Big Success
With Big Data

Executive Summary

High performance. Delivered.

In organizations that are using big data today, users report overwhelming satisfaction with their results, according to a new Accenture Analytics survey, and see big data as a catalyst for their transformation as digital enterprises. Key findings emerging from the research cluster around these themes:

- **Big data is taking off.**
  Users that have completed at least one project are very satisfied with their initial forays into big data. The vast majority who have completed their projects report that they are satisfied with business outcomes and that their big data initiative is meeting their needs.

- **Bigger companies are getting more from big data.**
  The bigger the organization, the better the results, perhaps because they bring more to the table. Larger organizations are leading the way by starting with focused initiatives, rather than trying to do everything at once.

- **Big data demands broad learning.**
  Users begin big data projects thinking it will be easy, only to discover that there is a lot to learn about data as an asset and about analytics.

- **Help needed.**
  With big data talent in short supply, successful users source skills wherever they can find them, leaning heavily on external, experienced resources.

- **Big data is definitely disruptive, potentially transformational.**
  The consensus is clear: big data brings disruption that can revolutionize business.

Source: Accenture Big Success with Big Data Survey, April 2014
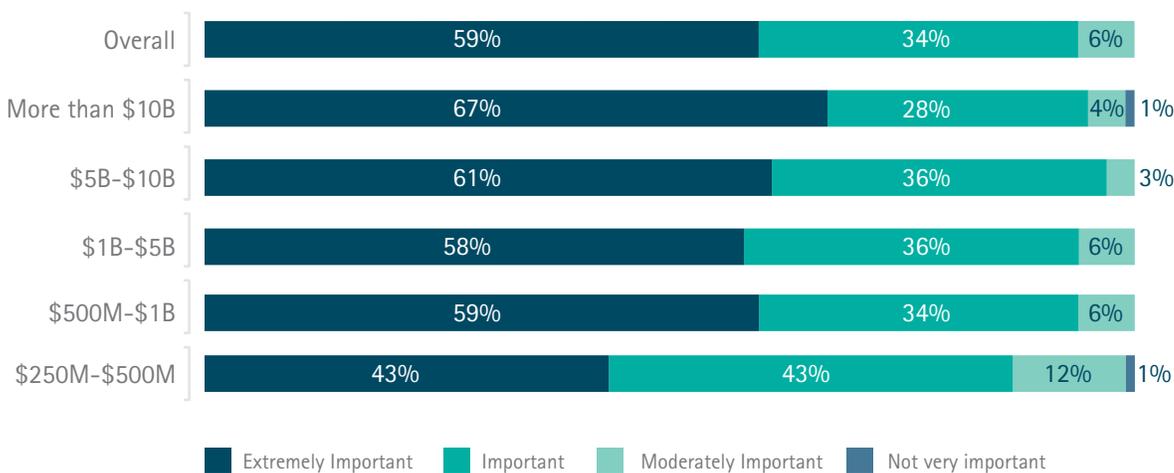
Big success with big data

Big data is clearly delivering significant value to users who have actually completed a project, according to survey results. The vast majority (92 percent) of all users report they are satisfied with business outcomes, and 94 percent feel their big data implementation meets their needs. Larger companies are more likely than others to regard big data as extremely important and central to their digital strategy (see Figure 1).

While a significant number of organizations may still be standing on the sidelines, big data users who start and complete projects see practical results and significant value. Organizations perceive big data to be critical for a wide spectrum of strategic corporate goals, from new revenue generation and new market development to enhancing the customer experience and improving enterprise-wide performance.

One of the world's biggest package shippers is also among the world's largest big data users, spending $1 billion annually to store and study 16 petabytes of data from every conceivable point of its business.[1]

Figure 1: Importance of big data

How important is big data to your organization?

	Extremely Important	Important	Moderately Important	Not very important
Overall	59%	34%	6%	
More than $10B	67%	28%	4%	1%
$5B–$10B	61%	36%	3%	
$1B–$5B	58%	36%	6%	
$500M–$1B	59%	34%	6%	
$250M–$500M	43%	43%	12%	1%

Winning big by thinking big

Larger companies turn out to be among the biggest beneficiaries of initial big data implementations. Why? Although big data projects still pose challenges, larger companies appear to bring more to the table:

- A deeper understanding of big data's scope and sources of value.

