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IBM Smarter Analytics

Transform Big Data into Business Opportunity

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Four years ago, we started working with organizations to build a **smarter planet**.



Through thousands of client engagements, we learned that analytics is fundamental to success.

Since then, **analytics** has continued to evolve:

- From business initiative to business imperative
- From enterprise data to big data
- From advancing single organizations to transforming entire industries

“Data is the new Oil”

In its raw form, oil has little value. Once processed and refined, it helps power the world.



Forbes
.com

“Big Data has arrived at Seton Health Care Family, fortunately accompanied by an analytics tool that will help deal with the complexity of more than two million patient contacts a year...”

THE WALL STREET JOURNAL

“Companies are being inundated with data—from information on customer-buying habits to supply-chain efficiency. But many managers struggle to make sense of the numbers.”



“Data is the new oil.”
Clive Humby

The New York Times

“At the World Economic Forum last month in Davos, Switzerland, Big Data was a marquee topic. A report by the forum, “Big Data, Big Impact,” declared data a new class of economic asset, like currency or gold.



Forbes
.com

“...now Watson is being put to work digesting millions of pages of research, incorporating the best clinical practices and monitoring the outcomes to assist physicians in treating cancer patients.”



FT FINANCIAL TIMES
World business newspaper

“Increasingly, businesses are applying analytics to social media such as Facebook and Twitter, as well as to product review websites, to try to “understand where customers are, what makes them tick and what they want”, says Deepak Advani, who heads IBM’s predictive analytics group.”

Los Angeles Times

The Oscar Senti-meter — a tool developed by the L.A. Times, IBM and the USC Annenberg Innovation Lab — analyzes opinions about the Academy Awards race shared in millions of public messages on Twitter.”

Analytics is expanding from enterprise data to big data

Volume

12 terabytes

of Tweets create daily

Analyze product sentiment

Velocity

5 million

trade events per second

Identify potential fraud

Variety

100's video feeds

from surveillance cameras

Monitor events of interest

350 billion

meter readings per annum

Predict power consumption

500 million

call detail records per day

Prevent customer churn

80% data growth

are images, video, documents...

Improve customer satisfaction



83x

6,000,000 users on Twitter
pushing out **300,000**
tweets per day

500,000,000 users on Twitter
pushing out **400,000,000**
tweets per day

1333x

Today's big data challenges for both transactions and analytics are increasing demands on data systems

Mobile

Commerce

Social

Analytics

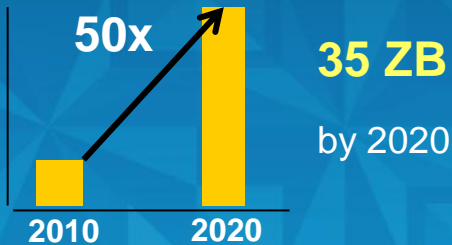
Big Data

Cloud

Increasing

Volume of data

requires growing capacity



Increasing

Velocity of data

requires higher performance



Millions of transactions per second

Telco subscriber activity logging

Increasing

Variety of data

requires new techniques



Billions of devices & sensors

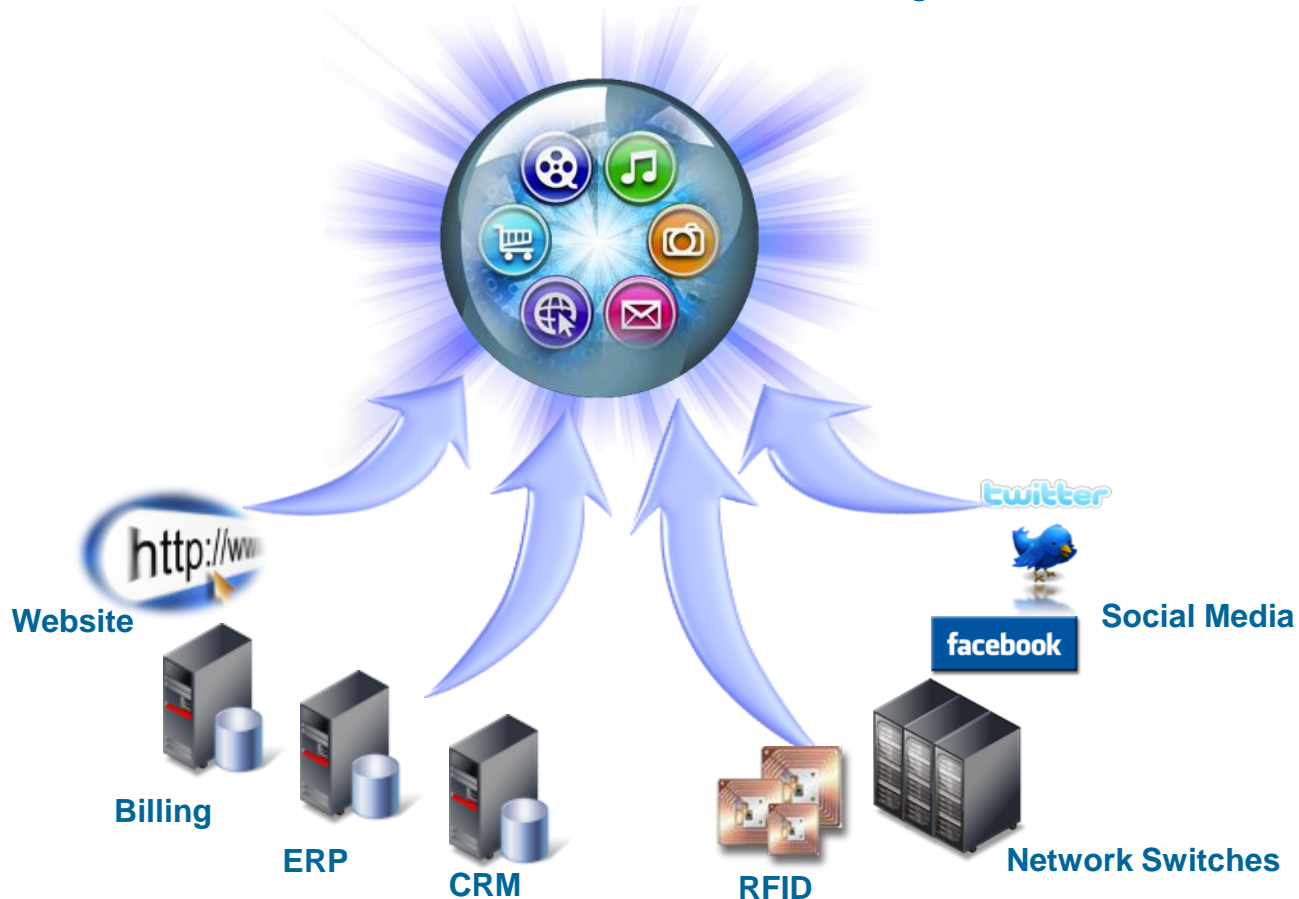
Smart Meters, RFIDs, GPS...

