

Enterprise Technology Trends

Insights from 100+ IT leaders worldwide

salesforce research

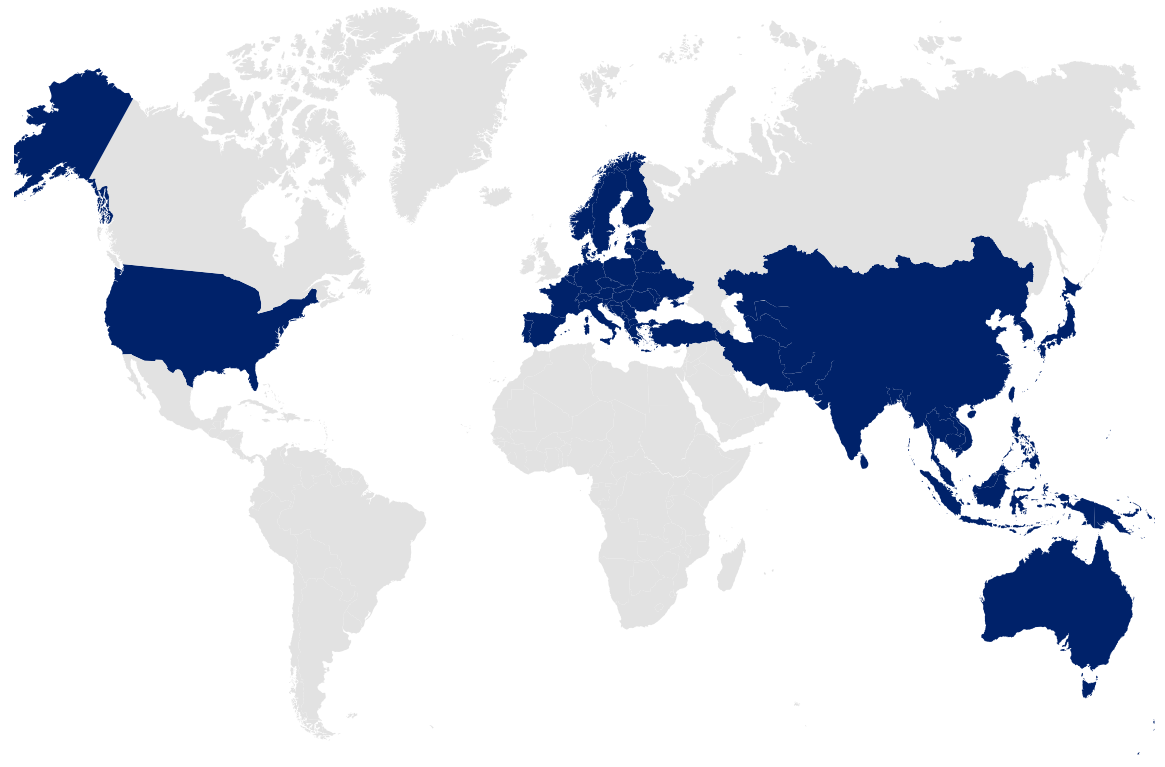


For this report, “Enterprise Technology Trends,” Salesforce Research analyzed survey responses from enterprise IT leaders regarding 10 key topics impacting their departments and broader organizations. Through this research, we sought to determine:

- The extent to which these topics are being prioritized by enterprise IT organizations
- How well-defined IT organizations’ strategies are regarding these topics
- The skill levels of enterprise IT staff when it comes to these topics
- How IT leaders view the future of these topics within their organizations and industries

Data in this report is from three double-blind studies conducted in February and March 2019 that yielded between 100 and 105 responses each. Respondents are full-time IT leaders – those holding senior manager or higher leadership roles. Survey panelists are from North America, Asia Pacific, and Europe. All respondents are third-party respondents sourced through Pulse Q&A (not limited to Salesforce customers). For further survey demographics, see page 28.

Due to rounding, not all percentage totals in this report equal 100%.



