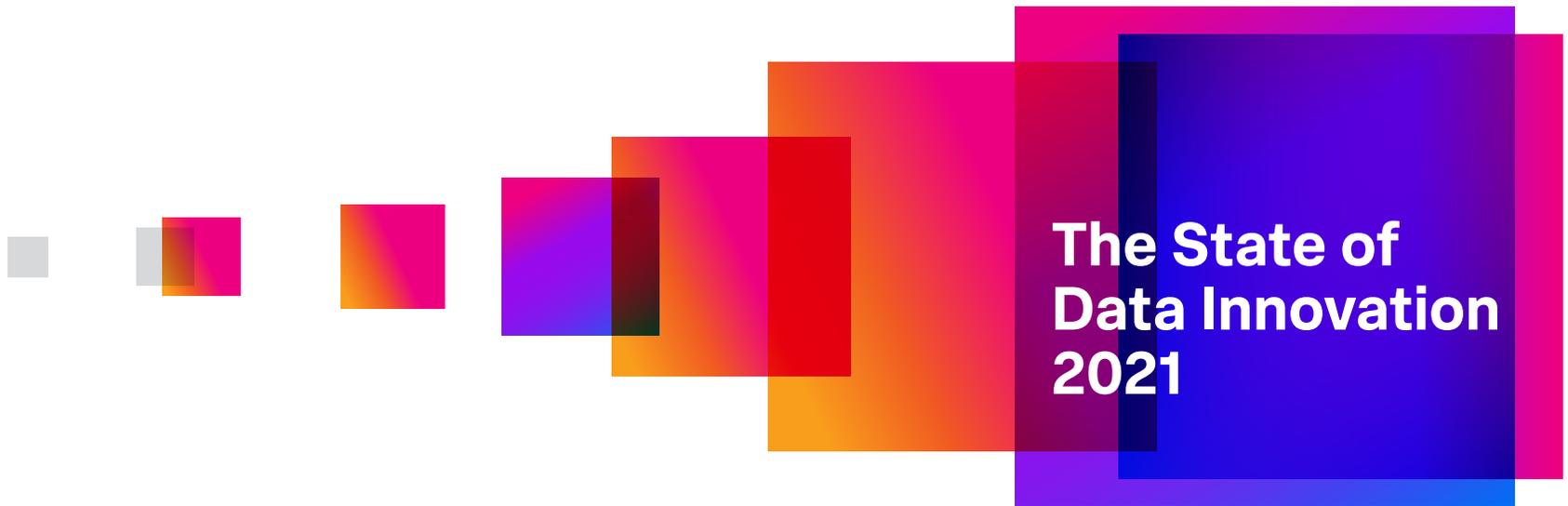# The State of Data Innovation 2021

Global research reveals how organizations with mature data practices can seize opportunity — and respond to disruptive change.

splunk>

The State of Data Innovation 2021

If You Don't Innovate, the World Will

Innovation is arguably the virtue that is most important to a company's success.

Here's the argument: The world in which your organization exists is innovating constantly, and not always with your best interests at heart. Technology shifts the ground under your feet on a daily basis, empowering new competitors and new lines of product and service — when it's not destroying the entire basis of legacy industries. It raises the game on customer experience and creates expectations among employees, from BYOD (pre-COVID, "bring your own device") to BYOD (post-COVID, "bring your own domicile").

And then there's the world beyond technology, with factors that can shut down regional facilities, supply chains or entire economies: pandemics, record heat waves, historic winter storms, epic hurricane seasons. Social and political turmoil. Ransomware.

In short, innovation is about both adapting to seize opportunity and defending against disruptive change. If the past 25 years of digital transformation didn't show us the value of innovation, the past year and a half of global pandemic sure did.

"It's essential in this era of high-speed digital transformation that organizations go from just storing and managing data to using it to reinvent themselves and their customer experiences," says Shawn Bice, Splunk's president of products and technology. "All of our digital transformation journeys really come down to, 'How can I turn data into meaningful action?'"