A smarter approach to meeting data challenges is required to:

Reduce complexity ■ **Accelerate time to value** ■ **Improve IT economics**

Big Data is a Hot Topic Because Technology Makes it Possible to Analyze ALL Available Data

Cost effectively manage and analyze
all available data in its native form
unstructured, structured, streaming



In Order to Realize New Opportunities, Customers Need to Think Beyond Traditional Sources of Data

Transactional and Application Data



- Volume
- Structured
- Throughput

Machine Data



- Velocity
- Semi-structured
- Ingestion

Social Data



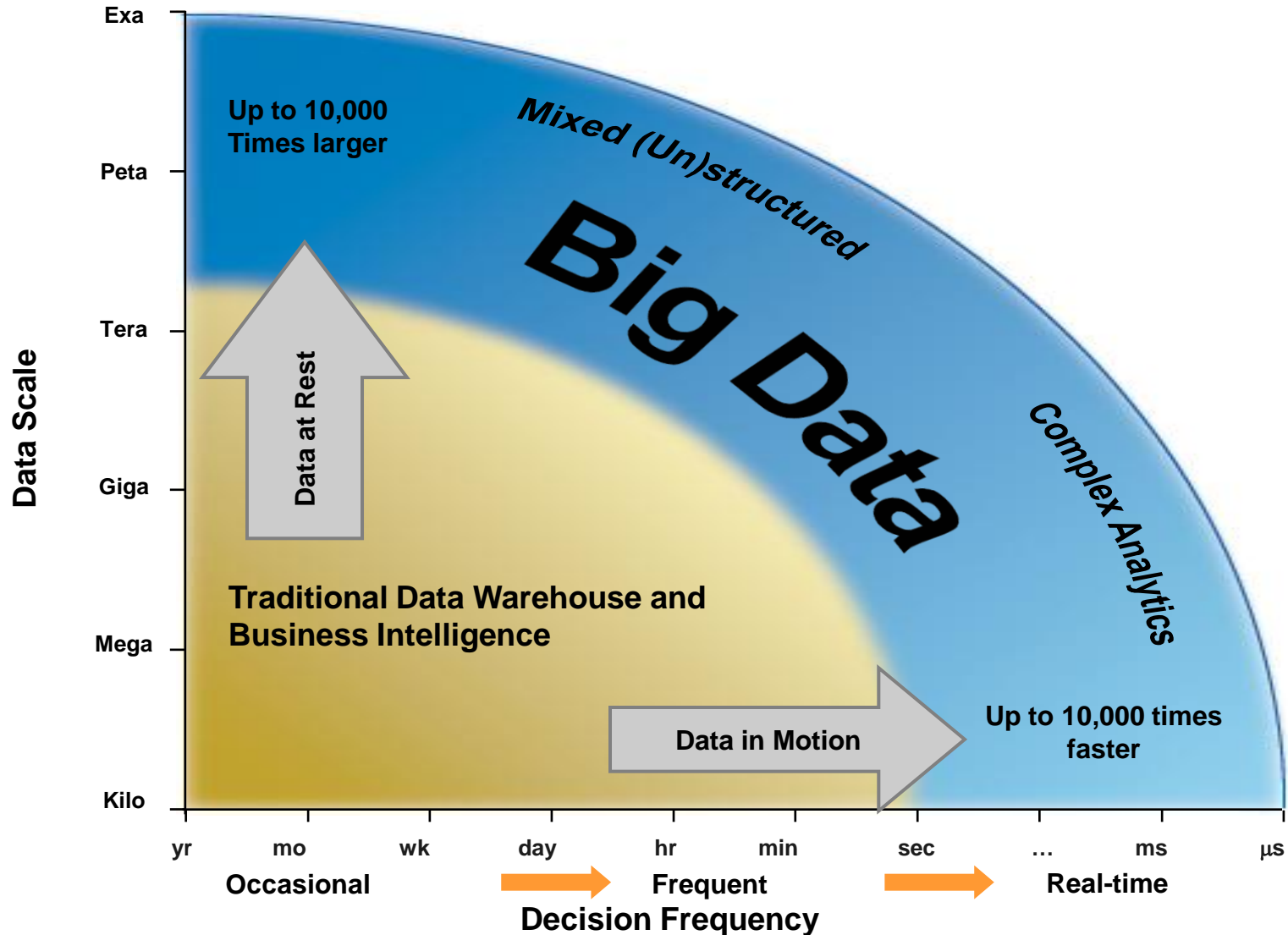
- Variety
- Highly unstructured
- Veracity

