

# DATA VARIETY COMES OF AGE

When Gartner coined the “three Vs” of big data back in 2001, one of the three quickly rose above the rest. Big data is characterized by three qualities, volume, velocity and variety—and of these, the most important is variety, as different types of data, whether it be demographic, social, etc., can yield greater insight and move a business forward.

“All data has value, some more than others, but we need to get past the structured thinking of the past. When we talk about the three V’s, variety is our friend. The greater the variety, the greater the insights we have,” says Dr. J.T. Kostman, chief data officer of Time Inc.

There’s nothing new about big data in traditional database formats. Transactional data has been recorded since businesses began, and the volume has grown with the size of the markets served. What’s new is the vast amounts of largely unstructured data that has never been collected before—either because it was locked up in inconvenient formats (PDFs, video, speech) or because it simply didn’t exist (location data from smartphones or sentiment from social media platforms).

Companies have come to understand that accessing, collecting and analyzing this data, then leveraging it in the service of business objectives, yields insights that can move the business forward. “The opportunities to drive revenue, connect with customers and develop new products are all there for the taking,” says Matt Ariker, chief operating officer of the Consumer Marketing Analytics Center at McKinsey & Company.

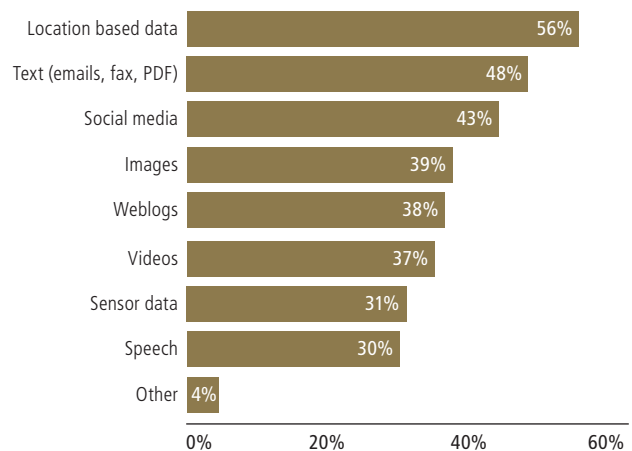
“There’s so much variety now. Separating the information from the noise and figuring out what has value is a challenge,” adds Heather Wilson, chief data officer at AIG.

### WHAT DATA IS COLLECTED MOST?

In the spring of 2015, Forbes Insights surveyed 316 senior data and IT executives on behalf of Teradata and asked them

what sources of big data they currently use. The most cited was location data, collected by over half of the respondents, followed by text, collected by just under half. Social media, images, website traffic and videos were collected by about four in 10 organizations. Next came sensor data and audio, collected by about a third.

### WHAT SOURCES OF BIG DATA ARE YOU CURRENTLY USING?



Source: Forbes Insights-Teradata Data and Analytics survey, April 2015. N=316 for all respondents.

But while most organizations don’t yet take full advantage of the variety of data available, the future is another matter. Interviews with chief data officers reveal that companies are laying the groundwork now to access and analyze every type of data in the future.

The reason? “It’s the difference between looking at yourself in the rearview mirror of your car versus one of those multidimensional mirrors in the clothing store,” says Time Inc.’s Dr. Kostman. “More types of data mean greater variety and a better understanding of the audience. More and more, we’re going to rely on every type of data that’s available.”

While expanding the company’s reach into new data sources is important, so is ensuring that data already collected is used to its full extent. “The variety piece is really cool,” says Wells Fargo Chief Data Officer Charles Thomas. “You don’t want to miss the next big thing, and you should always carve out a piece of your capacity to look at how to bring in new types of data. I have an analytical innovation team whose only job is to look at new data sources and find ways to leverage them to help our customers.

“But we also need to make sure that we do a good job with the basic stuff we have today,” he continues. “There’s a lot of opportunity in the core transactional data.”