"Your data strategy has to continually be refined: what you are looking for, the quality of the data, how it is presented to users. We're almost applying DevOps approaches for our models and infrastructure, but that means you have to take manual steps out and move towards more of a managed process."

— Director of technology, communications and media company, United States

Anecdotal experience with Splunk's customers told us that organizations with mature data practices are more innovative, better at both generating game-changing ideas and rolling them out in record time. After a year of watching businesses stand up new digital products and services on the fly, shift to remote work with days' notice and otherwise redesign fundamental processes, we wanted to quantify the idea that data fuels the innovation engine.

With researchers at the Enterprise Strategy Group, we set out to measure data innovation, surveying 1,250 senior IT and business decision-makers worldwide, across industries, at larger organizations to assess their data practices, their innovation infrastructure, and their results.

We started with a definition: **Data innovation is the reinvention or fundamental transformation of business processes through the use of new types of data analysis or the analysis of new data sources.** Our thesis was that organizations with the best data capabilities should be using that data to generate more innovation — and having more meaningful impact on their businesses.

That's exactly what we found.

Executive summary (spoilers)

Not to get ahead of ourselves, but our research shows that organizations with mature data practices and innovation-forward strategies open up a remarkable achievement gap versus data-innovation beginners. On average, leading organizations:

- Have developed eight products or services in the past year attributed to data innovation — **double the innovation** of beginner-level organizations.
- Are almost twice as likely to say their data-fueled product innovation has let them **enter new markets and increase customer wallet share**.
- **Have increased employee productivity** by 16% in the past year, nearly double that of beginner-level innovators (9%).
- Are nearly twice as likely (66% versus 36%) to be **directly monetizing their data**.

Those results were powered by remarkable internal transformations. Leaders in data innovation are two to three times as likely as beginners to say they have fundamentally changed:

- Sales and marketing (47% of leaders versus 23% of beginners)
- Customer service (50% versus 19%)
- Supply chain/distribution (38% versus 17%)
- Manufacturing/operations (38% versus 14%)
- Finance (44% versus 14%)
- Software engineering (45% versus 20%)

Our research not only quantified the results that leading data innovators achieve, it dug into the *how* and *why*, including a list of leaders' strategies and key recommendations. But before the answers, we explored the questions: What technologies bring data to the innovation process? Which obstacles have to be overcome? What strategies ensure that "data in" leads to "successful innovation out," and how do leaders quantify those successes?
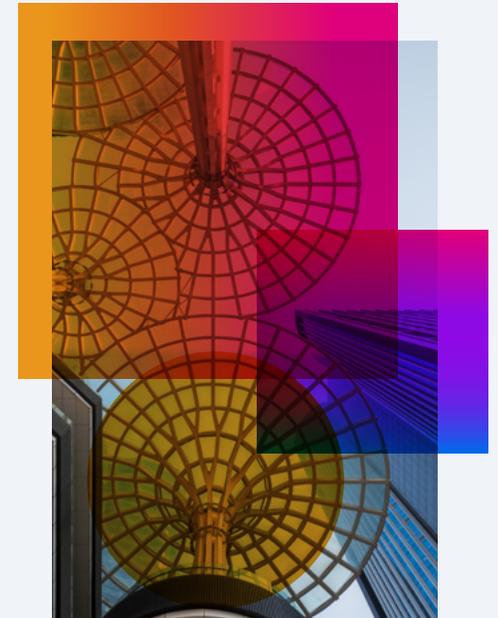
Defining Data Innovation

Classically, there are three types of business innovation:

- Product (think Fitbits or smartphones)
- Process (the assembly line, lean manufacturing)
- Business model (entertainment streaming services)

But what is innovation? Any innovation is a response to a condition. Whether novel (restaurants' shift to all-takeout during COVID-19) or longstanding (Henry Ford's reaction to complex manufacturing processes). And an innovation is, by nature of being new, an experiment.

