IBM Connected 2013

Her Deneyim Bir Kazanım

#connected

An increasingly sensor-enabled and instrumented business environment generates **HUGE** volumes of data with **MACHINE SPEED** characteristics…

1 **BILLION** lines of code

EACH engine generating 10 TB every 30 minutes!

Automatic Temporal and Spatially Enriched Data

83x

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

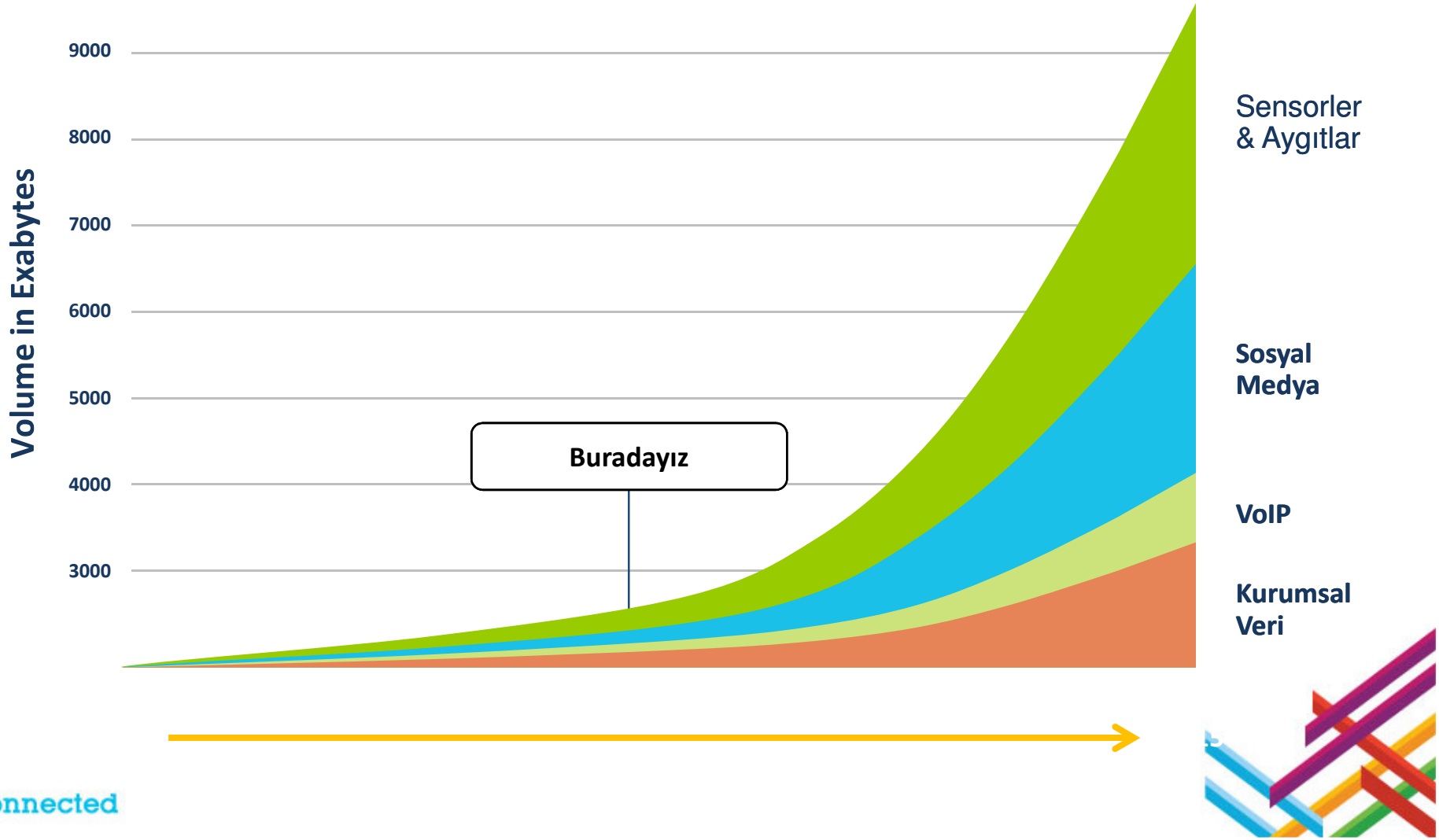
500,000,000 users on Twitter
pushing out **400,000,000**
tweets per day

