



Data *Disruption*

Business Change



INTRODUCTION

It is impossible to ignore the fact that we live in a data-driven civilization. Not only is the amount of data in the world doubling every two years, but the percentage of these data that are becoming valuable because of advanced analytics is also growing. The entire field of data capture and analysis is evolving so rapidly that organizations have difficulty keeping up. Yet data-driven business processes, competition, and the rewards of faster and more intelligent operations leave us with no other choice.

For a long time, our ability to capture data outpaced our ability to process it. This meant that large quantities of data were stored in data warehouses until some future time when tools would be available to find value in them or until they were discarded all together. Several things have happened in recent years to change this dynamic. One is the exponential growth in data; the other is the emergence of new platforms and technologies that make it possible to process data sets of almost unlimited size economically while lowering the cost and increasing the speed of analysis. These elements, combined with new analytic techniques and a growing use of machine learning to accelerate analytic methods, is changing almost every aspect of our lives.

To gain a fuller understanding of how modern analytical methods are being used in visible and not-so-visible ways, we approached data analytics experts from many fields and industries. I asked them to contribute essays about their experiences applying big data analytics. This e-book is a compilation of those essays. In it you will find discussions about new analytics technologies, how organizations can more effectively use their data assets, and many interesting use cases. The essays have been grouped into five sections:

- **Business Change.** Essays in this section speak to how advanced analytics are changing the way businesses operate. It is much more than a story about increased productivity and efficiency: it is a story about the complete transformation of traditional business models into something new and totally data driven.
- **Technology Platforms.** Essays in this section take a closer look at some of the tools and platforms that are making advanced analytics economical for organizations of all sizes.

INTRODUCTION

- **Industry Examples.** This section continues the discussion of transformative analytics technologies in the context of specific business and public-sector use cases.
- **Research.** This section focuses on how new-age analytics are changing the way scientists are conducting research and how they are speeding knowledge acquisition.
- **Marketing.** This section focuses on advanced, analytics-driven marketing strategies and techniques. These techniques are being used for everything from brand marketing to personalization to public relations to attribution techniques that enable companies to analyze their most effective marketing activities in real time.

It is my hope that assembling knowledgeable insights and experiences from so many different perspectives will provide a valuable glimpse into this rapidly evolving technology. I have found many of these essays both eye-opening and thought provoking. There is no question that advanced analytics will continue to play an increasingly important role in business, government, health care, knowledge acquisition, and a broad spectrum of human endeavor.



All the best,
David Rogelberg
Publisher

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Business Change



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CYCLES OF INNOVATION ARE BECOMING SHORTER



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I have been involved in applying big data to business strategy for most of my career—a career that goes back long before “big data” became the popular technology idea it is today. Over the years, I have seen how technical innovations have changed the way businesses operate, but I have also seen how those new technologies often take much longer to work their way into the business process than enthusiasts imagine they will. Even so, it is clear that modern data analytics tools are changing the pace of innovation. It is also true that traditional approaches to the kinds of disruptive change big data analytics enables, such as resisting the change and protecting the franchise, are not so effective in a digital economy. Here are a couple of examples.

“Traditional approaches to the kinds of disruptive change that big data analytics enables, such as resisting the change and protecting the franchise, are not so effective in a digital economy.”

KEY LESSONS

- 1 A LARGE ENTERPRISE CAN FORGO INNOVATION FOR A LONG TIME, BUT CYCLES OF INNOVATION ARE BECOMING SHORTER, WHICH PUTS THE NONINNOVATING COMPANY AT A DISADVANTAGE.
- 2 TO REMAIN A MAJOR PLAYER IN ITS GIVEN INDUSTRY, A COMPANY NEEDS TO DEVELOP NEW BUSINESS MODELS BASED ON BIG DATA-DRIVEN ENGAGEMENT.



CYCLES OF INNOVATION ARE BECOMING SHORTER

Not long ago, I moderated a roundtable discussion among technology executives from leading banking and financial services institutions. I asked the executives to talk about how they saw big data affecting them. Each spoke about how he or she envisioned big data affecting operations, and most said predictable things about improving efficiencies. They talked a good bit about how as competitors they could use big data in strategies that would enable them to differentiate themselves from each other.