- A serious focus on practical applications and business outcomes.

- Greater commitment in budget and talent.

- A keener appreciation of the importance and disruptive power of big data.

Start local, end global

Users in larger companies are winning big by starting small and staying realistic with their expectations, helped by frequent, direct CIO involvement and strong c-suite support. Rather than attempting to do everything at once, they focus resources around proving value in one area, and then letting the results cascade across the wider enterprise. The mantra here could be 'start local, end global', as users focus on practical applications such as customer support, build internal support, and concentrate on desired outcomes.

A global retailer began its big data work in marketing, then expanded to digital channels and is now introducing big data across the enterprise.

Big data demands broad learning

While many organizations are only beginning to explore initial projects, they find big data presents big challenges:

- Many companies have different definitions of big data.

- Varied expectations persist, from the prospect of large immediate cost-savings to mistaken notions about the cost of implementation.

- Among the list of obstacles cited is the lack of talent, as well as security issues and budget concerns.

Many organizations hold differing views of data sources and uses. Valuable data sources are omitted or overlooked (see Figure 2).

Differing perceptions about the scope and benefits of big data remain to be clarified:

- More than one-third of users (36 percent) think big data requires an extremely big investment.

- A roughly equal percentage (37 percent) thinks organizations can achieve extremely large cost-savings with big data.

- One in four (26 percent) believe companies are required to implement big data all at once across the enterprise.

Many users imagine big data initiatives will be easy until they confront challenges from security and budget to talent, or the lack of it (see Figure 3). More than four in ten (41 percent) reported a lack of appropriately skilled resources, and almost as many (37 percent) felt they did not have the talent to run big data and analytics on an ongoing basis.

Assembling the requisite expertise becomes a key success factor for many projects.

A leading B2C e-commerce portal in China has mobilized a global team of experts in machine learning, analytics and big data across Asia, Europe and the United States to derive insights from its massive online volume that will drive customer purchase recommendations.

Figure 2: Sources of big data

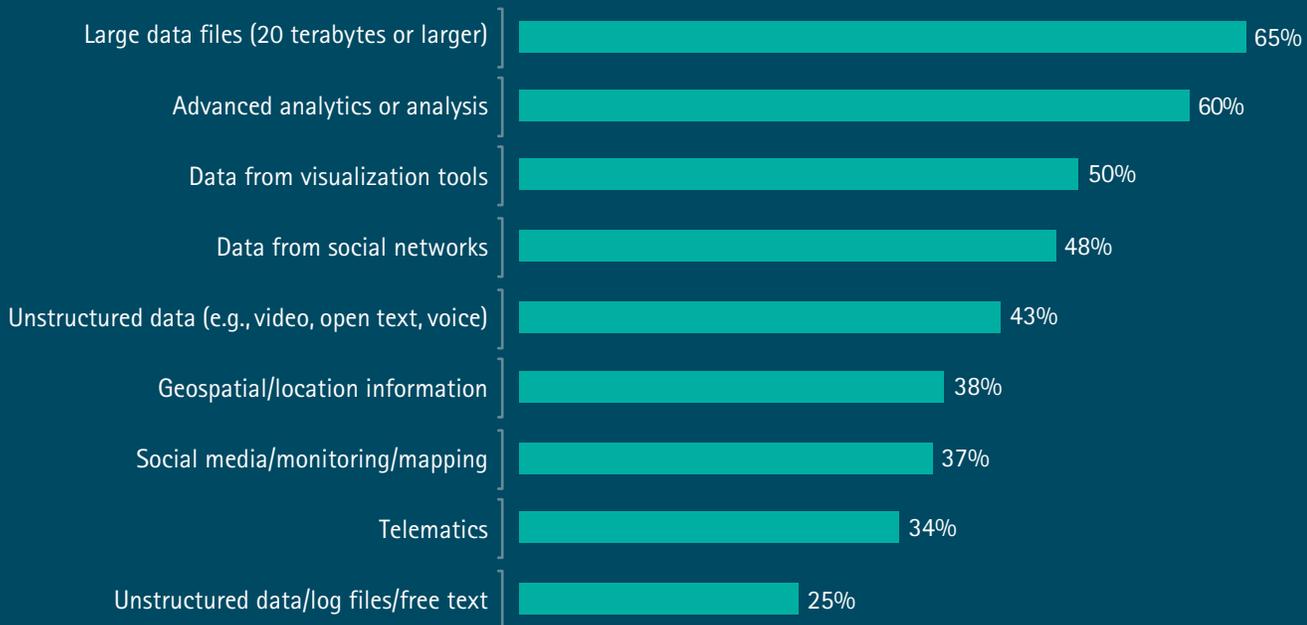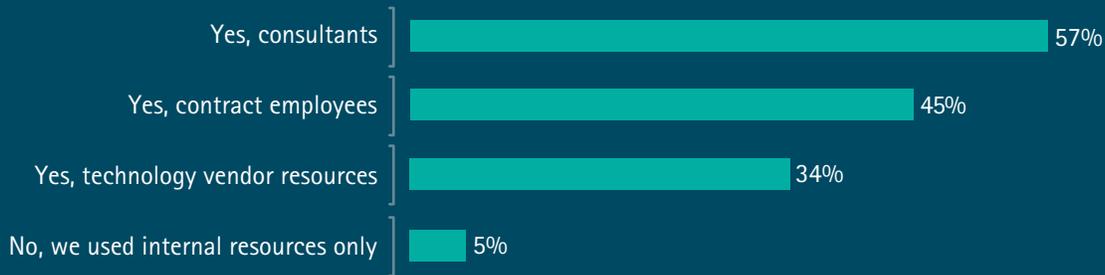Which of the following do you consider part of big data (regardless of whether your company uses each)?