1333x

	**Google stopped reporting how much data they store in 2010 SEC filing: at that time they were 100 PBs**
	**YouTube is an Exabyte (1M TBs) scale repository** •72+ hrs of video uploaded every minute to YouTube •YouTube is the second most used search engine next to Google •Last filing showed 768+ PBs, 3-4 years ago: clearly bigger than an Exabyte
	**Facebook crossed a billion users in August 2012** •The world's population crossed 7B in the last year: 1/6th of the world's population is on Facebook •35% of the world's photography is estimated to be put on Facebook
	**Twitter is about 124 billion tweets a year, average 4500 tps**
	**Global text messaging is about 193,000 texts/second**
	**US Cell calls: 2.2 trillion minutes a year; 19 mins/day/person** •Uncompressed this is a YouTube year

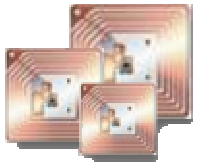
Big Data: Bu sadece başlangıç

Veri büyüklüklerinin belirsizliği ve karmaşıklığı gittikçe büyüyor..



Explosion in data and real world events

1.3 billion RFID tags in 2005
30 billion RFID tags today



1 trillion devices are connected to the Internet

76 million smart meters in 2009 … 200M by 2014

4.6 billion camera phones world wide

The information base of the world doubles every 11 hours

80% of world's information is unstructured content

twitter

Twitter processes 12+ terabytes of data every day

facebook

25+ terabytes of log data every day

The volume, variety, and velocity of data is growing at an unprecedented rate.

How did we get here?

Diner's Club
1950: with 200 members

Cellphone
More powerful than computers used for Apollo mission

An Explosion of Bandwidth and Computational Power

95% of Fortune1000 use IMS
50B transactions/day

Moore's Law
Computers: millions of times faster

Big Data is the Next Natural Resource

Characteristics of Big Data

Volume

Data at scale

Terabytes to petabytes of data

Variety

Data in many forms

Structured, unstructured, text, multimedia

Velocity

Every 60 seconds

- **98,000+** tweets
- **695,000** status updates
- **11million** instant messages
- **698,445** Google searches
- **168 million+** emails sent
- **1,820TB** of data created
- **217** new mobile web users

Veracity

Addressing uncertainty

Managing the reliability and predictability of inherently imprecise data types

InfoSphere Streams

R&D 100 2010

Velocity IS the game changer: It's NOT just how fast data is produced or changed, BUT the speed at which it must be received, understood, and processed.

IBM

VENTANA RESEARCH

2013 Technology Innovation Awards

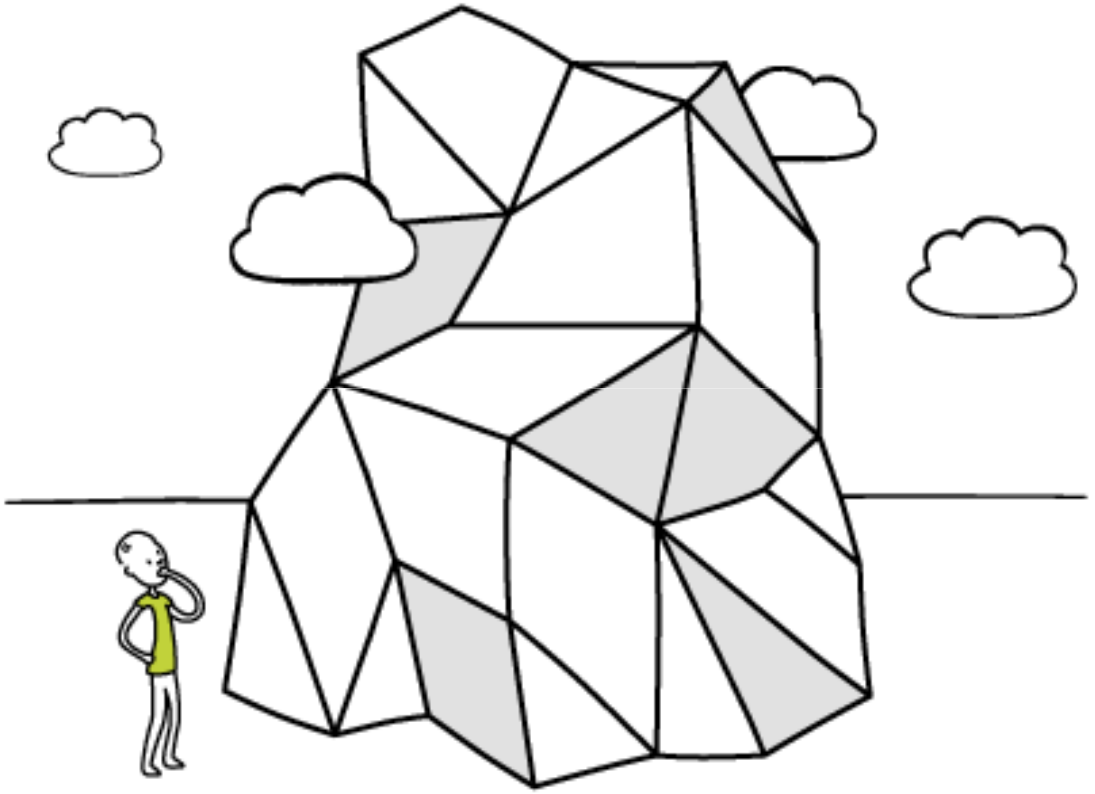
Operational Intelligence (OI)

