifecycle Mgmt	↓ COGS + FPDE	
Reduce Working Capital	**Inventory**	Inventory Utilization	Inventory Days on Hand	Inventory Cover	↓ FG + SFG Inventory	Working Capital reduction potential $12 M - $17 M
	Receivables	Risk Management		Credit Risk Analytics		

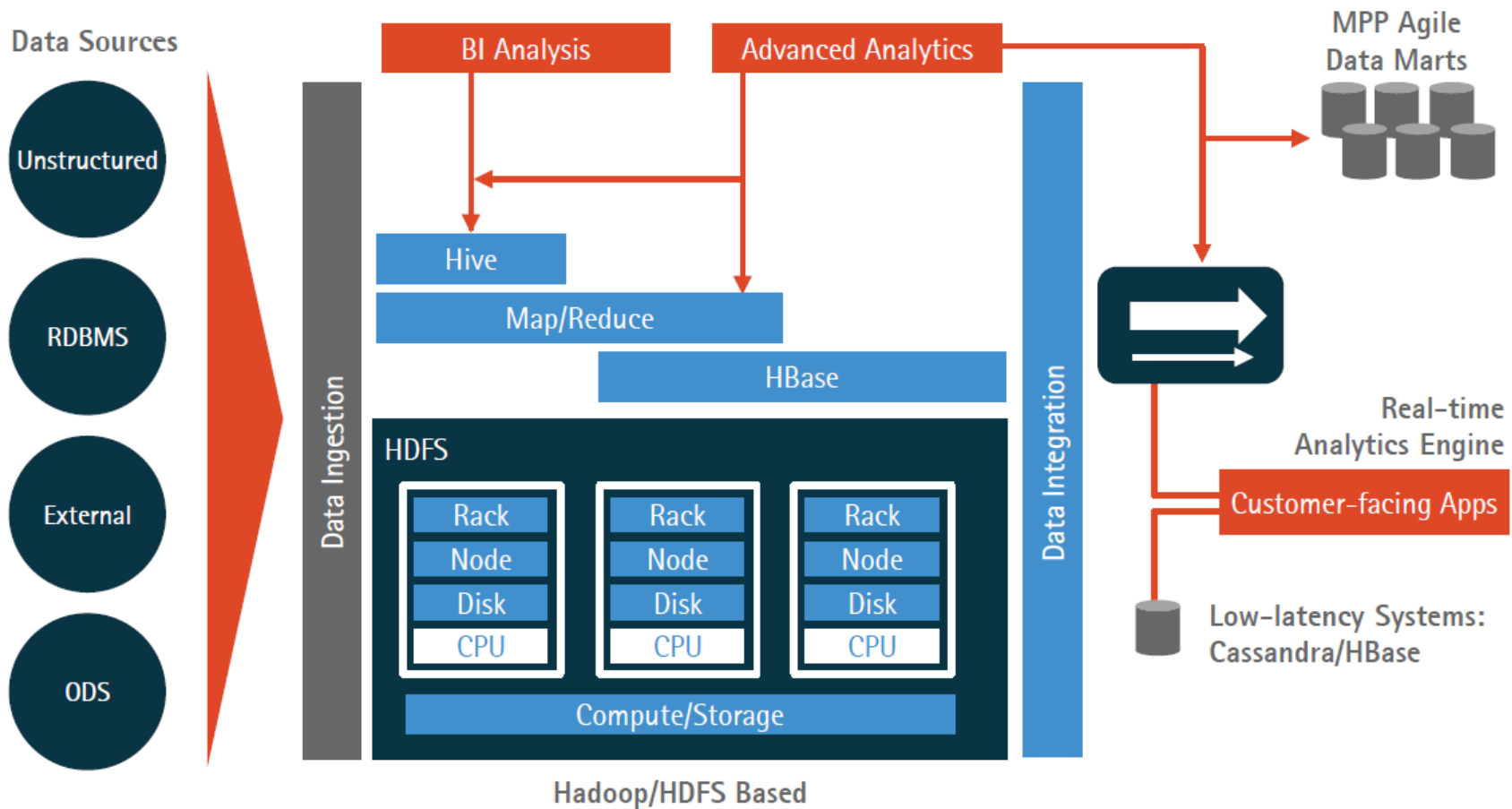Business Value

There are many barriers to the adoption of Big Data. Some causes technological disruptions while others may lead to certain organization challenges, which have to be overcome for the seamless operations.

There are some interesting Big Data myths that need to be dispelled.

