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Accenture Technology Vision 2016

Executive Summary

High performance. Delivered.

People First: The Primacy of People in a Digital Age

Winners in the digital age do much more than tick off a checklist of technology capabilities. They know their success hinges on people. The ability to understand changing customer needs and behaviors is, of course, vital. But the real deciding factor in the era of intelligence will be a company's ability to evolve its corporate culture to not only take advantage of emerging technologies, but also, critically, embrace the new business strategies that those technologies drive.

Succeeding in today's digital world is a challenge that can't be solved simply by consuming more and more technology, or, as some fear, replacing humans with technology.

Enterprises must focus on enabling people—consumers, workers and ecosystem partners—to accomplish more with technology. They will have to create a new corporate culture that looks at technology as the way to enable people to constantly adapt and learn, continually create new solutions, drive relentless change, and disrupt the status quo. In an age where the focus is locked on technology, the true leaders will, in fact, place people first.
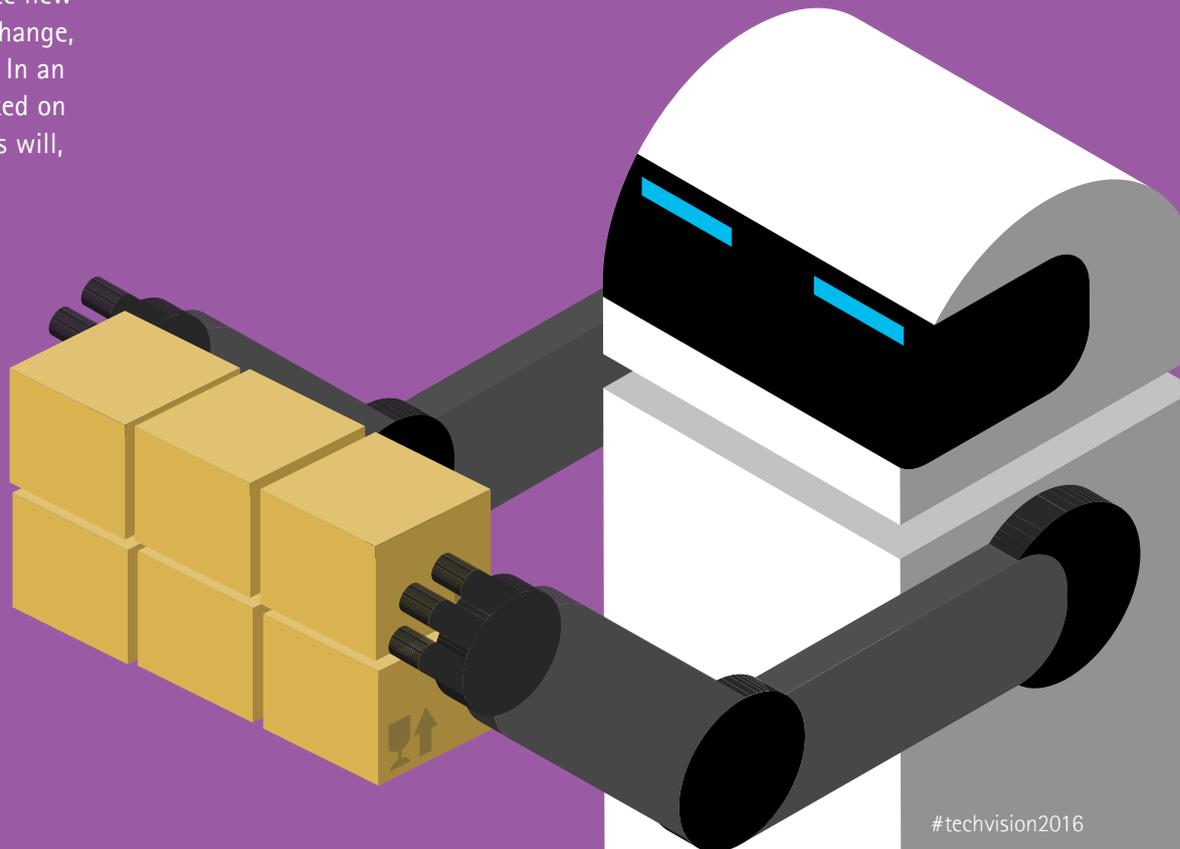
Digital Culture Shock

We are in the midst of a major technology revolution, specifically a digital revolution. Our research model and analysis shows that digital is now dominating every sector of the economy.

