



Innovations in Data Visualization and Collaboration

Harriet Fryman,
IBM Business Analytics

Business Analytics **Forum**



From the Labs...



This presentation provides information about software that is in the Labs – it is not a “product”

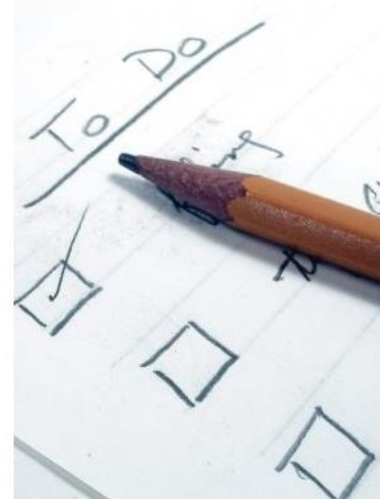


Disclaimer: Information regarding potential future products is intended to outline our general product direction and it should not be relied on in making a purchasing decision. The information mentioned regarding potential future products is not a commitment, promise, or legal obligation to deliver any material, code or functionality. Information about potential future products may not be incorporated into any contract. The development, release, and timing of any future features or functionality described for our products remains at our sole discretion.



Agenda

- Introductions
- Trends in Web, BI and Visualization
- Visualizing with Many Eyes
- Demo
- Possible Directions





From our “Technology & Innovation” team

- Monitor and evaluate technology trends
- Work closely with researchers (IBM Research and colleges/universities)
 - Provide market needs input into research
 - Shepherd new innovations into IBM Business Analytics

RANK	TREND	LAST	PAGE
1	▲	2 iPad/ / eReaders / Tablets	1
2	▲	7 Hadoop / Massive Parallelism / Big Data	2
3	▬	3 Mobile and Apps	3
4	▬	4 Predictive Analytics	4
5	▬	5 Location Intelligence	5
6	▼	1 Cloud Computing	6
7	▲	8 HTML5	7
8	▲	- Android	8
9	▬	9 In-Memory Analytics	9
10	▬	10 Unstructured Data	10

THE BUZZIndex

IBM

CY10 - Q4

UPDATED

NEW





Business Intelligence

BI 1.0

- Report authors
- Report consumers



BI 2.0

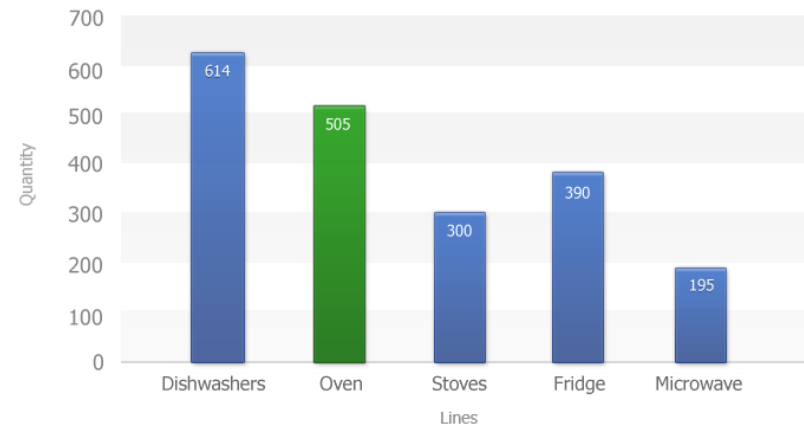
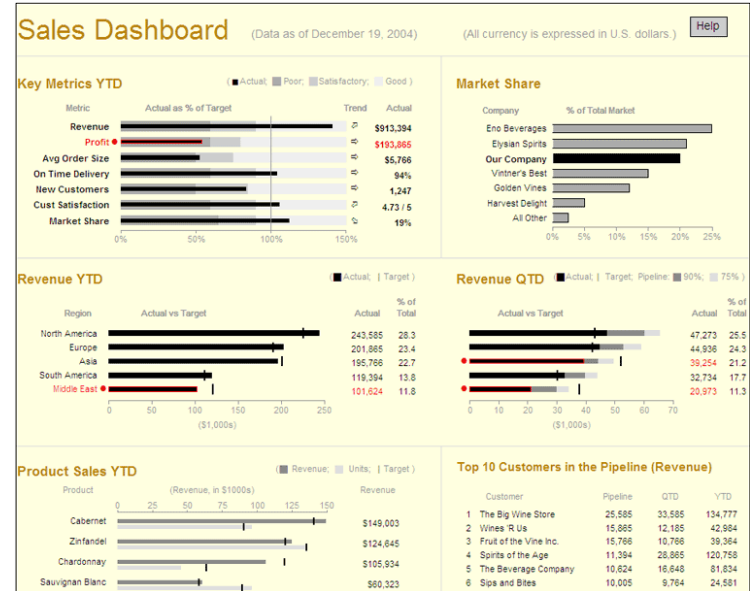
- What if everyone could create their own “reports”?
- What if everyone could interact?





