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Business Analytics using Big
Data to gain competitive
advantage

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“If every image made and every word written from the earliest stirring of civilization to the year 2003 were converted to digital information, the total would come to five exabytes. An exabyte is one quintillion bytes, or one billion gigabytes—or just think of it as the number one followed by 18 zeros. That's a lot of digital data, but it's nothing compared with what happened from 2003 through 2010: We created five exabytes of digital information *every two days. Get ready for what's coming: By next year, we'll be producing five exabytes every 10 minutes. How much information is that? The total for 2010 of 912 exabytes is the equivalent of 18 times the amount of information contained in all the books ever written. The world is not just changing, and the change is not just accelerating; the rate of the acceleration of change is itself accelerating*

– WSJ 2/22/2012 book review *Abundance: The Future Is Better Than You Think*”

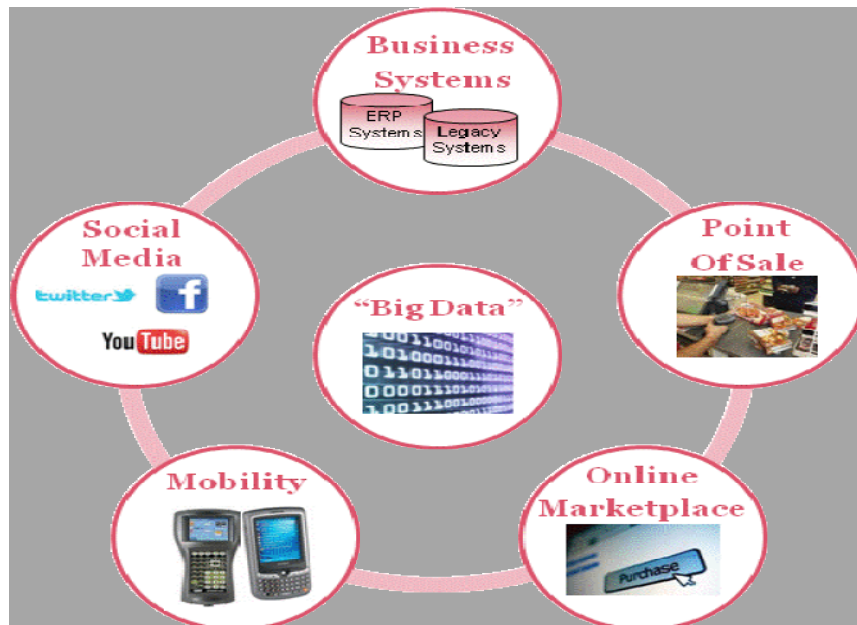
Big Data* is a term applied to data sets whose size is beyond the ability of commonly used software tools to capture, manage, and process the data within tolerable elapsed time.

Characteristics of Big Data are:

- **Volume:** Big Data sizes are a constantly moving target ranging from a few dozen terabytes to many petabytes of data in a single data set
- **Velocity:** Speed of generation, web logs, sensor data, complex event processing
- **Variety:** structured, un-structured and semi-structured formats, graphs, GIS, and others

Big Data technologies have been popularized by Google, Yahoo, Facebook and others as they extract value out of the tremendous volume of data they handle on a day to day basis.

Data Challenges – The information is growing at a phenomenal rate.....



Information growing at exponential rate

- New sources of information are constantly emerging
- The amount of information collected is growing exponentially

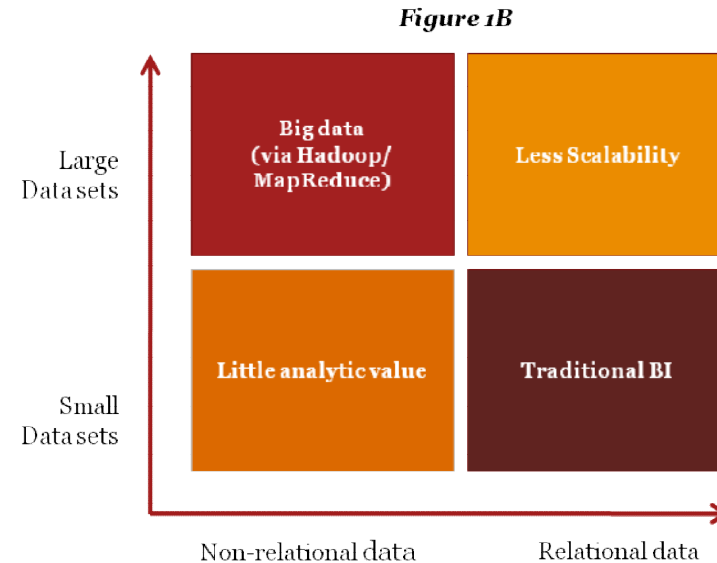
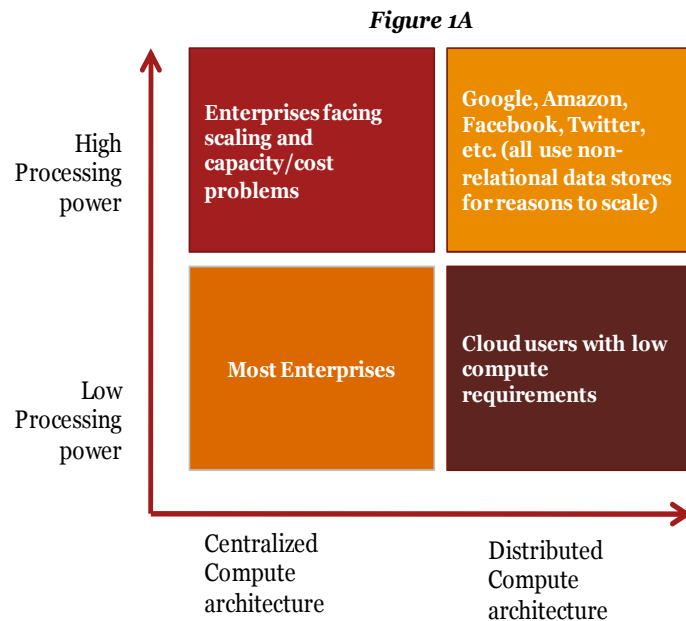
Driving value from information is a competitive opportunity