Just about unstructured data

Only to handle huge volume

Solely an IT problem

Only for internet age companies

No need for RDMBS anymore

All about data scientists

Privacy, liability
Sensitivity
IP

Data Policies

Data science
Visualization
Solution Development

Skills

Tools and Technologies

Converging architectures
Compatibility,
Integration

Access and Availability
Ownership
Quality
Data structure &
Architecture (MDM)

Data Management

Organizational Change

Data-centricity
Incentives
Sharing and collaboration

The Transformation Journey
Accenture approach

Accenture's Big Data Discovery service helps organizations identify Big Data opportunities and use cases that are aligned with business stakeholder needs.

It helps organizations define a delivery road map and an actionable plan with clear business value delivery goals by phase.

Through Discovery, the team defines a conceptual technical and solution architecture design and helps to understand the total cost of ownership (TCO) of the technologies chosen.

Approach

| Identify, classify, map and prioritize use cases | Define HL Solution and Technical Architecture | Perform TCO Comparative Analysis of technologies chosen | Estimate and define an actionable plan with a business driven approach |

The Business Value of Big Data
Impact on different Business Sectors

- Recent research has shown that companies, that use Big Data and analytics to make decisions, are more productive and make more revenues. Here are some examples of certain business sectors that utilized Big Data to gain advantage.

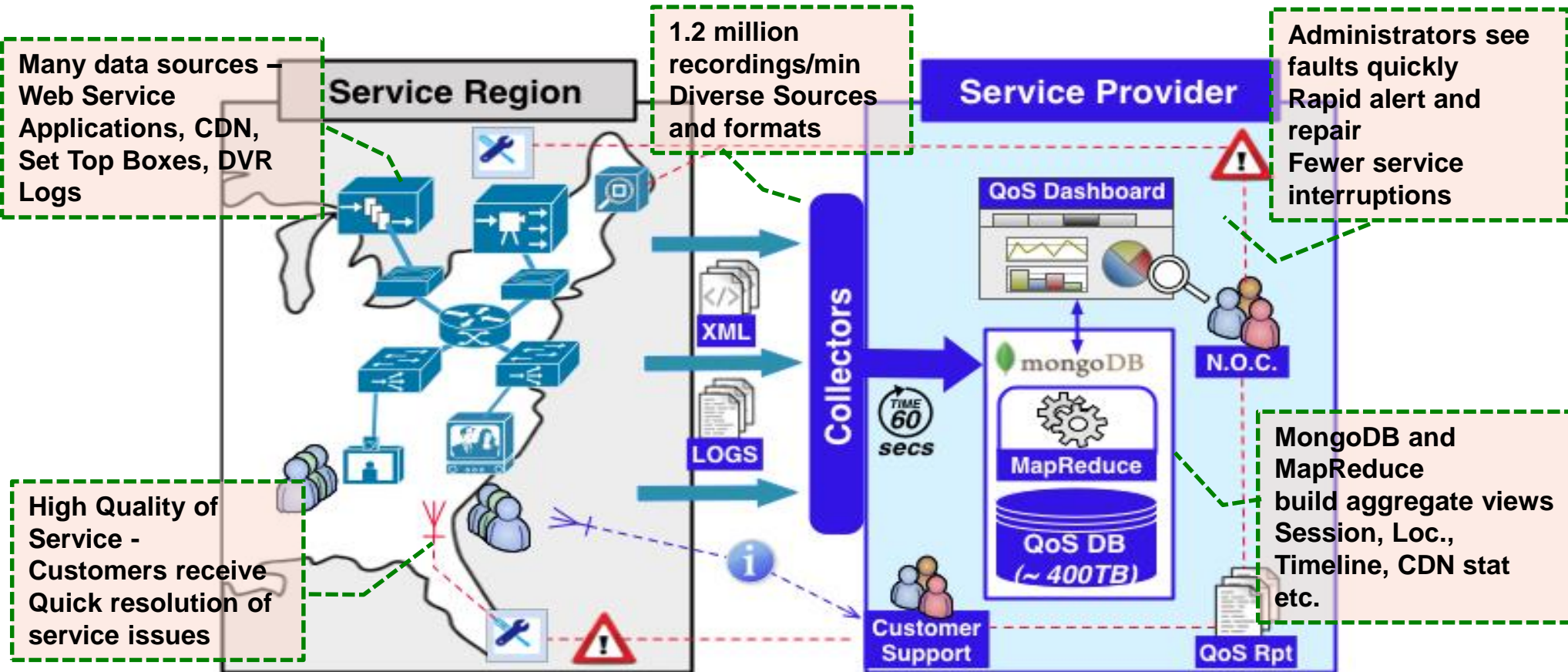| Telecommunication & Media	Retail & Consumer Goods	Financial Services
Emerging Trends with Big Data • Improve customer experience and retention • Tailored real-time recommendations during customer interactions • Monetization of data through value added services • Enhance operational efficiencies by detecting infrastructure bottlenecks real-time • Network and security analytics, intrusion detection with a 360 degree view **Uses** • Ad Targeting • Network Data Analysis • Search quality • Data Sandbox	**Emerging Trends with Big Data** • Large-scale clickstream analytics • Event, location and behavior based targeting combining social media data • Sentiment analysis • Cross-selling, Market Basket Analysis and Ad targeting • Deep consumer segmentations • Merchandizing and Optimization • Supply-chain management and analytics • New services such as price comparisons or virtual markets • Operational transparency **Uses:** • Marketing Campaign Analysis • Sentiment Analysis • Point of Sale • Trade surveillance	**Emerging Trends with Big Data** • Marketing partnerships to develop enhanced profile of customer • Targeted offers to cross sell and up-sell • Performance marketing – improve promotion effectiveness • Leverage multiple sources of unstructured data to improve 360 degree view of customer • Customer retention • Manage credit risks • Fraud detection and analysis • Sales force productivity and effectiveness • Trade portfolio performance and optimization **Uses** • Risk modeling • Customer attrition analysis • Recommendation engine • Threat analysis (fraud detection)