When it came time for one executive from one of the largest banks to weigh in on this topic, he looked around the room and said, “I don’t see any of my competitors of tomorrow in the room today.” He went on to list about 15 companies growing entirely new business models around big data–driven digital engagement, all of them carving out rapidly growing niches at the expense of traditional financial services. Another example is Uber, a totally data-driven enterprise that is turning the traditional taxi business on its head. Already, Uber has its own competitors.

Big data and modern analytics tools rapidly process vast quantities of data from every source possible: transactional data, sensor data, social data, historical data—all kinds of structured and unstructured data. These tools enable faster market response and faster innovation. They provide an analytical sandbox that enables business innovators to fail faster, fail better.

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Big data analytics tools provide an analytical sandbox that enables business innovators to fail faster, fail better.

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ALL BUSINESS IS BECOMING CUSTOMER-CENTRIC



SVEN DENECKEN

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Sven Denecken is the global vice president for Co-Innovation and Strategy at SAP SE, where he assesses customer and market requirements and supports SAP's strategy. Through Co-Innovation projects, Sven uncovers key trends and best practices in the application of new technologies. Working with his teams, he supports alignment with customers, the ecosystem, and SAP's field organization. Through Co-Innovation, he works to facilitate and enable sustainable relationships among SAP, customers, industries, and partners.



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The ability to collect and analyze large amounts of relevant data rapidly enables businesses to operate in ways they have never operated before. We see this improvement in function in four key areas:

- **Customer-centricity.** This term refers to building a business model based on a complete view of customers' interests, behaviors, and preferences. Working on this model becomes possible only when businesses look at large amounts of structured and unstructured customer-related data.
- **Operational excellence.** This excellence includes a high degree of real-time automation, touchless responses to customer demands, and business process integration. It is possible only through rapid, in-memory analysis of data from many sources.

“The ability to collect and analyze large amounts of relevant data rapidly enables businesses to operate in ways they have never operated before.”

KEY LESSONS

- 1 BY EXPLORING LARGE DATA STREAMS AND ENGAGING IN ANALYTICAL SANDBOXING, BUSINESSES ARE ABLE TO QUICKLY TEST AND ADOPT NEW BUSINESS STRATEGIES.
- 2 BUSINESSES THAT THINK OF THEMSELVES AS TRADITIONAL BUSINESS-TO-BUSINESS OPERATIONS ARE INCREASINGLY RESPONDING TO THE DEMANDS OF THEIR CUSTOMERS' CUSTOMERS.



ALL BUSINESS IS BECOMING CUSTOMER-CENTRIC

- **Global networking.** The Internet has set the expectation for a business network in that it is responsive and functional and provides global commercial reach. Such networking has also become the means of capturing the data that customers and connected things generate.
- **Rapid innovation.** By exploring large data streams and engaging in analytical sandboxing, businesses can quickly test and adopt new business strategies.

The combined effect of these data-driven capabilities is the creation of business opportunities that disrupt markets and traditional businesses. For instance, some traditional asset-centric businesses are turning into service-oriented businesses. In a traditional taxicab business, the taxi company invests in cars, and then depends on revenue that cab drivers generate to ensure a good return on that investment. In contrast, Uber simply delivers a transportation service. The taxicab assets are no longer part of the business equation.

Another example of a business model in transition is order fulfillment. Traditionally, a customer accesses a digital storefront where he or she clicks a button to make an online purchase. That storefront sits on top of a traditional fulfillment operation, which in turn relies on manual picking and packing of the purchased item. This kind of operation compensates for uncertainties in buying patterns by maintaining a large inventory. The challenge is to use structured and unstructured customer-centric data to anticipate buying patterns, automate fulfillment, and integrate the supply chain more tightly. Real-time analytics platforms are beginning to make that possible, but they require extending digital integration from end to end.

The key to digital business is the increasing use of customer-centric business models. Even businesses that think of themselves as business-to-business operations will find themselves responding to the demands of their customers' customers, and these businesses will model all their activities—marketing and sales, production, supply chain, even finance—around their customers' needs.

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Some traditional asset-centric businesses are turning into service-oriented businesses.



