

Three Keys to Winning With Big Data

Generate Outsized ROI From Big Data

Abstract

Some companies are using Big Data better than others.

Big Data has been a big topic for years now, and more and more companies are using it to optimize their businesses and create new sources of revenue. However, some companies are using Big Data better than others, and they share these common factors in terms of how they are winning with Big Data:

- Applying Big Data throughout the enterprise
- Aggressively using unstructured data
- Centralizing Big Data teams

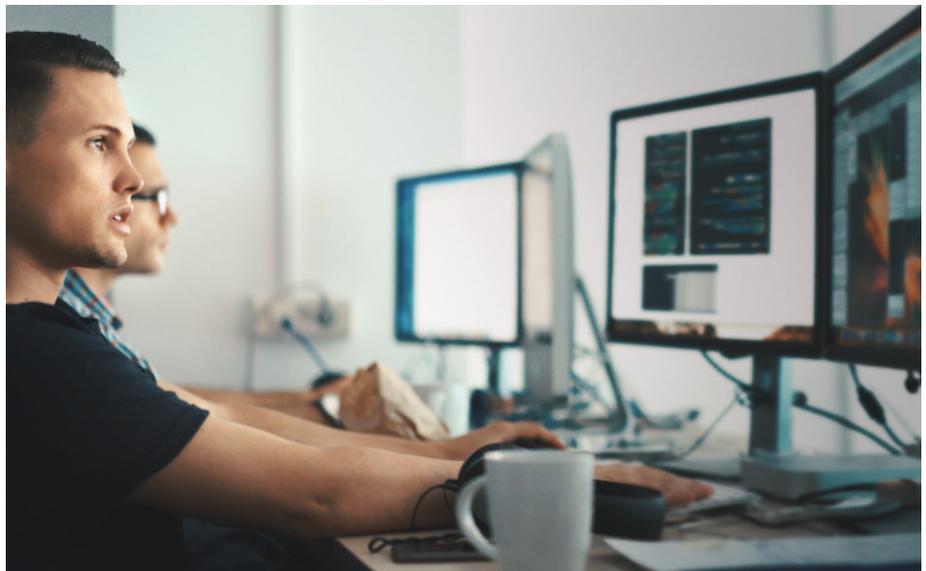
Big Data Continues to Explode

If you're curious about the scale of the Big Data explosion, Amazon.com is a good place to start. Back in 2013, when Big Data was starting to become an important element of the digital landscape, an Amazon search on the topic generated about 250 books, articles, and ebooks. That's a lot of information, but it's nothing compared to today: In 2016 alone, nearly 1,000 books were published on the topic of Big Data—and the site listed 180 more to be published in 2017.

Or you might examine Google search data. Google uses a relative scale of 0 to 100 to measure the changing popularity of a particular search term. At the beginning of 2012, "Big Data" had a ranking of 16; in January 2017, it was at 86.¹

People are writing about Big Data.

People are searching for information about Big Data. Enterprises are using Big Data, more and more.



Dealing with Big Data is increasingly a strategic necessity for the modern enterprise.

People are writing about Big Data. People are searching for information about Big Data. Enterprises are using Big Data, more and more. But what separates the companies that use Big Data well from those that don't? In our research, we identified three key factors that are aligned with Big Data success.

Factor #1: Winners Apply Big Data Throughout the Enterprise

The biggest gains in the early days of Big Data were in the realm of marketing and sales, research and development, and customer service (and in the early days, these companies tended to be internet-centric). Companies turn click-stream data, from their own sites and from search engines, into targeted marketing and sales opportunities (and continue to do

What's more interesting is how winners are using Big Data to create fundamentally new businesses, new business models, and new opportunities.

so with greater and greater sophistication). Big Data drives the creation and testing of new products. And companies use it to understand actual, real-world customer sentiment in something close to real-time.

These are powerful applications of Big Data—and still very useful. However, they are mostly more efficient, more effective ways of doing the kind of business or operational activities that enterprises have always performed. What's more interesting is how winners are using Big Data to create fundamentally new businesses, new business models, and new opportunities.

Retailers, for example, are using click-stream data to do more than just fine-tune their online business and drive traffic to their sites. Many with an offline/online presence are combining customer data with mobile location data to create highly targeted offers delivered direct to customers' mobile phones in real-time. Step into a store where you have a relationship (like a rewards program or a store card), and you could get a tailored offer on your phone.