- What defines the condition/challenge/opportunity against which you formulate a response? Data.
- What tells you whether the innovative response is succeeding, and whether it can be further improved? Data.

Data is essential to creating and measuring innovation. In this digital era, there's more data, and more opportunity to innovate, than ever.
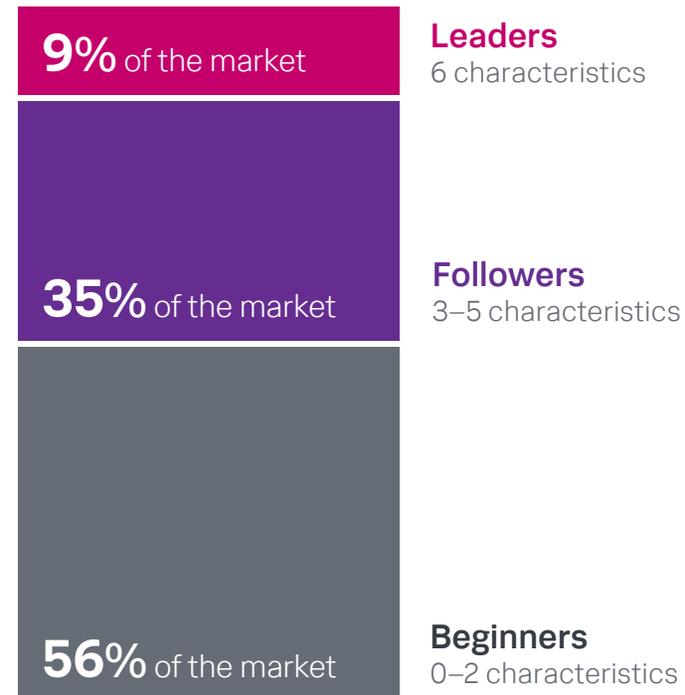
Following the data innovation leaders

To define success with data-driven innovation, we had to first define how successfully organizations manage and tap their data. We rated each organization according to a six-factor measure:

- **Data definition:** classifying and tagging data with metadata that supports access and use.

- **Data aggregation:** consolidating the data from an enterprise as a whole and in such a way that allows different business silos to access each other's data.

- **Data quality:** measuring how accurate, complete, consistent and deduplicated data is.

- **Data investigation skills:** ensuring that employees have the right skills to query the organization's data to answer business questions.

- **Data investigation tools:** ensuring that employees have the right tools to query the organization's data to answer business questions.

- **Data monitoring:** automating queries to capture ongoing and real-time answers to important business questions.

Leaders were defined as organizations excelling at all six factors, and constituted 9% of respondents. Close behind was a group of *followers* (35%) that exhibit three to five of these factors. The remaining 56%, achieving excellence in two or fewer, were defined as *beginners*.

It's notable that in our previous research into organizations' success with observability and data security, and quantifying the value organizations extract from their data, the leadership group has consistently been 9% to 11% of each research sample, while the beginner group hovers between 50% and 60%. This suggests that roughly a tenth of all larger organizations are at the leading edge of digital transformation generally, while about half have barely begun the journey.

Data Maturity Levels

9% of the market

Leaders
6 characteristics

35% of the market

Followers
3–5 characteristics

56% of the market

Beginners
0–2 characteristics

Data Maturity Inhibitors

Which factors are most lacking or challenging for surveyed organizations?

- Only 29% have a classification system that defines most/all data.

- Only 40% have comprehensive data aggregation, while 29% say that some or all lines of business keep their own data separate or hidden.

- Only 39% say that their data quality is known and measured comprehensively. Others have, at best, partial insight into data quality.

- Only about 1 in 5 say that all or most of their employees have the skills and tools they need to appropriately access the data needed to do their jobs well.

- Only 29% report "excellent progress" toward automating data monitoring. More encouragingly, another 48% report "good progress."

Using data to drive innovation is not easy, says Shawn Bice, Splunk's president of products and technology, and there's a reason our research found the leaders to be a relatively small group.