- **Don’t get bogged down by Big Data**

Big data is massive and messy, and it’s coming at you fast. These characteristics pose a problem for data storage and processing, but focusing on these factors has resulted in a lot navel-gazing and an unnecessary emphasis on technology.

- **It’s not about Data. It’s about Insight and Impact**

The potential of Big Data is in its ability to solve business problems and provide new business opportunities. So to get the most from your Big Data investments, focus on the questions you’d love to answer for your business. This simple shift can transform your perspective, changing big data from a technological problem to a business solution.



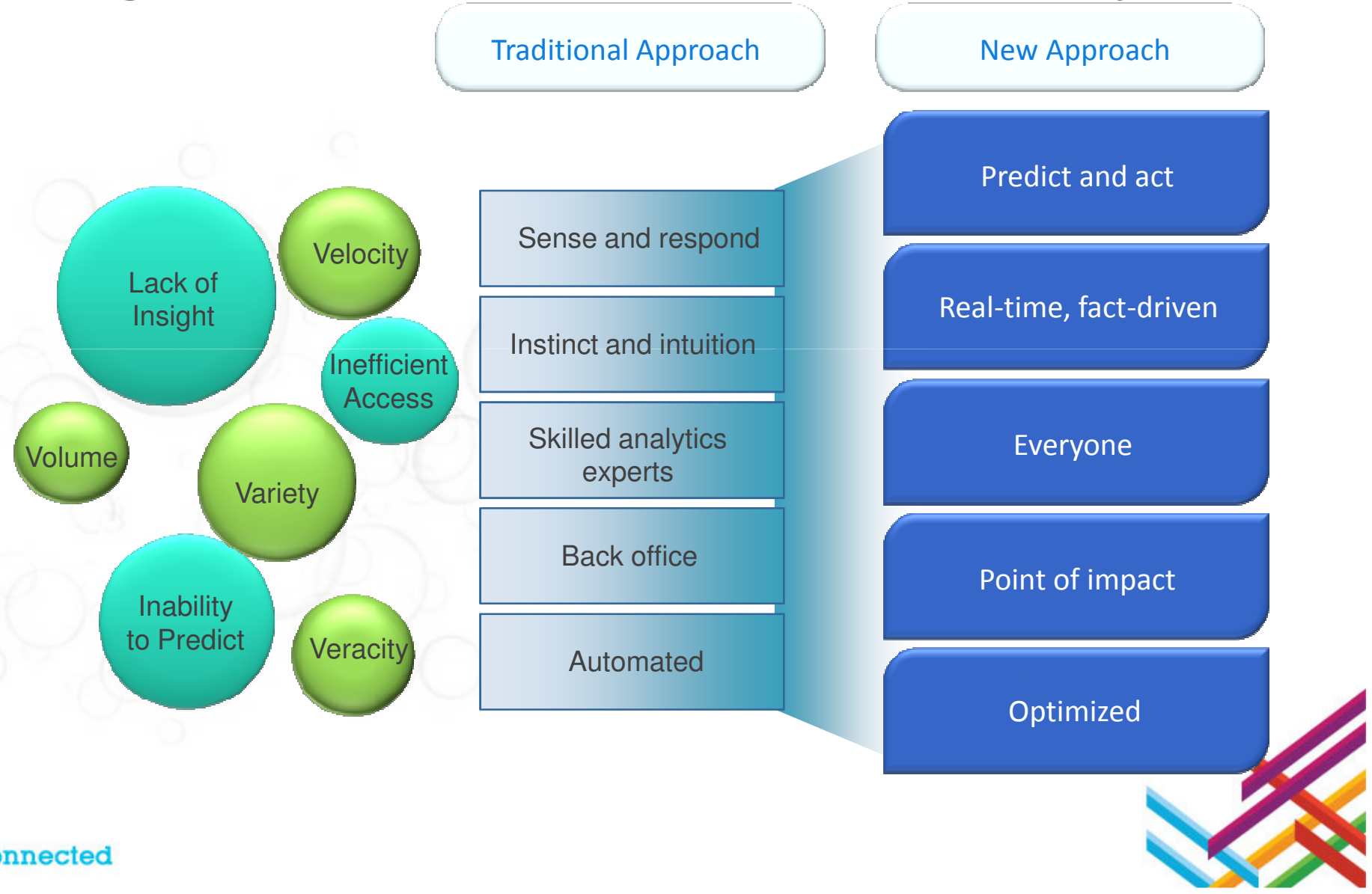
Five key findings highlighted in the 2012 Big Data Study