Enterprise Content

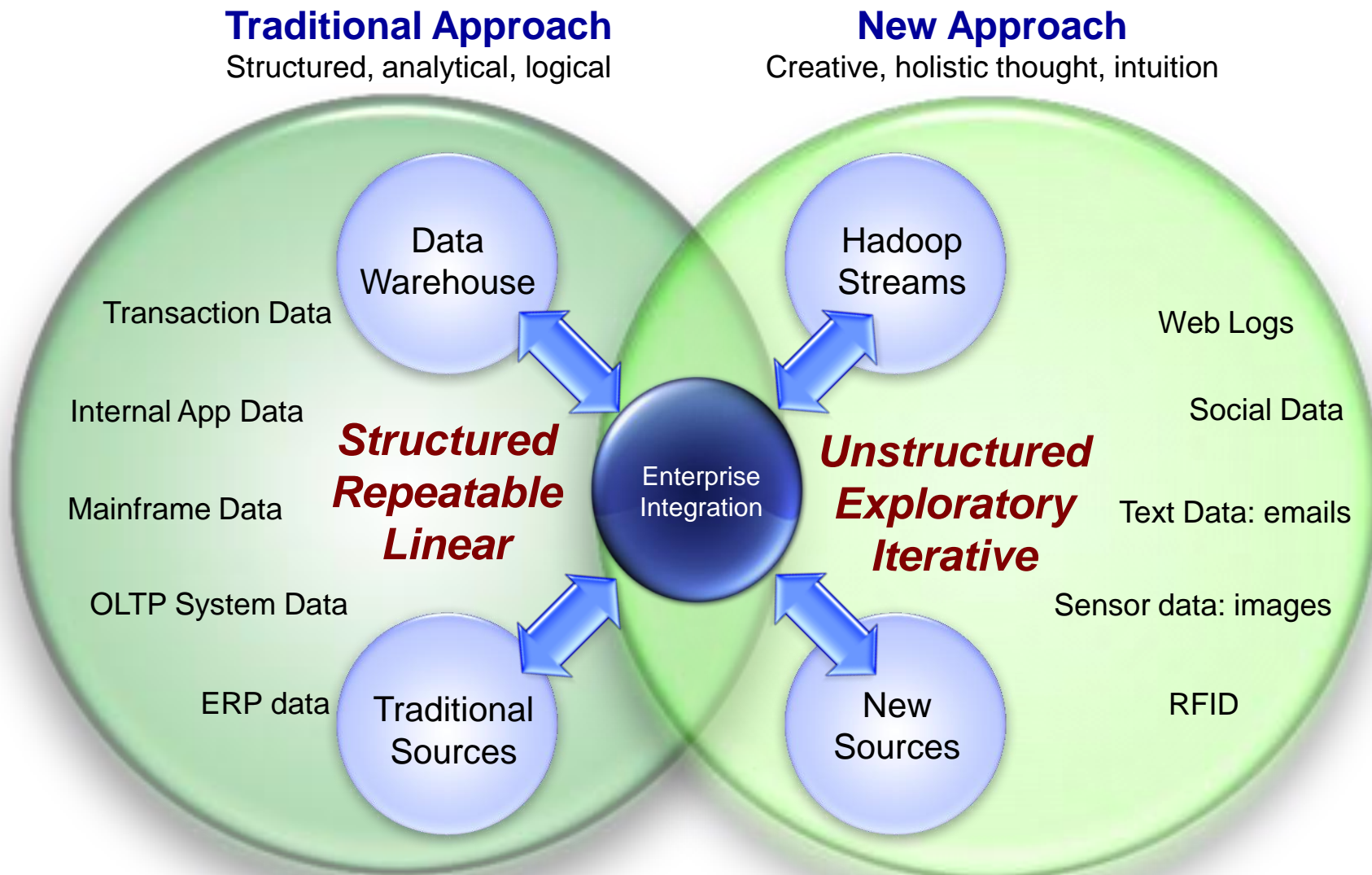


- Variety
- Highly unstructured