This global digital economy accounted for 22 percent of the world's economy in 2015. And it's rapidly growing, as we forecast those numbers to increase to 25 percent by 2020, up from 15 percent in 2005.[1]

With digital pervading everything, it's bringing with it ubiquitous and unprecedented amounts of change. There are new technologies and solutions, more data than ever before, legacy and new systems to tie together, an upsurge in collaboration (inside and outside the enterprise), new alliances, new startups...new everything. Meanwhile, out in the marketplace, digital customers are also maturing. Their dramatically transformed expectations of service, speed and personalization are just the start.

The rise of the millennial generation brings with it not just a new type of customer, but also a new kind of employee with very different outlooks and aspirations. This 'born digital' generation demands a world fashioned to its needs and new expectations about how work should be organized. Pervasive collaboration technologies are reconfiguring long-established norms of employment. The push toward freelance and portfolio careers is reshaping the workforce—how, when, and where.

These changes are no phase. Change, in fact, has become the new normal. According to our global technology survey of more than 3,100 IT and business executives, 86 percent of the executives anticipate that the pace of technology change will increase rapidly or at an unprecedented rate in their industry over the next three years. And many companies, already reeling from the impacts of technology and the changes they need to make in response, find themselves temporarily overwhelmed—some even paralyzed as they absorb the magnitude of the tasks ahead. That's understandable.

But once they've paused for breath, they'll need to start changing their products, their business models, and all of the processes that support them. They'll need to develop new skills. And they'll have to learn different, more agile ways of working across ecosystems composed of looser, partner-based collaboration. This requires a different way of looking at all the business's moving parts—and particularly its people. New ways of investing in their development, managing them and helping them adapt and embrace change are all foundational. The business is digital, so the organization, its people and its culture must now become digital too.
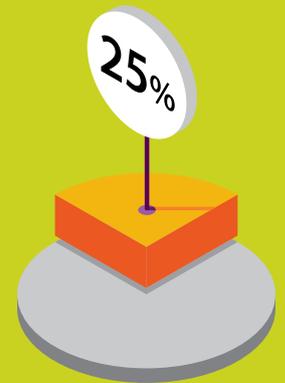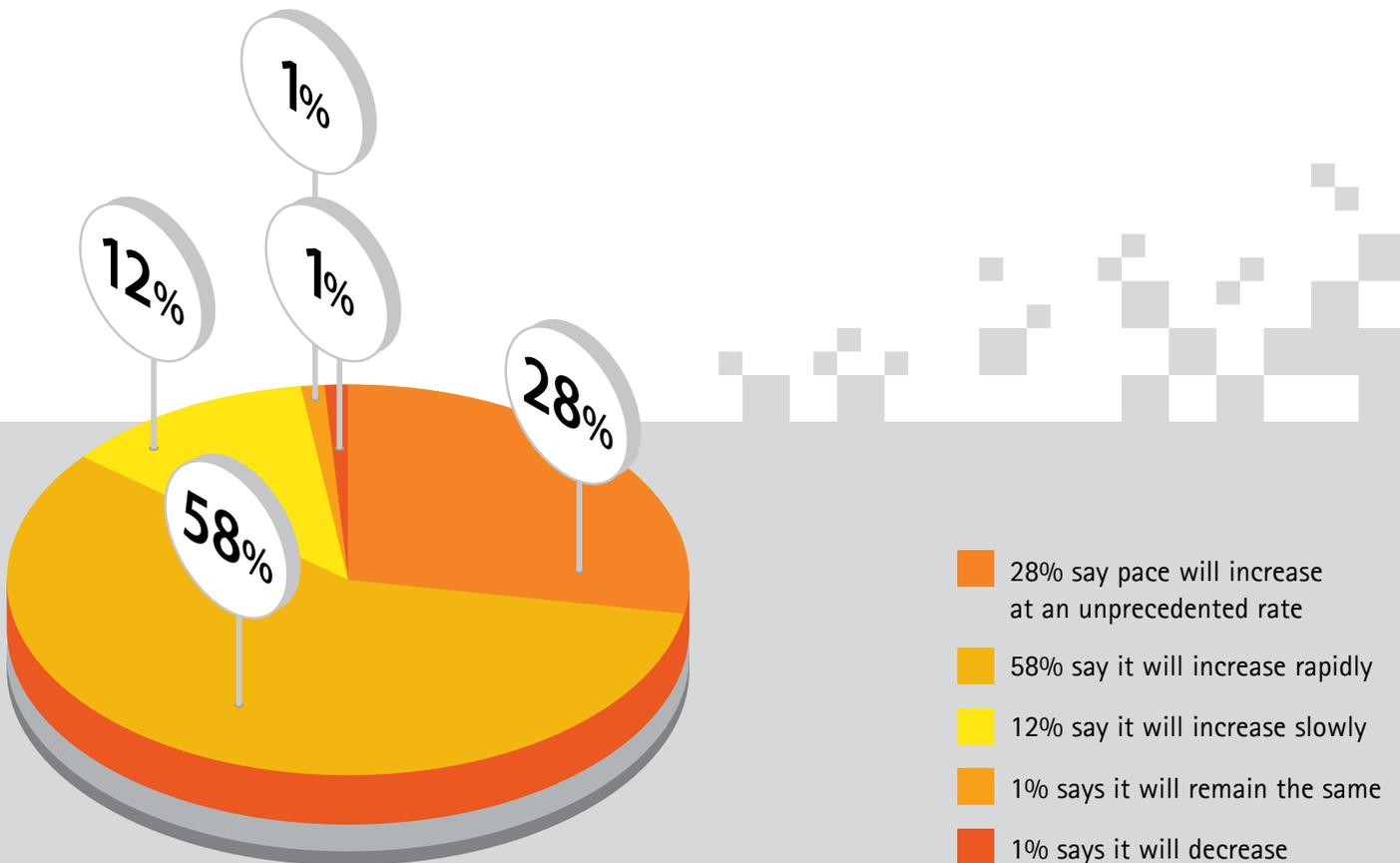