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CONNECTING THE DOTS



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For more than a decade, Marshall Spender has influenced the development of the digital analytics industry with his WebMetricsGuru writings, which focus on social media metrics, analytics, and media convergence. Marshall teaches Web Intelligence at Rutgers University and the Zicklin School of Business, where he is a faculty lecturer. He is the author of *Social Media Analytics: Effective Tools for Building, Interpreting, and Using Metrics* (McGraw-Hill, 2011); he is currently working on his second textbook on Digital Analytics for Marketers to be published by [Routledge](#) in late 2017.

 
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The implications of superfast, in-memory computing became clear to me recently during an event at one of the universities where I teach marketing. I was speaking that day with a training manager of a leading programmatic advertising vendor. For those that are not familiar with the term “*Programmatic*”; it is one of the newest evolutions of digital advertising that increases efficiency while reducing costs of reaching targeted audiences by collecting and processing big data through superfast computing. The goal of Programmatic Advertising is to harvest eyeballs at the precise moment a consumer is ready to make a purchase decision.

One of the educational institutions I teach at had been losing potential students to other universities that charge much higher tuitions for similar curriculum and programs.

I mentioned that situation to the vendor, saying that some academics at the university in question blamed demographics trends for the declining enrollment. However, based on a conversation with the aforementioned Programmatic training manager suggested a different reason: our competitors’ digital marketing agencies had established business relationships with Programmatic Advertising vendors that allowed them to actually do Programmatic marketing of their educational programs at scale—something my institution hasn’t yet done (for a variety of reasons). *It was a revelation moment for me!*

“ Ask any taxicab company how disruptive Uber has been. ” 

KEY LESSONS

- 1 SUPERFAST, IN-MEMORY COMPUTING WILL TRANSFORM THE COMPETITIVE LANDSCAPE AND WILL BE MASSIVELY DISRUPTIVE.**
- 2 PAY ATTENTION. YOUR BUSINESS MODEL MUST BE INFORMED BY DEVELOPMENTS IN THE SUPERFAST COMPUTING SPACE.**

CONNECTING THE DOTS

By overlooking the impact of digital programmatic advertising as part of our university's branding we were losing ground to other universities who had the means and insight to employ such methods at their disposal. I believe higher educational institutions using Programmatic technologies attracted more students precisely because they put their targeted messaging in front of the right audience of students just as they were deciding which school to attend.

On price alone, we could not compete. That's disruption. As I look around the digital landscape, I see many similar examples where superfast, in-memory computing transformed the competitive landscape. Here are a few examples:

- **Uber.** Already hugely successful, this company could never have existed before. It is entirely based on big data crowd-sourcing, allowing anyone who has a car to offer a ride to anyone else in any city where the company operates. Ask any taxicab company how disruptive Uber has been.
- **Auto-driving cars.** In the not too distant future vehicles will require so many sensors to move safely without a human driver. I suspect this new technology will create disruptions in cities and states as well as in the federal government as parts of roads and highway lanes begin to be reserved for auto-driving vehicles.
- **Rich media.** A big bugaboo in search engines is their failure to automatically detect, analyze, and tag billions of online images and videos. Big data in-memory processing will change that. Facebook can already accurately tag people's faces while Google has systems that can annotate images with a short description. Eventually similar technology capabilities will be applied to video and audio files.

My advice to business leaders is simple: just pay attention to the rapid advances in technology yielding all of these changes. Taking it back to the world of superfast in-memory computing - you cannot afford *not* to know what is going on in this space. Your business thinking—your business model—must be informed by what is happening in this space. When you understand the impacts of these new technology offerings, you won't have to worry so much how it all applies to you. That will be obvious.

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DISTRIBUTED HUMAN PROCESSING



SATYEN SANGANI
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Satyen Sangani is the CEO of Alation. Before Alation, Satyen spent nearly a decade at Oracle, ultimately running the Financial Services Warehousing and Performance Management business, where he helped customers get insights into their systems. Prior to Oracle, Satyen was an associate with the Texas Pacific Group and an analyst with Morgan Stanley & Co. He holds a master's degree from the University of Oxford and a bachelor's degree from Columbia College, both in economics.