1	Customer analytics are driving Big Data initiatives
2	Big Data is dependent upon a scalable and extensible information foundation.
3	Initial Big Data efforts are focused on gaining insights from existing and new sources of internal data
4	Big Data requires strong analytic capabilities.
5	The emerging pattern of Big Data adoption is focused upon delivering measurable business value

Source: Analytics: The real-world use of Big Data, a collaborative research study by the IBM Institute for Business Value and the Saïd Business School at the University of Oxford. © IBM 2012.

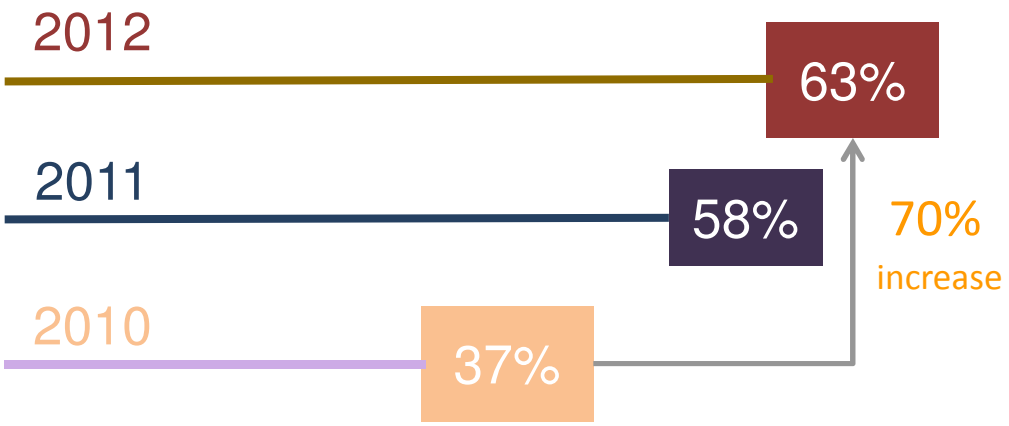
	Big Data	Big Data Analytics
Andy Pulkstenis Director- Analytics *State Farm*	*"It means different things to different people"*	*"Ah – now that does mean something…data sources get bigger…classical techniques may not work so well"*
Dr. Michael Berry Prof- *EE & CSc* U of Tenn	*"Never having enough ram…never having the complete set"*	*"Being able to find needles in a haystack in orders of magnitude…but it makes the problem harder, not easier"*
Jim Head EVP - Analytics *BBDO*	*"A level of complexity in data that we are simply unaccustomed to seeing"*	*"Traditional inferences are no longer estimated, they are observed"*

Organizations Need Smarter Analytics



Achieving a Competitive Advantage from Information and Analytics

Realizing a competitive advantage



Respondents were asked "To what extent does the use of information (including Big Data) and analytics create a competitive advantage for your organization in your industry or market." Respondent percentages shown are for those who rated the extent a [4] or [5 Significant extent]. The same question has been asked each year.

2010 and 2011 datasets © Massachusetts Institute of Technology

Total respondents n = 1144

Source: Analytics: The real-world use of Big Data, a collaborative research study by the IBM Institute for Business Value and the Saïd Business School at the University of Oxford. © IBM 2012.

When the Unaffordable becomes Affordable… the Impossible becomes Possible

- **Increasing abundance of automated consumer-facing service opportunities gives us the data to know more about an entity than ever before**
  - BUT ironically, we know less (think local banking branch)

- **Ironically, with all this information, businesses still don't have a 360o view of an entity's presence across its ecosystem…**
  - Makes it hard to calculate a loyalty index, conduct root cause analytics, +++

The Death of the Average: Client D.N.A

Service Profile:
Current Handset = RealPhone
Next Upgrade = March 2013
Data Plan = Unlimited Domestic
Features = Basic

Usage Data Summary (3 mos):
80% of calls out-of-network
Made 3 calls to a competitor call center
5 streaming video events per day
Heavily uses smartphone app
Data roamed in Japan 6 times

Customer Insights:
Customer Seg = SME
Customer Value = High
Influencer Score = Moderate
Churn Risk = Mod/High
Loyalty Member = No

Billing Profile:
Average Bill = $200 per mo
Pays by autopay

Preference:
Movies & video
Sports
International Travel
Social Media (Facebook)