Large data files (20 terabytes or larger)	65%
Advanced analytics or analysis	60%
Data from visualization tools	50%
Data from social networks	48%
Unstructured data (e.g., video, open text, voice)	43%
Geospatial/location information	38%
Social media/monitoring/mapping	37%
Telematics	34%
Unstructured data/log files/free text	25%

Figure 3: Main challenges with big data projects

What are the main challenges to implementing big data in your company?

Security	51%
Budget	47%
Lack of talent to implement big data	41%
Lack of talent to run big data and analytics on an ongoing basis	37%
Integration with existing systems	35%
Procurement limitations on big data vendors	33%
Enterprise not ready for big data	27%

Figure 4: Sourcing big data support

Did you get external help for your big data installation?

Yes, consultants	57%
Yes, contract employees	45%
Yes, technology vendor resources	34%
No, we used internal resources only	5%

A total of 95 percent of respondents used one or more types of external help.

Figure 5: Addressing big data challenges

What have you done to overcome these challenges?

Internal technical training	54%
Vendor-based workshops	50%
Independent research	49%
Internally led business case workshop/socialization	45%
External technical training	33%
Proof of concept to demonstrate value and effectiveness	18%
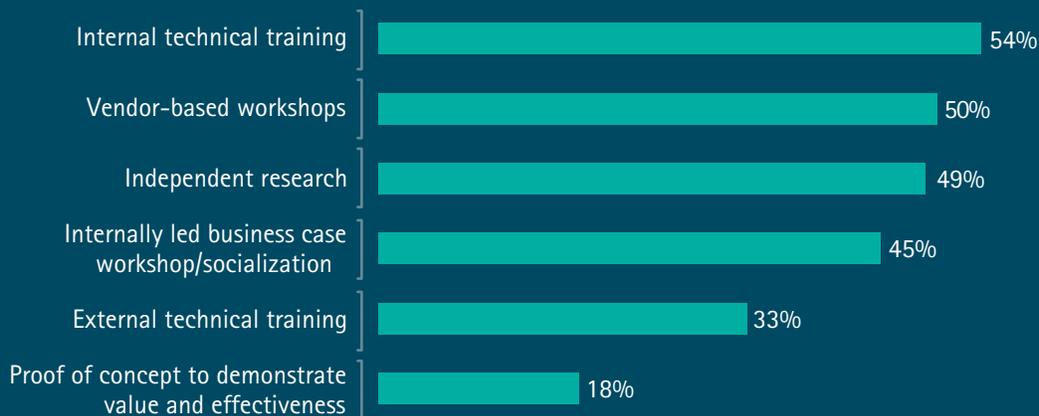
Help needed

With so many organizations simultaneously competing for big data skills, sourcing talent is undeniably difficult.

