

Learning How to Swim: Making the Case for a Big Data Strategy

By Chris Ford

For those who have never learned how to swim, being around water can be pretty intimidating. Sure, it looks fun as you watch your friends splashing around. And it's 95 degrees Fahrenheit outside, so you're uncomfortably aware that the obvious way to cool off means getting in the water. Topping it off, your best friend is 30 feet out, talking to the girl you like, but you're still too afraid to jump in. When that happens, you know it's time for a big change.

Learn how to swim. Do it now. Not only is it a basic survival skill everyone should master, it's also a particularly apt metaphor for learning how to leverage big data to keep your enterprise thriving and to maintain your competitive edge.

Many enterprises were skeptical when data warehousing took off. After that, more than a few companies stayed behind during the first surge of the Internet Age, gripping the proverbial edge of the pool in fear. For businesses that want to succeed in today's world, letting the same thing happen with big data is not unlike treading water and going nowhere. Now is the time to dip your toe in the refreshing waters of big data. If your business wants to compete, not just in the near future but for the long haul, it's imperative to join the big data fray now. In the hope that companies are able to identify with some of the following scenarios, let's take a look at several of the most compelling reasons to incorporate big data into a sound business strategy.

Most people have heard a lot of big data buzz, and a great percentage of these people are persuaded that its potential will be realized eventually. However, enterprises that could actually reap benefits from big data right now may be thinking there's no rush to take advantage of it. To them, it's just another marketing ploy climbing its way up the hype curve. They may even rationalize their resistance by maintaining that creating a big data strategy is currently too expensive and time-consuming or by persuading fellow colleagues that there's plenty of time to add big data when they really need it.

Jump In, The Water's Fine!

Big data is a logical expansion out of the Internet Age and the mobile world. Since the 1980s, Sun Microsystems' mantra has been, "The network is the computer." Many of business intelligence's most creative gurus have internalized this notion, with some even going so far as to use it as their guiding philosophy. They may have a point. The Internet Age has shown us that Google is a computer, not an application. Facebook is also a computer, not an application. These gigantic computers with millions, or quite possibly billions, of CPUs are generating, processing and spitting out data in volumes that, until recently, were unimaginable. The same holds true for mobile devices and other data collector devices, such as processors, and data spewing devices, like smart phones, GPS devices, sensors and tablets. Before this age of big data, a person might check his or her bank account balance once a week, make a few dozen phone calls per week, and send and receive a hundred or so emails during that time. Throw in a few more transactions here and there and everything adds up to fairly manageable amounts of data.

Jump to today, which may include:

- 6 tweets
- 4 posts
- 12 likes
- 8 plusses
- Checking with a financial aggregating app against 12 accounts
- 20 text messages
- 3 online transactions including some sweet new shoes
- 5 updates to a fantasy league
- Sponsoring 3 friends for their marathon for a cure
- Downloading 2 eBooks
- Downloading 3 audiobooks
- Adding 3 blog entries
- Tracking food eaten for breakfast on another app

- Listening to 22 songs on another app and liking 16 and hating 6 of them
- Adding 6 recommendations on LinkedIn

Of all that activity listed above, seven of those items were about you, your company, your competitors, your market, your industry or your geography. This example barely scratches the surface of big data. Rather, it's a mere outline of the picture big data represents. And if this information matters to your competitors, it should really matter to you on behalf of your enterprise. A big data strategy includes processing all of this seemingly disparate information — adding in weather data, demographics data, security data, fraud detection, credit information, comparative data, market categorization, delivery times, globalization settings and searches about all the above — and integrating it into a cohesive comparative analysis, providing quality intelligence and reporting tools from which executives can make informed, real-time decisions. If your business wants to get in on this information gold mine, big data is the one true answer. And don't forget to check the weather in three different time zones, in the event you might want to use the hotel pool during an upcoming trip. This could conceivably occur during the first three hours of a single work day and I've probably left out about 65 percent of the myriad other things a person could do in this new digital age. Now, multiply that by a billion people just like you and me and add another smaller chunk for the other billions of people who aren't quite as connected, still adding so much data into the system that it's mind-numbingly massive in scale.

Most People Don't Learn to Swim in a Day

Harnessing the power of big data means you have to add new technologies to your infrastructure. It also means you may have to start applying a new mindset to your organization. It also means trying things that may, in the long run, not be feasible. Think of it as a construction or remodeling process, where unexpected events are inevitable. Virtually no one gets it perfect the first time, but that shouldn't deter you from starting now. In fact, it's best to work out problems while you have time on your side.

What are some of the new technologies you'll need to add to your infrastructure? First, you'll add non-RDBMS databases, like NoSQL databases, columnar databases and even semistructured and completely unstructured data stores. Again, there will be a learning curve to understanding these technologies, as well as growing pains when working with them. Next, you'll add processing paradigms, like Hadoop or other MapReduce installations, with another learning

curve when installing grids and clusters of computers that you haven't worked with in the past. With those grids, there will be performance tuning hurdles, hardware procurement processes, frameworks to install, software deployment methodologies ... the list goes on.

You'll be adding new and varied data sources with which you have no previous experience. Yes, this is a lot of work. It will include data procurement, new data collection methods and data you can't even anticipate right now. You'll be adding new visualization tools for the massive amounts of data that you will try to digest. You'll be trying to integrate all of this data back into existing data warehouses, data marts and applications. You will be moving to more real-time processing, away from batch processing overnight.

"Yes, we get it now! Look what big data is doing for our competitors!" If you wait until one of your colleagues says this in a meeting in response to positive results your competitors are realizing, you could be so far behind that you may never recover. Without being alarmist, the recent history of our digital age provides fair warning about how much has been won and lost by those organizations that either took the Internet seriously from its beginning or hung back to see how it would play out. The early devotees of the Internet, data warehousing and business intelligence are the organizations that dominate our society today. Those that chose not get on board effectively are known to us as dinosaurs.

Don't make the same mistakes so many made a decade ago. Take heed of those mistakes and learn from history. You may have competitors that you don't even know exist. They could be applying big data techniques right now, making themselves stronger in the global marketplace, winning a game you don't even know you're playing. The same people who claimed the Internet was only hype years ago are the probably the same people saying that big data is a flashy trend.

It's Time to Sink or Swim

Each time someone posts a comment about your device's battery life, don't you want to know what they said? Every time Twitter erupts with complaints about the content of your food product, you'll want to be way ahead of it. If a product boycott starts up on Facebook, understand intrinsically that it could happen to you. It's in your company's best interest to have information about your own product to help your organization avoid the same fate. Each time your network gets overwhelmed with traffic, it's crucial to know why it's happening. If your product gets recalled, it's imperative that you handle it in a way that actually shows you care about your customers, rather than letting yourself get bad-mouthed all

over the Internet. If your company has to react to a weather event affecting your services, you want to be that company whose services were back up and running the fastest. Your best, and frankly, only option for handling any of these types of issues is to adopt big data concepts, apply them, learn from them and continuously improve them.

Meet your swim instructors. Google, eBay, Yahoo, Facebook and many other organizations have given us new technologies to start this process. Many more new technologies will be on their way, probably sooner than any of us can imagine, further expanding your ability to process

all of this data. It's a brave new world, especially if you know how to swim.

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