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Compute and storage are two orders of magnitude cheaper than they were 10 years ago. As a consequence, we now collect and analyze an unprecedented array of data forms; data, too, are unconstrained.

So, where is today's bottleneck? It's within the line-of-business (LOB) workers and their ability to reliably self-serve analytics. We have given high-end data scientists tools that allow them to use our unconstrained compute, storage, and data resources, but there are probably 500,000 to 1 million such people in the world. We have not extended similar tools to the broader worker population.

The question then becomes, How do I make superfast data available to the 4,000 LOB people in my company? Put another way, how do we make *every* one of these 4,000 people as smart as any one of these 4,000 people? My answer: data literacy.

To understand the concept, think about Yelp. Everyone on Yelp has the ability to review restaurants because they know how to use the interface and they can see everybody else's past comments. They have both the means and the context to contribute.

“The question becomes, How do I make superfast data available to the 4,000 LOB people in my company?”



KEY LESSONS

- 1 TAP INTO THE POWER OF DISTRIBUTED HUMAN PROCESSING.
- 2 INNOVATION IS FUNDAMENTALLY DRIVEN BY INSIGHTS. IF YOU GIVE ALL OF YOUR STAFF THE POWER TO BE DATA ANALYSTS, IMAGINE THE INNOVATION AND DISRUPTION THAT COULD DRIVE.

DISTRIBUTED HUMAN PROCESSING

You can create an entire staff of analysts in a similar way, simply by giving them the tools and the context for using them.

The wife of friend works as an attorney at a payments company. She is not conversant with database queries and so had to rely on analysts to produce the data she needed. Even when the matter was urgent, getting the data sometimes took weeks.

Frustrated, she started studying past answers to her previous requests. By reverse-engineering those answers, she was able to find what analysts had done to arrive at them. She effectively started by copying their work to get her own answers. In this case, she used our product to help her, so she had both the context and the tools to generate her own insights.

We must tap into the power of distributed human processing. How?

- **Distribute information with context.** Arm people not only with data but also information about how to use those data. You cannot give people a big file full of information that could potentially contain PII, expecting them to do the right thing. Train them, and offer them the tools they need to gain insights.
- **Measure measurability.** Make sure people back up their reviews, their decisions, and their ideas with data. It is not good enough to make data available, and then allow people to do whatever they want with it. Expect measurable results. That has to be a cultural process.
- **Foster collaboration.** Ultimately, it is that collaborative element that generates data literacy because it allows you to create context socially—by having people talk to each other.

Competition effectively forces every participant in an industry to innovate. Innovation is what gives you the one up, and innovation is fundamentally driven by insights. A staff of 4,000 data analysts? This is the big disruption.

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Arm people not only with data but also information about how to use those data.

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SUPERFAST DATA PROCESSING MAKES PEOPLE BETTER AT WHAT THEY DO



QUENTIN CLARK

Chief Technology Officer,
Member of the SAP SE
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Quentin Clark is responsible for driving SAP's technology vision and leading the company's efforts to build and innovate world-class products that affect people, organizations, and customers. With more than 20 years of enterprise experience, he has been instrumental in developing and driving product strategy as well as leading industry-disruptive product launches. Before SAP, Quentin held various leadership positions at Microsoft, most recently overseeing product development for its entire suite of data products.



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Humans can no longer keep up with the information flow on our planet. With analytics models that make sense of massive amounts of data, however, it becomes possible to keep up and use growing amounts of information. In a business context, it becomes possible to go from high-level views of a process, drill down to the minutest details in real time, and build analytical models into that view to give it meaning. So, the applications make their users smarter and enable them to make better choices.

For example, if a new paper is published in the medical field at 9:00 AM, and if at 9:05 AM a doctor has completed a patient examination and is interacting with his knowledge base system as part of his evaluation, he wants the information in that paper to be available to him. Nobody wants to hear that that doctor never got around to reading that paper because he doesn't subscribe to that publication and therefore he didn't know about a treatment that would have helped his patient. With an analytics-driven knowledge base, a doctor can keep up with the volumes of new research taking place continuously. The machine does not replace the doctor, but it does help the doctor wade through a vast body of information to focus on the right aspects of a problem.

