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BIG DATA

## THE NEW
# BIG DATA

**Over The Last Few Years, Big Data Has Grown Into A Large And Formidable Beast.**

OVER **THE** LAST FEW YEARS, BIG DATA HAS GROWN INTO A LARGE AND FORMIDABLE BEAST. **NEW** ADVANCES IN ARTIFICIAL INTELLIGENCE, MACHINE LEARNING AND PROCESSING POWER ARE LEADING TO THE CREATION OF INNOVATIVE APPLICATIONS THAT USE **BIG DATA** TO TRANSFORM THE WAY WE LIVE, WORK, SHOP AND PLAY.

BRAD RHOADS

**[01]**

**ONE** of the biggest users of this new big data is the healthcare industry. For hospitals struggling to contain costs, internal data from patient records, along with external data like weather forecasts and holidays, can be the key to predicting admission rates. This helps them make better operations decisions like predicting staffing needs, as Paris hospitals recently did with the help of machine learning.[1]

**[02]**

In the United States, the National Cancer Institute takes it a step further. It is recommending a patient database that uses big data to predict outcomes of certain treatments.[2] Rather than creating costly and time-consuming new trials for each procedure, researchers will simply back-reference the data for subjects.[3] Much of the credit for the rise of what we'll call Big Healthcare goes to the adoption of Electronic Health Records, now used in 94% of American hospitals.[4]

Now, shifting gears, think about the way we access music. Streaming services like Pandora, Apple Music and Spotify® have almost 200 million subscribers worldwide tuning in, spurring billions of neatly digitized data points.[5] Throw in YouTube and other free services, and you have a huge set of data available to analyze which songs each customer segment likes, including details like how long each listener samples a track before moving on.

The real challenge is to see if data analysis can predict which songs will be hits or misses. But, that would take a long, complicated study by university researchers, in someplace like Antwerp, where soulless algorithms would be applied and XY scatter charts studied to scientifically predict the position of dozens of songs on Billboard's Dance Hit charts.

**[03]**

Of course, that happened already. And, they got it right 83% of the time. The researchers say they can become even more accurate as they continue to gather more data points.[6]

Pandora, for example, gathers 450 different data points for each song in its catalogue (what it calls the song's genome). It then employs a team of musicologists to make predictions about what songs subscribers will like.[7]

Utilities are also looking to predictive models to improve outputs. The most aggressive studies have been done, unsurprisingly, in California, where the state is developing a smart grid.[8]

Teams at the University of Southern California (USC) are studying, among other things, how to use big data for the optimal integration of renewable energy sources like solar into the existing grid. Their Deep Solar project analyzes weather patterns and usage data to regulate the intake of private solar sources.[9]

The National Aeronautics and Space Administration (NASA), which has been collecting weather data and mission data points for decades, has a different problem. They have too much data, and they have to store all of it, and then figure out how to *use* it.[10]

**[04]**

Under the Obama administration, NASA created the Big Data Challenge, opening the process up to public universities and research groups. Through this program, collective decisions can be made about keeping what's important, and then on how best to access the data.[11] Remember, storing data is costly, as is transmitting it millions of miles across space. The first step is to decide what data to create before ever committing to storage and analyses.

NASA's Big Data Challenge in many ways mirrors what First Data does for businesses. Every day, First Data hears from dozens of businesses who want to know how to make better sense of their transactions. "When we initially approach them with solutions, it's daunting," says Glenn Fodor, who runs First Data's Information and Analytics Solutions division. "They say, *'this is a lot of stuff, what do I do with it?'*"

**[05]**

Fodor says, having massive amounts of data with no plan is counterproductive. He recommends a measured approach, tailored to the individual business owner that answers their most basic needs.

"The challenge is, you have all this data. How do you boil it down to concise, actionable information that helps make business decisions that will allow me to either grow revenue or cut costs?" Fodor explains that you can grow data in many ways. For instance, by selling more stuff, retaining customers better, or by gaining new customers. *That's* when you see the lightbulb come on. We tell them how to do each of those things. That's what our analytic tools accomplish."

Rishi Chhabra helps design and implement those analytic tools for First Data. And, he's done his homework. "I personally visited with hundreds of merchants, just to understand what we could do to delight them. But their questions were more basic, more human. 'Just please tell me how much money I make each day.' It's very hard for them to figure these things out. So, we start there."

**[06]**

Chhabra's applications are now used by thousands of merchants who turn to First Data's Clover Insights tool to track their sales and learn how they compare with others in their same vertical, or in the same zip code, or in different parts of the country. He's helped everyone from single-owner businesses to the largest employer in the world.

"Transactions don't lie," says Chhabra. "So, we help with forecasts and quarterly reports using real data based on actual purchases, not analysis from outside sources. I'm showing them all purchases in each category, not something extrapolated from a survey, or website clicks."

In the end, big data is only as good as the tools that go with it. That's true if you're helping markets understand how long the fidget-spinner craze will last (turns out, not very long), or where you should open a new franchise without cannibalizing your current customer base. As these tools evolve, we'll continue to see the new big data used in big, new ways — even bigger than predicting the sickest beat in Belgium or the song of the summer in Spain.◣

**[07]**

In This Article:

#BigData
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**The New Big Data**

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