Customer Profile:
Gender = Male
Marital = Married
Children = No
Income = Upper/Mid Tier
Language = English

D.N.A. Engineered Next Best Action

Action	Impact on Churn	Impact on Customer Lifetime Value	Likelihood to respond positively to action
$20 off this month's bill			
Deliver an apology — Issue with cell tower being fixed this weekend			
6 months free unlimited data plan			
Upgrade phone			

Connect the Dots: Real Time Web Behaviors

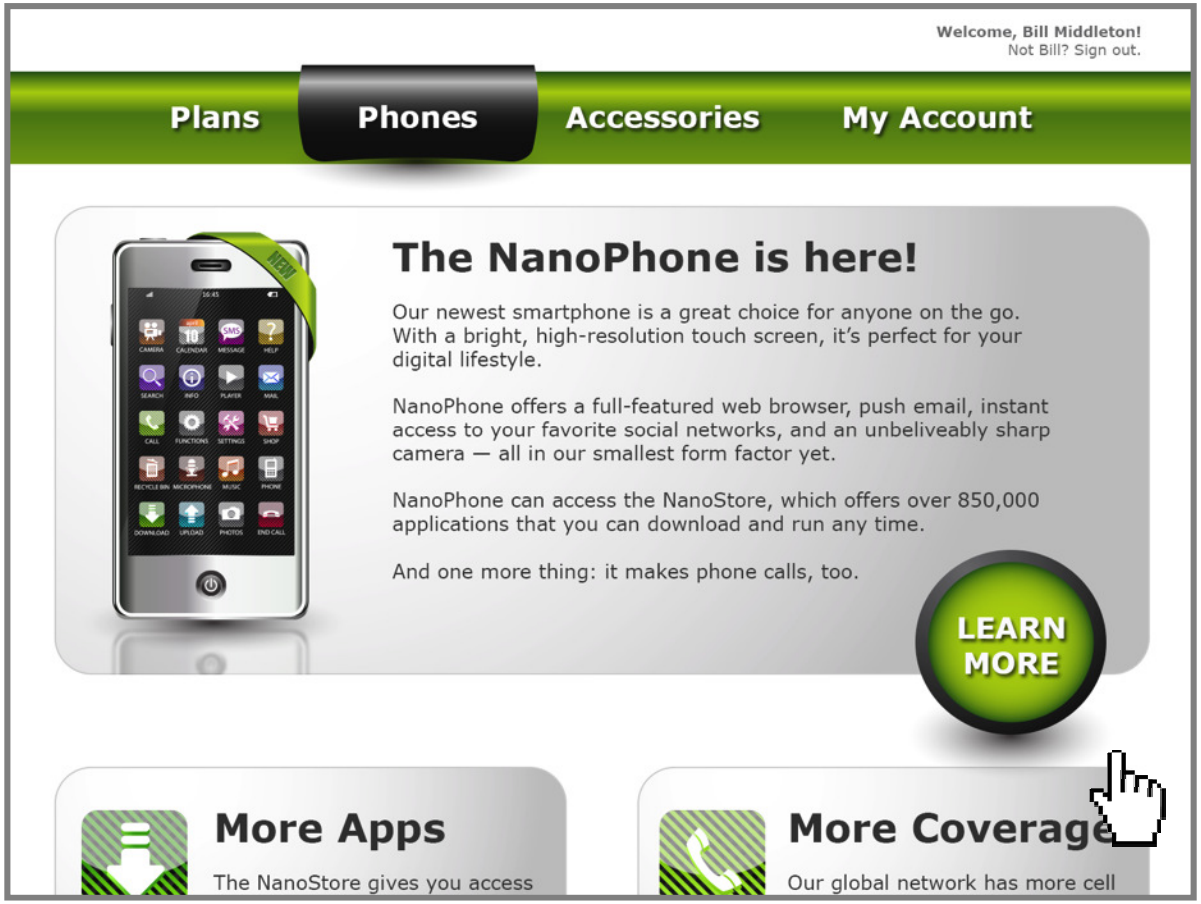
Audience and ID:
Bill Middleton, 1234567