"I've spent most of my career in data, and I can tell you that 99 out of 100 organizations don't really know what to do with their data," says Bice, who came to Splunk after five years with Amazon Web Services. "But I'm a big believer that literally every organization can use data to build a foundation for a future of innovation and success."

Bringing data to innovation

Having ranked organizations according to their proficiency with data, we then measured the ways that they bring data to innovation, and the degree to which they make innovative thinking — and action — part of their cultures, from valuing inquiry to enabling collaboration to quantifying results.

We found, to no surprise, that it's not just data that drives innovation. It's a conscious effort to use that data to break new ground.
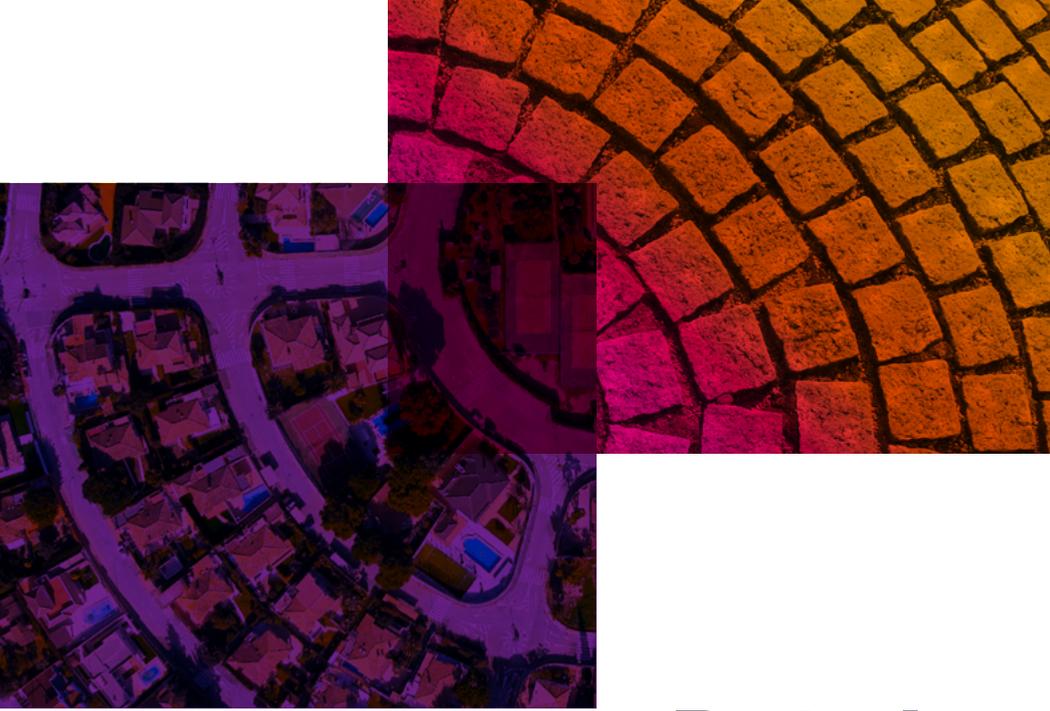
Data Innovation Outcomes: Better, Smarter, Faster

We teased some of the outcomes in the first section; now let's go deep. The research shows that organizations with more mature data-innovation practices see improved results.

Data-innovation leaders are positively affecting their businesses much more than their peers.

- **Product innovation:** Leaders in data innovation release twice as many product/service innovations as beginner-level organizations. Leaders are much more likely to enter new markets, improve customer conversions, and increase spend per customer as a result of their data-led product innovations. Innovative offerings make up 69% more of leaders' revenue mix.

- **Data monetization:** Leaders are much more likely than beginners to monetize data with data innovation (66% versus 36%). Data monetization accounts for 31% more revenue for leaders and is growing 75% faster than for beginners.

- **Employee productivity:** Leaders use more data sources to optimize employee productivity and efficiency, and have seen a 16% improvement in productivity — a 78% greater increase than the 9% reported by beginners.