25% of the world's economy will be digital by 2020.

Source: Digital Economic Value Index, Accenture, January 2016

Getting past the digital culture shock that so many businesses find themselves in today sounds daunting. But fortunately there are models already available for inspiration. Not only have many large tech companies established thriving digital cultures, but there are also early adopters in other industries showing the way ahead. Virgin America, for example, is the only airline based in Silicon Valley, and it has learned to think like the disruptive tech businesses that surround it. It has experimented with everything from in-flight social networks to rethinking how to buy tickets. The company even went so far as to collaborate with its frequent flyers: 30,000 people signed a Change. org petition to give the airline two gates at Dallas Love Field (which it was subsequently allocated). Virgin returned the favor with cash, by offering stock options to frequent flyers before the company went public. Most impressive of all, the rewards to the company have been very real: 2014 revenue of almost $1.5 billion and a $306 million initial public offering (IPO).[2]

How do you anticipate the pace of technology will change in your industry over the next three years?

- 28% say pace will increase at an unprecedented rate
- 58% say it will increase rapidly
- 12% say it will increase slowly
- 1% says it will remain the same
- 1% says it will decrease

Source: Accenture Technology Vision 2016 Survey

Pillars of the Corporate Cultural Shift

So what is a vibrant and successful digital culture built on? There are four key pillars. Enterprises will need to strive to be built for change, be data-driven, embrace disruption, and be digitally risk-aware.

Built for change

As perhaps the most basic of the four aspects, organizations must be built for change, which may mean changing how you operate as a company. Moving at the speed required for a digital business means developing new skills, new processes, new products, and whole new ways of working. Agile methodologies come to the fore. 'New IT' is essential, with DevOps models and practices to drive continual delivery, service-oriented architecture (SOA) and the cloud for scalability, software-as-a-service (SaaS) for efficiency, architectures built for agility, and platforms for collaboration.

The wraparound for all this is an acceptance of change by people, enterprise wide. Whatever their role, people need to expect change, understand its impact and keep pace with it by evolving and adding to their skills. Already, 37 percent of business and IT executives we surveyed report that the need to train their workforce is significantly more important today compared to three years ago. The most advanced organizations will become champions for change, harnessing the latest developments to grow and improve the business.

As important (but still underdeveloped) is making the shift to becoming a fully data-driven organization. While much has been said over the last few years about increasing the capabilities within enterprises for using data and analytics, being truly data driven goes beyond just having better tools or even better skills. It means changing the basis for making decisions at every level of the company. Instead of relying on gut instinct, traditional experience, or even the HiPPO principle (i.e., the highest-paid person's opinion is paramount), what's needed is for data to become so pervasive and readily available that it supports insight-driven decision-making throughout the enterprise.