- More than half of respondents (57 percent) leveraged the help of consultants, 45 percent used contract employees and 34 percent used technology vendor resources (see Figure 4).

- Organizations that relied on consultants, contractors and other external resources found their big data installations to be easier than those using only internal resources.

The big data skills shortage is likely to persist in the near term, making this one problem companies cannot overcome through hiring alone. To address the talent shortage crisis and other challenges, companies resort to a spectrum of strategies (see Figure 5).

- Nearly all (91 percent) companies expect to increase their data science expertise, the majority within the next year.

- Training, workshops and research are used to address the talent challenge by developing skills internally.

Successful big data practitioners are leveraging big data and big data technologies to drive business outcomes. An outcome focus requires an ability to mobilize data from across the enterprise; to interrogate that data deeply to understand its value, and determine what data is important and what data is not; and requires a discipline to govern it so that it maintains its currency in the enterprise.

As more data is available, it demands to be quantified, quickly. New methods and approaches for data discovery mean analytic-driven insights are generated in weeks or months. Agile approaches are employed to drive rapid, demonstrable progress.

Working with big data necessarily places companies in a sphere that is potentially rich with inadvertent discovery and innovation. Understanding business use cases and data usage patterns (the people and things that consume data) provides crucial evidence into the appropriate solutions, technologies and approaches that will be used to deliver results. Multiple solutions exist for any given big data challenge, so it is vital to remain open to the possibilities, and become a learning enterprise by testing extensively, learning what works best, then refining and moving forward. Big data pioneers have honed their capacity to test everything and learn quickly; other companies are emulating these practices.

Big data's disruptive potential

Expectations about big data among survey respondents convey the potentially life-or-death competitive threat, as well as the enormous transformational potential created by big data.

A vast majority of users (89 percent) believe big data will revolutionize business operations in the same way the Internet did (see Figure 6). Nearly as many (85 percent) feel big data will dramatically change the way they do business.

Almost eight in ten users (79 percent) agree that 'companies that do not embrace big data will lose their competitive position and may even face extinction.' Even more (83 percent) have pursued big data projects in order to seize a competitive edge.

Early adopters see competitive advantage in big data, and are rapidly moving to disrupt their own data practices, rather than let competitors beat them to the punch. Perceptions about big data's disruptive power are not confined to technology organizations; users see a new competitive weapon in play across industries and geographies, from businesses such as financial services and insurance, to practitioners such as postal services and governments.

Companies are moving rapidly to take advantage of maturing new technologies that move, mine and consume increasingly diverse data from an ever larger array of sources and sensors, driving outcomes sooner with greater impact than anyone imagined possible. Users are structuring projects and expecting results in weeks or months, rather than losing years in the design phase. The result is an exponentially more complex and challenging environment: architectures and analysis are always on; vast volumes of data are being continuously gathered and must be consumed and analyzed at speed; more data means more noise around meaningful signals.

All of this helps to explain such strong user expectation that spending on data science expertise will increase in the near term. Ninety-one percent of users report plans to build out or increase their current data science expertise soon, and the larger the company, the sooner they plan to invest, 69 percent within the coming year for companies greater than $10 billion (see Figure 7).

One large national agency at a European government was experiencing slowdowns in utilization, cancelled queries and storage limitations. After implementing a new solution for big data processing, storage requirements fell by 90 percent, Total Cost of Operations (TCO) dropped, and previously impossible statistical analysis is now routine.