Data Visualization Research

- Aesthetics, perception, biological-factors, pre-attentive properties, colors, animation, shading, etc.
- Enable data consumers to get
 - Deeper insight
 - Faster
- Visual appeal to
 - support and enable that understanding
 - Without becoming a barrier to understanding





IBM Research: Watson Labs



Collaborative User Experience | Visual Communication Lab

The Sparks

- Email inboxes
- Baby names
- Map of the Market

The Goals

- “Democratize” visualization
- Enable visualization to be a catalyst for discussion and collective insight

The Result

- Many Eyes
- Public site launched in January 2007
- Leadership: Respected site among visualization researchers





Introduction to original Many Eyes

explore

- visualizations
- data sets
- comments
- topic centers

participate

- create visualization
- upload data set
- create topic center
- register

learn more

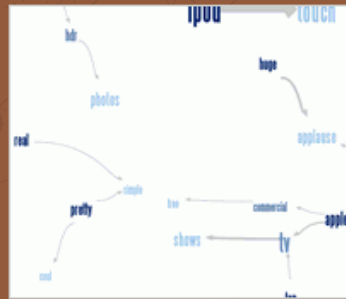
- quick start
- visualization types
- about Many Eyes
- blog

Login

visualizations

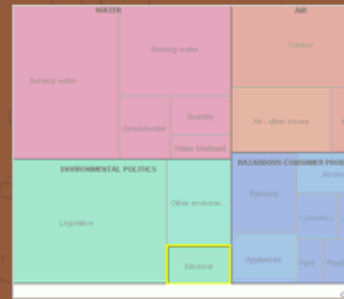
Featured Visualizations

News from Apple



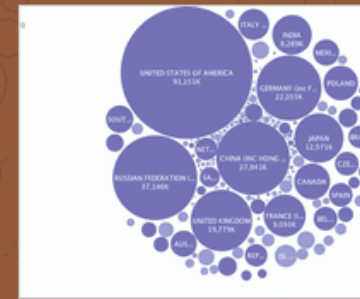
Live from Apple's fall 2010 event
by Irene Ros

Environmental Health Major issues



Number of stories in the Environmental Health News archive 2002-2010 (Aug.) by major issues
by Vito Iacqua

Cumulative Emissions



G20 & non-G20 countries: 1751-2006.
by adamnieman



many eyes beta

for shared visualization and discovery

brought to you by IBM



Introduction to the new Many Eyes Experiment

Many Eyes

Log in

Explore

- Visualizations
- Data sets
- Comments
- Topic centers

Participate

- Create a visualization
- Upload a data set
- Create a topic center
- Register

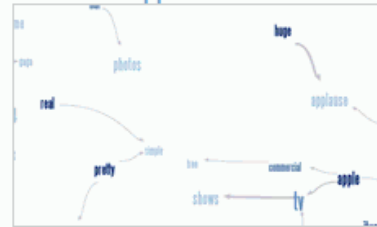
Learn more

- Quick start
- Visualization types
- About Many Eyes
- Privacy
- Blog

Visualizations

Try our featured visualizations

News from Apple



Live from Apple's fall 2010 event

by Irene Ros

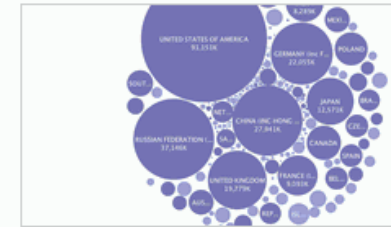
Environmental Health Major issues



Number of stories in the Environmental Health News archive 2002-2010 (Aug.) by major issues

by Vito Ilacqua

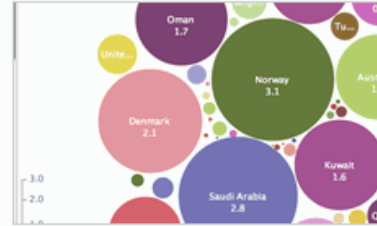
Cumulative Emissions



G20 & non-G20 countries: 1751-2006.

by adamnieman

Pakistan flood aid



As at 24 August 2010

by smfegers

Car Manufacturer Mentions on Twitter



Can you guess which is most frequently mentioned?