This doesn't just mean people using data—machines must also be equipped to harvest and act on intelligence. For shoe and apparel e-tailer Zappos, data transcends ad placements and site personalization, because they use it to make critical decisions about their customers—most notably, which are the customers they care about the most. Using a combination of their own and third-party data, Zappos' marketing analytics team unearthed two key customer segments to find and nurture. The end result is still ads, but ads targeted at the right people. And to drive this data and consumer culture home, Zappos famously offers new hires $3,000 to leave after four weeks, effectively cutting loose anyone who is not inspired by the company's obsessive customer focus.[3]

Data driven

Embrace disruption

"Imagine a world in which these appliances are connected to each other. You'd have one of the largest platforms for distributing content and services and apps—even ads."

David Eun,
Executive Vice President at Samsung

With people, at every level, driving change with new tools, new skills, and new machines, leaders will have a critical role to play. Instead of focusing primarily on efficiency gains from digital, the real frontrunners will embrace disruption as part of their corporate DNA, inspiring their people with a vision for how technology enables processes to be done differently—to be done better— so that the business can follow a completely new direction. As a key part of this, they'll listen carefully to people—customers, partners and employees—using technology as the channel to deepen understanding of the emerging needs, requirements and attitudes that drive disruption.

They'll create and embed strategies to underpin their success in a dynamic world. And they'll be at the forefront of reshaping their (and others') industry's boundaries— playing a lead role in the formation and coordination of existing and future ecosystems.

Take, for instance what Samsung is doing. Samsung is pushing out a constant stream of next-generation wearables and smart appliances: refrigerators that text you when a door is left open, washing machines that use spot energy prices to determine when to run a load of laundry, robot vacuum cleaners controlled by a smartwatch or smartphone. "Imagine a world in which these appliances are connected to each other," says David Eun, a Samsung executive vice president. "What you'd have is one of the largest platforms for distributing content and services and apps—even ads."[4] Moreover, the disruption doesn't stop with Samsung's products: on the people side the company launched its C-Lab program where employees pitch ideas as part of a competition. Winners take a year or more off from their regular job to run a small team to research and develop the idea.

Unfortunately, change at the pace we're seeing from the digital economy also creates new areas of risk. Compounding the risk is the recognition that the huge scale that gives software much of its opportunity also amplifies the potential problems. Digital businesses will encounter and create risks that traditional businesses were never exposed to: new security vectors; responsibility for consumer privacy; demand for transparent use of data; and questions around the ethical use of new technologies. In response, leaders will inherently need to take digital trust into consideration in everything they do. Security, privacy and digital ethics can't be reverse-engineered around a technology; instead, they must be integral to the development process from the outset.

Digital risk awareness

Technology Vision 2016 Trends: Reinventing the World Again and Again

Digital is now firmly embedded in every business. But even with technology as an integral part of the organization and its strategy, it is people who will underpin success in a world that continues to reinvent itself at an unprecedented rate.

This year's Accenture Technology Vision highlights five emerging technology trends shaping this new landscape. Although each trend starts with technology, as you read you'll see our 'People First' theme flows through each of them. Tomorrow's leaders are taking these trends on board and executing strategies to secure their clear digital advantage.
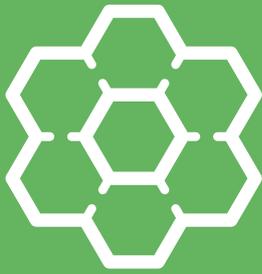
Trend 1: Intelligent Automation

Intelligent automation is the launching pad for new growth and innovation. Powered by artificial intelligence, the next wave of solutions will gather unprecedented amounts of data from disparate systems and—by weaving systems, data, and people together—create solutions that fundamentally change the organization, as well as what it does and how it does it.

Trend 2: Liquid Workforce

Companies are investing in the tools and technologies they need to keep pace with constant change in the digital era. But there is typically a critical factor that is falling behind: the workforce. Companies need more than the right technology; they need to harness that technology to enable the right people to do the right things in an adaptable, change-ready, and responsive liquid workforce.
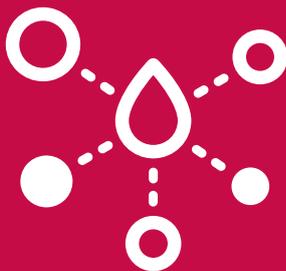
Trend 3: Platform Economy

The next wave of disruptive innovation will arise from the technology-enabled, platform-driven ecosystems now taking shape across industries. Having strategically harnessed technology to produce digital businesses, leaders are now creating the adaptable, scalable, and interconnected platform economy that underpins success in an ecosystem-based digital economy.

Winners will create corporate cultures where technology empowers people to evolve, adapt, and drive change.