Source: Accenture Big Success with Big Data Survey, April 2014

Figure 6: Big data's competitive significance

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree
Big data will revolutionize the way we do business to a degree similar to the advent of the Internet in the 1990s	51%	38%	10%	1%
Big data will dramatically change the way we do business in the future	39%	46%	13%	2%
Companies that do not embrace big data will lose their competitive position and may even face extinction	37%	42%	19%	2%
We feel we are ahead of our peers in using big data and this creates a competitive advantage for us	37%	46%	12%	4%

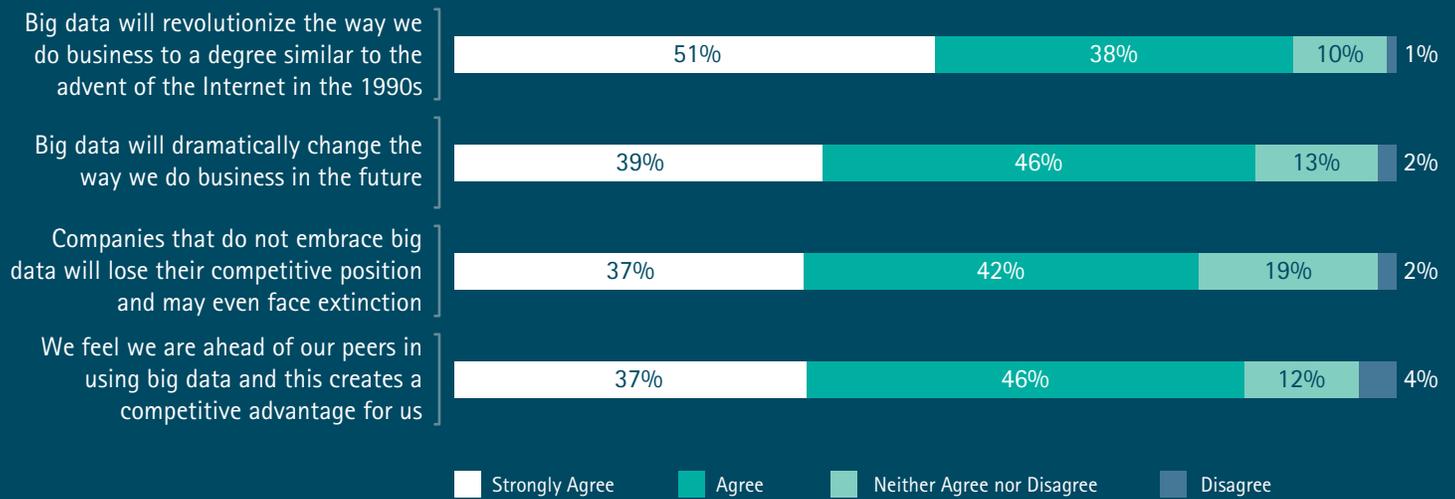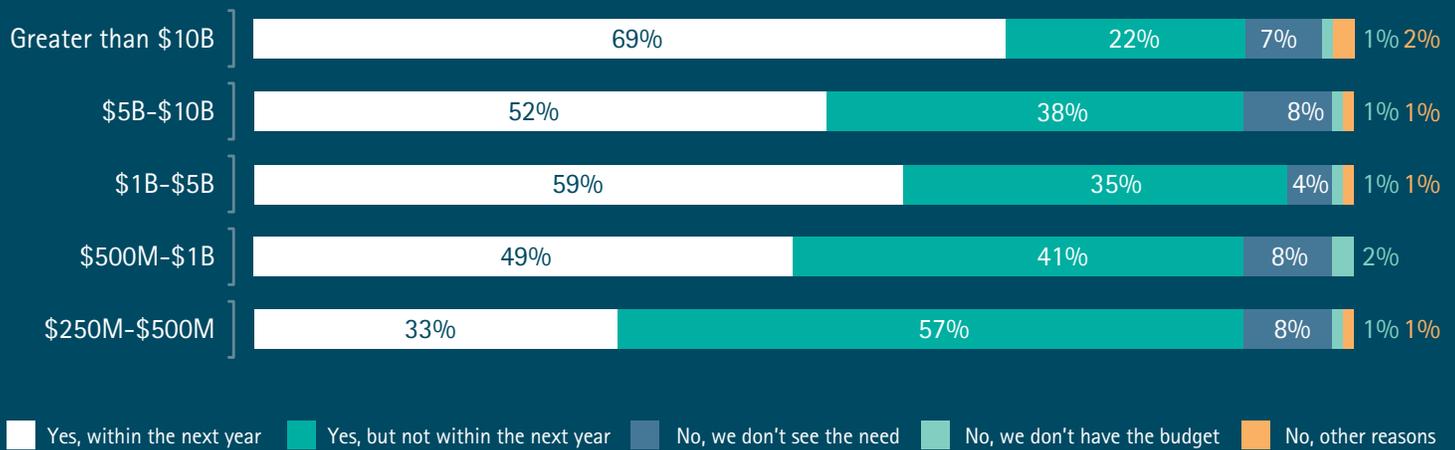Legend: Strongly Agree | Agree | Neither Agree nor Disagree | Disagree