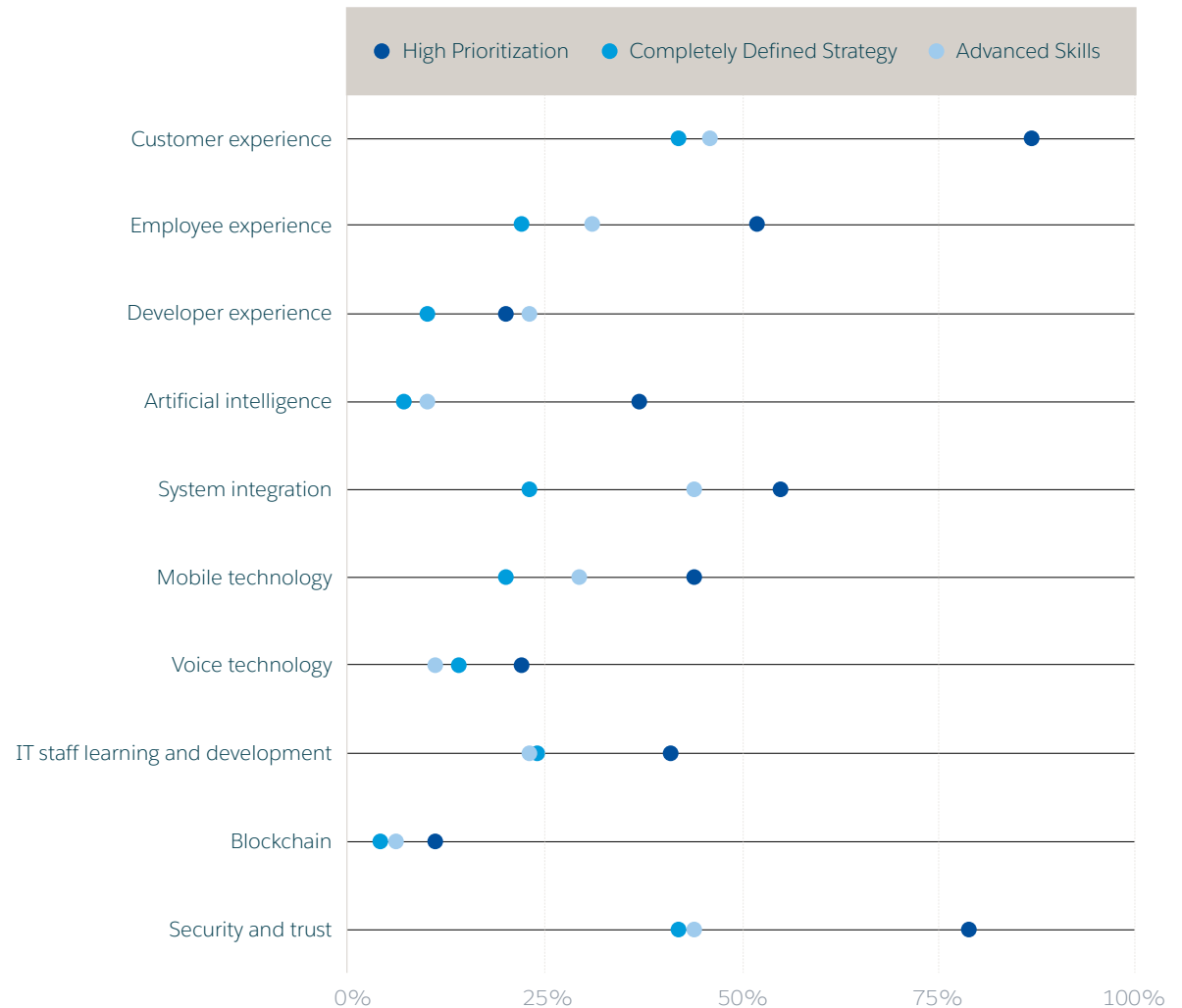
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Enterprise IT organizations are in the most exciting and decisive moment in their histories. Faced with unprecedented innovation, highly empowered and discerning customers, and an increasingly demanding workforce, IT leaders must satisfy a diverse array of new demands, all while keeping the lights on.

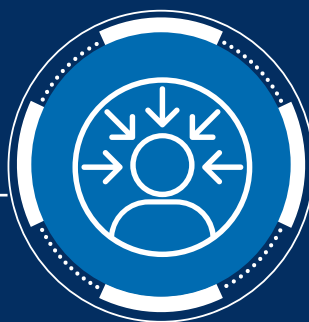
With only so many resources, prioritization is a necessity, and a talent shortage has created pervasive skill gaps that in turn prevent teams from defining – let alone executing – cohesive strategies around the most critical enterprise technology initiatives.

Competing Priorities, Skill Gaps, and Ill-Defined Strategies Are a Reality for Today's IT Leaders



Trend 01:

customer experience



Consumers and B2B buyers alike are more savvy, empowered, and more discerning than ever. Their expectations have been shaped by everyday experiences with companies that are increasingly connected and tailored to their wants and needs.

IT leaders are paying attention, rating customer experience as their top priority. This new North Star is driving myriad changes to their organizations, from new customer-centric strategies to their team's very skillsets.

PRIORITIZATION



- High | 87%
- Moderate | 10%
- Low | 4%

STRATEGY



- Completely defined | 42%
- Somewhat defined | 53%
- Somewhat undefined | 4%
- Completely undefined | 1%

SKILLS



- Advanced | 46%
- Intermediate | 54%
- Novice | 0%

To find, win, and keep market share, cutting-edge customer experiences aren't just a nice-to-have – they're essential.

93% of IT leaders say improved customer-facing technology is critical for their company to compete.