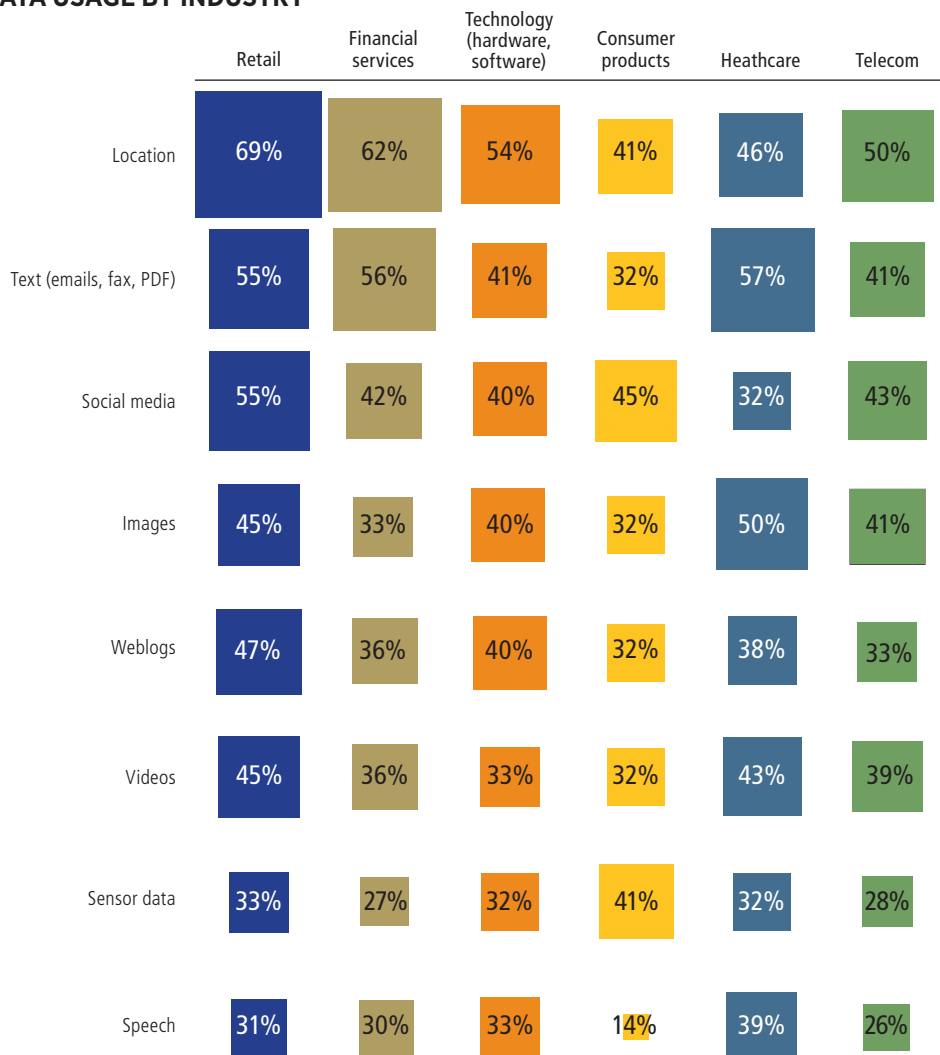
**WHICH INDUSTRIES USE WHICH TYPES OF DATA?**

It’s not a big exaggeration to say that every organization

will eventually find a use for every type of data. For now, however, data usage varies by company and industry.

- When a leader sees analytics as the “killer app” and makes it a priority—as famously depicted in Thomas Davenport’s *Competing on Analytics* (Harrah’s CEO Gary Loveman) and Michael Lewis’s *Moneyball* (Oakland A’s General Manager Billy Beane)—the organization follows.
- Big organizations can throw more resources at data and analytics than small ones, and many are investigating data sources without knowing in advance whether they have any application to the business.
- Some types of data are natural fits for particular industries—location in retail, for instance, or imaging in healthcare.

**DATA USAGE BY INDUSTRY**



Source: Forbes–Teradata Data and Analytics survey, April 2015. N=316 for all respondents. Industry-specific sample sizes range from 22 (consumer products) to 86 (financial services).

The chart above shows the percentage of survey respondents within each industry who said that their company uses a particular type of data. Although 316 executives responded to the survey, some of the industry-specific sample sizes are small, so the percentages shouldn't be taken too literally. Nevertheless, many of the differences are instructive.

For instance, it's easy to see why the retail sector appears to use every type of data more than other sectors: consumers buy a wide variety of goods and generate a lot personal data that can be used to predict what they want to buy, how much they can afford, who they usually buy from and why, what triggers they're most likely respond to and what locations they frequent.

In descending order of popularity, here are the data types that the respondents cited.

**Location.** Over half (56%) of all survey respondents say that they use location data. These executives are disproportionately from the retail and financial services sector. "It's very useful to be able to locate a person at a given time and place," says Ross Farrelly, Teradata's chief data scientist in Australia and New Zealand. "For example, it's important in deciding where to put ATMs or in knowing who is in a particular store."

**Text.** Half (48%) of all executives say that they collect and use text data. That means documents of any type: emails, email archives, PDFs, anything with words and letters. Any industry with heavy legal or compliance requirements—for instance, healthcare or financial services in the chart above—will likely need to collect and analyze a lot of text.

Text analysis is also very useful to a sector not shown on the chart: government, in particular law enforcement. "We work with organizations that need to quickly trawl through a massive store of documents and extract everything relevant to a person of interest," says Teradata's Farrelly. "The original documents need to be preserved in order to maintain the trail of evidence. But they also need to extract the entities from the text and create an index of companies, individuals, emails, addresses, phone numbers and so on. They run queries on people of interest, find documents that mention that person, identify related documents and gather evidence."

**Social media.** Among all respondents, 43% use social media data. A disproportionate number work in retail (55%) and consumer products (45%), both of which use

social media to monitor brand awareness, track brand risk and build communities of brand advocates.

**Images.** According to the survey, the healthcare industry does not collect data as much as other sectors. The exception is image data: 39% of all respondents use it, but 50% of the healthcare respondents do. One reason is the need to scan medical records; another is the widespread use of medical imaging. Image data presents unique challenges: not only are the files huge, but the data is also complex and difficult to analyze.

A use of image data that cuts across sectors is fraud detection. "One thing we see a great deal is the use of image recognition to see whether the signatures are being falsified or even photocopied," says Teradata's Farrelly.

## THE CHALLENGE: INTEGRATING MULTIPLE DATA TYPES

In digital's early days, there was a lot of talk about "channel shift"—the idea that new channels would replace old ones. Channel shift would have simplified data collection and analysis, as the amount of data would have remained relatively stable, with only the form changing.

But channel shift never happened. "People used to think that we'd go from face-to-face interaction in branches to talking in call centers or interacting online," says Wells Fargo's Thomas. "We quickly realized that there's no such thing as channel shift. There's simply channel addition. When I got a mortgage recently, I was engaging with the representatives via dot-com, email, text, mobile, call center, and then I physically went in and signed a document. Just imagine one hand knowing what the other is doing throughout that entire process to make it as seamless and simple, and customer-friendly, as possible."

In other words, organizations need to learn to gather, track and analyze data from everywhere in order to get a complete picture of the customer. The data variety imperative is here to stay. The challenge is how to get all of that different data to work together in the service of the business.

"We can now integrate data across devices and across screens," says Time Inc.'s Dr. Kostman. "Within the next few months, we will have integrated legacy transactional data with behavioral data. We are building the process to ingest, cohere, consolidate and give us access to truly integrated data."

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