- **App-dev enablement:** Leaders are four times as likely to have significantly accelerated data delivery to application developers in the past 12 months. Ninety-six percent of leaders say accelerating data delivery to developers has accelerated application development, and 95% say it has improved application functionality.

Whether a given process change or innovation most directly affects the front end or the back, the ultimate focus has to be on the people your entire organization exists to serve. "Your culture has to be obsessed with creating value for a customer," says Splunk Chief Customer Officer John Sabino, who cites lean manufacturing processes as an inspiration. "You work back from the customer. You get a minimum viable product in front of the customer, take the data on what's working, and what's not working, and act upon it. That's the key to innovation, to enable that to happen."

> "Because we are capturing more and better customer data, we've seen significant gains by being able to target specific customers with new personalized product offers."
>
> — VP of sales, retailer, France

The majority of organizations across maturity levels say data innovation helps them improve employee productivity and product/service evolution. Asked to indicate specific areas of improvement, high percentages of respondents reported the following:

- **Employee efficiency/productivity (62% of respondents).**
- **Development and launch of products/services (55%).**
- **Identifying staffing priorities and new roles needed (50%).**
- **Application development (49%).**
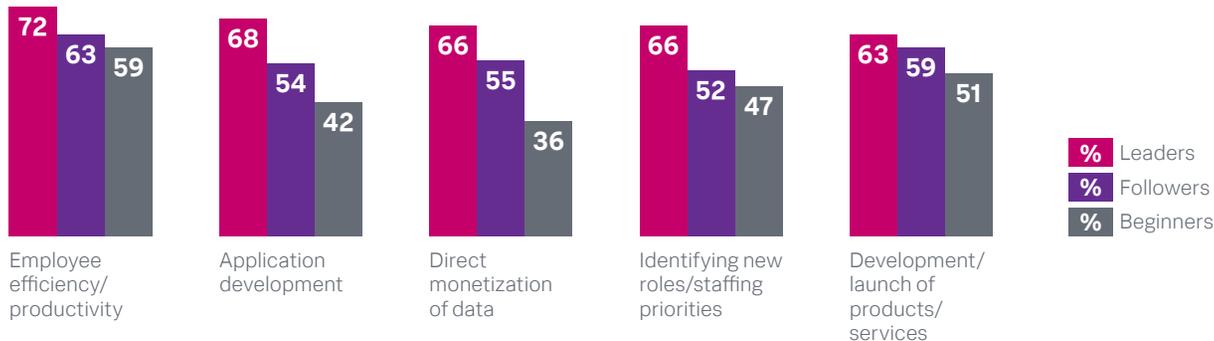- **Direct monetization of data (46%).**

When we parsed the research data by innovation-maturity level, we found that leaders are consistently outperforming those at lower levels of maturity, with the widest gaps between beginners and leaders in the areas of application development and direct monetization of data.

"Implementation of new performance management and observability technologies to provide real-world performance and scaling visibility for customer-facing applications is one of the things that has helped us innovate most effectively."

— IT manager, global bank, New Zealand

Data Leaders Innovate Broadly

Leaders are more likely to employ data innovation across all use cases.

	72	68	66	66	63
	63	54	55	52	59
	59	42	36	47	51
	Employee efficiency/ productivity	Application development	Direct monetization of data	Identifying new roles/staffing priorities	Development/ launch of products/ services

