Big Data and Storage Technologies
Futures and Trends

Christian Bandulet, Oracle EMEA
Master Principal Sales Consultant
Elite Engineering Exchange
13.06.2014
Do you remember... vt100 Internet

<table>
<thead>
<tr>
<th>Getting Files</th>
<th>Finding Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Find Files on the Net (Archie)</td>
<td>Search for Information (Gopher)</td>
</tr>
<tr>
<td>Get Files from the Net (FTP)</td>
<td>Hypertext Search (WWW)</td>
</tr>
<tr>
<td>File Transfers for Net Account</td>
<td>Query About Someone (Finger)</td>
</tr>
<tr>
<td>Entertainment</td>
<td>Messages</td>
</tr>
<tr>
<td>MUDs (Games)</td>
<td>Internet E-Mail</td>
</tr>
<tr>
<td>Internet Teleconference (IRC)</td>
<td>Internet Message Areas (Usenet)</td>
</tr>
<tr>
<td>Tintin Interface for MUDs</td>
<td>Help</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>Detailed Reference Text</td>
</tr>
<tr>
<td>Unix Shell Access (BASH)</td>
<td>Help Using Internet Functions</td>
</tr>
<tr>
<td>Connect to Other Sites (Telnet)</td>
<td>If You're Stuck at &quot;Password&quot;</td>
</tr>
<tr>
<td>SLIP Access (Mosaic, Netscape, etc)</td>
<td>How To Configure SLIP Access</td>
</tr>
<tr>
<td>SLIP - Graphical Interface</td>
<td></td>
</tr>
<tr>
<td>PPP - Point-to-Point Protocol</td>
<td></td>
</tr>
</tbody>
</table>

Your Choice (A,B,C,D,E,F,G,H,I,J,K,M,P,Q,S,T,U,W,Y or X)? :
(N)onstop, (Q)uit, or (C)ontinue?
Menu: <Ctrl R-Shift> 2400 8N1  VT100  Online
3rd Platform

BILLIONS OF USERS

3rd Platform

MILLIONS OF APPS

Mobile Cloud Big Data Social
Mobile Devices

HUNDREDS OF MILLIONS
OF USERS

2nd Platform

LAN/Internet Client/Server
PC

TENS OF THOUSANDS
OF APPS

MILLIONS
OF USERS

1st Platform

Mainframe, Mini Computer Terminals

THOUSANDS
OF APPS

Source: IDC, 2013
The Internet of Things Will **Subsume** the Information and Communication Technology Industry

Over time, the Internet of Things (IoT) will grow to subsume the traditional Information and Communication Technology (ICT) industry.

IoT is growing over three times as fast as traditional ICT, and by 2020 will nearly equal all other ICT spending.

Buyers and users of IoT technology and services will realize huge business benefits.

Source: IDC, 2014
Google to Acquire Nest

MOUNTAIN VIEW, CA – JANUARY 13, 2014 — Google Inc. (NASDAQ: GOOG) announced today that it has entered into an agreement to buy Nest Labs, Inc. for $3.2 billion in cash.

Nest’s mission is to reinvent unloved but important devices in the home such as thermostats and smoke alarms. Since its launch in 2011, the Nest Learning Thermostat has been a consistent best seller—and the recently launched Protect (Smoke + CO Alarm) has had rave reviews.

Larry Page, CEO of Google, said: “Nest’s founders, Tony Fadell and Matt Rogers, have built a tremendous team that we are excited to welcome into the Google family. They’re already delivering amazing products you can buy right now—thermostats that save energy and smoke/CO alarms that can help keep your family safe. We are excited to bring great experiences to more homes in more countries and fulfill their dreams!”

Tony Fadell, CEO of Nest, said: “We’re thrilled to join Google. With their support, Nest will be even better placed to build simple, thoughtful devices that make life easier at home, and that have a positive impact on the world.”