IT leaders are walking the walk when it comes to customer-facing technology. **Seventy-seven percent of IT leaders are increasing investment in the customer experience.** Connectivity is job number one in this regard – system or data integration ranks as the top customer experience technology initiative. And at a time when security and trust are top of mind for customers, companies, and policymakers, security and identity technology is just as important. Bringing customer service up to modern standards, going mobile, and leveraging AI round out the list of top customer-facing technology imperatives.

Budget constraints may come to mind as the dominant roadblock, but customer experience initiatives are more commonly derailed by legacy systems, disconnected data, competing priorities, or simply misunderstanding the user.

Integration and Security Are Top Priorities for Customer Experience

TOP CUSTOMER EXPERIENCE INITIATIVES FOR IT*

- 1**
(tie) System or data integration
- 1**
(tie) Security and identity technology
- 3** Customer service technology
- 4** Mobile technology
- 5** Artificial intelligence/
marketing technology

* Not a complete list.

TOP CUSTOMER EXPERIENCE CHALLENGES FOR IT*

- 1** Legacy systems
- 2** Disconnected data and systems
- 3** Competing priorities
- 4**
(tie) Insufficient understanding
of user experience
- 4**
(tie) Insufficient budget

Trend 02:

employee experience



Can dissatisfied employees satisfy customers? IT leaders are testing this theory. The employee experience ranks a distant fourth place for IT priorities, and just over one-fifth (22%) of teams have a completely defined employee experience

strategy. **Only 50% of IT leaders are increasing investment in the employee experience**, despite the fact that 75% of the workforce claims personal technology has changed their expectations of work technology.*

PRIORITIZATION



- High | 52%
- Moderate | 44%
- Low | 4%

STRATEGY



- Completely defined | 22%
- Somewhat defined | 60%
- Somewhat undefined | 16%
- Completely undefined | 2%

SKILLS



- Advanced | 31%
- Intermediate | 64%
- Novice | 5%

* Connected Customer survey, Salesforce Research, April 2018.
Data may or may not be represented in the "State of the Connected Customer" report.

Despite relatively low investment in the employee experience, IT leaders widely recognize the importance of modernized work technology. Evidently, there's a long road ahead when it comes to empowering teams to do their best work.

84% of IT leaders say improved employee technology is critical for their company to compete.

Only 21% of IT leaders say their technology maximizes employee engagement, and only 25% say it maximizes employee productivity.

As with customer experience initiatives, IT leaders rank legacy systems as the top inhibitor of employee experience initiatives. Budget constraints are a bigger headache for those working on the employee experience, while competing priorities and disconnected data and systems remain in the top five.

Once obstacles are overcome, security and identity technology takes precedence, with workflow automation and analytics rounding out the top three employee experience imperatives.

Improved Security and Workflows Are IT's Top Employee Experience Technology Priorities

TOP EMPLOYEE EXPERIENCE INITIATIVES FOR IT*

- 1 Security and identity technology
- 2 Workflow automation
- 3 Analytics
- 4 Mobile technology
- 5 Help desk/service desk

TOP EMPLOYEE EXPERIENCE CHALLENGES FOR IT*

- 1 Legacy systems
- 2 Insufficient budget
- 3 Competing priorities
- 4 Disconnected data and systems
- 5 Insufficient alignment with business units

* Not a complete list.

Trend 03:

developer experience



Huge demand for limited developer talent is holding back the innovation companies so desperately need to compete. **Seventy-two percent of IT leaders say project backlogs prevent work on strategic projects.**

Developers are the unsung heroes of technology-savvy

enterprises. Yet the developer experience is a top priority for just 20% of IT leaders, and only 10% have a completely defined strategy on the matter. Adoption of new development techniques and technologies, however, has the potential to make developers' lives easier – even if that's not the stated goal.

PRIORITIZATION



- High | 20%
- Moderate | 61%
- Low | 19%

STRATEGY



- Completely defined | 10%
- Somewhat defined | 42%
- Somewhat undefined | 36%
- Completely undefined | 11%

SKILLS



- Advanced | 23%
- Intermediate | 64%
- Novice | 13%

One headache for developers – traditional application code – may be on the way out, judging by the anticipated growth in low-code and no code development tools. **One quarter of IT organizations use low-code or no-code tools today, but an additional 41% plan to do so within two years – a projected growth rate of 165%.**