Manufacturing offers another example. Companies are using sensor data as a critical source of Big Data and creating big opportunities for their enterprises. Big-ticket, high-performance products like jet engines from GE are riddled with sensors that generate real-time performance data. This improves their marketability (better performance is a fantastic selling point) and improves their serviceability (automated alerts about failing parts or needed maintenance means less downtime).

Consumer products are also embracing embedded sensors and generating data to benefit producers and users. HP sells printers that will automatically order the ink cartridge you need before your printer runs out and deliver it to your door. For Nest, which makes thermostats, smoke/CO2 alarms, and security cameras, Big Data is an integral part of its products and business models. By amassing enormous quantities of user data, Nest generates opportunities for consumers to manage their lives and save money—and creates opportunities to partner with utilities and other businesses.

Factor #2: Winners Aggressively Use Unstructured Data

One of the most revolutionary aspects of the Big Data explosion has been the growth in the volume and application of unstructured data: digitized text, video, sensor, and image data that don't typically fit well into traditional databases. While computers have long been great at dealing with structured data—say, a parts list, a customer list, or accounting

While some Big Data devotees prefer to decentralize by embedding data scientists directly into business functions, our research suggests that the enterprises that get the most out of Big Data build a dedicated, enterprise-wide team.

records—it's only in recent years that analytics software has enabled the widespread, practical use of unstructured data. The most effective users of Big Data have been particularly aggressive at using the growing volume of unstructured data.

Unstructured data is key. So is external data. Take the case of retailers who are striving to optimize their business online and offline. Knowing the mobile location data of shoppers is essential to making real-time offers, and the only source for that information is telecommunications companies. Of course, embracing unstructured data and external data demands a data storage and analytics infrastructure that facilitates their use.



Fueling the Big Data explosion is unstructured data—text, video, audio, images, social media, sensors—which is growing dramatically faster than traditional data forms.

Factor #3: Leaders Centralize Big Data Teams

The worlds of business and IT tend to swing between centralization and decentralization, sometimes out of necessity (mainframe computers were the ultimate shared resource), sometimes because of strategy (proximity to end-users can be extremely valuable). While some Big Data devotees prefer to decentralize by embedding data scientists directly into business functions, our research suggests that the enterprises that get the most out of Big Data build a dedicated, enterprise-wide team.

The chief benefit of a centralized approach is building an ecosystem of talent. Data scientists can share analytical insights and approaches and find opportunities that span business units or functional/organizational hierarchies—much more challenging when Big Data experts are dispersed across an organization. In addition, centralization helps foster a culture that embraces Big Data analytics and insights.

Two Examples of Big Data Leader

This is a key point about Big Data: It's great for marketing, optimization, and the search for efficiencies. But its real value lies in the opportunity to create new businesses, new business models, and new opportunities—as another great example demonstrates: Netflix.

Few companies have embraced Big Data more aggressively than GE. Even in the early days of Big Data's enterprise adoption, GE committed to an investment of \$1 billion in an analytics and software center to monitor and evaluate performance of aircraft engines, power generators, healthcare equipment, and other machinery. Today, GE Digital represents a huge new business for the venerable company, operating from its San Ramon, California-based analytics and software center.

General Electric embraced sensor technology to make its own products and services better, and now sells software for data management and analytics using its Predix platform. GE believes Predix can be a US\$4 billion revenue product by the year 2020.²

This is a key point about Big Data: It's great for marketing, optimization, and the search for efficiencies. But its real value lies in the opportunity to create new businesses, new business models, and new opportunities—as another great example demonstrates: Netflix.

When we first looked at the growing presence of Big Data within the enterprise, one of the most compelling examples of its transformative power was Netflix. Netflix began as a physical distribution system for DVD rentals (sent to and from the company through the mail). Then it morphed into an online content streaming powerhouse. But today, Netflix is a creator and distributor of extremely high-quality branded entertainment product. Why? Big Data played a key role: Netflix used it gathered as a streamer of video content as a tool to create new programming content, and the results are spectacular.