- Volume

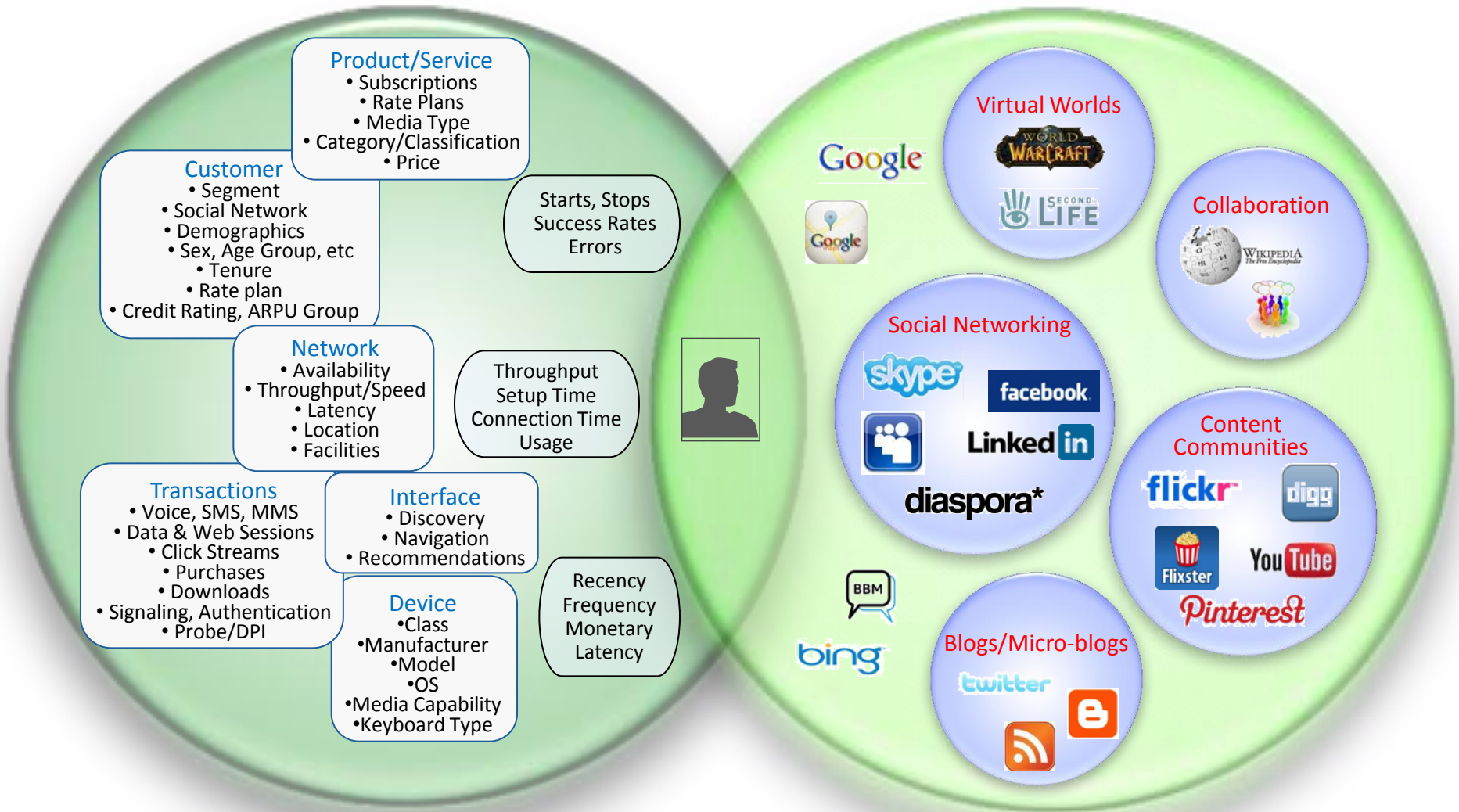
Big Data: New Opportunities Need New Analytics