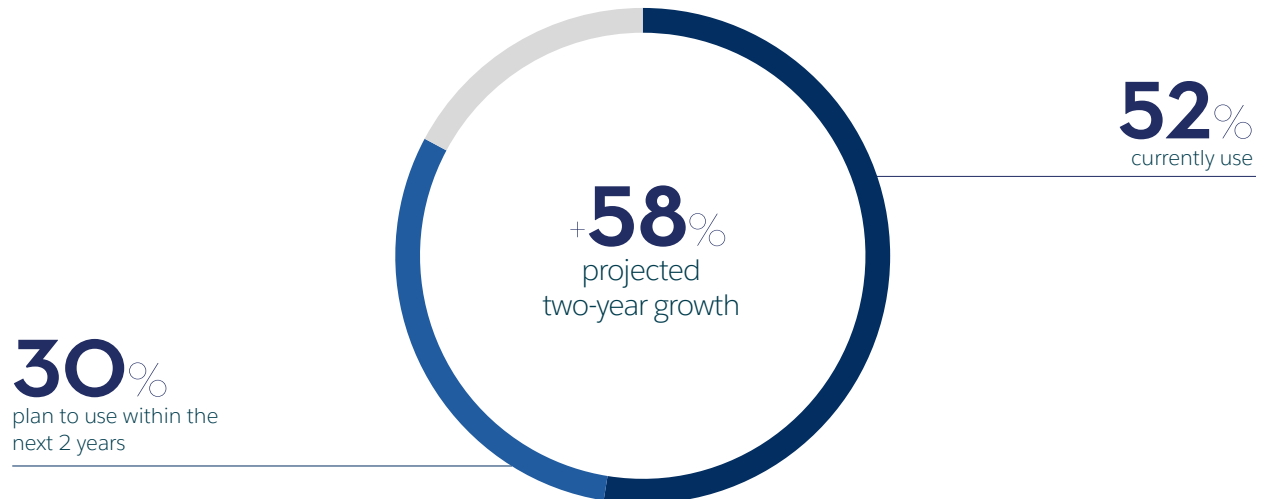
Over half (52%) of IT organizations have evolved their operations to include serverless computing, enabling their development teams to scale resources up or down without deploying additional infrastructure. Within two years, 83% of IT leaders expect to take this approach.

As New Development Technologies Take Off, Developer Support Remains Critical

Adoption of Low-Code/No-Code Tools



Adoption of Serverless Computing



Trend 04:

mobile technology



Ninety-nine percent of IT leaders say businesses must be mobile-enabled to survive in the future, underscoring the seriousness with which they take the matter. Yet with all their competing demands, fewer than half of IT leaders place a

high priority on mobile. That, combined with low skill levels and strategies that are largely described as only “somewhat” defined, will present challenges in a mobile-first future.

PRIORITIZATION



- High | 44%
- Moderate | 45%
- Low | 11%

STRATEGY



- Completely defined | 20%
- Somewhat defined | 59%
- Somewhat undefined | 19%
- Completely undefined | 2%

SKILLS



- Advanced | 29%
- Intermediate | 55%
- Novice | 16%

The rise of the mobile workforce is increasing demands on IT and developers alike. **Sixty-three percent of the workforce use their mobile devices for work tasks as much as for personal tasks.***

A mobile-first future isn't only attributed to an anytime, anywhere mentality. It's also due to the globalization and dispersion of teams.

All surveyed IT leaders foresee a workforce that spans many geographies and time zones, along with a business imperative of providing them with all the resources of a centralized team.

74% of IT leaders say a lack of mobile access to business apps, data, and content will slow business productivity in 2025.

This begs the question: What will the mobile development landscape look like as the workforce (and workplace) of tomorrow takes shape?

A Shifting Workforce Ups the Ante for Mobile Development



* Connected Customer survey, Salesforce Research, April 2018.
Data may or may not be represented in the "State of the Connected Customer" report.

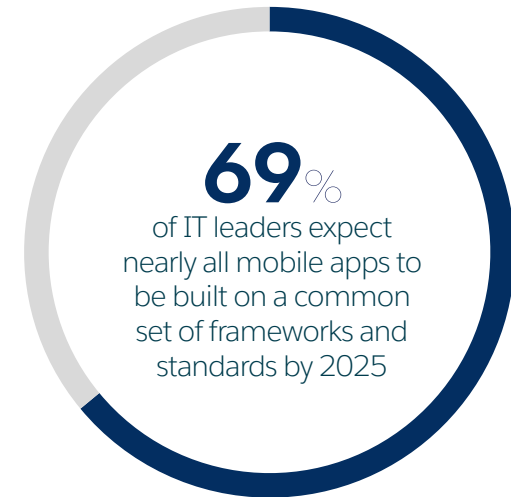
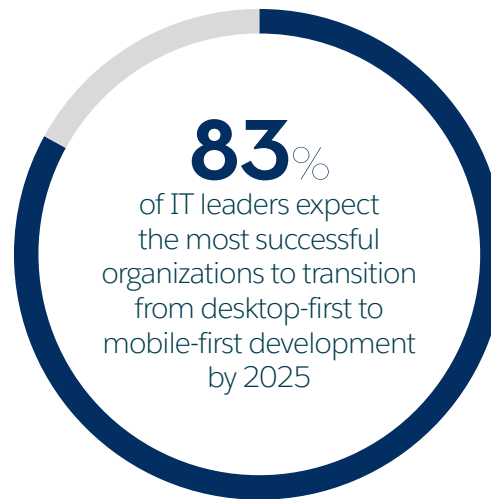
IT leaders are bracing for unprecedented innovation in mobile technology that could redefine its role in the enterprise. One survey respondent quipped, *“With 5G deployed, the mobile enterprise will change dramatically with device convergence replacing the desktop altogether.”*

It’s logical, therefore, that more than four out of five IT leaders expect a mobile-first development mindset among successful organizations by 2025.