Figure 7: Big data investment in the near term

Does your company have or plan to build/increase your data science expertise within the next year?

	Yes, within the next year	Yes, but not within the next year	No, we don't see the need	No, we don't have the budget	No, other reasons
Greater than $10B	69%	22%	7%	1%	2%
$5B-$10B	52%	38%	8%	1%	1%
$1B-$5B	59%	35%	4%	1%	1%
$500M-$1B	49%	41%	8%	2%	
$250M-$500M	33%	57%	8%	1%	1%

Legend: Yes, within the next year | Yes, but not within the next year | No, we don't see the need | No, we don't have the budget | No, other reasons

Disrupt your enterprise (before someone else does)

The cumulative effect of introducing big data technologies and practices into the enterprise results in transformational change. In practice, big data impacts central functions across the enterprise, from customer relationships and product development to operations (see Figure 8).

Companies typically need new enterprise IT architectures to work with vast volumes of data at speed. Thinking about data as an asset requires organizations to change their mindsets, becoming more data-focused, and assembling and acquiring the skills needed to manage data at speed and at scale.
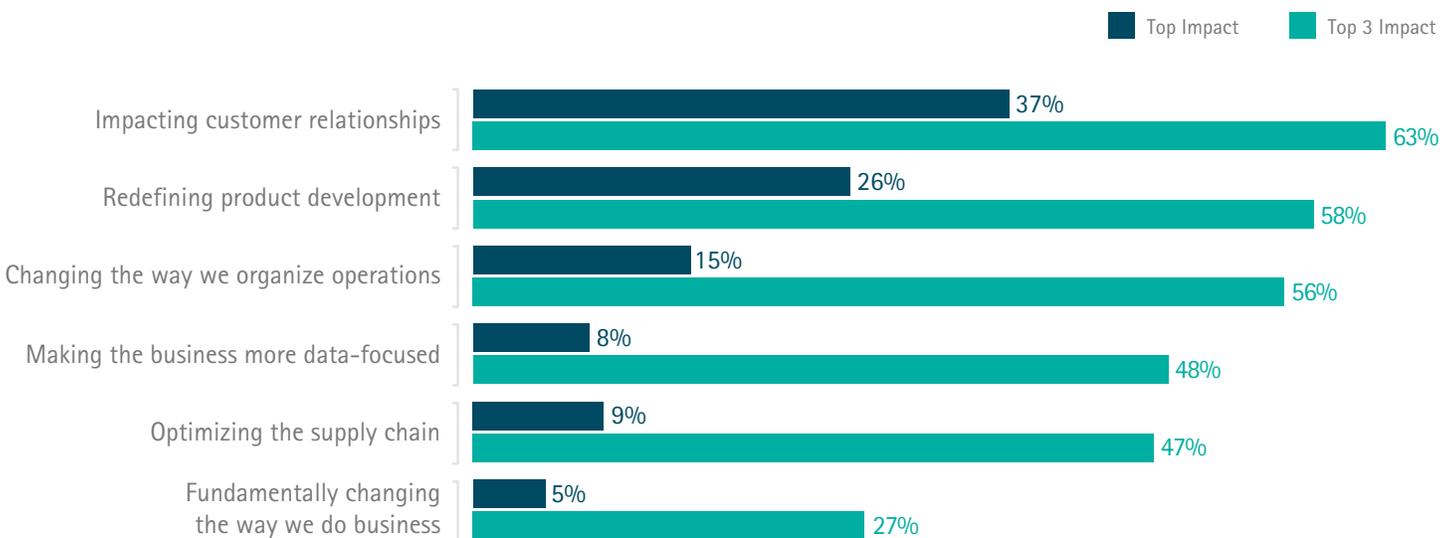
Users welcome the disruption because they suspect that if they don't harness the power of big data first, a known competitor or a company not even in their market today could attack tomorrow. Few enterprises can afford to be complacent when barriers to entry are being dramatically reduced by IT efficiencies and the advantages conferred by analytics and big data.