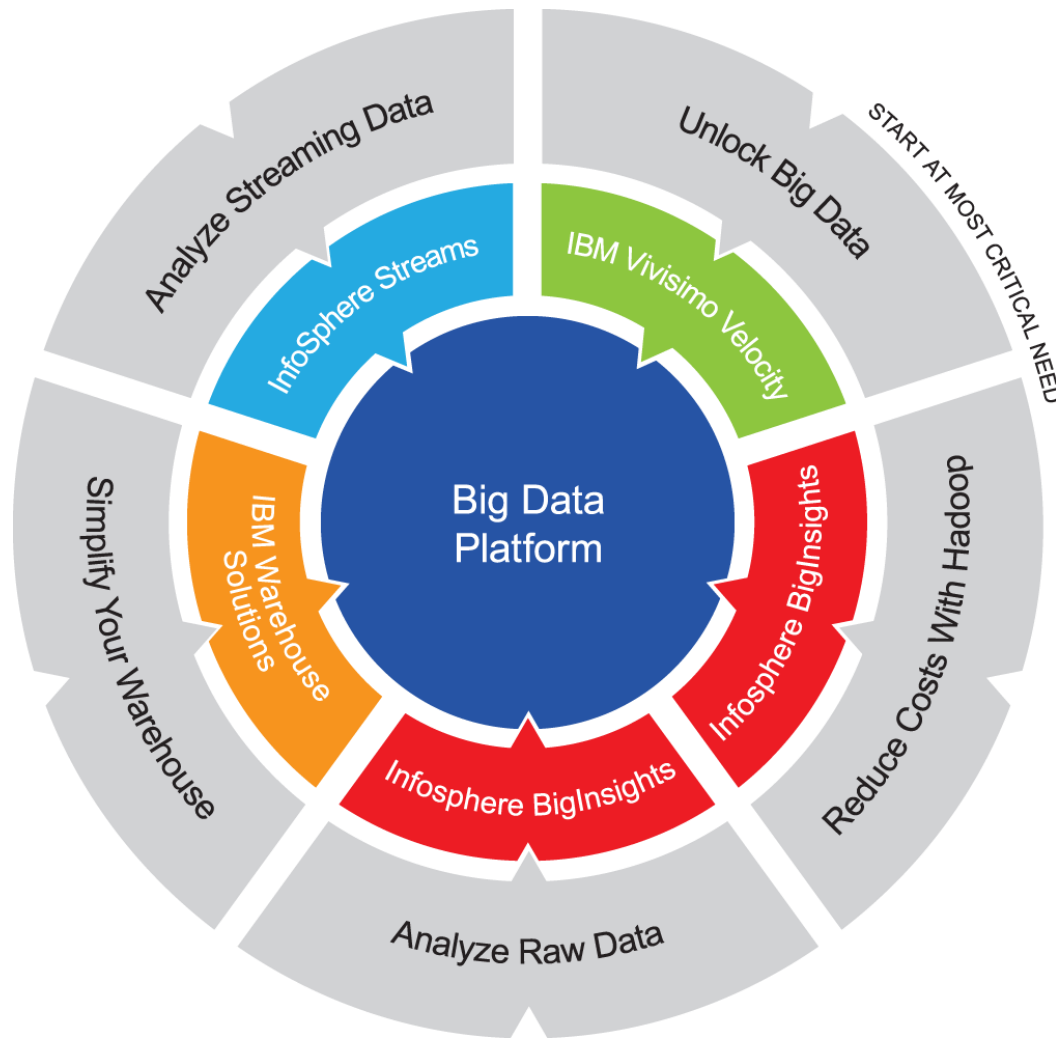
Complementary Approaches for Different Use Cases



Example Communications: One Customer – Two Worlds



Business-centric Big Data enables you to start with a critical business pain and expand the foundation for future requirements



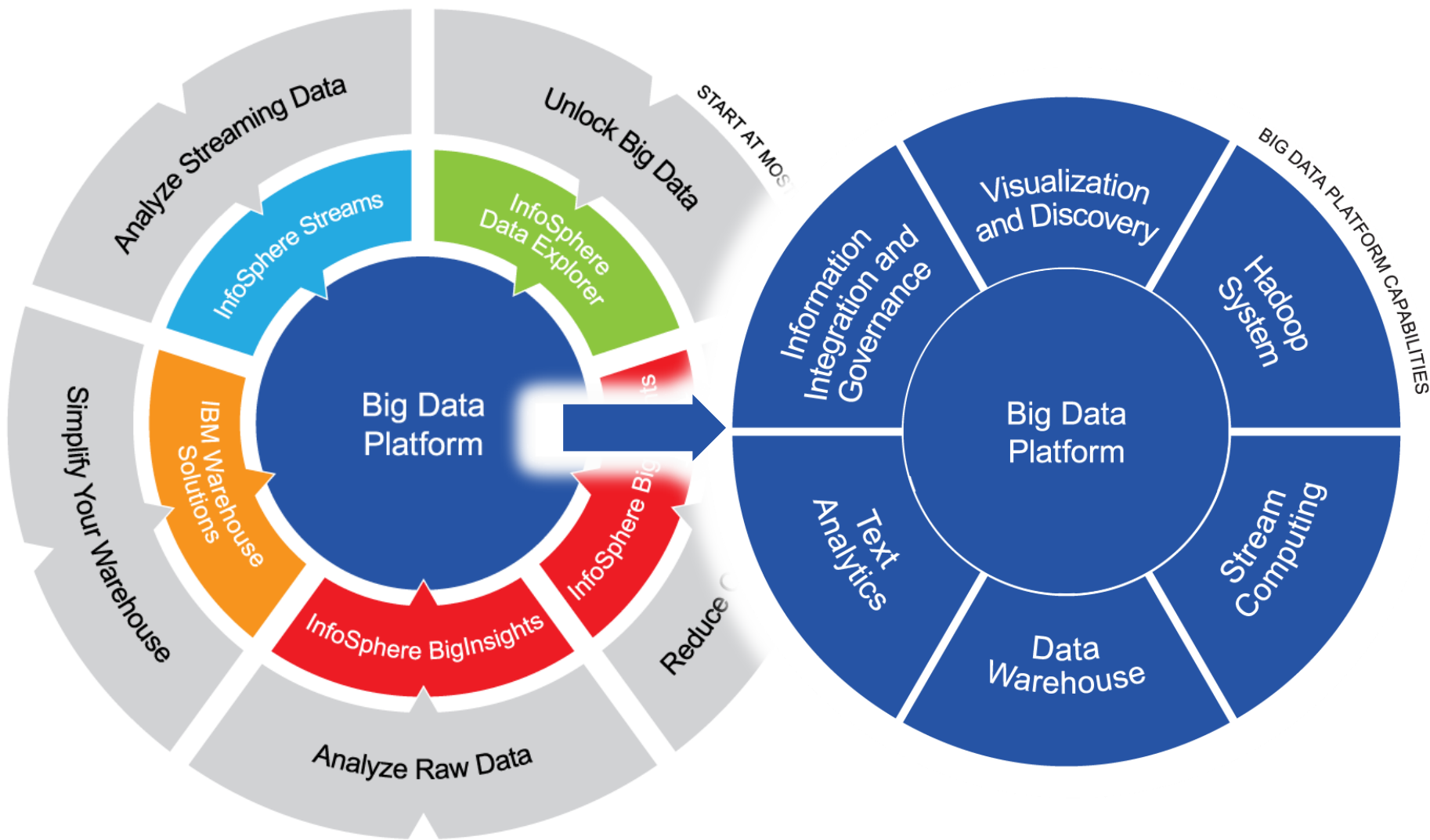
“Big data” isn’t just a technology—it’s a business strategy for capitalizing on information resources

