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Big Data: Beyond the Hype

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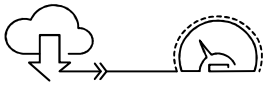
People matter, results count.

Trends in Data 2013

1. My Data is Bigger than Yours

The rise in volume (amount of data), velocity (speed of data) and variety (range of data) gives way to new architectures that no longer only collect and store but actually use structured and unstructured data to create business value. **Integrating distributed data in real time** is the big challenge. Look for technology solutions like data warehouse appliances, in-memory analytics, columnar storage and smart software solutions.

2. Inflection Point of Real Time



Even though the size of data is increasing the end users are expecting faster answers from their information environment – whether it is standard reports or navigating through to source data. In-memory technology and distributed messaging systems mark the end of batch and will allow for new business usage where speed (**fast data**) is the first requirement. To store, process and gain insight from Big or Open Data, on-demand or real-time virtualized architectures will replace traditional data warehouses.

3. Do It Yourself

Data exploration once was the field of a limited number of expert users but it has come a long way since. Through the democratization of information, placing data in the hands of many but still as a separate process, exploration now has become a part of our daily work. With this comes the increased need to **create insights on the fly**, by business users instead of through standard IT centered development processes making business & IT alignment an important topic. Agile techniques like Scrum allow for a quicker go-to-market and will be the default.'

4. Google Fast, Apple Easy

Just like at home, business users are expecting an engine that searches all available data (structured and unstructured, internal and external) to quickly find answers and navigate through the results to find patterns and trends using advanced or even predictive analytics. The result is a '**consumerization**' of enterprise data. The corporate data App Store is just around the corner.

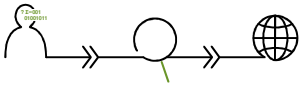
5. Eye of the Beholder

With the increased supply and demand for data it is hard to see the forest for the trees. The numbers are too big for any business user to really understand. This has led to a flood of **visual displays of quantitative information** like infographics or geographic information systems– a completely new way to analyze and communicate your Big Data insights.

6. Supercell of Data

The amount of available data is bigger than ever which causes a need for linear horizontal scalability. **Social media** supplies organizations with essential information about their customers' opinions. Combined with actual customer behavior as captured in transactional systems, a wealth of information emerges. **Cloud** makes this information (hardware, software, intelligence) available as-a-service via the internet on any device. Business users want to access the data anytime and anywhere. This puts increased demand on the information system architecture and information access like **mobile** devices and visualization.