Trend 4: Predictable Disruption

Every business now understands the transformational power of digital. What few, though, have grasped is quite how dramatic and ongoing the changes arising from new platform-based ecosystems will be. It's not just business models that will be turned on their heads. As these ecosystems produce powerful, predictable disruption, whole industries and economic segments will be utterly redefined and reinvented.
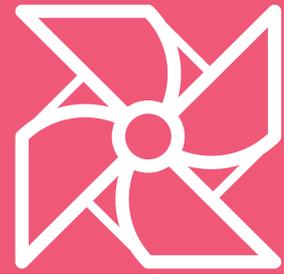
Trend 5: Digital Trust

Pervasive new technologies raise potent new digital risk issues. Without trust, businesses cannot share and use the data that underpins their operations. That's why the most advanced security systems today go well beyond establishing perimeter security and incorporate a powerful commitment to the highest ethical standards for data.

Digital Means People Too

We've come a long way in a short time. Companies no longer just serve customers; they collaborate with them. They no longer just compete with rivals; they partner with them. They're no longer limited by industry boundaries; they ignore them. The connecting tissue for all this may be digital, but the defining factor is people. And it's much, much more than a means of improving business today. Digital's power is to drive fundamental change in the status quo —whether that's the industries that companies operate in, the markets they serve or the talent they employ.
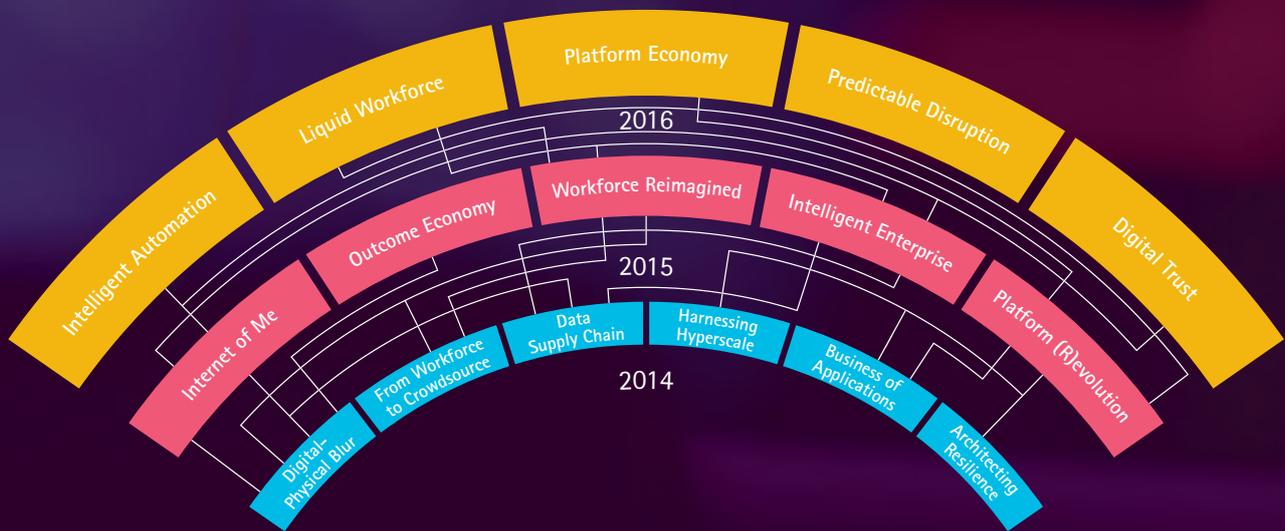
However, it's increasingly clear that technology, on its own, will not be enough to propel organizations toward their new strategic objectives. Winners will create corporate cultures where technology empowers people to evolve, adapt, and drive change. In other words, the mantra for success is: 'People First.'

Completing the Picture

Accenture's Technology Vision comprises a three-year set of technology trends. While each year we highlight the latest trends, it's important to recognize that each trend represents just part of the picture. As enterprises continue their journey toward becoming digital businesses, they will need to keep up with the latest evolutions in technologies, and continue to master those that have been maturing. These technologies are quickly becoming the base for how enterprises build their next generation of business, as well as the catalysts for many of the trends that we discuss this year.