The Business Value of Big Data
A real example in Media

Quality of Service is a key business demand for digital TV providers and presents a number of technical challenges. Tracking infrastructure and client hardware components can generate a range of unstructured data at huge scope and scale. Aggregate views reveal patterns that enable timely issue resolution and enable new business opportunities

Many data sources – Web Service Applications, CDN, Set Top Boxes, DVR Logs

1.2 million recordings/min Diverse Sources and formats

Administrators see faults quickly Rapid alert and repair Fewer service interruptions

High Quality of Service - Customers receive Quick resolution of service issues

MongoDB and MapReduce build aggregate views Session, Loc., Timeline, CDN stat etc.

Service Region

Service Provider

XML

LOGS

Collectors

TIME 60 secs

QoS Dashboard

mongoDB

MapReduce

QoS DB (~ 400TB)

N.O.C.

Customer Support

QoS Rpt

We've created custom java tool to:

- search selected social networks for profiles that matches available client data
- download all publicly available data for these profiles as it is.
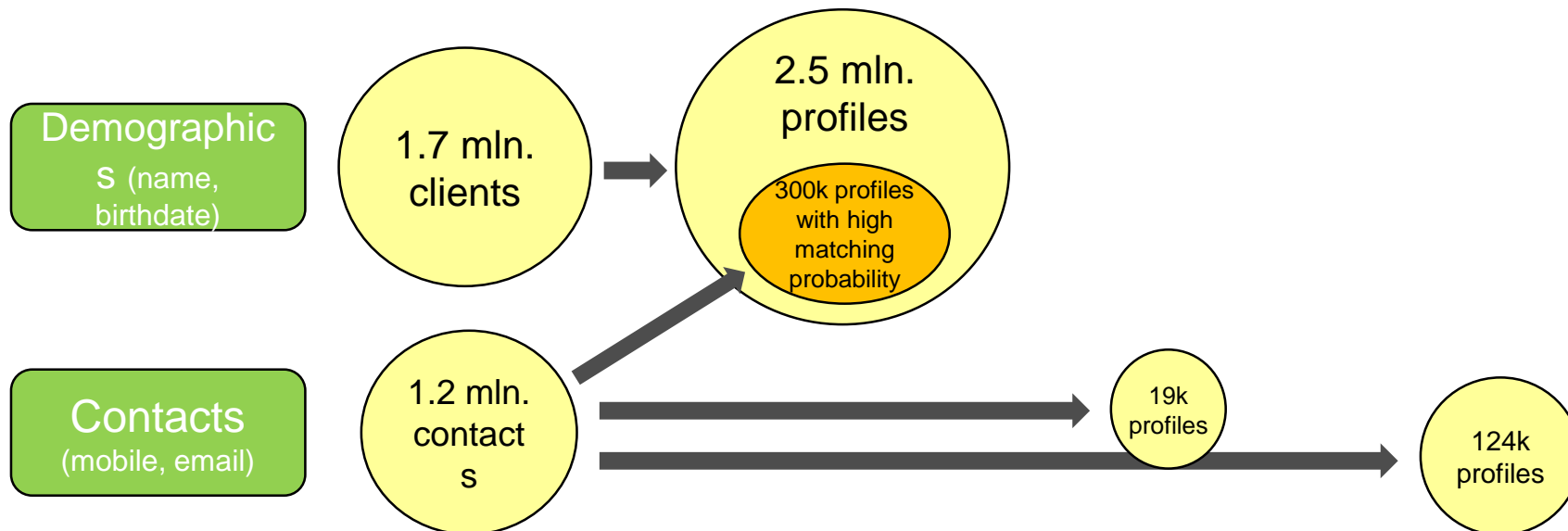
Profiles found by search criteria