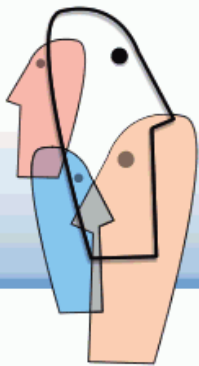
by Darrison

Teacher Starting Salary



By State

by Anonymous



An experiment brought to you by IBM Research and the IBM Cognos software group

<http://www.many-eyes.com>



Many Eyes: Rapid, Social, Data Visualization

Many Eyes enables anyone to:

- Represent content in visual ways
- Share
- Gather thoughts, new perspectives and related information from others

A bet on ...

1. ...the power of human visual intelligence to find patterns, and
2. ...the value of different perspectives

The screenshot shows the Many Eyes website interface. At the top, there is a navigation bar with the Many Eyes logo, a search bar containing the word "visualizations", and a search button. Below the navigation bar, there is a sidebar on the left with several sections: "explore" (visualizations, data sets, comments, topic centers), "participate" (create visualization, upload data set, create topic center, register), "learn more" (quick start, visualization types, data format & style, about Many Eyes, FAQ, blog), "contact us" (contact, report a bug), and "legal" (terms of use, privacy). Below the sidebar is a "Popular Tags" section with tags like "1 Map Maps Tag", "Tag1", and "Tag2". The main content area is titled "Listing Visualizations" and shows a grid of 18 different data visualizations, including maps of various countries (France, UK, Italy, Canada, Brazil, USA, China, Germany, Australia), pie charts, and test matrices. Each visualization is accompanied by a timestamp and a title.





Simple Data Upload

Self-serve simplicity

- No training needed
- Fast time to value

Many Eyes Welcome, Steve McD | Logout

visualizations

Upload Data

Before you upload data, please understand that **anything you upload will be visible to everyone on the internet**. That means you can share with your friends and collaborators, but it also implies that you should think carefully before you upload. Please refer to our use agreement for more details.

1] Prepare your data.
First, find the data set that you want to put into Many Eyes. For now, there is a size limit of 5 megabytes.

Data Tables
If your data is a list of values, first format it into a table with informative column headers. If your columns have different units of measure, be sure to include the units in the headers. Use Microsoft Excel™ or a text file where columns are separated with tabs. If this is your first upload, read the format guidelines and watch the step-by-step tutorial. If you have a specific visualization in mind, take a look at its explanation page for additional information.

Free Text
If your data is free text (such as an essay or a speech), open the data in a word processor or web browser, select the text, and copy it to the clipboard by typing control-C (Windows) or command-C (Macintosh).

	A	B	C	D
1	Mountain	Height/Feet	Height/Meters	
2	Everest	29035	8850	
3	K2	28250	8611	
4	Kanchenjunga	28169	8586	
5				

	A	B	C	D
1	Mountain	Height/Feet	Height/Meters	
2	Everest	29035	8850	
3	K2	28250	8611	
4	Kanchenjunga	28169	8586	
5				

2] Paste the data: click the rectangle below, and type control-V (Windows) or command-V (Macintosh). For files of a megabyte or more, there may be a delay while reading the data.

explore
visualizations
data sets
comments
topic centers
my stuff
my topic centers
my watchlist
my contributions
messages to me

participate
create visualization
upload data set
create topic center

learn more
quick start
visualization types
data format & style
about Many Eyes
FAQ
blog

contacts
contact
report a bug

legal
terms of use
privacy

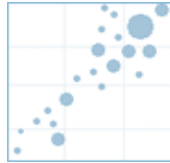
Popular Tags:
visualizations data sets
1 Map Maps Tag
Tag1 Tag2
Testing