Getting started is crucial

Success at each entry point is accelerated by products within the Big Data platform

Build the foundation for future requirements by expanding further into the big data platform

Expand with the Big Data Platform for future needs



A New Era of Analytics Delivers Cross-Enterprise Value

Network Operations

...identify network bottlenecks in real-time for faster resolution

Customer Service Representatives

...offer personalized price promotions to different customer segments in real-time



External Data

Executive Leaders

...get real-time reports and analysis based on data inside as well as outside the enterprise (web, social media etc.)

Business Analysts

... analyze social media buzz for the new services/offerings to gauge initial success and any course correction needed

Finance

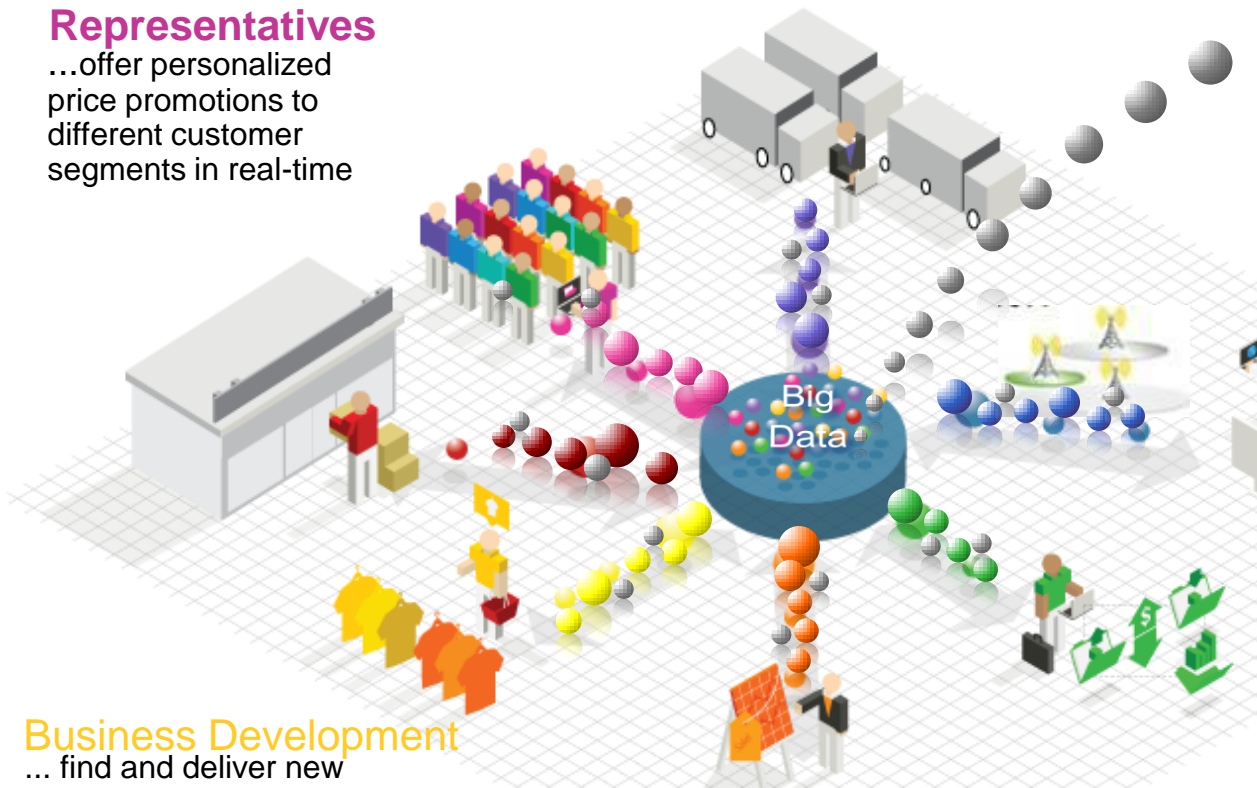
...analyze all Call Detail Records (CDRs) to identify and reduce revenue leakage due to unbilled / underbilled CDRs

Marketing

... analyze subscriber usage pattern in real-time and combine that with the profile for delivering promotional or retention offers

Business Development

... find and deliver new mechanisms to monetize network traffic and partner with upstream content providers





Vestas optimizes capital investments based on 2.5 Petabytes of information.