At the end of 2016, Netflix had nearly 94 million members and generated more than US\$8 billion in revenue. In 2016, Netflix invested US\$5 billion in programming and plans to invest US\$6 billion in 2017. What's most arresting about that figure is that now Netflix is second (in terms of spending) only to sports network ESPN. And Netflix outspends both American network television giants, NBC and CBS.³

Netflix is just a decade old, but it's a great example of how embracing emerging digital technologies can lead an enterprise into new ways of doing business and new opportunities. For Netflix, Big Data has been and continues to be a game changer—and it has the power to catalyze change for any enterprise that chooses to embrace its enormous potential.

Big Data as a Game Changer

The application of artificial intelligence and deep learning to data promises to offer still more opportunities to turn Big Data into big value.

Our conclusions about companies that are effectively using Big Data are mostly empirical, derived from surveying Big Data users and analyzing results. But they also make intuitive sense: In a fast-moving and progressive world, Big Data allows for experimentation across the enterprise. Big Data is partly a consequence of the rise of unstructured and external data, so the winners are going to be companies who are most aggressive at using it. And Big Data is so pervasive that it seems obvious that centralizing the function should generate more benefits than it does when companies “silo” the analytical functions.

The key message in our mind is that Big Data offers truly enormous, game-changing potential to the companies that put it to work effectively. Big Data can certainly help almost any enterprise find opportunities to streamline and optimize, but the benefits of these are dwarfed by the opportunities to change business models, create new products, and forge new markets. The application of artificial intelligence and deep learning to data promises to offer still more opportunities to turn Big Data into big value.

We invite you to learn more about Big Data and the many ways TCS can help you harness its potential in your enterprise.

References

- [1] From Google Trends: <https://www.google.com/trends/explore?q=big%20data>
- [2] “G.E., the 124-Year-Old Software Start-Up”; the New York Times, August 27, 2016: <https://www.nytimes.com/2016/08/28/technology/ge-the-124-year-old-software-start-up.html>
- [3] Netflix Q4 earning report/letter to shareholders: <http://files.shareholder.com/downloads/NFLX-/3675958336x0924415/A5ACACF9-9C17-44E6-B74A-628CE049C1B0/Q416ShareholderLetter.pdf>

About The Author

Dr. Satya Ramaswamy
Head of the Digital Enterprise Unit

As head of the Digital Enterprise Unit at TCS, Dr. Satya helps customers undertake Digital Reimagination™ projects: leveraging the Digital Five Forces (mobility, Big Data, social media, cloud computing, and artificial intelligence) to create new business models, business processes, products and services, customer segments, channels, and workplaces.

Dr. Satya has more than two decades of experience with digital technologies; before he joined TCS, he led two successful startup companies in the mobile application and Big Data spaces. Dr. Satya is the holder of 10 US patents. He has a Ph.D. in Distributed Computing from the Indian Institute of Technology (Chennai) and an MBA in Marketing and Analytical Consulting from the Kellogg School of Management (Chicago). He manages the Digital Enterprise Unit from the TCS office in Santa Clara, California.

About the TCS Digital Enterprise Unit

TCS adapts the capabilities of the digital five forces—Mobility and Pervasive Computing, Big Data and Analytics, Social Media, Cloud, and Artificial Intelligence and Robotics—to the unique needs and opportunities of each industry. We leverage a combination of these technologies to help clients digitally reimagine their business models, products and services, customer segments, channels, business processes, and workplaces to gain sustained competitive advantage.

Our experienced global team includes strategy experts, business analysts, digital marketers, user experience designers, data scientists, and engineers trained and certified in the latest technologies. By combining our technology vendor partnerships, our pre-built customizable products and reusable assets, and our deep industry expertise, we offer enterprises everything they need for a complete digital transformation—from strategy and use cases to system implementation and maintenance—and everything in between.

Contact

For more information about the TCS Analytics Insights Unit, contact analytics.insights@tcs.com

About Tata Consultancy Services Ltd (TCS)

Tata Consultancy Services is an IT services, consulting, and business solutions organization that delivers real results to global business, ensuring a level of certainty no other firm can match. TCS offers a consulting-led, integrated portfolio of IT and IT-enabled infrastructure, engineering, and assurance services. This is delivered through its unique Global Network Delivery Model™, recognized as the benchmark of excellence in software development. A part of the Tata Group, India's largest industrial conglomerate, TCS has a global footprint and is listed on the National Stock Exchange and Bombay Stock Exchange in India.

For more information, visit us at www.tcs.com