Nest will continue to operate under the leadership of Tony Fadell and with its own distinct brand identity. The transaction is subject to customary closing conditions, including the receipt of regulatory approvals in the US. It is expected to close in the next few months.
Datability: Leverage large Quantities of data in high speed
Deutschlands Zukunft gestalten
Koalitionsvertrag zwischen CDU, CSU und SPD
18. Legislaturperiode

Strategische Innovationspolitik

– Das Internet der Dinge hält Einzug in die Fabriken. Durch die intelligente Vernetzung innerhalb von Wertschöpfungsketten kann auch der Ressourcenverbrauch reduziert werden. Um die Technologieführerschaft im Maschinenbau zu erhalten, wollen wir das Feld Industrie 4.0 aktiv besetzen.
The Challenges of Unstructured Data

DATA IS GROWING IN VOLUME AND DIVERSITY

DATA CAN BE DIRTY OR OF UNCERTAIN VALUE

MOSTLY TEXT, AND DIVERSE SCHEMASES

20% STRUCTURED  80% UNSTRUCTURED

Business Intelligence and Data Warehouses

Text in Enterprise Applications

Enterprise Content Systems, File Systems, Email

Websites

Social Media

Big Data

XML
Innovative Insights - within and beyond the Warehouse

**Data Warehouse & BI Systems**

**Sales and Marketing Star Schemas**

<table>
<thead>
<tr>
<th>ProductID</th>
<th>CampaignID</th>
<th>Date</th>
<th>Geography</th>
<th>$Spend</th>
<th>#_Responses</th>
<th>ROI</th>
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</thead>
<tbody>
<tr>
<td>12324</td>
<td>506</td>
<td>12/3</td>
<td>Texas</td>
<td>$140K</td>
<td>30K</td>
<td>56%</td>
</tr>
<tr>
<td>12325</td>
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<td>12/4</td>
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**Marketing Events**

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**Sales and Orders**

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<th>ProductID</th>
<th>CampaignID</th>
<th>Date</th>
<th>Geography</th>
<th>$Revenue</th>
<th>Volume</th>
<th>%_Margin</th>
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**“Why are orders for our top selling cameras declining?”**

**Text in Enterprise Applications**

**Sales Notes**

“Customer is currently refusing to move forward because of new pricing model. Customer is confused on short vs. long term license options…”

**Content Management Systems**

**Documents, Notes and Email**

… it’s not thin or lightweight so it can’t easily be carried in a pocket, purse, or backpack. Compared to the size of today’s smartphones, this is just too bulky to carry around..

**Crawled Websites**

**Blogs, News & Industry Forums**

“.. the D150 is not user-friendly but is an excellent camera for the amateur photographer..”

**Social Media API’s**

**Public Comments and Sentiment**

“SO BEAUTIFUL!!!!!! @krungy11: Taken with my D150 camera~ it hasn’t been photoshopped at all ^^;; clio dara~!!! pic.twitter.com/E7bdRsxE”

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What Makes it Big Data?

- **VOLUME**
- **VELOCITY**
- **VARIETY**
- **VALUE**

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BigData
Core Technology or Ecosystem?

1. commodity, distributed disk storage: "write once"
2. massive parallel batch-processing: "read many"

3. Not-only SQL database
4. "R"
   + Integration
   + relational databases
   + BI & DWH
   + CEP
   + more
The Big Data Transformation is Happening Now

From the Hadoop Zoo to the Enterprise Data Center
Big Data Analytics – Next Frontier in IT
Divided Solution Spectrum
How the clients write to HDFS

Writing files to HDFS

- Client consults Name Node
- Client writes block directly to one Data Node
- Data Nodes replicates block
- Cycle repeats for next block
How the clients read from HDFS

Client reading files from HDFS

- Client receives Data Node list for each block
- Client picks first Data Node for each block
- Client reads blocks sequentially
MapReduce – Data Flow
Hadoop Architecture
Oracle’s growing Engineered Systems Portfolio

Leadership in the converged infrastructure market
Hardware and Software

Engineered to Work Together
Big Data and Storage Technologies
Futures and Trends

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