- Required to stay ahead of the competition - with the right products in the right channels at the right price
- Understanding customer behavior and real time market conditions
- Increasingly 'not doing this' will be a competitive disadvantage

Challenges of information are daunting

- If you build it, they will not come ... more likely they will run
- Information overload is real danger; manage velocity, access, validity, linkage and relevance
- Having KPIs doesn't mean you make good decisions

Big Data - Distributed Computing Architecture

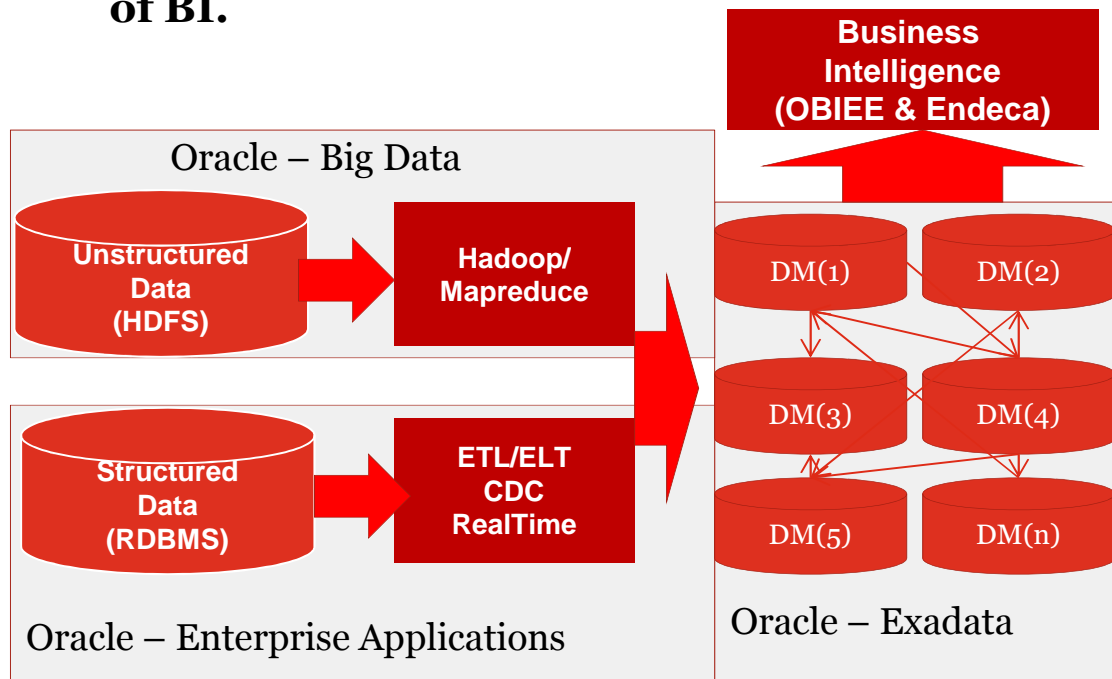


A shared-nothing architecture requires an efficient parallel-processing application service such as Parallel DMBS or the MR