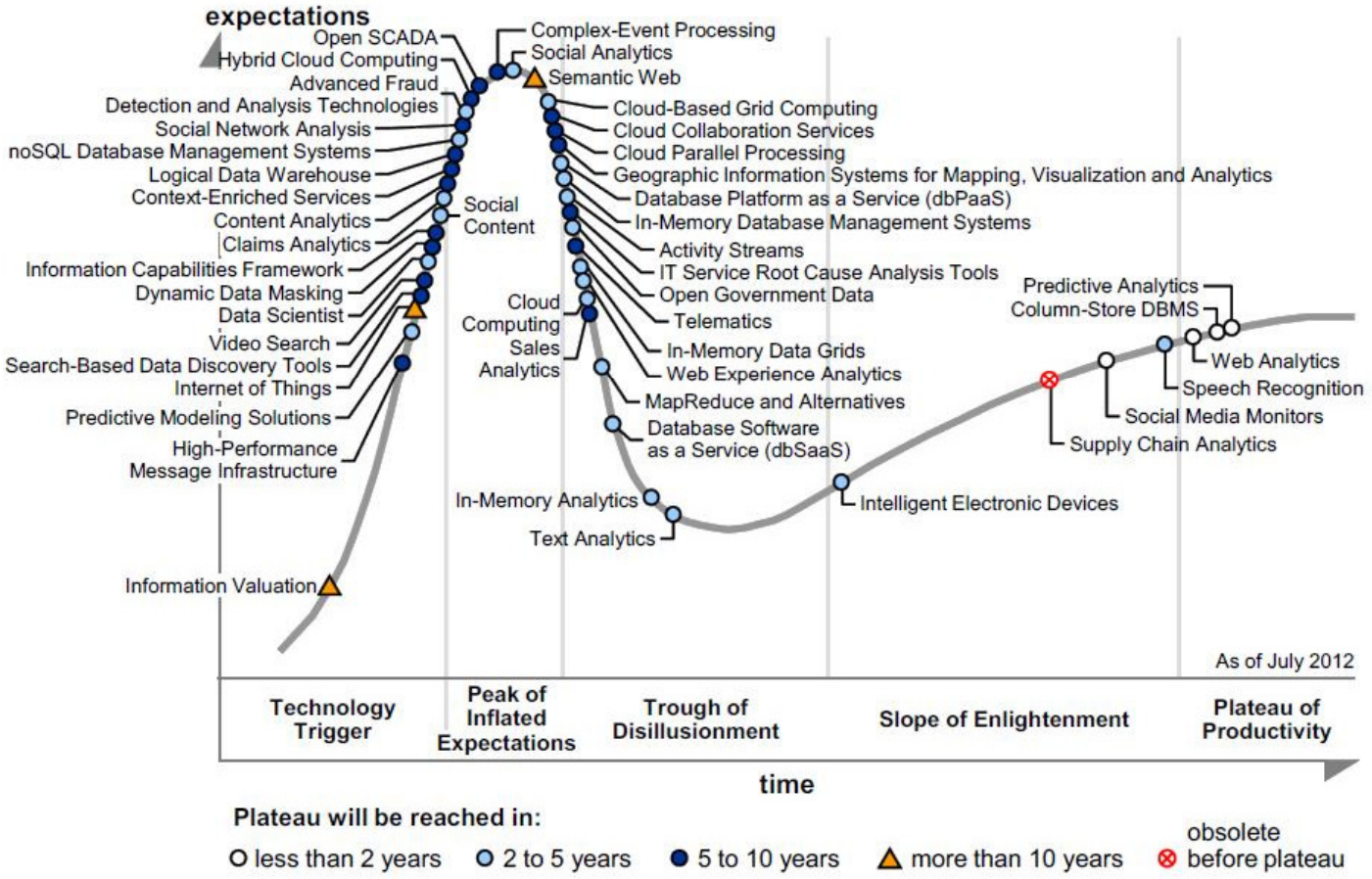
7. 'Analytication' of Data



Crunching the numbers or competing on analytics, data is not about volume. It is about the ability to **analyze and act in real time** using data from sensors, transactions or interactions, both from inside as well as outside your own organization. Data can be used to solve business problems and create a competitive advantage and improve decisions in an interconnected world. The Harvard Business Review even says that: "The data scientist is the sexiest job of the 21st century."