“ Humans can no longer keep up with the information flow on our planet. ”

KEY LESSONS

- 1 AN ANALYTICS-DRIVEN KNOWLEDGE BASE CAN HELP A DOCTOR WADE THROUGH A VAST BODY OF INFORMATION TO FOCUS ON THE IMPORTANT ASPECTS OF A PROBLEM.**
- 2 APPLICATIONS THAT INCLUDE BUILT-IN ANALYTICS MODELS ENABLE USERS TO MAKE BETTER CHOICES.**



SUPERFAST DATA PROCESSING MAKES PEOPLE BETTER AT WHAT THEY DO

A much more mundane example would be a retail store in which an employee fails to show up for work. When this happens, the store manager needs to go into his or her office, launch a website, and review a variety of employee records to figure out who would be the right person to fill the shift. This is a costly solution because it might take an hour to bring someone in to fill the shift, and the highest-paid person in the store must be off the floor to solve the problem.

An alternative scenario is that the store manager receives a message before the shift begins saying that this person will not show up. The system has already analyzed the availability of off-duty employees and their skill sets, reviewed specials the store is running that day, verified the level of business, and assessed other factors. Based on all those data, the system makes a recommendation for who should be called to fill the shift. The store manager can agree or work with the system until the optimum worker is selected, and then the system makes the call. The entire process has taken less than a minute of the store manager's time, and the staffing gap is minimal. An analytics model drives everything: it considers all the employee data, sales data, product line goals, work schedules, and other information that go into selecting the best employee to fill that shift, and the analysis happens instantly.

Analytics models applied to large amounts of granular data that are processed instantly make people in decision-making roles better decision makers. Information makes people better at their jobs.

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Analytics models applied to large amounts of granular data that are processed instantly make people in decision-making roles better decision makers.

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DISRUPTION IS PART OF ADVANCEMENT



KIRK BORNE

Principal Data Scientist,
Booz Allen Hamilton

Kirk Borne is a member of the NextGen Analytics and Data Science initiative within the Booz Allen Hamilton Strategic Innovation Group and an advisor for several other firms. Previously, he was professor of astrophysics and computational science at George Mason University, where he did research, taught, and advised students in the graduate and undergraduate Informatics and Data Science programs. Prior to that, he spent nearly 20 years supporting large scientific data systems at NASA.



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In the field of analytics, one of the latest and greatest algorithms people talk about is one called *deep learning*. Deep learning is computing that allows you basically to discover implicit data, such as what is in an image, without first providing an example. A few years ago, facial recognition was a hot technology. You could feed this algorithm an image, and it would perform facial recognition to identify that image, whether it was a person or an object, a picture or a video. That was explicit data discovery.

Let's use the 2014 Boston Marathon bombing to understand how implicit data discovery—deep learning—might work in a disaster situation. During the aftermath of the bombing, fast data processing could have made it possible to tap into surveillance cameras and perform a fast pattern-recognition sequence among all the chaotic things that were happening to identify people in medical distress. This could be done just based on facial expressions, body motion, and body movement. We could have quickly identified the people who needed the most attention.

This is what this type of data processing enables. A human can look at those images and see who needs help, but there could be thousands or hundreds of thousands of images to look through. There's no way even a team of people could do that rapidly.

“ You want fast data collection and storage with superfast processing so that you can get immediate benefit from the data you are analyzing. ”

KEY LESSONS

- 1 SUPERFAST DATA PROCESSING, SPECIFICALLY IN THE FORM OF DEEP LEARNING, IS GOING TO ALLOW ORGANIZATIONS TO TAP INTO IMPLICIT DATA, NOT JUST EXPLICIT DATA.
- 2 BEFORE ORGANIZATIONS CAN TAKE ADVANTAGE OF SUPERFAST DATA PROCESSING, THEY MUST LEARN TO RELINQUISH CONTROL OVER DATA STORES TO SHARE ACROSS THE ORGANIZATION AND POSSIBLY ACROSS OTHER ORGANIZATIONS, AS WELL.



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DISRUPTION IS PART OF ADVANCEMENT

It's more effective to employ fast processing with minimal human intervention. That's the general idea here. You want fast data collection and storage with superfast processing so that you can get immediate benefit from the data you are analyzing.