Technology Vision Evolution 2014–2016

Platform Economy
Liquid Workforce
Predictable Disruption
2016
Intelligent Automation
Outcome Economy
Workforce Reimagined
Intelligent Enterprise
Digital Trust
2015
Internet of Me
Data Supply Chain
Harnessing Hyperscale
Business of Applications
Platform (R)evolution
2014
Digital-Physical Blur
From Workforce to Crowdsource
Architecting Resilience

The 2016 trends represent an evolution from our reports from the past two years:

Accenture Technology Vision 2015:
Digital Business Era—Stretch Your Boundaries

The Internet of Me: Our World, Personalized

As everyday objects are going online, so too are experiences— creating an abundance of digital channels that reach deep into every aspect of individuals' lives. Forward-thinking businesses are changing the ways they build new applications, products, and services. To gain control over these points of access, they are creating highly personalized experiences that engage and exhilarate consumers without breaching their trust. The companies that succeed in this new 'Internet of Me' will become the next generation of household names.

The Outcome Economy: Hardware Producing Hard Results

Intelligent hardware is bridging the final gap between the digital enterprise and the physical world. As leading enterprises come face to face with the Internet of Things, they are uncovering opportunities to embed hardware and sensors in their digital toolboxes. They are using these highly connected hardware components to give customers what they really want: not more products or services, but more meaningful outcomes. These 'digital disrupters' know that getting ahead is no longer about selling things—it's about selling results. Welcome to the 'outcome economy.'

Workforce Reimagined: Collaboration at the Intersection of Humans and Machines

The push to go digital is amplifying the need for humans and machines to do more together. Advances in natural interfaces, wearable devices, and smart machines will present new opportunities for companies to empower their workers through technology. This will also bring to the surface new challenges in managing a collaborative workforce composed of both people and machines. Successful businesses will recognize the benefits of human talent and intelligent technology working side by side in collaboration—and they will embrace them both as critical members of the reimagined workforce.

Intelligent Enterprise: Huge Data, Smarter Systems—Better Business

The next level of operational excellence and the next generation of software services will each emerge from the latest gains in software intelligence. Until now, increasingly capable software has been geared to help employees make better and faster decisions. But with an influx of big data—and advances in processing power, data science, and cognitive technology—software intelligence is helping machines to make even more well-informed decisions. Business and technology leaders must now view software intelligence not as a pilot or a one-off project, but as an across-the-board functionality—one that will drive new levels of evolution and discovery, propelling innovation throughout the enterprise.

The Platform (R)evolution: Defining Ecosystems, Redefining Industries

Among the Global 2000, digital industry platforms and ecosystems are fueling the next wave of breakthrough innovation and disruptive growth. Increasingly, platform-based companies are capturing more of the digital economy's opportunities for strong growth and profitability. Rapid advances in cloud facilities and mobility not only are eliminating the technology and cost barriers associated with such platforms, but also are opening up this new playing field to enterprises across industries and geographies. In short: platform-based ecosystems are the new plane of competition.

Accenture Technology Vision 2014:
Every Business is a Digital Business—From Digitally Disrupted to Digital Disrupter

Digital–Physical Blur: Extending Intelligence to the Edge

The real world is coming online, as smart objects, devices, and machines increase our insight into control over the physical world. More than just an Internet of Things, it's a new layer of connected intelligence that augments employees, automates processes, and incorporates machines into our lives. For consumers, this provides new levels of empowerment because they are highly informed and can interact and influence the way they experience everything around them. For their part, organizations now get real-time connections to the real world that allow machines as well as employees to act and react faster— and more intelligently.

From Workforce to Crowdsource: Rise of the Borderless Enterprise

Picture a workforce that extends beyond your employees—one that consists of any user connected to the internet. Cloud, social, and collaboration technologies now allow organizations to tap into vast pools of human resources across the world, many of whom are motivated to help. Channeling these efforts to drive business goals is a challenge, but the opportunity is enormous. Such an approach can give every business access to an immense, agile workforce that not only is better suited to solving some of the problems that organizations struggle with today, but in many cases will do it for free.

Data Supply Chain: Putting Information into Circulation

Yes, data technologies are evolving rapidly, but most have been adopted in piecemeal fashion. As a result, enterprise data is vastly underutilized. Data ecosystems are complex and littered with data silos, limiting the value that organizations can get out of their own data by making it difficult to get to. To truly unlock that value, companies must start treating data more as a supply chain, enabling the data to flow easily and usefully through the entire organization— and eventually throughout the organization's ecosystem of partners as well.

Harnessing Hyperscale: Hardware is Back (and never really went away)

Eclipsed by more than a decade of innovation in software, the hardware world is now a hotbed of new development as demand soars for bigger, faster, more efficient data centers. Every company will see the benefits of 'hyperscale' innovation trickle into its data center in the form of cost reduction; but as companies digitize their businesses, more and more will see these systems as essential to enabling their next wave of growth.