- **%** Leaders
- **%** Followers
- **%** Beginners

Measuring innovation's impact

The principal benefit of data-enhanced innovation for all respondents is getting closer to the customer, whether that's by providing better digital experiences, engaging via new channels or offering new products that better fit customers' needs. Across the board, respondents say data innovation helps them achieve:
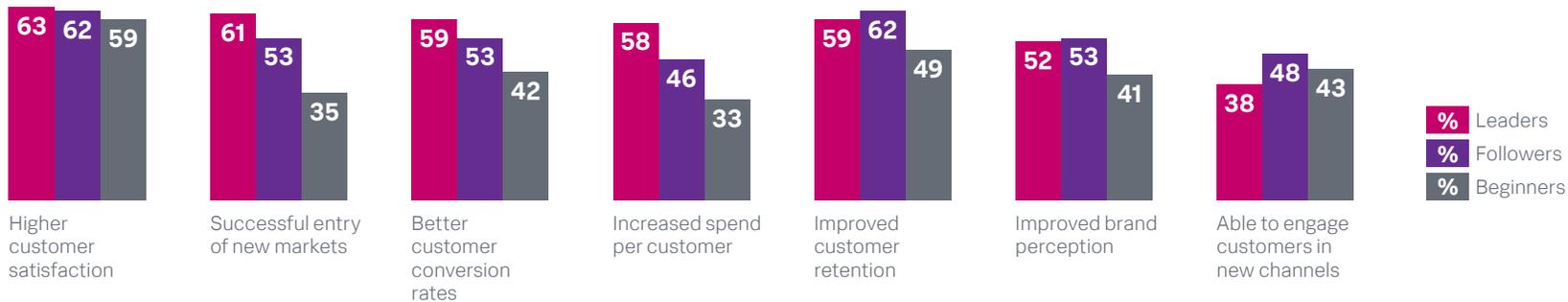
- **Higher customer satisfaction (60% of respondents).**
- **Improved customer retention (54%).**
- **Better customer conversion rates (48%).**
- **Improved brand perception (47%).**
- **Successful entry of new markets (45%).**
- **Ability to engage customers in new channels (44%).**
- **Increased spend per customer (40%).**

Those with the strongest data-innovation practices see a greater share of the benefits. On average, data-innovation leaders have developed eight products/services in the past year thanks to their data-innovation capabilities, double that of beginners. Leaders are more than twice as likely as beginners to report that their data-fueled product innovation has allowed them to enter new markets and increase customer wallet share. These and other results (see chart below) show that applying data to a cultural innovation commitment is providing new opportunities, even in tumultuous times.

Perhaps most tellingly, leaders are nearly twice as likely to report that the majority of their product innovations are unqualified successes: 60% of leaders say so, while only 48% of followers and 32% of beginners can say the same. That's a powerful advantage. Even in a startup-inspired world of "fail fast," setting yourself up to fail less often is even better.

Leaders Get Closer to Customers

Beginners trail both leaders and followers in using data to reach and motivate customers.

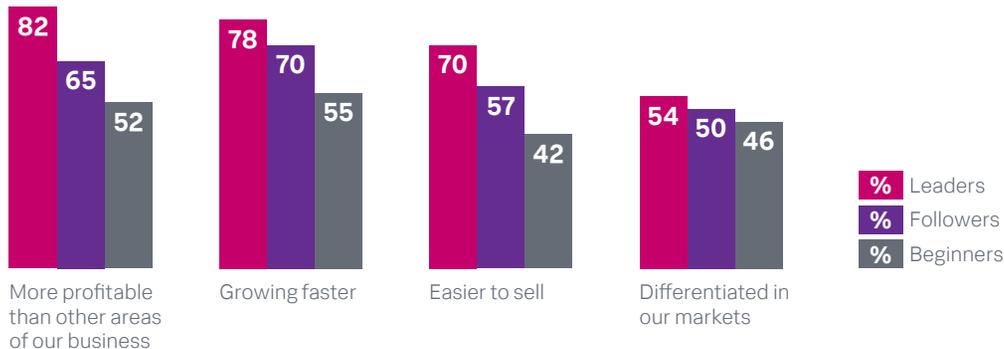|	Higher customer satisfaction	Successful entry of new markets	Better customer conversion rates	Increased spend per customer	Improved customer retention	Improved brand perception	Able to engage customers in new channels
% Leaders	63	61	59	58	59	52	38
% Followers	62	53	53	46	62	53	48
% Beginners	59	35	42	33	49	41	43

Turning data into revenue

For many organizations, monetizing data — specifically, using data to provide a subscription or service as a complement to, or separate from, other lines of business, or reselling data — is a hallmark of digital transformation. This is especially true of the data-innovation leaders in our survey.