Broad Set of Visualizations

See Relationships Among Data Points



Network Diagram



Scatterplot



Matrix Chart

See Parts of a Whole



Treemap



Pie Chart



Treemap for Comparisons

Analyze Text



Phrase Net



Word Tree

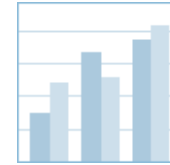


Tag Cloud



Word Cloud

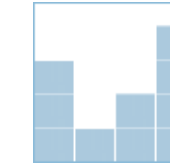
Compare a Set of Values



Bar Chart



Bubble Chart



Block Histogram

See Data Spatially

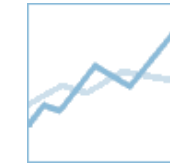


Maps

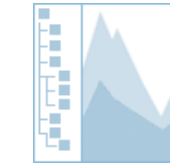
Track Rises and Falls Over Time



Stack Graph



Line Graph



Stack Graph For Categories

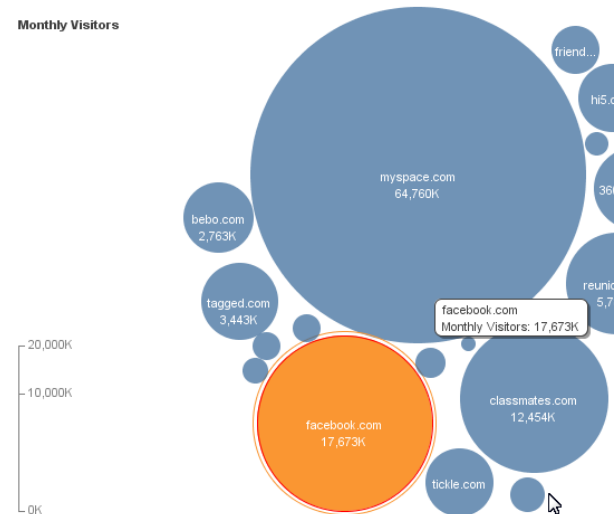
Interactivity

- Each user can view the data in a different way
 - Filtering
 - Flip X & Y axes
 - Highlighting selected information
 - Fonts, colors
 - Tooltips
 - Zoom in/out

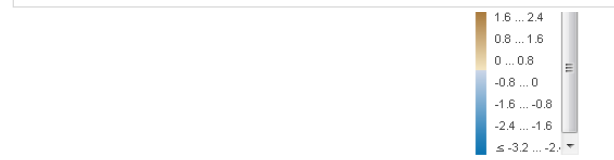
Visualizations : Social Network Monthly Visitors

Creator: Anonymous
Tags:

Monthly Visitors



Data file: Social Network Size By Monthly Visitors (April 2007) Data source: Compete.com



Visualizations : Obama's 2008 Acceptance Speech

Creator: K.Lansing
Tags:

Edit Language Font Layout Color



Data file: Obama's 2008 Acceptance Speech Data source: [unreadable]



Data file: Projected Changes in House Delegations based on Population Changes 2000-2008 Data source: Us Census Bureau Election Data Services



Data file: Projected Changes in House Delegations based on Population Changes 2000-2008 Data source: Us Census Bureau Election Data Services



Social and Collaborative

- Comments
 - saved with the commentor's view of the data
- Data set and visualization ratings
- “Topic Centers”
 - A collection of data sets and visualizations around a topic

ment expenses 1962-2004

1,500K
1,000K
500K
0K

1962 1965 1968 1971 1974 1977 1980 1983 1986 1989 1992 1995 1998 2001 2004

HUMAN RESOURCES
NET INTEREST
NATIONAL DEFENSE

Click or ctrl-click to highlight points on graph. Percentage

Data file: US Budget, \$Millions, 1962-2004 (Y2000\$) Data source: Office of Management and Budget (OMB)

full image share this add to topic hub rate this

Comments (33)

currently showing

Frank van Ham says:
Where have your tax dollars gone?
Posted Wednesday January 10 2007, 10:23 AM
see view for this comment

Anonymous says:
What is this spike in housing assistance?
Posted Wednesday January 10 2007, 08:34 PM
see view for this comment

Anonymous says:
Huge variability...is this politics-driven or weather-driven?
Posted Wednesday January 10 2007, 08:51 PM
see view for this comment

This data set has 1 positive and 0 negative ratings.