Big Data Technologies driving Analytics

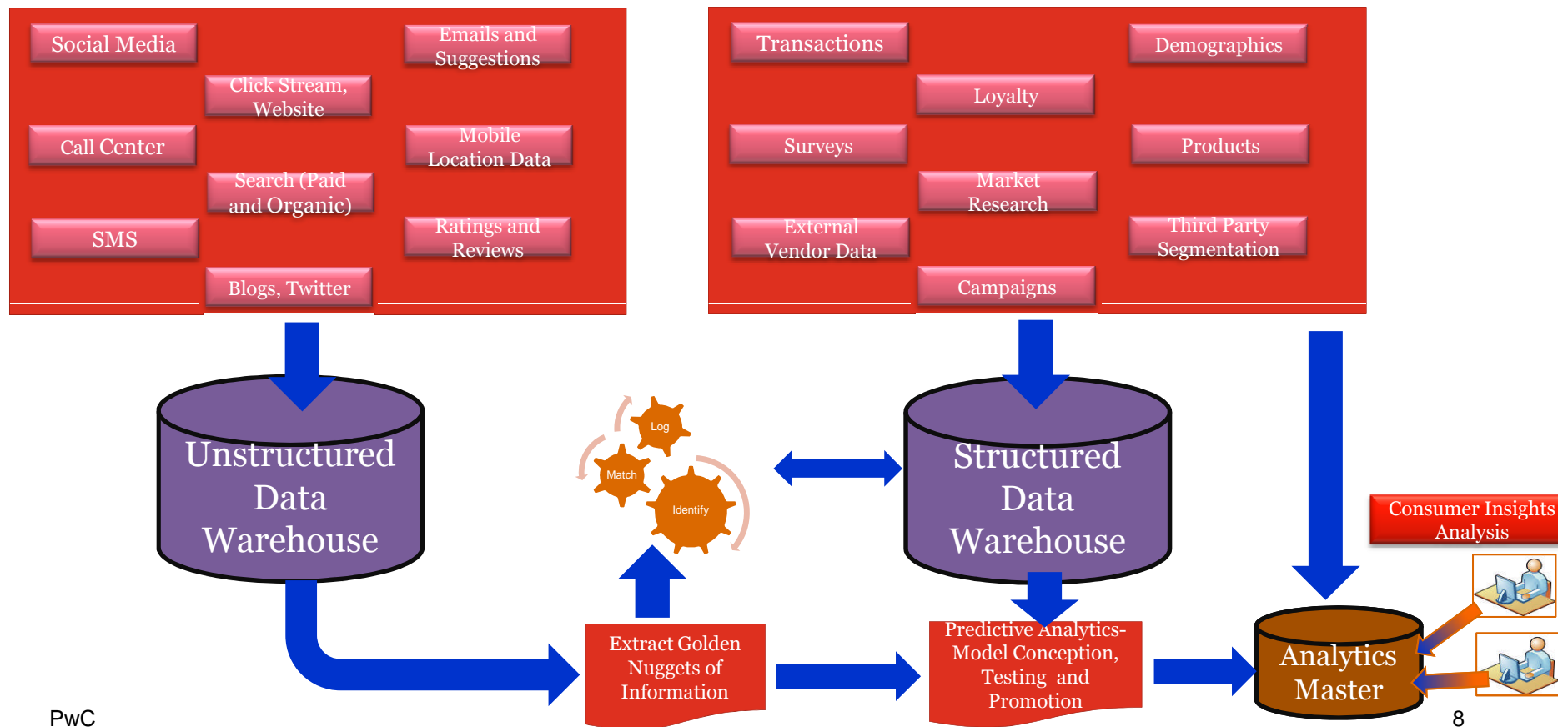
- ☐ Columnar Storage and Databases
- ☐ In Memory Databases and Analytics
- ☐ Convergence of Machine Learning & Data Mining with Big Data
- ☐ Support of MR by major RDBMS vendors
- ☐ Management of structured and un-structured content
- ☐ Advances in Hadoop
 - ☐ Hive and HBASE Integration
 - ☐ RHadoop Project (R and MR Integration)

Big Data BI – The convergence of business intelligence and search technologies enables companies to expand the BI landscape to a wide variety of business users and business processes – combining the simplicity of search and power of BI.



- Keyword- and text-based simple searching
- Searching structured and unstructured data
- Faster and easier for business users
- Automated relevancy and linkages to BI services (dashboards, reports, and data services)
- Linkage between structured and unstructured data
- Ability to understand and answer questions with simple English queries

Big Data Analytics :



Big Data Analytics by Industry

1. Health Industries

- Consumerism
- Patient Support Models and Wellness Plans
- Social Strategies and Mobile Healthcare

2. Retail

- Consumer behaviors and Customer experience
- Social Strategies and Mobile Strategies
- Beyond Price Point Themes

3. Hospitality

- Consumer behaviors and Customer experience
- Social Strategies and Mobile Strategies
- Market segmentation and pricing analytics

4. Financial Services

- Mobile Banking and Digital Wallets
- Regulatory Challenges
- Risk Sensitivity

5. Utilities

- Smart Grids and Smart Meters
- Customer Satisfaction and Incentive Models
- Asset Management and Aging workforce

6. Entertainment & Media

- Digital Rights Management
- User Generated Content
- Piracy

Thank you

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