Products of Interest:
NanoPhone

Product Education: 20

Likelihood to Purchase: 20

Churn Risk: 65



Connect the Dots: Real Time Web Behaviors

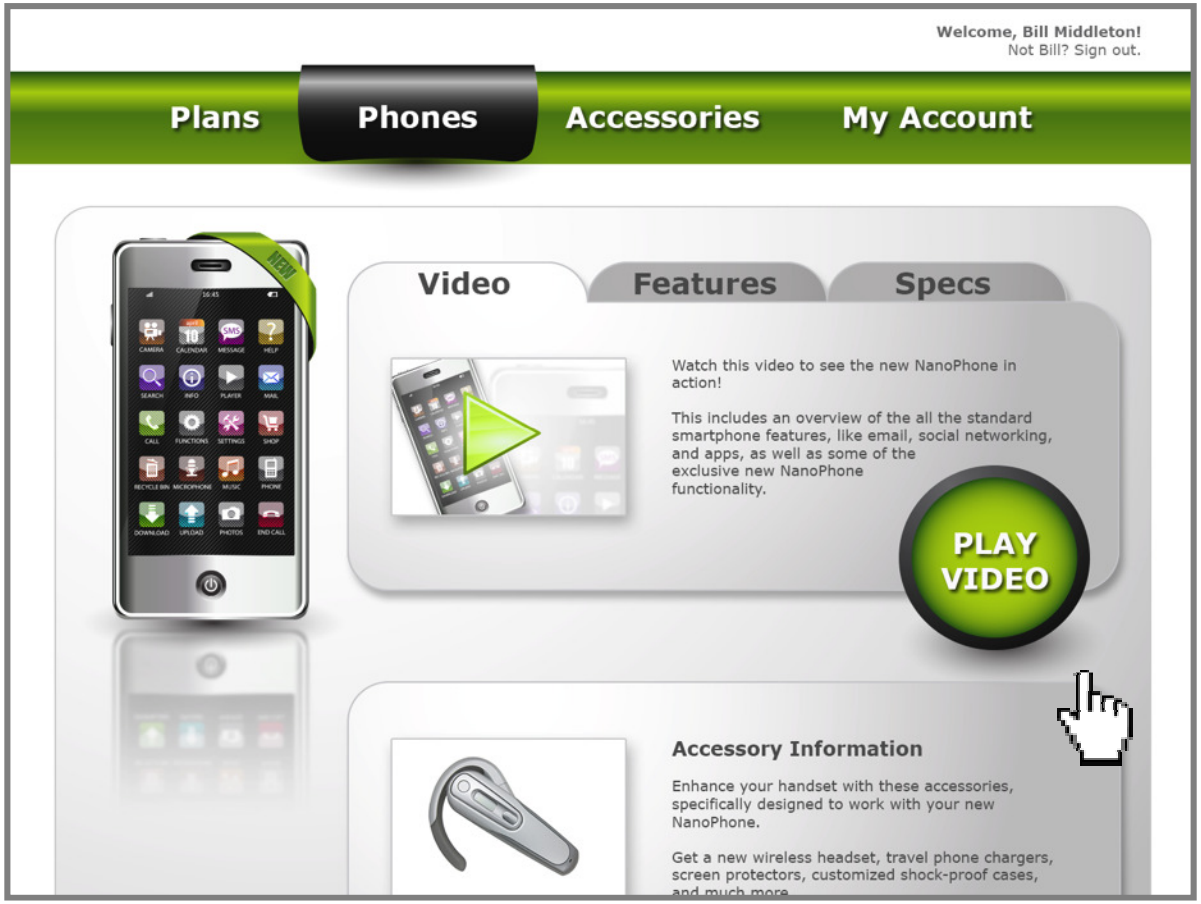
Audience and ID:
Bill Middleton, 1234567