Across the board, 46% of respondents say they actively innovate how they monetize their data. Of that group, just over a third say monetization is core to their business (37%), versus those who have a data product that complements their core business (49%) or a data product that is separate from their core business (14%).

Data innovation leaders are reaping the lion's share of the benefit from monetization opportunities. Fully 66% of leaders directly monetize their data, versus 36% of beginners. As a group, leaders report that about 34% of their revenue comes from data products/services, while beginners claim only 26%. And leaders' data-derived revenues are growing 75% faster than beginner organizations, at 35% per year versus 20% for beginners.

Leaders Monetize Their Data

Leaders' data-centric offerings are much more likely to provide a lift to the organization.

	Leaders	Followers	Beginners
More profitable than other areas of our business	82	65	52
Growing faster	78	70	55
Easier to sell	70	57	42
Differentiated in our markets	54	50	46

% Leaders
% Followers
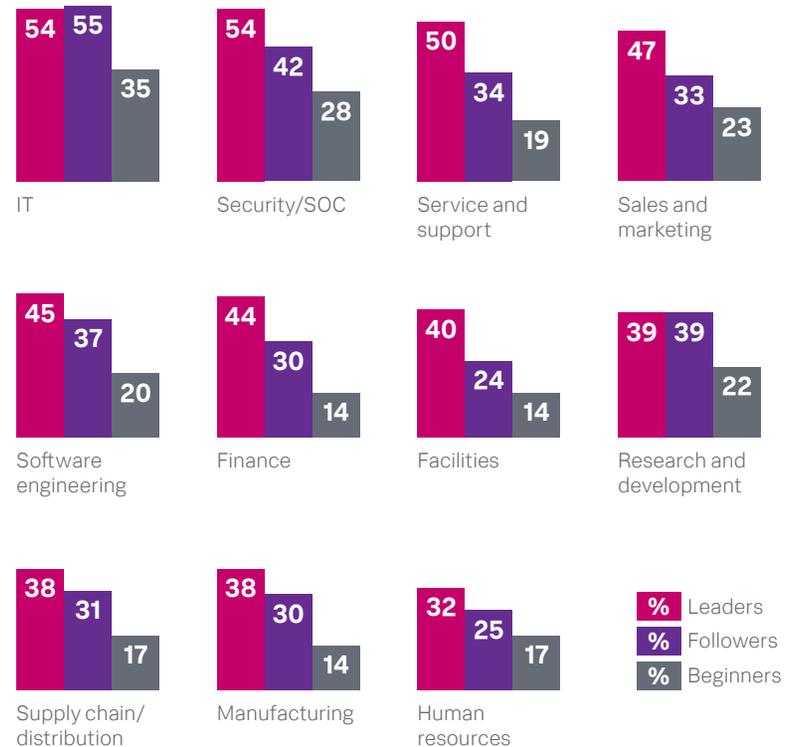% Beginners

Turning data into productivity

In addition to putting new data products in front of customers, organizations are using data to improve daily decisions and actions in every aspect of their businesses. Improving employee productivity with data has been a major benefit of the digital era. Regardless of maturity level, significant numbers of respondents are using a wide range of data sources to help employees work smarter, including:

- **Application utilization (59%).**
- **Knowledge sharing (59%).**
- **Device performance/telemetry (55%).**
- **Collaboration patterns (52%).**
- **Employee monitoring (48%).**
- **Employee surveys (39%).**

When asked how much data innovation has increased employee productivity, 38% of leaders say "more than 20%." Only 29% of followers and 11% of beginners say the same. On average, beginners say data innovation had increased productivity by 9%, versus 16% for leaders — a 78% greater result. Digging further, we found that leaders say they've "fundamentally" transformed key functions about twice as often as beginners, from security (54% versus 28%), to software engineering (45% to 20%), to sales and marketing (47% to 23%).