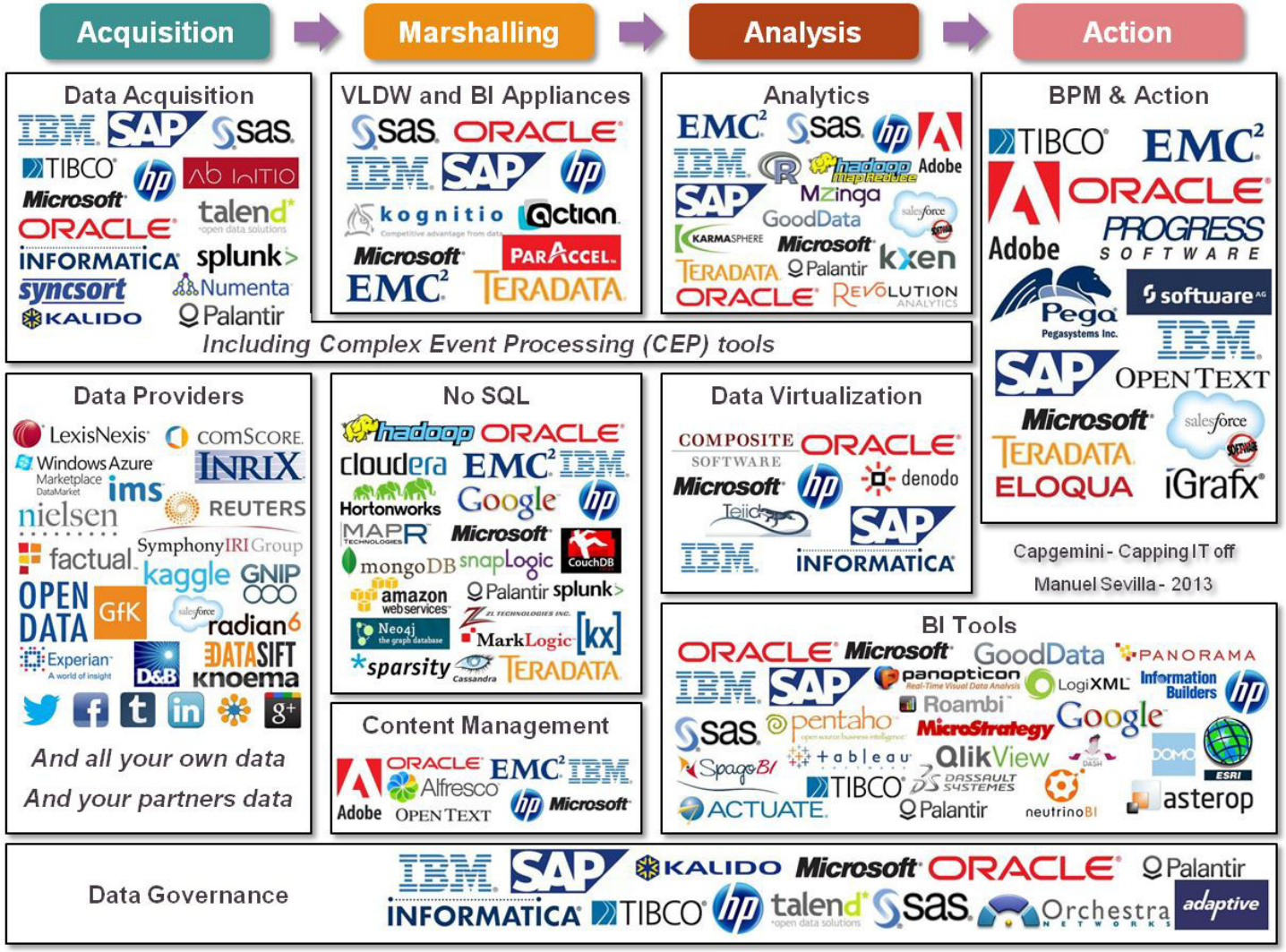
Top of the Hype Cycle

Figure 1. Hype Cycle for Big Data, 2012

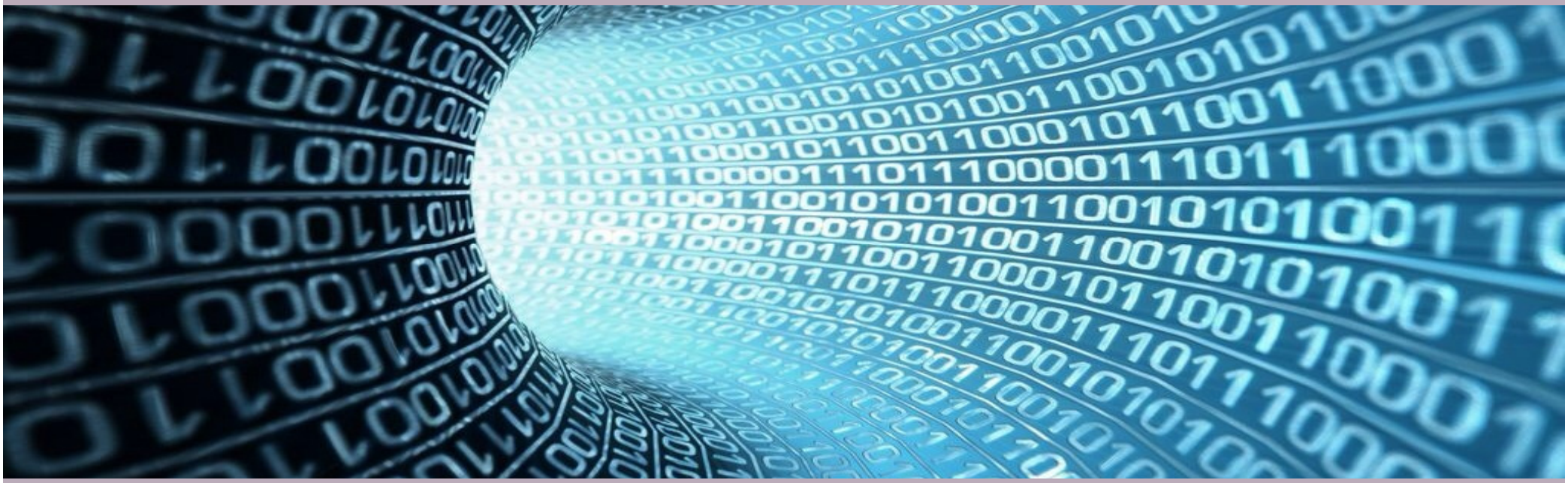


Source: Gartner (July 2012)

Big Data players



Data is an Asset
Information a Productivity Factor
Increase in (Big) Data

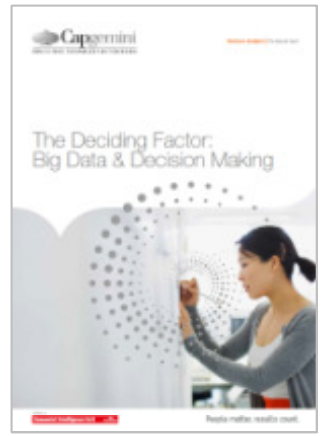


Paradigm shift: from Internal to External
Support Business Challenges
Truly Understand Operations

The Economist Intelligence Unit Survey

The Deciding Factor: Big Data and Decision Making

What we found:



75% Believe their organizations to be **data-driven**

9 out of 10 Say the decisions they've made in the past 3 years would have been better if they'd had all the relevant information

Survey respondents say that **unstructured content** is too difficult to interpret **42%**

85% Say the issue is not about volume but the ability to analyse and act on the data in real time

No Link to Corporate Strategy
Lack of Skills
Technology is a Driver and a Burden

BIM Technology Skills
Sector Skills
Analytical Skills

http://www.youtube.com/watch?v=HYuh7Pt50EQ

Big Data for our customers – Different Situations

- They have more and more data to handle with and they're struggling with costs or really drowning into it:
  - Communications: CDRs, Logs, Network QoS...
  - Utilities: Smart Metering, Smart Grid...
  - Financial Services (Wealth Management): Data Retention & Archival, Performance Attribution

Information Foundation

- They want to personalize as much as possible their interactions with their customers:
  - Communication: VIP churn reduction...
  - Retail: Real Time Next Best Action
  - Financial Services: Risk prediction, Next Best Action
  - All sectors: Fraud detection

Analytics

- They live in an interconnected world where you can acquire data from outside e.g. suppliers, Facebook, Twitter, blogs, weather, traffic, GoogleMaps, Open Data...
  - CP: Improve interaction with final customers
  - Public Sector: Law Enforcement
  - Utilities: Pushing consumers to become prosumers
  - All sectors: Sentiment Analytics

New business models Process improvements

Maturity levels of Big Data

Level 1

- Empower existing business model
- e.g. Understand customer, better service, better products

Level 2

- Enable data driven, disruptive innovation
- e.g. Understand past better, start predicting future

Level 3

- Create data-driven business models
- e.g. Bank sells data about customer group buying habits to retailers, advertisers, Mobile network operator predicts traffic jams