That kind of data collection is already happening. What's missing is the actual storage of those data in a large cluster, like Apache Hadoop. To move forward, we need extra computational power on top of that storage unit. It's not just storage for future playback: the software is playing it back. In this example, each hospital is going to need its own high-performance computing center as part of its operations.

Of course, that is not what's happening. That's where this whole concept of *crowd computing* comes into play. Data centers and communities pool their resources and have shared services; many different organizations can share one big compute center and data center. Then, any organization can basically rent those services.

In my disaster example, hospitals may need these capabilities only for a disaster response. It's an unpredictable spike in their need, and that's when the crowd computing model works so well. They pay only for the computing and data storage when they are needed.

I think business disruption will happen when we start doing all the things fast computing makes possible. We have to share information and data across the boundaries of our organizations and even across different organizations. Silo smashing is disruptive. The IT department wants to own its resources. Every other business unit wants to own its own data. No one wants to share.

That's not beneficial to the business, but it is human nature. The willingness to share resources and data will be beneficial to organizations, but people are worried about obsolescence. As we move forward, the work we do will look different. This disruption, which people perceive as a negative thing, is scary, but the benefits are going to outweigh the cost of any disruptions.

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DATA: A COMPULSORY OBSESSION



**STEEN KJØNG
PAULSEN**

Business Intelligence
Consultant,
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Steen Kjøl Paulsen has, throughout his professional life, been engaged in the business intelligence (BI) and analytics industry. He has taken the journey as software developer, head of research, and consultant. He is currently in the consulting business, where he leads the initiatives on Apache Hadoop-based projects. He is strongly engaged in emerging technologies within BI and analytics and thus has a wide area of expertise using big data.



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I am data obsessive. Many computers in my home collect data on my water and energy usage, what times the home security alarm is activated, what the weather patterns are in my home country of Denmark. This is no passive habit: data influence my behavior.

For instance, weather data combined with fuel economy data have altered my driving habits. I allow myself to drive a little faster on days when neither heat nor air conditioning are required to keep me comfortable in my car. The extra speed will not reduce my fuel efficiency: I have the data to prove it.

Perhaps you are beginning to see why I think businesses also should become data obsessive.

Some are, of course. Take the power company I recently worked with. It was plagued by periodic shutdowns. The problem was easily fixable, but no one had a clue what caused it. Those shutdowns were expensive, not to mention upsetting to customers.

“ In-memory computing and superfast data processing at scale can disrupt industry by enabling the commoditization of previously unavailable or unusable data. ”



KEY LESSONS

- 1** BECOMING DATA DRIVEN BEGINS WITH BECOMING DATA OBSESSIVE.
- 2** EXECUTIVES NEED NOT BE DATA OBSESSED THEMSELVES, BUT THEY SHOULD SURROUND THEMSELVES WITH PEOPLE WHO ARE.

DATA: A COMPULSORY OBSESSION

The company used big data analytics to investigate the problem. Sensors on its equipment, many of which take readings 50 times a second, provided a flood of data that, once successfully analyzed, showed that a small, inexpensive water valve was the culprit. Without big data analytics, no one would have suspected that a cheap valve could cause full-scale shutdowns.

In-memory computing and superfast data processing at scale can disrupt industry by enabling the commoditization of previously unavailable or unusable data. We no longer must rely on the tightly formatted, structured data of relational databases. With technologies like Apache Hadoop, Apache Spark, and Scala, we can mine and analyze masses of unstructured video, audio, tweets, newspaper articles, and machine sensor data, integrating them all into our daily work lives in real time.

Think back to the power company. By stuffing its sensor data into a Hadoop cluster, it used vast computational power to aggregate and analyze information captured over a period of months. It generated value from previously useless data and added real power to its business process.

These arguments and lessons hold across industries. Data that historically were impossible to use because of slow analytics systems can now be game changers. To my mind, it goes without saying that you should strive to become data driven. Perhaps it is less intuitive to suggest this: becoming data driven begins with becoming data obsessive.

If as an executive you cannot quite generate that level of fascination, then certainly you should hire and strategically deploy some obsessive-minded data nerds in your midst. If your organization does not have a cultural fascination with or flair for using big data, your attempt to become data driven will devolve into just another boring task. It will never quite be completed.

