A Smarter Approach To Big Data
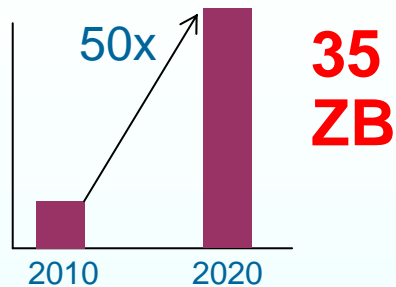
Utilize Speed And Simplicity For Faster Value

The Growth Of Big Data Is Accelerating, Driving Business To Adapt

Cost effectively processing the growing **Volume**

50x

35 ZB

2010   2020
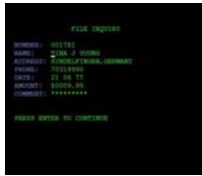
- Every day we create 2.5 quintillion bytes of data
- 12 terabytes of tweets every day
- Healthcare agency has a 22 billion row data warehouse

Responding to the increasing **Velocity**

30 Billion RFID sensors and counting

- Walmart handles over 1 million customer transactions every hour
- Over 8.6 million cell phone calls a minute

Collectively analyzing the broadening **Variety**

80% of the worlds data is unstructured

- 144 billion emails a day
- Sensors and video feeds
- Twitter tweets
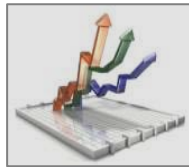- RFID tags

So What Is Big Data And Where Is It Coming From?

It's NOT just Google, or Facebook, or Twitter

Banking Transactions

CRM Applications

Stock Trades

Traditional RDBMS

Business critical transactions

Structured for maximum concurrency

Designed for High Availability in case of failure

Web Logs

Social Media

Weather Data

External Data At Rest

Huge volumes of unstructured data stored on disk

No pre-defined schema with numerous formats

Too large for traditional tools to process in a timely manner
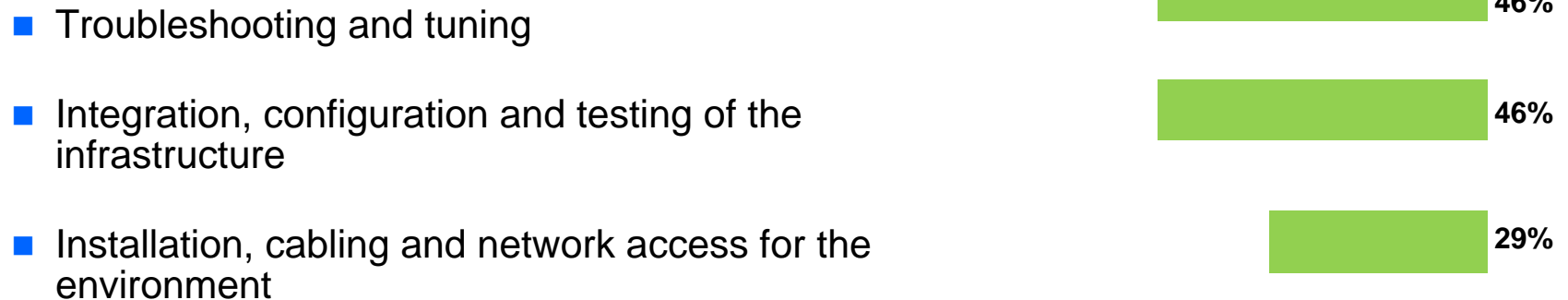
Utility Meters

Medical Equip.

Call Data Records

Data in motion (Real Time)

Tremendous velocity with ultra low latency required

High volumes, data is typically not stored
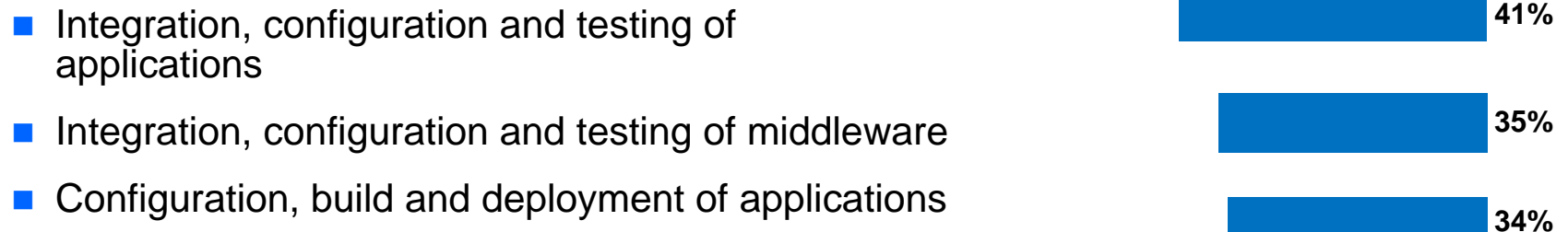
Multiple data sources