Quick win: Demand, Aligned, Business case, Step-by-Step

Value from Data:
Link Business Objectives
with (Big) Data strategy

Leverage Data:
Establish Information Foundation
Reduce Costs
Better Intelligence

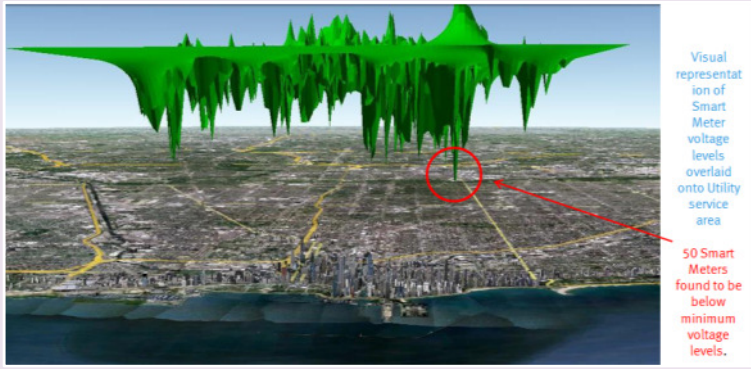
From Data to Decision:
Enable Access to Actionable Insights
Using Cloud: anytime, anywhere
Smarter Decisions trough Data Science (Centers)

Examples

During a flight, each plane is generating terabytes of data generated from electronic components. Being able to exploit this data to propose new services to its customers like preventive maintenance, proposing the way to reduce fuel consumption by changing pilot's habits or poorly performing components earlier than planned means improving customer services and creating a new business model based on data.

This is a Big Data challenge as each component (thousands for each plane) has got its own data format that may change during upgrades. Big Data is mandatory to mix this with weather information as well and sound recorded in the cockpit.

Aircraft Manufacturer



A major TV event ends and everyone reaches for the kettle. A sub-station fails or a pylon is knocked down. The challenge in next generation smart energy systems is being able to weight supply against demand and actively change the way the network is configured. With millions of residents sending their latest demand and tens of thousands of network points reporting on their current status the ability to forecast future demand as well as adapting present configuration represents challenges in the amount of data to handle in real time and to build effective forecast models.

Smart Energy

Examples

Discover fraud patterns based on multi-years worth of credit card transactions and in a time scale that does not allow new patterns to accumulate significant losses.

Measure transaction processing latency across many business processes by processing and correlating system log data.

Compliancy + Archiving needs.

