Internet measurement and the impact of big data

Kenjiro Cho (IIJ/WIDE)

Big Data everywhere

the WHITE HOUSE PRESIDENT BARACK OBAMA

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Big Data is a Big Deal

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Posted by Tom Kalil on March 29, 2012 at 09:23 AM EDT

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[Editor's Note: Watch
http://live.science360

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Tom Kalil is Deputy Di

The New York Times
SundayReview | The Opinion Pages

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NEWS ANALYSIS

The Age of Big Data

By STEVE LOHR
Published: February 11, 2012

GOOD with numbers? Fascinated by data? The sound you hear is opportunity knocking.

Enlarge This Image

Chad Hagen

Mo Zhou was snapped up by I.B.M. last summer, as a freshly minted Yale M.B.A., to join the technology company's fast-growing ranks of data consultants. They help businesses make sense of an explosion of data — Web traffic and social network comments, as well as software and sensors that monitor shipments, suppliers and customers — to guide decisions, trim costs and lift sales. "I've always had a love of numbers,"

The Economist

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Special report: Managing information

Data, data everywhere

Information has gone from scarce to superabundant. That b benefits, says Kenneth Cukier (interviewed here)—but also

Feb 25th 2010 | from the print edition

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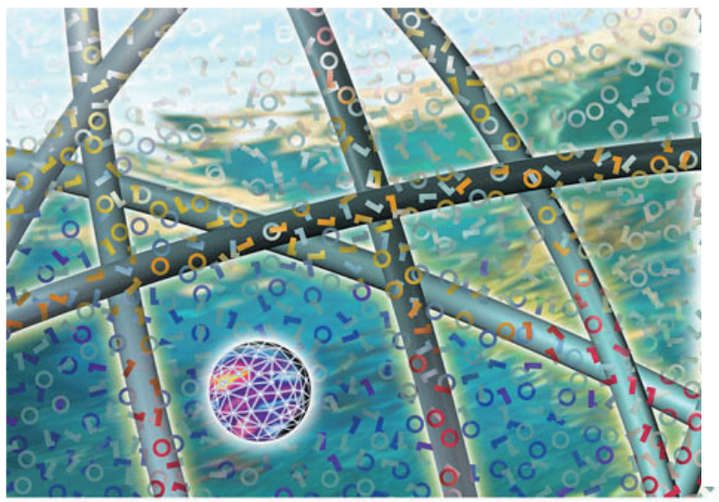

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Report

Big data: The next frontier for innovation, competition, and productivity

May. 2011 | by James Manyika, Michael Chui, Brad Brown, Jacques Bughin, Richard Dobbs, Charles Roxburgh

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The amount of data in our world has been exploding, and analyzing large data sets—so-called big data—will become a key basis of competition, underpinning new waves of productivity growth, innovation, and consumer surplus, according to research by MGI and McKinsey's Business Technology Office. Leaders in every sector will have to grapple with the implications of big data, not just a few data-oriented managers. The increasing volume and detail of information captured by enterprises, the rise of multimedia, social media, and the Internet of Things will fuel exponential growth in data for the foreseeable future.

Google's Chief Economist Hal Varian on Statistics

The McKinsey Quarterly, January 2009

"I keep saying the sexy job in the next ten years will be statisticians. People think I'm joking, but who would've guessed that computer engineers would've been the sexy job of the 1990s? The ability to take data — to be able to understand it, to process it, to extract value from it, to visualize it, to communicate it — that's going to be a hugely important skill in the next decades, not only at the professional level but even at the educational level for elementary school kids, for high school kids, for college kids. Because now we really do have essentially free and ubiquitous data. So the complimentary scarce factor is the ability to understand that data and extract value from it."

Are we on the edge of a big wave?

- Big data: extracting hidden useful info from huge amount of unstructured data
- we have been doing it for Internet measurement for 20 years!

Should we take advantage of big data or stay away from it?

- pros:
  - it helps to convince people for the need of data
  - it attracts researchers, students, and money
  - many useful tools have been developed
- cons:
  - it's just a hype, technically nothing new
  - dubious about those who jump on the bandwagon
- How can we make use of the big data trend?

technologies

- data collection
  - increasing data sources (e.g., sensor data, SNS)
- data storage
  - distributed storage, NoSQL database
- data processing
  - cloud computing, distributed processing (e.g., MapReduce)
- data understanding
  - data mining, machine learning, statistical analysis

Fundamental change to creative thinking process?

- Data-driven decision making has been important
- but, ICT pushes it to a completely different level (in quality, quantity, expressions)
- now, we can literally interact with data (data-human interaction)