Business of Applications: Software as a Core Competency in the Digital World

The way we build software is changing. Mimicking the shift in the consumer world, enterprises are rapidly moving from applications to apps. Yes, there will always be big, complex enterprise software systems to support large organizations, and it will still be necessary for IT developers to keep customizing those systems, providing updates and patches, and more. But now, as organizations push for greater operational agility, there is a sharp shift toward simpler, more modular apps. The implications for IT leaders and business leaders alike: they soon have to decide not just who plays what application development role in their new digital organizations but also how to transform the nature of application development itself.

Architecting Resilience: Built to Survive Failure, the Mantra of the Nonstop Business

In the digital era, businesses are now expected to support the nonstop demands that their employees and stakeholders place on business processes, services, and systems. This shift to support ever-changing priorities has ripple effects throughout the organization, especially in the office of the chief information officer, where the need for 'always on' IT infrastructure, security, and business process economics can mean the difference between business as usual and the erosion of brand value. As a result, today's IT leaders must ensure that their systems are designed for failure rather than designed to spec.

Conclusion

The New Mantra for the Digital Business: People First

Collectively, these themes represent the newest expression of Accenture's stance that 'Every Business is a Digital Business.' They add to Accenture's multiple-year perspective on technology's tectonic shifts and their impacts on the strategies and operational priorities for organizations worldwide. And they are all elements of a new digital culture that companies must begin to assimilate in order to move forward and transform themselves.

Individually, each theme, from each year, highlights the evolution of a key technology, some of which are already central to the digital explorations of many leading enterprises. Viewed in aggregate, the themes represent a fundamental shift in the assumptions that companies now must make as they plan for success in the years to come. They provide a richly detailed view from which business leaders in every industry can draw insight and inspiration about where digital technologies can take their organizations.

Leveraging the power of a digital business is no longer simply about incorporating these technologies into the organization. It's about reinventing the organization—and the culture within it—to drive innovation, to drive change, to drive the business into the next generation.

These digital strategies and disruptions are still emerging, but the proactive enterprises that take the next few years to carve out their places in these newly forming digital ecosystems will be those that define their own destiny. The question for every enterprise is this: Can you lead your people to get there?

Research Methodology

About the Technology Vision

Every year, the Technology Vision team partners with Accenture Research to pinpoint the emerging IT developments that will have the greatest impact on companies, government agencies, and other organizations in the next three to five years.

The research process began during 2015 with gathering inputs from the Technology Vision External Advisory Board, a group comprising more than two dozen experienced individuals from the public and private sectors, academia, venture capital, and entrepreneurial companies. In addition, the Technology Vision team conducted interviews with technology luminaries and industry experts, as well as with nearly 100 Accenture business leaders.

The team also tapped into the vast pool of knowledge and innovative ideas from professionals across Accenture, using Accenture's collaboration technologies and a crowdsourcing approach to run an online contest to uncover the most interesting emerging technology themes. More than 3,200 participants actively engaged in the contest, contributing valuable ideas and voting on others' inputs.

As a shortlist of themes emerged from the research process, the Technology Vision team reconvened its advisory board. The board's workshop, involving a series of 'deep-dive' sessions with Accenture leadership and external subject-matter experts, validated and further refined the themes.

The screens used during these processes weighed the themes for their relevance to real-world business challenges. Specifically, the Technology Vision team sought ideas that transcend the well-known drivers of technological change, concentrating instead on the themes that will soon start to appear on the C-level agendas of most enterprises.

The themes were prioritized using the following criteria:

- Actionable today

- Highly relevant to an organization's transformation within three years

- Having significant impact beyond any one industry 'silo'

- Disruptive beyond a straightforward one-for-one replacement of an existing solution