This visualization has 23 positive and 0 negative ratings.

Part of these topic hubs

Examples

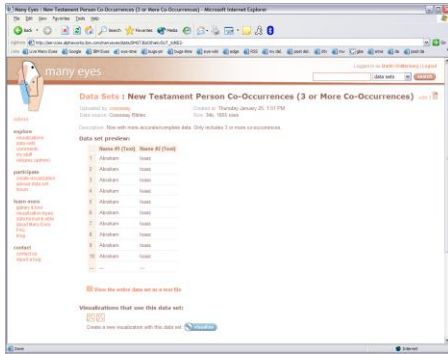
Being watched by

Irene
ruoyang
MBAbright
fire
LogosSeeker
jingui
anandesh
ohlumos

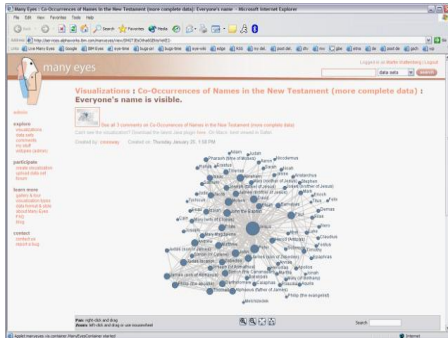


Expanding Conversations

1 User “crossway” uploads co-occurrence data for biblical figures to Many Eyes



2 Crossway uses the network diagram tool to create a graph visualization



The long list of responses / trackbacks on the ESV blog entry: a discussion about the visualization and analysis.

3 Crossway writes about the visualization on ESV blog

4 Many blogs (almost 100 by Google’s count) write about crossway’s blog entry.

5 One of these bloggers posts new data to Many Eyes—and, of course, blogs about the results.



Demo

Business Analytics **Forum**



Information and Analytics Communities

- **On-line communities, User Groups, Technical Forums, Blogs, Social networks, and more**
 - Find a community that interests you at...
 - ibm.com/software/data/community
- **Information Champions**
 - Recognizing individuals who have made the most outstanding contributions to Information Management communities
 - ibm.com/software/data/champion

WIN *an Apple® iPad*

Please remember to complete your session evaluation online at the Communication Station or point your Smart Phone browser to:

www.spss.com/goldcoast



For a chance to win an Apple® iPad



Thank You

Business Analytics **Forum**

Disclaimer



© Copyright IBM Corporation 2010. All rights reserved.

U.S. Government Users Restricted Rights - Use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM Corp.

THE INFORMATION CONTAINED IN THIS PRESENTATION IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY. WHILE EFFORTS WERE MADE TO VERIFY THE COMPLETENESS AND ACCURACY OF THE INFORMATION CONTAINED IN THIS PRESENTATION, IT IS PROVIDED “AS IS” WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. IN ADDITION, THIS INFORMATION IS BASED ON IBM’S CURRENT PRODUCT PLANS AND STRATEGY, WHICH ARE SUBJECT TO CHANGE BY IBM WITHOUT NOTICE. IBM SHALL NOT BE RESPONSIBLE FOR ANY DAMAGES ARISING OUT OF THE USE OF, OR OTHERWISE RELATED TO, THIS PRESENTATION OR ANY OTHER DOCUMENTATION. NOTHING CONTAINED IN THIS PRESENTATION IS INTENDED TO, NOR SHALL HAVE THE EFFECT OF, CREATING ANY WARRANTIES OR REPRESENTATIONS FROM IBM (OR ITS SUPPLIERS OR LICENSORS), OR ALTERING THE TERMS AND CONDITIONS OF ANY AGREEMENT OR LICENSE GOVERNING THE USE OF IBM PRODUCTS AND/OR SOFTWARE.

IBM, the IBM logo, and ibm.com are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries, or both. If these and other IBM trademarked terms are marked on their first occurrence in this information with a trademark symbol (® or ™), these symbols indicate U.S. registered or common law trademarks owned by IBM at the time this information was published. Such trademarks may also be registered or common law trademarks in other countries. A current list of IBM trademarks is available on the Web at “Copyright and trademark information” at www.ibm.com/legal/copytrade.shtml