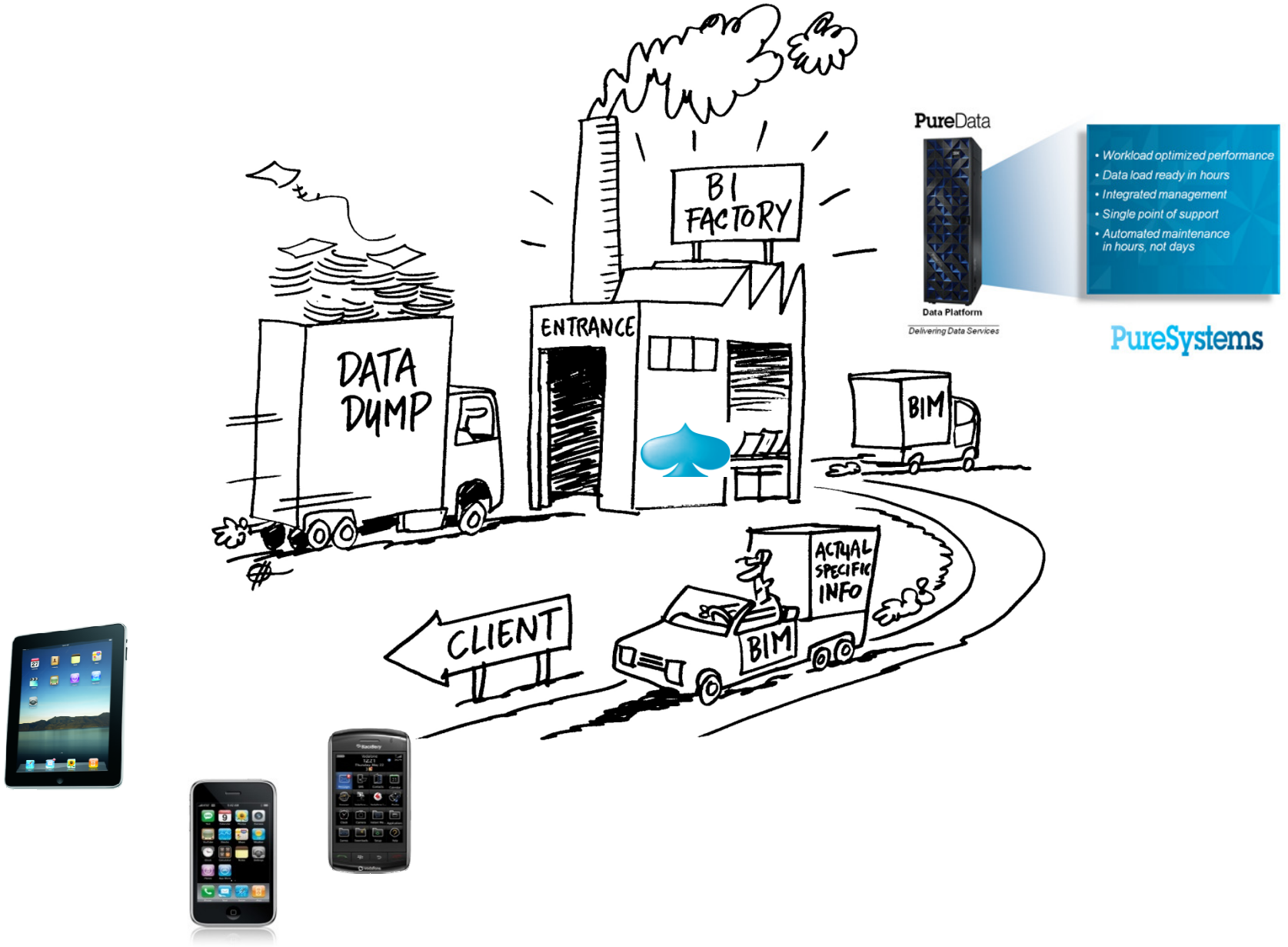
Financial Services

For Burberry, being a digitalized end-to-end company means also taking into account Social Networking.

Their Facebook page is not only an advertising tool, with more than 14 million fans and 140 thousand active members, it is a CRM tool.

Exploiting data provided by Facebook to improve their business and predict trends or events as soon as possible does not concern only Internet companies like Google or Amazon. It concerns public sector and any company that has customers or partners.

CP – Retail


BI FACTORY
ENTRANCE
DATA DUMP
BIM
ACTUAL SPECIFIC INFO
BIM
CLIENT
PureData
Data Platform
Delivering Data Services
• Workload optimized performance
• Data load ready in hours
• Integrated management
• Single point of support
• Automated maintenance in hours, not days
PureSystems

What is Analytics As A Service?

- It is like a Business Intelligence / Analytical factory in the cloud
- Making BI/Analytics (hardware using IBM pure data for analytics, software, data) available via the internet and on any device (desktop, laptop, mobile device, tablet)
- Transferring day-to-day related responsibility for Business Intelligence / Analytics from customer to Capgemini
- Application Development & Application Maintenance of customer environment on **Capgemini Infrastructure**

What are your benefits?

- **Business Transformation Enabler**
  - Reduced complexity (Customer demand, Capgemini supply)
  - Benefit from business content (and Capgemini best practices)
  - Collaboration & sharing within the cloud (secure!) – Information brokerage
  - Benefit from Capgemini global resources
  - Enables Agility (on any device)
  - Managing BIG data

- **Cost Effective IT Delivery Model (Set-up / ongoing)**
  - Shared Infrastructure & resources (costs)
  - Less hassle for monitoring and maintenance
  - No worries about back-up, recovery and availability
  - Flexibility, scalability for development
  - Industrialized approach leading to more efficiency
  - Benefit from BI/DWH technology innovations

Summary

- Trends in Data
  - Social, Mobile, (Big Data) Analytics, Cloud
- Data is an Asset
- Getting value is a challenge
- (Big) Data Strategy, Information Foundation, Analytics (from the cloud)
- Analytics As A Service (IBM Pure Data for Analytics)
  - Transform Business
  - Cost effective

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