A leading North American financial institution has already seen the transformative effects of big data play out in several areas of its operations:

- As multiple online banking applications struggled to perform real-time analysis on incoming data, a new architecture was proven and implemented that will seamlessly scale as volume continues to grow.

- A new credit card data warehouse reduced storage management costs, enhancing service to the bank's hundreds of millions of card holders.

- Multiple data sources, terabytes of volume and other challenges drove a complete data transformation of its consumer analytics platform.

Figure 8: Potential for transformation

Where will big data have the biggest impact on your organization in the next five years?

	Top Impact	Top 3 Impact
Impacting customer relationships	37%	63%
Redefining product development	26%	58%
Changing the way we organize operations	15%	56%
Making the business more data-focused	8%	48%
Optimizing the supply chain	9%	47%
Fundamentally changing the way we do business	5%	27%

Source: Accenture Big Success with Big Data Survey, April 2014

The future is
not near...it's now

Accenture is engaged today with the practical reality of helping make big data work across large, complex enterprises in many different industries.

Accenture's feet-on-the-ground big data and analytics practitioners have deep experience working hand-in-hand with companies on successful implementations, translating the difficult and confusing into the practical and achievable.

To get the most from their big data projects, organizations should consider the following:

- **Explore the entire big data ecosystem.** The big data landscape is in a constant state of flux with new data sources and emerging big data technologies. Explore all data available and be prepared to explore a broad range of technology options when developing a big data strategy with a focus toward business actions and outcomes that can be differentiating in the market.

- **Start small then grow.** Focus resources around proving value quickly in one area of the business first via a pilot program or proof of concept. Build internal consensus and then grow big data programs organically.

- **Be nimble.** Stay flexible, adapt and learn as technologies evolve and new opportunities can be explored.

- **Focus on building skills.** In addition to staffing up when possible, build skills of existing employees with training and development and tap outside expertise.

To learn more about how Accenture is making big data work for big enterprises, see complete survey results at accenture.com/bigdatasuccess

About the research

Accenture Analytics surveyed more than 1,000 respondents from companies operating across seven industries and headquartered in 19 countries that had completed at least one big data implementation. As the intent of the survey was to measure actual user experience with big data projects, respondents from companies that had not completed at least one big data installation were not included in the results. More than 4,300 targets were screened; 36 percent have not completed nor are currently pursuing a big data installation while nearly four percent were currently implementing their first big data project. Among those who had completed a big data project, more than half did not meet our demographic criteria. A total of 1,007 respondents completed the survey.

About Accenture

Accenture is a global management consulting, technology services and outsourcing company, with more than 293,000 people serving clients in more than 120 countries. Combining unparalleled experience, comprehensive capabilities across all industries and business functions, and extensive research on the world's most successful companies, Accenture collaborates with clients to help them become high-performance businesses and governments. The company generated net revenues of US$28.6 billion for the fiscal year ended Aug. 31, 2013. Its home page is www.accenture.com.

Accenture Analytics, part of Accenture Digital, delivers insight-driven outcomes at scale to help organizations leverage the digital revolution for their competitive advantage. With deep industry, functional, business process and technical experience, Accenture Analytics develops innovative consulting and outsourcing services for clients seeking superior returns on their analytics investment. For more information, follow us @ISpeakAnalytics and visit www.acccenture.com/analytics.