Current Environments Have Become Too Complex And Are Driving Up Costs

Top contributors to Project Delays

Hardware
- Troubleshooting and tuning — **46%**

- Integration, configuration and testing of the infrastructure — **46%**

- Installation, cabling and network access for the environment — **29%**

Software
- Integration, configuration and testing of applications — **41%**

- Integration, configuration and testing of middleware — **35%**

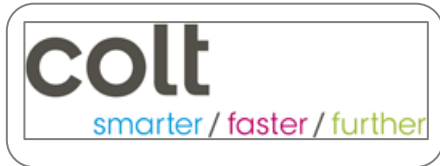- Configuration, build and deployment of applications — **34%**

Big data drives up complexity even more

From a commissioned 2012 study conducted by Forrester Consulting on behalf of IBM

Leading Business Are Using Big Data To Gain A Competitive Advantage

Colt Technology Services Group **saves USD 1.9M** annually through improved business intelligence

Japanese internet company - analyze and process 18M transactions/hour, to increase **subscribers by 100%**

"reduce the time to analyze complex GIS data from **days to minutes** - a more than **98% improvement**."

Real business results!

Increased annual **revenues by 30%**

Enabled **600 percent growth** in mobile solutions and **200 percent growth** in internet banking

Premier Healthcare Alliance improves patient outcomes while **reducing spending by USD 2.85B**

Add Business Value By Analyzing All The Data About Your Customers

Data Source	**Analysis**	**Business Value**

Traditional RDBMS

Analyze all customer records across departments

Complete view of customer value to the company

External Data

Analyze customer sentiment and experience

Attract and retain customers

Real Time Data

Analyze customer data as it happens

Personalize customer interaction in real time

IBM's Big Data Platform Is A Complete Ecosystem For The Big Data Challenge

Visualization and Reporting Analytics Zone

Cognos and SPSS

Enterprise Data Zone

BLU Acceleration

Landing and Analytics Zone

Hadoop System

Real-time Analytics Zone

Stream Computing

Information Integration and Governance Zone

InfoSphere Information server

External Data Sources

Data Delivery

Create More Value Through A Smarter Information Management Strategy

- Efficiently analyze your current data

- Visualize your data

- Analyze new sources of unstructured data and data in motion

- Efficiently integrate all your data

- And **simplify** your environment with expert integrated systems

Build On A Strong Foundation With Revolutionary BLU Acceleration

- A faster and easier way to do analytics
  - ▶ Innovative columnar data processing
  - ▶ Eliminate complex indexes and partitioning schemes
- Make best use of all your hardware resources
  - ▶ Dynamic in-memory database
  - ▶ Actionable compression
  - ▶ Optimized for CPU
  - ▶ Skip unnecessary processing of irrelevant data
    - Handles extreme transactional performance
  - ▶ Add proof point from 10.5/10.1
- Dramatically outperforms competitors

10x-25x
Analytics performance improvement is common

4x-10x
vs competitors performance

Visualize Your Data And Deliver It To The People Who Need It

- **Complete business analytics portfolio**
  - ▶ Powerful visualization capabilities to understand your data quicker
  - ▶ Predictive analytics to optimize business decisions

- **Make the data available to the people that need it in the format they need it in**
  - ▶ Smart phone, dashboard, programs

- **Easy to use web tooling**
  - ▶ Decreases development cost and supports easy deployment and delivery

Analytics users outperform peers
1.6x Revenue

20x faster
Predictive analytics with LESS tuning

Include External Data To Get A Complete View Of Your Business

- **Gain competitive insight by leveraging external data**
  - ▶ Customer-focused objectives are top priority*

Big data adoption **grew 97%** over last two years

- **New programming models for new types of data**
  - ▶ Designed for efficient scale out cluster usage
  - ▶ Solve problems that we could not before