Of course, this mobile revolution has implications that extend far beyond the workplace. Another survey respondent noted, *“The consumer will choose their engagement platform and you need to be ready on all platforms to provide an identical experience on all.”*

This vision of universally excellent mobile experiences is supported by the 69% of IT leaders who expect mobile apps to be built on common frameworks and standards by 2025, essentially rendering native mobile app development obsolete.

Mobile Development Will Be Transformed by 2025



Trend 05:

system integration



Mobile or otherwise, the pure number of systems, touchpoints, and data sources proliferating enterprises is staggering. In fact, **the average enterprise now uses 900 different applications.*** Knitting these applications

together to create cohesive customer and employee experiences now ranks among IT's top three priorities. Yet **IT leaders estimate that only 29% of their applications are integrated.***

PRIORITIZATION



- High | 55%
- Moderate | 43%
- Low | 2%

STRATEGY



- Completely defined | 23%
- Somewhat defined | 60%
- Somewhat undefined | 17%
- Completely undefined | 0%

SKILLS



- Advanced | 44%
- Intermediate | 53%
- Novice | 3%

Seventy percent of customers consider connected experiences – like seamless handoffs between departments and contextualized engagement based on earlier interactions – as very important for winning their business.* Yet connected experiences remain the exception to the rule.

36% of IT leaders say their organizations offer completely connected experiences.**

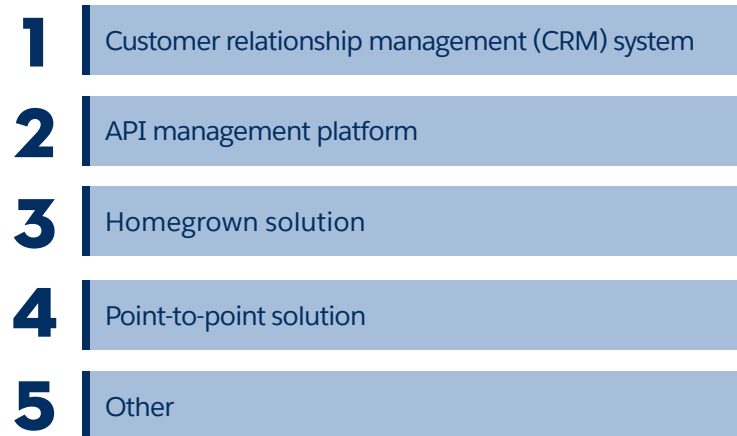
Over two-thirds (69%) of IT leaders attribute their connectivity shortcomings to a lack of integration, and a similar number consider such projects to be too long and expensive.

Challenging as they may be, integration initiatives are commonplace – **95% of IT leaders report using at least one technology for data or system integration.** Customer relationship management (CRM) and API management technologies are the most common solutions, while point-to-point solutions have fallen out of favor.

Integration Is an Imperative, but Challenges Persist



RANKING OF TECHNOLOGIES USED FOR INTEGRATION



* "State of the Connected Customer," Salesforce Research, June 2018.

** "Mulesoft Connectivity Benchmark Report," February 2019.

Trend 06:

artificial intelligence



Perhaps more than any other technology since the advent of smartphones and mobile apps, artificial intelligence (AI) is shaking up IT circles. **Eighty-three percent of IT leaders say AI is transforming customer engagement, and 69% say it is transforming**

their businesses. Yet AI strategies are among the worst-defined of any IT topic, and skill sets are notably low. It is for these reasons, perhaps, that IT organizations are unlikely (or unable) to include AI in their top priorities.

PRIORITIZATION



- High | 37%
- Moderate | 40%
- Low | 23%

STRATEGY



- Completely defined | 7%
- Somewhat defined | 40%
- Somewhat undefined | 36%
- Completely undefined | 17%

SKILLS



- Advanced | 10%
- Intermediate | 36%
- Novice | 54%

AI is already making a big splash in enterprise technology, with 42% of IT leaders reporting that their organizations already use it. That rate of adoption is expected to nearly double within just two years.

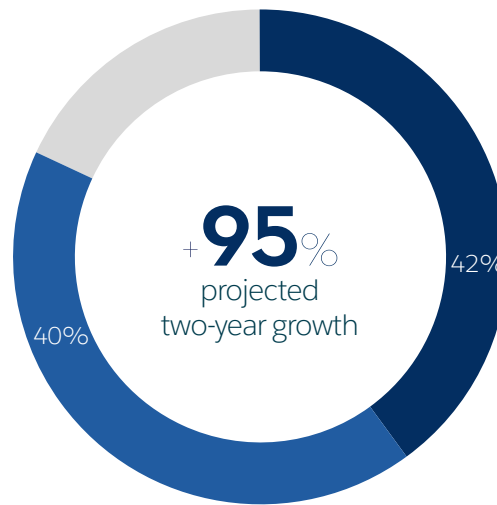
64% of IT leaders are actively looking for ways to use AI.