- Model the weather to optimize placement of turbines, maximizing power generation and longevity.
- Reduce time required to identify placement of turbine from weeks to hours.
- Incorporate 2.5 PB of structured and semi-structured information flows. Data volume expected to grow to 6 PB.



University of Ontario Institute of Technology (UOIT) Detects Neonatal Patient Symptoms Sooner

Capabilities Utilized:

Stream Computing

Performing real-time analytics using physiological data from neonatal babies

Continuously correlates data from medical monitors to detect subtle changes and alert hospital staff sooner

Early warning gives caregivers the ability to proactively deal with complications

Significant benefits:

Helps detect life threatening conditions up to 24 hours sooner

Lower morbidity and improved patient care

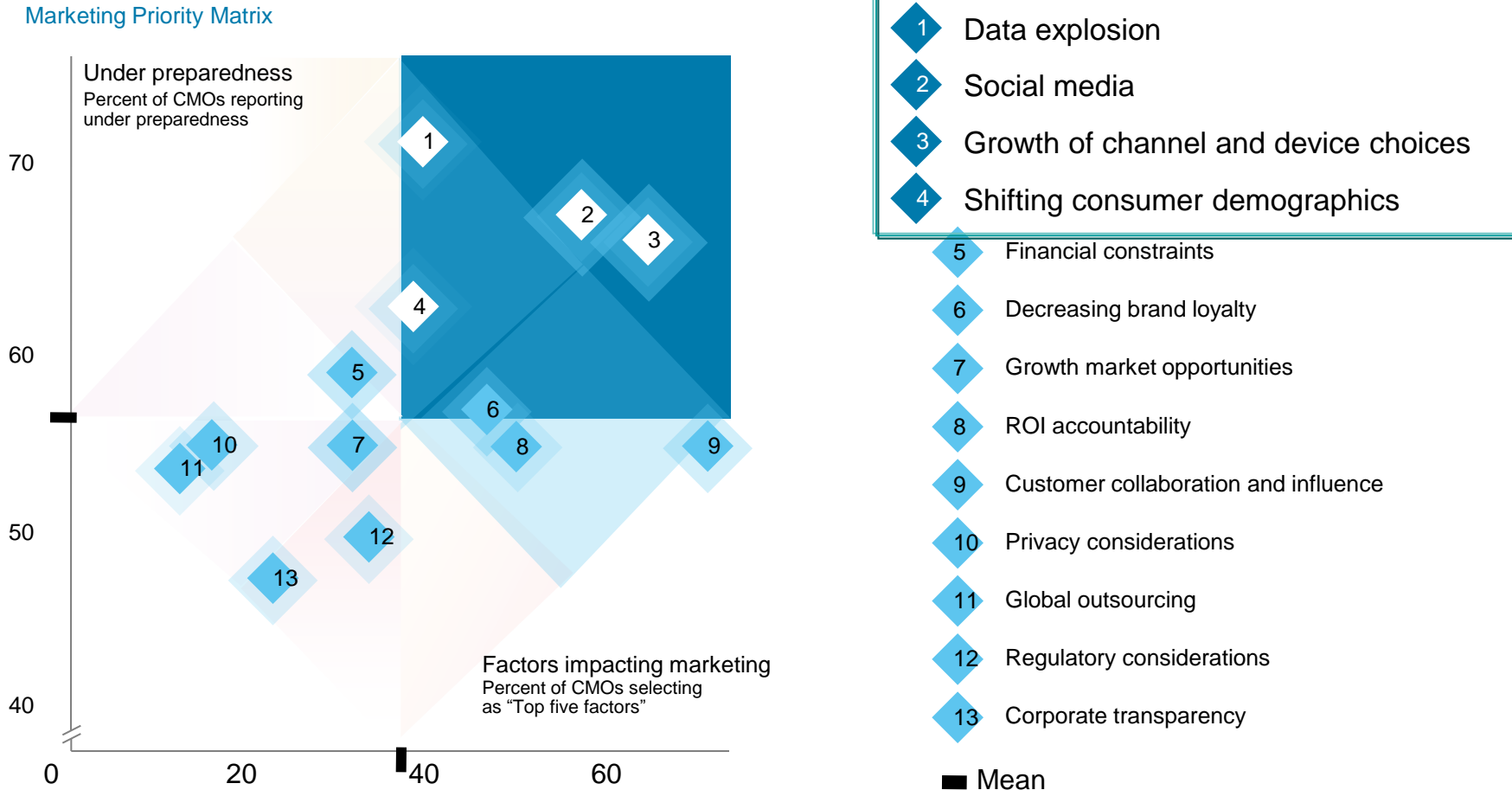
“Helps detect life threatening conditions up to 24 hours sooner”



Key Challenges for CMOs

IBM CMO Study:

CMOs are underprepared in the critical areas required for relationship deepening



Source: Oct 2011 CMO Study

Q7 Which of the following market factors will have the most impact on your marketing organization over the next 3 to 5 years? n1=1733; Q8 How prepared are you to manage the impact of the top 5 market factors that will have the most impact on your marketing organization over the next 3 to 5 years? n2=149 to 1141 (n2 = number of respondents who selected the factor as important in Q7)

Objectives

Needed Capabilities

1 Single view of customer



Consolidation



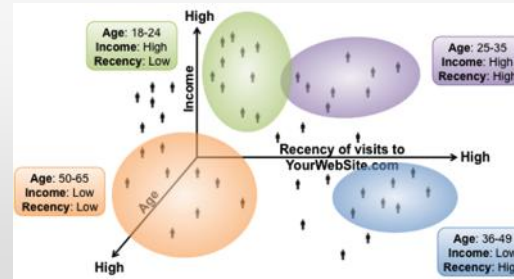
Clickstream
Transactions
Events
CRM
Support calls

All in one place

2 Increased Targeting Precision



Segmentation



Clustering
Scoring
Feature Selection
Associations

3 Improved Relevance



Matching

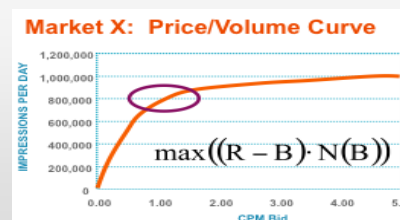


Personalized message
Matching algorithms
Matrix computations
Single Value Decomp.

4 Higher campaign profitability



Optimization



Forecasting
Predictive algorithms
Decision trees
Linear Regression

Social Media Analytics, Engagement and Monetization Cycle

Web Analytics



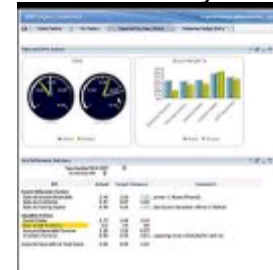
- Measure and Track Online Audience
- Measure contribution from social sources
- Segment audience by psychographics

Social Media Analytics

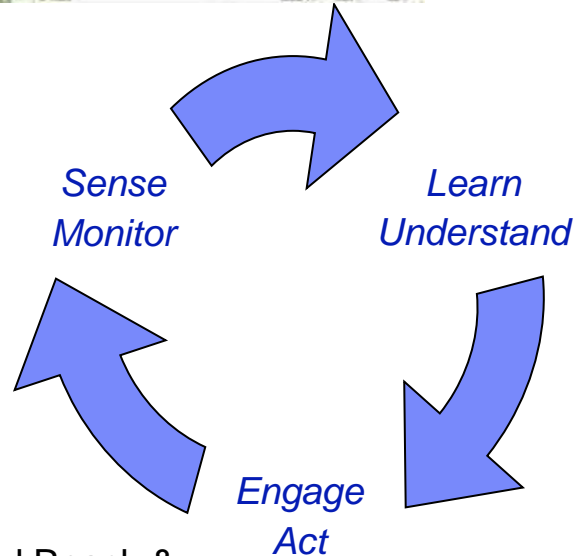


- Capture blogs, message-boards, social media sites and news feeds
- Extract concepts and sentiment
- Affinity Analysis
- Detect Evolving Topics

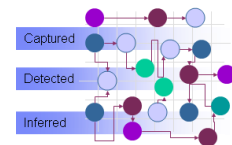
Advertiser Sales Analytics



- Impact of social media on ad impressions
- Impact of social media on ad effectiveness
- Analysis of ad impressions by customer segment



Prediction & Segmentation



- Enhanced audience segments and LTV
- Correlate sales, survey web traffic and social media data
- Leader identification
- Predictive content recommendations

Extend Reach & Enhance Monetization




- Targeted communications to loyal audiences
- Deploy content recommendations
- Targeted outreach to communities to extend audiences
- Sales-consumable 'sound-bites'
- Premium pricing for ads on socially-recommended content

Becoming a Big Data Marketer – it is a race



- Chief Marketers have assumed a powerful new role with Big Data – their guidance and insights will form the basis of strategic decision making over the next decade
- The future of marketing is all about the customer. What is your customer's next move?
- There is a 12- to 36-month window to become a “Big Data marketer”. It's not just about achieving marketing excellence but you run the risk of competitors getting ahead
- Turn Big Data into your Big Competitive Advantage and generate Big ROI

EXPERIMENTATION WITH BIG DATA IS MORE AND MORE PREVALENT. EXPLORING BIG DATA TO FIND PATTERNS TO MAKE BETTER DECISIONS IS THE NEW NORM.



Ufone reduced churn and kept subscribers happy, helping ensure that campaigns are highly effective and timely

Capabilities Utilized:

*Cognos BI, SPSS
InfoSphere Streams
Unica*

Need

- To ensure that its marketing campaigns targeted the right customers, before they left the network
- Keep its higher usage customers happy with campaigns offering services and plans that were right for them

Benefits

- Increased annual revenues by 30 percent and annual profits by USD 7 million
- Decreased time required to compile sales tax data by 98 percent



THINK

BIG

BIG