- **Advanced development tools for faster deployment**
  - ▶ GUI based accelerators for the most common scenarios

Accelerators cut development time by **2.5X**

*"Analytics: The real-world use of big data" - http://public.dhe.ibm.com/common/ssi/ecm/en/gbe03519usen/GBE03519USEN.PDF

Integrate Your Data Across The Enterprise With An Efficient Infrastructure

- **Speed up integration projects**
  - ▶ Handle change faster with agile tooling
  - ▶ Decrease time to deployment

- **Complete end-to-end information integration**
  - ▶ Runs Heterogeneous platform
  - ▶ Native connector support, including new big data sources

- **Fast and scalable**
  - ▶ Parallel architecture for efficient scaling

- **Ensure quality and enforce corporate rules**

Find InfoServer Example

Accelerators cut development time by **2.5X**

98% reduction in data latency

Simplify Complex Environments And Get Results Faster

- **PureData Systems reduce complexity**
  - ▶ Spend less time doing installation and development
  - ▶ Get business value sooner

3.7X Faster to deploy

- **PureData Systems are optimized for specific data workloads**
  - ▶ Built-in best practices
  - ▶ Integrated hardware and software to get the most from your investment

3.25X OLTP performance

- **Sized to fit your needs**
  - ▶ Growth when you need it, scale to the largest sizes

Up to 20x analytics performance

Service Oriented Finance Wants To Capitalize On Big Data And Control Expenses

To increase our customer satisfaction, I need to understand what they like, what they don't like, and why.

I want to lower my operational costs. Complexity is forcing me to spend most of my budget maintaining the current systems.

Service Oriented Finance CMO

Service Oriented Finance CTO

IBM Can Help Service Oriented Finance Utilize Analytics To Grow Their Business

> **Let me show you examples of how IBM analytics solutions can help:**
>
> 1. **Decrease your financial risk**
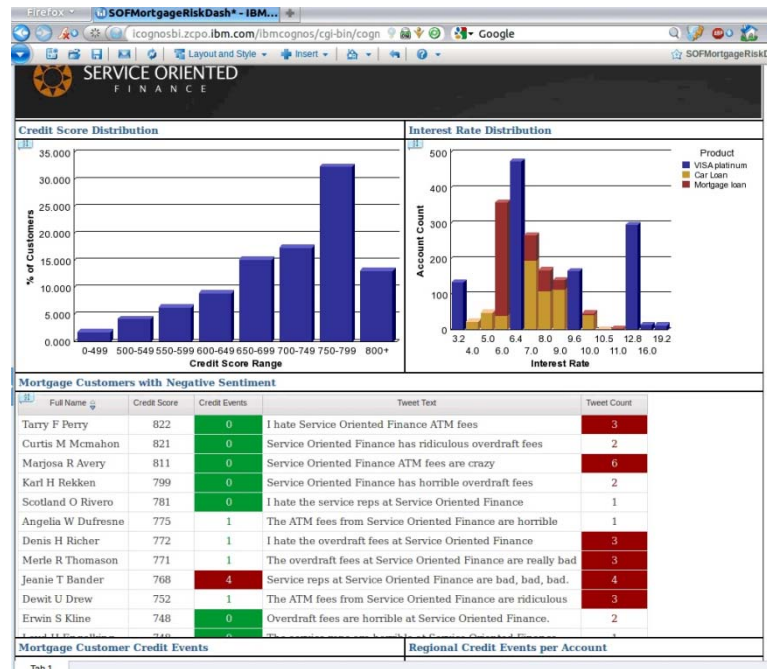> 2. **Retain your best customers**
> 3. **Simplify your current environment**

IBM

DEMO: Gain A 360° View Of Our Customers To Help Retain Our Best Customers

- **Solution**
  - ▶ Combined data from Twitter with mortgage data in our data warehouse
  - ▶ Built report with Cognos Report Studio
- **Purpose**
  - ▶ Identify good customers who have made complaints about Service Oriented Finance on Twitter

Our Competitors' Approaches Don't Solve The Challenges of Big Data Analytics

Oracle Exadata
Engineered System

One size fits all approach.

Does one size really fit all your database needs?

SAP HANA
In Memory Database

Limited by memory.

Would you be even be able to run your workloads here?