Searching criteria

Available records quantity

| Vkontakte | Foursquare | Facebook |

Demographics (name, birthdate)

1.7 mln. clients

2.5 mln. profiles

300k profiles with high matching probability

Contacts (mobile, email)

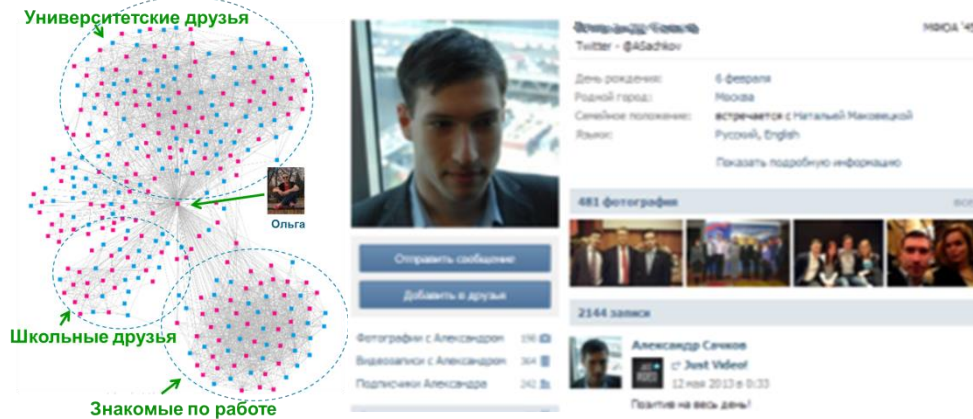1.2 mln. contacts

19k profiles
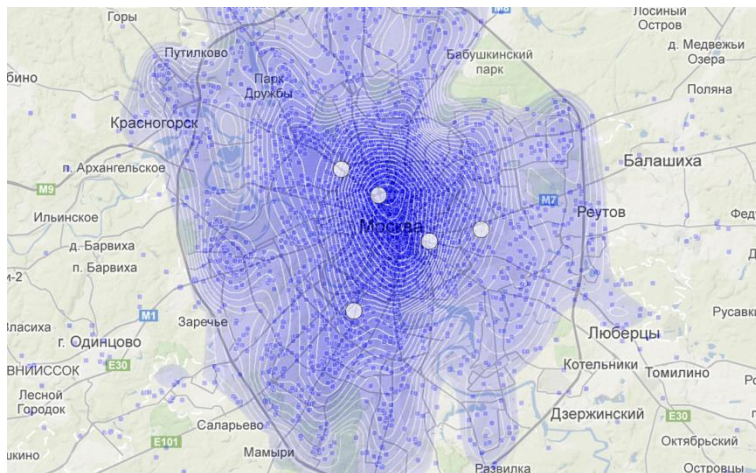
124k profiles

The Business Value of Big Data
A real example in Financial Services (2/2) – Outcomes
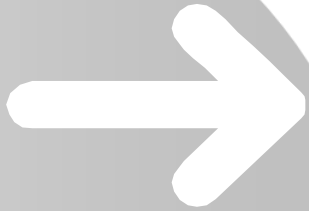
Opinion leaders

36 Opinion leaders among
Sberbank clients were identified

Average profile of Sberbank client in Foursquare

- Works in center, lives close to city border
- Most shopping is done near living place
- Use underground
- Prefer bars and cafés to restaurants
- Prefer sport entertainment to art
- Prefer parks within city bounds for recreation

Conclusions

- **Value of Big Data is undisputable** because it boost the ability of data to drive business outcomes aligned to the enterprise. This is exactly what clients are seeking.

- **Seek fact based approaches**, look and incorporate business use cases and data usage patterns to select the right fit-for-purpose technologies. This is done depending on needs.

- **Hybrid solution architectures provide tremendous valu**e**, but there are tradeoffs** in system integration and leveraging new technologies. Initiatives that plan to augment instead of using radical new approaches are appearing to have more success.

- **Enterprise Big Data investments based on looking at the size of the data maybe wrong**. Evaluate speed, variety, and other aspects.

- **Executing at an enterprise level to maximize the value of Big Data requires an aligned strategy**. Having an innovative mindset, a discipline of predictable delivery, and good partners are advantages