Products of Interest:
NanoPhone

Product Education: 80

Likelihood to Purchase: 80

Churn Risk: 65



Connect the Dots: Real Time Web Behaviors

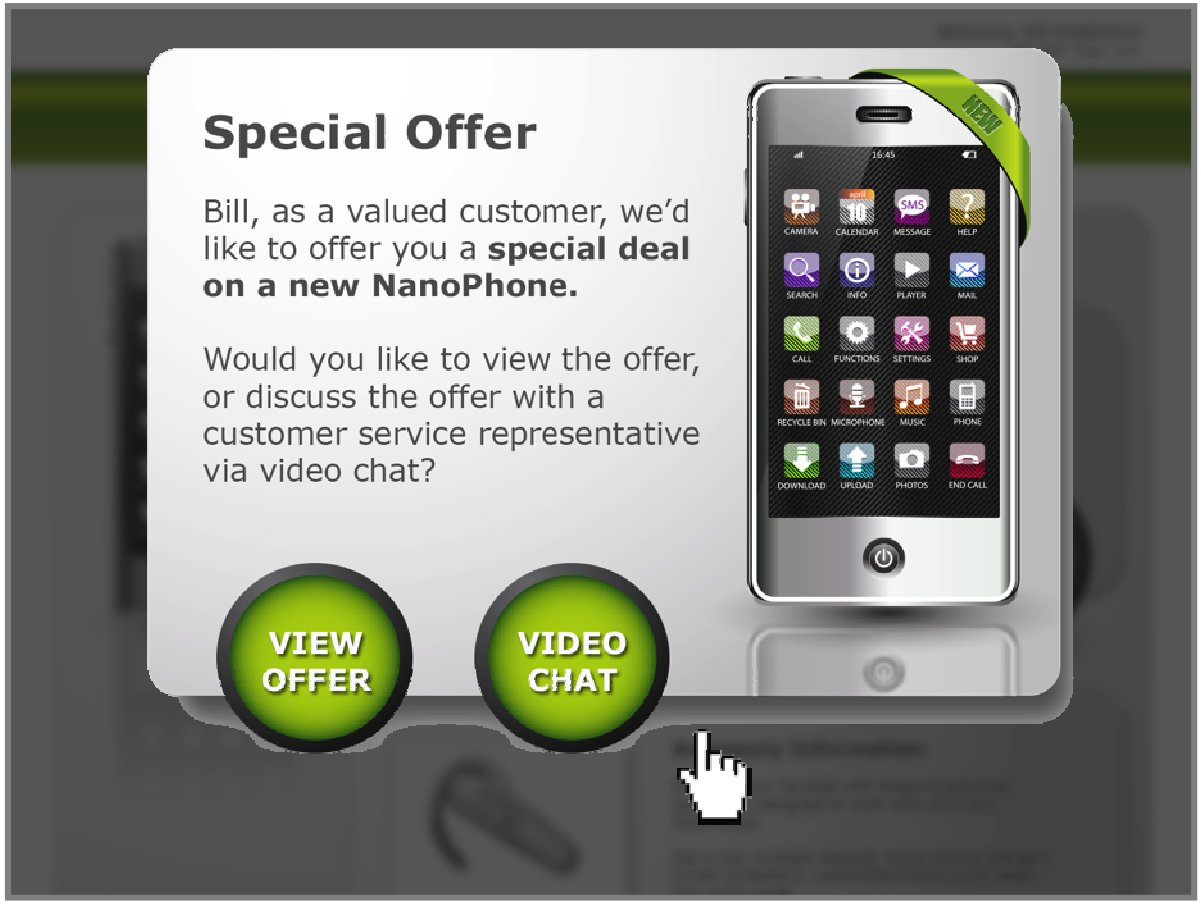
Audience and ID:
Bill Middleton, 1234567

Products of Interest:
NanoPhone

Product Education: 60

Likelihood to Purchase: 65

Churn Risk: 65



Big Data CSR Dashboard of the Future

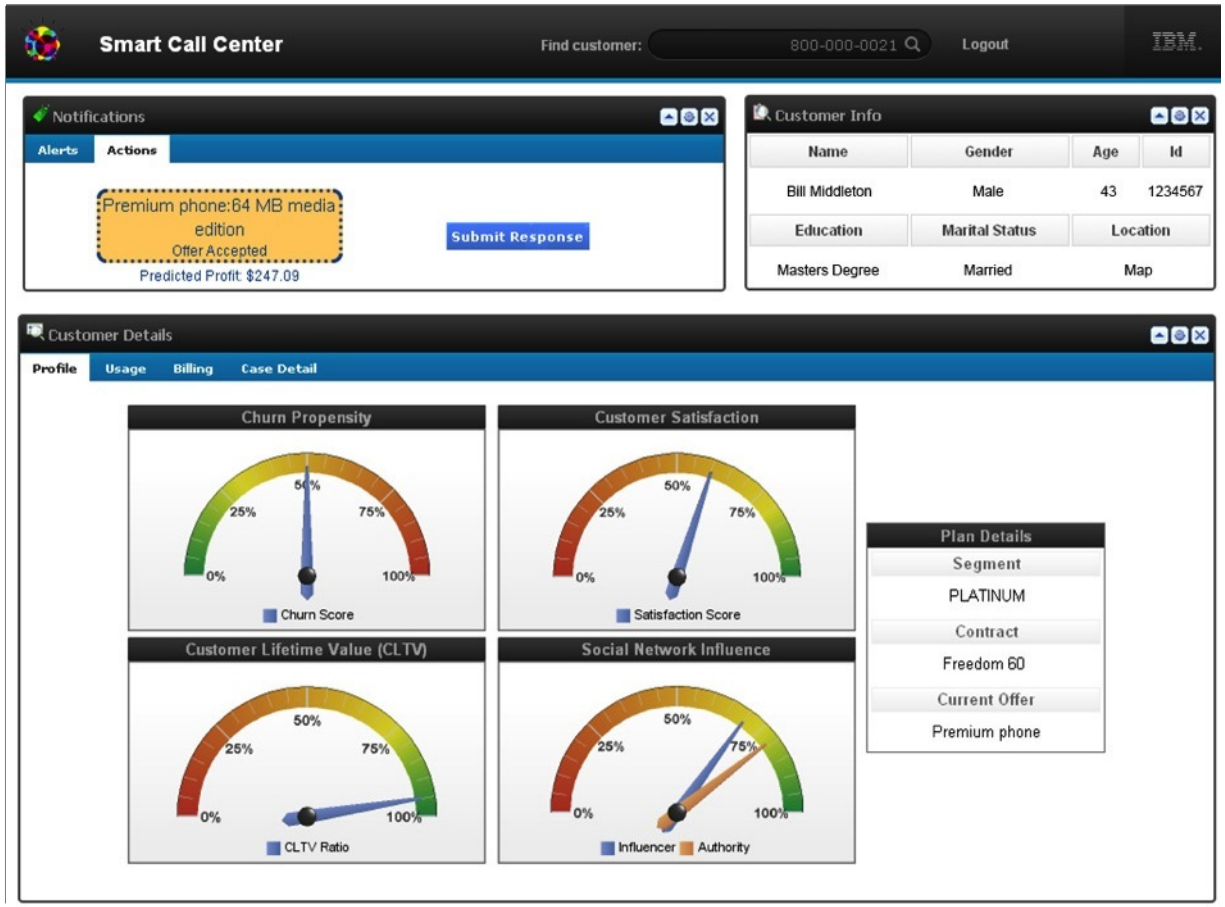
Audience and ID:
Bill Middleton, 1234567