Base your decision on facts, not feelings. Make your industry data driven. I can promise that it will improve your business because you will finally know why things do what they do.

“

Data that historically were impossible to use because of slow analytics systems can now be game changers.

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MANY ORGANIZATIONS AREN'T SURE HOW TO USE FAST DATA TECHNOLOGY—YET



PAUL HAWKING

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Information Systems;
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Paul Hawking is an associate professor in Information Systems at Victoria University. He is considered one of the leading commentators on enterprise resource planning systems and business intelligence—specifically, SAP solutions. His knowledge is well respected in both industry and academia, and he is often asked to assist companies with their SAP strategies and solutions. Paul has presented at leading SAP and academic conferences around the world and was the first academic to achieve SAP Mentor status.



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Currently, the problem with the fast data industry is that a lot of companies know that it's important, but they do not know what to do with it. I see three different approaches to this issue:

- I see one group that has adopted in-memory computing just to do traditional tasks faster. From a business intelligence perspective, they have adopted SAP HANA technology to speed up their reporting and processing. They are actually digging deeper into the data because of the speed at which the data appear.
- Another group is taking advantage of the functionality indirectly because SAP is releasing new products built on HANA functionality. It's not speeding up traditional tasks but new solutions built on fast data technology.
- The third group consists of companies that are using the in-memory technology to create new business models.

An example of that third set of companies is a distribution or logistics company I am working with. This company is using the Internet of Things to monitor its trucks and using the geospatial information and the speed of those trucks to identify and try to warn truck drivers about over-speed situations or dangerous corners. The company is also gathering data about the length of idle time the truck has. Then, it's analyzing that data to see if the idle time results from a holdup at the customer's end for unloading the trucks or traffic congestion.

“Currently, the problem with the fast data industry is that a lot of companies know that it's important, but they do not know what to do with it.” 

KEY LESSONS

- 1** THE ORGANIZATIONS THAT INVEST TIME INTO FAST DATA PROCESSING TECHNOLOGIES WILL BE THE ONES TO LEAD THE WAY FOR OTHER COMPANIES WAITING TO SEE WHAT COMES FROM THOSE TECHNOLOGIES.
- 2** ORGANIZATIONS NEED A ROADMAP TO GUIDE THEM THROUGH THE STEPS OF ADOPTING AND IMPLEMENTING FAST DATA TECHNOLOGIES, WITH THE UNDERSTANDING THAT WE ARE JUST BEGINNING TO SEE THE FULL POTENTIAL OF THE TECHNOLOGY.

MANY ORGANIZATIONS AREN'T SURE HOW TO USE FAST DATA TECHNOLOGY—YET

This information helps the business find better contractual ways to reroute the trucks and improve green emissions. If a truck is being held up for 30 minutes at a location, then the company can renegotiate its contract based on how long a truck sits before it's unloaded. For green emissions, if the truck is idling for a prolonged period of time, emissions are far greater. The business can use the data it is collecting to ask why the truck is sitting there and what can be done to improve that time? That improves emissions.

If you look at these three sets of users together, there is a maturity model. Most companies have no idea what to do with any new technology. The challenge is the confusion about the fast data offerings. Numerous opportunities are associated with these technologies. Making existing processes more efficient is the easiest and safest approach. These efficiencies can result from faster processing and integration or through improved analytics. Companies could use these technologies as a game changer.

All this is based on companies being aware of what game they are in and where the opportunities are. Some suggest that companies look at the underlying fundamentals or assumptions of their business and investigate how the business can use this new technology to turn such assumptions upside down. If fast data technologies were available then, how would things be done differently?

I don't think companies realize the extent of the change that is coming. They know they are going to head down this path, they know that things will improve, but they do not realize the power of what's coming. To start taking advantage of fast data applications, organizations must use in-memory technologies to improve business analytics bottlenecks and implement business process solutions based on in-memory technology. Only then can they investigate how to use their knowledge of the technologies to differentiate themselves from their competitors. With this technology, organizations will be more empowered. It will be a big paradigm shift in the way people do their jobs. Users will not be pulling the data from a transactional environment. Instead, the data will be there as users do their job. This brave new computing world will provide greater insight into what people can already do.

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