Chatbots – which can be voice- or text-based – are being adopted at a pace that matches AI overall. But IT leaders have expectations for AI that extend far beyond more efficient customer engagement. Approximately four-fifths of respondents believe, for example, that AI will help their organizations draw important insights – such as those that can lead to operational efficiencies – and detect both internal and external security threats.

Regardless of how they put it to work, IT leaders are nearly unanimous in acknowledging the big responsibilities coupled with AI. **Ninety-two percent of IT leaders say ethics are a critical part of any AI strategy.**

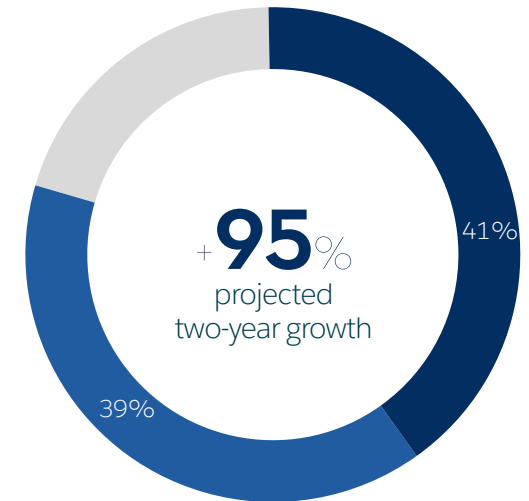
With an Eye on Returns, IT Plans for Big AI Expansions

Adoption of AI



■ Currently use | 42%
■ Plan to use within 2 years | 40%

Adoption of Chatbots



■ Currently use | 41%
■ Plan to use within 2 years | 39%

IT Leaders Who Agree with the Following Statements



Given the rising popularity of chatbots, it likely comes as no surprise that IT leaders rank customer service as the top line of business for greatest AI value potential. With personalized, real-time engagement now expected, marketing is ranked as the second-most anticipated AI beneficiary, with IT departments themselves rounding out the top three. Although fraud detection is a popular early use case for enterprise AI, the finance department is notably absent from IT leaders' ranking of top AI lines of business use cases. Instead, commerce and sales are tied for fourth place, underscoring a prominent role for AI among customer-facing business units.

Identifying use cases is hardly a roadblock for AI's implementation – IT leaders rank it at the bottom of their challenges – but that doesn't mean the transition to intelligent enterprise technology is without its obstacles. With a mere 10% of IT leaders describing their teams' AI skill sets as advanced, insufficient technical skills rise above all other AI implementation challenges. Competing priorities and budgets – perennial IT pain points – follow as the second- and third-greatest challenges, respectively.

AI Is Viewed as a Boon for Customer-Facing Business Units, But Scarce Skills Curb Its Impact

BUSINESS UNITS WITH GREATEST AI VALUE POTENTIAL*

- 1 Customer service
- 2 Marketing
- 3 Information technology
- 4 Commerce (including ecommerce)
(tie)
- 4 Sales
(tie)

* Not a complete list.

TOP CHALLENGES FOR AI IMPLEMENTATION*

- 1 Insufficient technical skills
- 2 Competing priorities
- 3 Insufficient budget
- 4 Change management
- 5 Earning customer trust

Trend 07:

voice technology



Voice technology is an increasingly prominent example of AI in everyday life. In fact, 54% of customers report having used a voice assistant like Siri or Alexa to communicate with a company.* Yet much like AI generally, IT strategies and skill sets around voice

technologies have substantial room for improvement, and prioritization of voice initiatives has largely taken a back seat to more immediate needs. According to our survey respondents, however, this will need to change sooner rather than later.

PRIORITIZATION



- High | 22%
- Moderate | 52%
- Low | 26%

STRATEGY



- Completely defined | 14%
- Somewhat defined | 39%
- Somewhat undefined | 34%
- Completely undefined | 12%

SKILLS



- Advanced | 11%
- Intermediate | 46%
- Novice | 43%

* "State of the Connected Customer," Salesforce Research, June 2018.

Over a third (36%) of enterprise IT organizations use customer-facing voice technologies today, with an additional 50% planning to do so within the next two years. Three customer-centric departments – customer service, sales, and marketing – are viewed as the top business units for voice technology value potential.

Yet the potential for voice technologies isn't limited to customer engagement. Employee-facing voice technologies such as productivity assistants are less common today – 24% of IT leaders report having them – but if projections hold, that figure will rise to 79% within just two years. Indeed, back-end business functions like IT and human resources are included among the top five business units with voice potential.

68% of IT leaders believe voice technologies will be a key part of their business processes within two years.

