

BIG DATA

A Revolution That Will Transform How We Live, Work, and Think

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MAIN IDEA



"Big Data" is defined as "the ability of society to harness massive amounts of information in novel ways to produce useful insights or goods or services of significant value." In practical terms, Big Data is where we use huge quantities of data to make better predictions based on the fact we identify patterns in the data rather than trying to understand the underlying causes in more detail.

A good example of the usefulness of big data was when the H1N1 flu virus struck in 2009. The traditional approach to tracking a virus was to collect data about doctor's visits which the Center for Disease Control and Prevention (CDC) tabulated and then published a week or two later. Google came up with a different approach. Google suggested the spread of H1N1 could in fact be tracked by the Google searches people with the flu carry out when looking for remedies. Google then analyzed a staggering 450 million different mathematical models to come up with a collection of search terms which correlated with the historical data Google already had relating to the spread of seasonal flu. As a result, health officials could use the Google method to track the spread of H1N1 in real time and respond rapidly rather than waiting a couple of weeks for the CDC updates.

Big data will be a source of new economic value and innovation in the future. It will also change the way information is analyzed and transform the way society is organized. The big data era which is just beginning will eventually challenge the way everyone lives and interacts with the world.

"Big data is all about seeing and understanding the relations within and among pieces of information that, until very recently, we struggled to fully grasp."
 – Viktor Mayer-Schonberger and Kenneth Cukier

1. Big data represents three shifts in the way society is organized Pages 2 - 4

Big data's ascendancy will bring about three fundamental shifts in the way information is analyzed and then used in society:



- Process all data, not just samples 1
- Less desire for exactness 2
- Move from causes to patterns 3

2. Big data changes the nature of business, markets and society Pages 5 - 7

In the analog era, collecting and then analyzing data was enormously expensive and very time consuming. Digitization has essentially reversed that dynamic and as a result three emerging trends are going to grow substantially in the immediate future:



- 1 Datafication will become common
- 2 Data will become a key asset
- 3 Expertise will give way to analysis

3. Big data has lots of positives but also a dark side as well Page 8

As big data becomes more and more widespread, several key issues will arise which society will need to address. Some of the more obvious of these issues will be:



- 1 How to regulate algorithms?
- 2 Individual privacy vs. probability?
- 3 Role of data-driven predictions?

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