- Transcending any one vendor or discrete product technology

These tests produced a handful of robust hypotheses that were synthesized into the five overarching trends presented in this year's report.
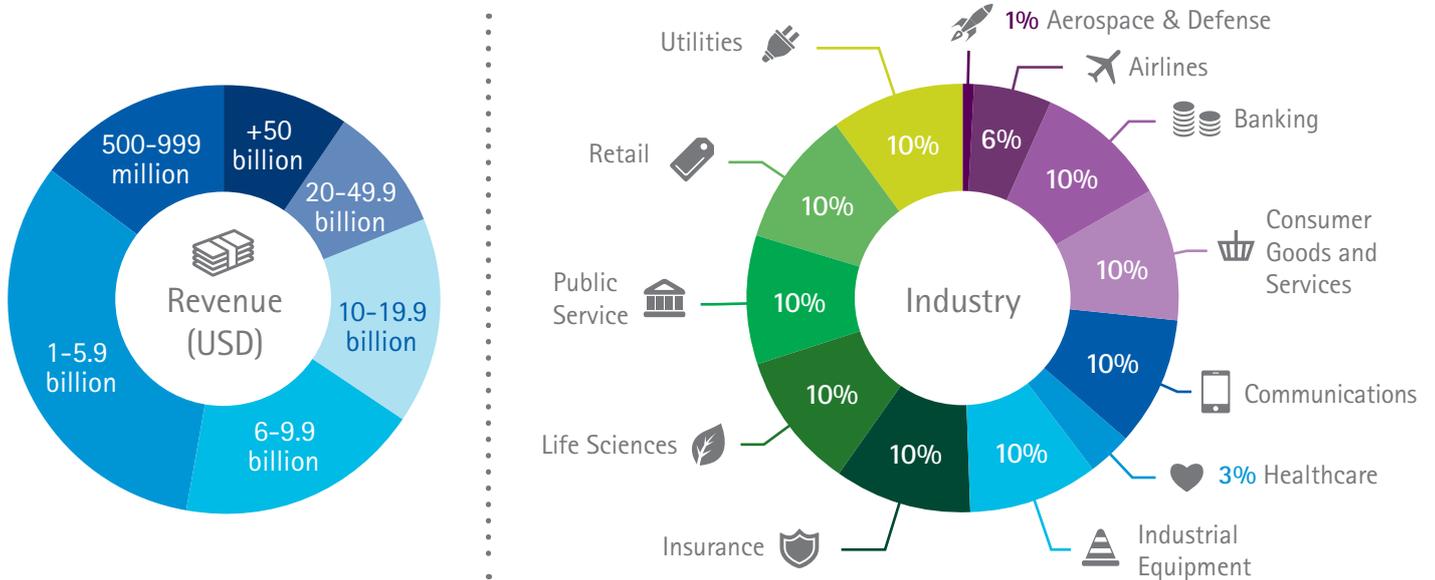
Accenture Technology Vision 2016
Survey Demographics

For the second year, we conducted a global survey of more than 3,100 business and IT executives across 11 countries to understand their perspectives on the impact of technology on their organizations, and to identify their priority technology investments over the next few years. The survey was fielded from October through December 2015.

	Australia	Brazil	China	France	Germany	India
Locations	8%	9%	9%	9%	11%	8%
Headquarters	246	274	269	289	337	254

	Ireland	Japan	South Africa	United Kingdom	United States
Locations	1%	8%	8%	11%	17%
Headquarters	36	267	237	337	546

Revenue (USD)

- +50 billion
- 20–49.9 billion
- 10–19.9 billion
- 6–9.9 billion
- 1–5.9 billion
- 500–999 million

Industry

- 1% Aerospace & Defense
- Airlines
- 6% Banking
- 10% Consumer Goods and Services
- 10% Communications
- 3% Healthcare
- 10% Industrial Equipment
- 10% Insurance
- 10% Life Sciences
- 10% Public Service
- 10% Retail
- 10% Utilities

(Banking 10%, Consumer Goods and Services 10%)

Title

- 25% Director, IT
- 15% CTO or Director of Technology
- 13% Function Head
- 10% CIO or Chief Mobility Officer
- 9% COO
- 8% Line of Business Head
- 8% CMO
- 8% CFO
- 3% CSO

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About Us
About Accenture Technology R&D

The Technology Vision is published each year by Accenture Technology R&D, the dedicated research and development organization within Accenture that includes the Technology Vision group, Accenture Open Innovation and Accenture Technology Labs.

For more than 20 years, Accenture Technology R&D has helped Accenture and its clients convert technology innovation into business results. Our R&D group explores new and emerging technologies to create a vision of how technology will shape the future and shape the next wave of cutting-edge business solutions.

We offer seminars on the Technology Vision, which provide a forum to discuss the trends in greater depth and explore the implications for your organization's business.

About Accenture

Accenture is a leading global professional services company, providing a broad range of services and solutions in strategy, consulting, digital, technology and operations. Combining unmatched experience and specialized skills across more than 40 industries and all business functions—underpinned by the world's largest delivery network—Accenture works at the intersection of business and technology to help clients improve their performance and create sustainable value for their stakeholders. With approximately 373,000 people serving clients in more than 120 countries, Accenture drives innovation to improve the way the world works and lives. Visit us at www.accenture.com.

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