Voice Technology Is Positioned to Revolutionize Customer and Employee Engagement

Adoption of Customer-Facing Voice Technologies



■ Currently use | 36%
■ Plan to use within 2 years | 50%

Adoption of Employee-Facing Voice Technologies



■ Currently use | 24%
■ Plan to use within 2 years | 55%

Business Units with Greatest Voice Tech Value Potential*



* Not a complete list.

Trend 08:

IT staff learning and development



Technology is racing forward, but technical skill sets are not. Fewer than a quarter of IT leaders have a completely

defined strategy on how to handle this crisis of skills, setting their firms up for competitive disadvantages.

PRIORITIZATION



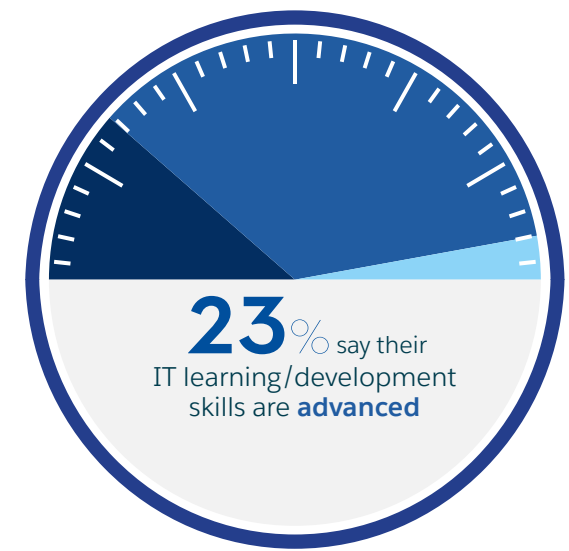
- High | 41%
- Moderate | 49%
- Low | 10%

STRATEGY



- Completely defined | 24%
- Somewhat defined | 58%
- Somewhat undefined | 16%
- Completely undefined | 2%

SKILLS



- Advanced | 23%
- Intermediate | 71%
- Novice | 6%

Companies are at war for scarce IT employees. In fact, nearly four-fifths of IT leaders say finding good IT talent has never been harder.

In-demand skills don't stop with programming and data science. A recent study found that “soft” skills such as collaboration, teamwork, and abstract thinking are viewed by IT leaders as nearly as important as technical skill sets.*

93% of IT leaders say business acumen is an important skill for technical staff.

Could the opposite talent dynamic be true as well? IT leaders may be missing an opportunity to convert nontechnical talent when hiring. Only 40% are recruiting from nontraditional backgrounds.

Skill gaps present not only technical and business challenges, but also a moral quandary: **96% of everyday people believe companies have a responsibility to prepare their workforce for emerging technology's impact on jobs.****

IT Leaders Are Missing Opportunities to Close the Skill Gaps



* "The Future of Workforce Development," Salesforce Research, December 2018.

** "Ethical Leadership and Business," Salesforce Research, February 2019.



Trend 09:

blockchain



With mobile technology decidedly mainstream, and AI getting there, the natural question for forward-looking IT leaders is “what’s next?” That may well be blockchain, a cryptographic technology that could revolutionize customer engagement as we know it. Blockchain is in its infancy,

with IT professionals and their business partners just starting to wrap their heads around it. Well-defined strategies and advanced skills are currently the exception to the rule. IT leaders’ views of its future impact, however, suggest that blockchain may not stay in the shadows for long.

PRIORITIZATION



■ High | 10%
■ Moderate | 32%
■ Low | 57%

STRATEGY



■ Completely defined | 4%
■ Somewhat defined | 16%
■ Somewhat undefined | 39%
■ Completely undefined | 41%

SKILLS



■ Advanced | 6%
■ Intermediate | 22%
■ Novice | 72%

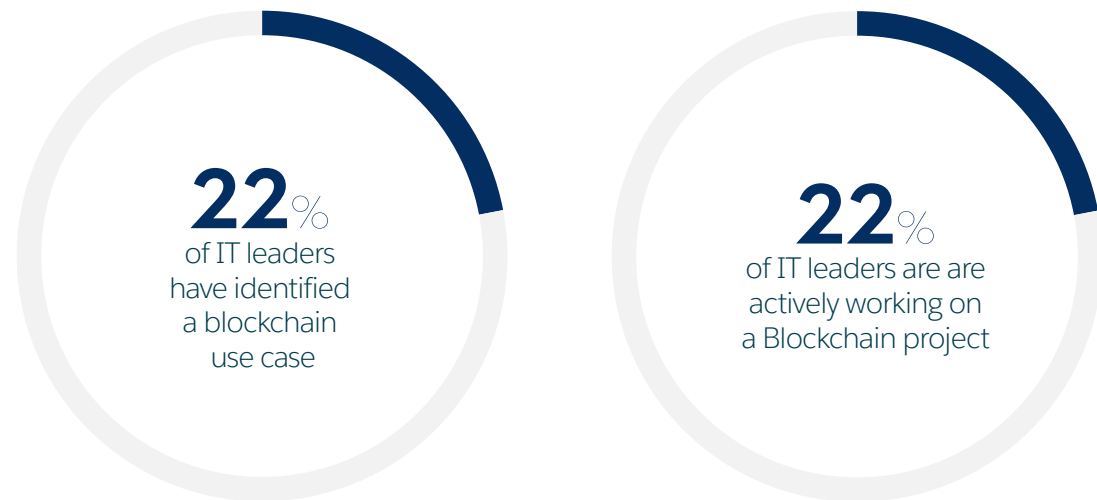
IT leaders foresee a big role for blockchain within their organizations and industries. Nearly three-quarters, for instance, believe the technology will create new business models and overhaul security, and nearly two-thirds expect improved partnerships.