Products of Interest:
NanoPhone

Product Education: 60

Likelihood to Purchase: 65

Churn Risk: 65



From Transactions to Interactions

Service Profile:
Current Handset = uPhone
Next Upgrade = March 2014
Data Plan = International Roam
Features = Custom

Customer Insights:
Customer Seg = SME
Customer Value = High
Influencer Score = High
Churn Risk = Low
Loyalty Member = Yes

Preference:
Movies & video
Sports
International Travel
Social Media (Facebook)

Usage Data Summary (3 mos):
80% of calls out-of-network
Made 3 calls to a competitor call center
5 streaming video events per day
Heavily uses smartphone app
Data roamed in Japan 6 times

Billing Profile:
Average Bill = $200 per mo
Pays by autopay

Customer Profile:
Gender = Male
Marital = Married
Children = No
Income = Upper/Mid Tier
Language = English

You Need a Platform to Build Out a Customer's D.N.A.

Step 1: Lay out a Governance Policy and Integrate– It's Data After All!

Step 2: Discovery of Big Data Asset You Have

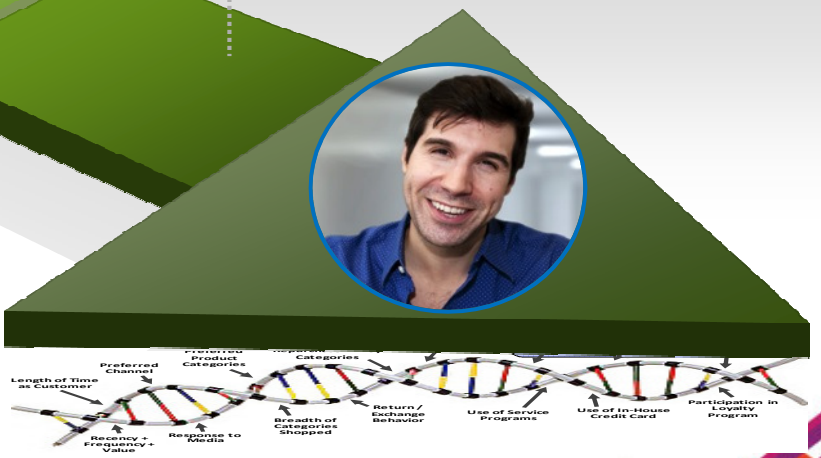
Step 3: Simplify Your Structured Data at Rest

Step 4: Discovery and Learning of Data at Rest – New Data Types?

Step 5: Analyze Unstructured Data

Step 6: Analyze What You Learned in Motion

Step 7: Unsupervised Learning



without analytics

BigData

is just a bunch of data

MYTH: Big Data is only about large datasets; we should just say larger than what you have

MYTH: Big Data means Hadoop..that's it

MYTH: Big Data means 'rip-and-replace', death to the RDBMS and no governance

MYTH: NoSQL means no SQL, never, utter hatred for SQL

MYTH: Big Data means unstructured data and only for sentiment

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Teşekkürler

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