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Data Visualization for Big Data Success
Big Data

“Big data really is about having insights and making an impact on your business. If you aren’t taking advantage of the data you’re collecting, then you just have a pile of data, you don’t have big data”

- VP of Engineering Jay Parikh
What About Big Data?

“The Library of Congress has 18 terabytes of data. We do that every three days.”

David Stone
Senior Manager – Analytics Platform
eBay

“More data beats better algorithms”

Anand Rajaraman
Teaches Web Scale Data Mining
at Stanford University

1,048,576

Max rows in Excel 2010
Is that Big Data?
The Problem: Volume of Data

Agencies are struggling to unlock exploding data

NEW DIGITAL DATA TOUCHED BY BUSINESSES

Source: IDC, Credit Suisse
The Problem: Diverse Data

Agencies are struggling to unlock diverse data

- How many failed logins occurred in this timeframe?
- What’s the audit trail with key contracts?
- Monitor compliance across contracts, procurement and financials?
- What’s the performance... across programs?
- How to monitor KPIs in... citizen services?
- Where’s potential for... streamlining logistics?

Integrated and correlated data

[Various company logos and technologies]
The Problem…
How Do People Effectively Work With Data?
We Have Been Using Tabular Representations of Data for 4,000 Years
We’re Still Using Tabular Representations of Data Today
Improved Representation Can Transform Reflecting on Data to Experiencing It

“The deep fundamental question in statistical analysis is Compared with what?” Edward Tufte
The Key to Making Sense of Data is Visualization
Exploit the power of the human visual system
Leverage the Human Perceptual System

70% 30%
Total Sense Receptors
<table>
<thead>
<tr>
<th>Product</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
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</thead>
<tbody>
<tr>
<td>North America</td>
<td>1.983</td>
<td>2.343</td>
<td>2.593</td>
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<td>178</td>
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<td>272</td>
<td>534</td>
<td>480</td>
<td>469</td>
<td>479</td>
<td>583</td>
<td>554</td>
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<tr>
<td>Grand Total</td>
<td>4,234</td>
<td>4,810</td>
<td>4,899</td>
<td>4,195</td>
<td>4,763</td>
<td>5,775</td>
<td>4,700</td>
<td>4,570</td>
<td>5,475</td>
<td>5,171</td>
<td>5,958</td>
<td>7,182</td>
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</table>

![Sales Dollars Graph](image-url)
Iterate, explore, and experiment
How Do People Reason About Data?

Through an *unpredictable and iterative* process.

- Discovering structure;
- Finding patterns and outliers;
- Deriving causal relationships;
- etc.

*Cycle of Visual Analysis*
Incremental

Allow people to easily and incrementally change the data they are looking at and how they are looking at it.

Find the perfect view: People can intuitively explore a broad space of visualizations to find the “perfect” views that answer their questions.

Build visual literacy at their own pace: Start simple…and then slowly, over time, build up sophisticated views of their data

Perform rapid Q&A: Quickly layer new information into a view to answer new questions
Expressive

No single view answers every question.
Enabling The Cycle of Visual Analysis Leads to Monitoring, Sharing and Storytelling
The Problem: Slow & Complex Software

Traditional reporting technologies are complicated, inflexible and slow moving.

<table>
<thead>
<tr>
<th>THE MOST</th>
<th>THE MANY</th>
<th>THE FEW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don’t have business analytics, it’s too hard</td>
<td>Waste countless hours in Excel, with poor results</td>
<td>Rely on an army of engineers and a high priest</td>
</tr>
</tbody>
</table>
Help people see and understand their data
The Tableau Revolution

Fast and easy analytics for everyone

- Intuitive drag and drop interface
- Easy to create data mash-ups
- Easy to use filters

Tableau leverages data from its source

No longer needed:
- Pull data into a proprietary silo
- An army of engineers
- A high priest
- Lots of time
- Heavy software customizations
- Stale reports

Refresh 100MM records in 1 second
Fast, Flexible & User Friendly

Transform all types of data into self-reliance analytics

- Databases
- Big Data
- Spreadsheets
- Application Data
- Cloud

Tableau Software
Build Drag & Drop Pictures of What You Want to See
No Scripting or Coding
...Just Fast, Easy and Beautiful
Self Reliance Analytics For Everyone

Finding Bigfoot (Data) – Visualize the Squatch

All data sourced from Transport for London (this work is not affiliate routes, which is sourced from Homesforroutes.net). The dataset performed in a week during November 2009 on Bus, Tube, DLR routes based on bus stop locations and therefore only approximate.

About Tableau maps: www.tableau-software.com/maps/data

Click on ANY element of the visualization (location, season, year, detail field) in order to filter by that item.
Select the element AGAIN to go back to the full view.

The BFRO classifies sightings according to a system based on the sightings “potential for misinterpretation”.

<table>
<thead>
<tr>
<th>Total Sightings</th>
<th>Class A</th>
<th>Class B</th>
<th>Class C</th>
<th>Unclassified</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,781</td>
<td>1,934</td>
<td>1,660</td>
<td>31</td>
<td>156</td>
</tr>
</tbody>
</table>

Volume
- 0.0M
- 2.0M
- 4.0M
- 6.0M
- 8.0M
- 10.0M
- 11.6M

Data gathered from the official website of the “Bigfoot Field Researchers Organization” (BFRO).

The data was attempted to be published and cleared to attend some type of normally unfortuitously the BFRO data submission service. The BFRO is a private, not-for-profit organization by submitters.

BFRO does the “finding Bigfoot” Animal Planet TV show.
What Customers Say

Easiest to use business intelligence product on the market

“Tableau is the “sweetheart” of the Magic Quadrant”
— Gartner

“Tableau had the highest score in the area of in-house implementation by a very wide margin, skewing the entire chart. No other product came close”
— BARC

“Tableau Software continues to set the standards…”
— Forrester

“Few, if any, other vendors have such enthusiastic customer bases”
— Gartner

Figure 3 Forrester Wave™: Advanced Data Visualization (ADV) Platforms, Q3 ’12
Product Demonstration

Tableau Desktop
For Anyone
• Explore and visualize data
• Self-service analytics for everyone
• Blazing speed against massive data

Tableau Server
For Agencies
• Visual analytics platform
• Web reports, dashboards and apps
• Secure information management
• Enterprise scalability
Thank You.

Download a free trial and try it for yourself at: www.tableausoftware.com/trial

In just minutes, you’ll be visualizing your own data!