Blockchain adoption has been nascent, for sure. Just over one-fifth (22%) of IT leaders have identified a use case within their organizations. But those who have mapped blockchain's capabilities to their businesses aren't wasting any time; the same percentage of IT leaders (22%) are actively working on a blockchain project.

Even though just a small share of organizations have jumped on the blockchain bandwagon to date, their ranks are expected to swell in the near future.

50% of IT leaders plan to increase their investment in blockchain over the next two years.

Even in Its Infancy, Blockchain's Impact Is Taking Shape



IT Leaders Who Agree with the Following Statements



Only 17% of IT leaders feel strongly that they understand blockchain, and even fewer (7%) feel strongly that their business partners do. It's logical, therefore, that proving value and identifying use cases are the top two impediments to blockchain implementation.

But figuring out how to apply blockchain to their businesses isn't the only hurdle for IT leaders seeking to implement the technology. Navigating the complex regulations and standards impacting blockchain, along with identifying and analyzing the necessary data, also rank among its biggest roadblocks. Identifying and onboarding partners – a critical component of any blockchain strategy – rounds out the top five blockchain challenges.

With so many hurdles to navigate on the path to realizing blockchain's potential, few IT leaders want to go it alone.

68% of IT leaders would prefer a vendor's blockchain solution over building their own.

IT and Business Pain Points Curb Blockchain's Early Impact

RANKING OF CHALLENGES FOR BLOCKCHAIN IMPLEMENTATION

- | | | | |
|----------|---|-------------------|--|
| 1 | Proving value | 6 | Insufficient technical skills |
| 2 | Identifying use cases | 7
(tie) | Competing priorities |
| 3 | Regulations and standards | 7
(tie) | Designing smart contracts
(distributed digital ledgers) |
| 4 | Data challenges
(e.g., identifying, wrangling) | 9 | Identity/authentication |
| 5 | Partner identification and onboarding | 10 | Insufficient budget |

Trend 10:

security and trust



The innovation that now defines IT has ushered in unprecedented possibilities for customers, employees, and business models. This innovation comes with an increased focus on security and trust, rising to become IT's second-highest priority. Investment has followed, with

security and trust having the most well-defined strategy (tied with customer experience) and the second-highest level of skills. Security has become such an imperative that **54% of IT organizations have a dedicated security team or officer.**

PRIORITIZATION



- High | 79%
- Moderate | 21%
- Low | 0%

STRATEGY



- Completely defined | 42%
- Somewhat defined | 52%
- Somewhat undefined | 6%
- Completely undefined | 0%

SKILLS



- Advanced | 44%
- Intermediate | 53%
- Novice | 3%

The seriousness with which IT leaders take security and trust is evident in their practices. They've expanded their security mandate to look more broadly at sources of threats. Eighty-five percent now view internal threats with the same level of seriousness as external ones, and nearly as many (78%) have taken precautions to monitor how employees access and use customer data.

Regulation has further ushered IT's security priorities and investments. Eighty-eight percent of enterprise IT organizations, for example, have increased security investments due to the European Union's General Data Protection Regulation (GDPR). But customer sentiment around data privacy seems to have an even bigger influence, with 95% of organizations having increased security investments due to public concern.

IT Leaders Expand Security Mandate



IT Leaders Who Agree with the Following Statements

Public concern over data privacy has prompted us to increase security investments



GDPR has prompted us to increase security investments



We are completely transparent with customers over how their data is used



Data from this report were collected through three separate surveys of full-time IT leaders. The figures below represent ranges of distribution across those three surveys.

INDUSTRY

Technology	27% – 35%
Healthcare	13% – 15%
Financial Services	6% – 19%
Manufacturing	5% – 8%
Telecommunications.....	4% – 6%
Retail & Consumer Goods.....	1% – 9%
Other.....	25% – 27%

REGION

United States.....	70% – 72%
Europe	19% – 20%
Asia Pacific	8% – 10%

COMPANY SIZE

5,000–9,999 employees	23% – 49%
10,000+ employees	51% – 77%

SENIORITY

C-level	27% – 41%
VP.....	20% – 21%
Director.....	33% – 40%
Senior Manager	0% – 19%





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