Data Leaders Transform Key Functions

Far more leaders report "fundamentally transforming" operations than beginners.

	Leaders	Followers	Beginners
IT	54	55	35
Security/SOC	54	42	28
Service and support	50	34	19
Sales and marketing	47	33	23
Software engineering	45	37	20
Finance	44	30	14
Facilities	40	24	14
Research and development	39	39	22
Supply chain/distribution	38	31	17
Manufacturing	38	30	14
Human resources	32	25	17

% Leaders
% Followers
% Beginners

Innovation strategies: turning data into action

As we've noted, cutting-edge data management practices are only the starting point. The value of data is what you *do* with it. Accelerating and improving innovation with data requires a culture that's ready to take that data and run with it. We identified several strategies that help leaders in data innovation do a better job of turning their data into measurable positive outcomes.

1. **Get data to developers — fast.** The simplest and most important step is getting that data to someone who can use it. Leaders are better at getting data into the hands of their own disruptors. Among all respondents, 29% say they've "significantly accelerated" data delivery to development teams in the past year; another 51% say they've "somewhat accelerated." Leaders are four times as likely as beginners to have accelerated data delivery (64% versus 16%, with followers staking the middle ground at 42%).

   For the majority of respondents, accelerated data delivery has resulted in material improvements: 85% report improved application functionality and developer efficiency, while 83% say it has improved the speed of application development.
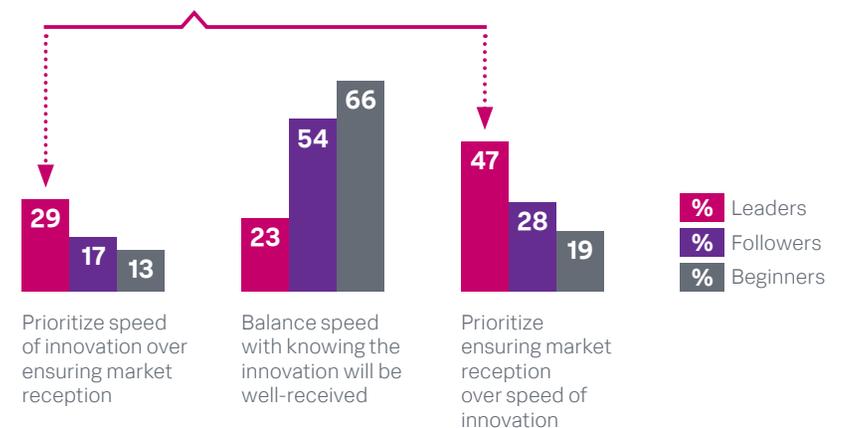
2. **Prioritize among conflicting innovation goals.** Prioritizing data delivery to developers lets them work faster, and lets organizations give more consideration to innovation strategy. But obviously the virtues of speed and deliberation can undermine one another. When we asked respondents which mattered most to their organization, speed of innovation, or knowing innovations will be well-received, we saw an interesting breakdown.

   Beginners are far more likely (66%) to say they go for both, aiming to "balance speed with knowing innovations will be well-received," while innovators tend to choose one or the other, with a greater propensity to prioritize being well-received by their markets. To our researchers, it appears that beginners are unsure how to prioritize, while leaders double down on the virtue that best serves their market position. Leaders in a highly regulated industry like financial services lean toward "get it right," while tech and communications/media tend toward "get it now." In either case, having the confidence — and the data — to lean hard into a strategy seems to be a mark of leading organizations.

> "We're using data to model and test more options during the application development process because we can get more data to developers faster. This has enabled us to select the best features to bring to actual product builds."
>
> — VP of IT, life sciences company, United States

Leaders Are Decisive About Innovation

Leaders are more likely to commit to insight (especially) or speed, while beginners and followers try for a balance.
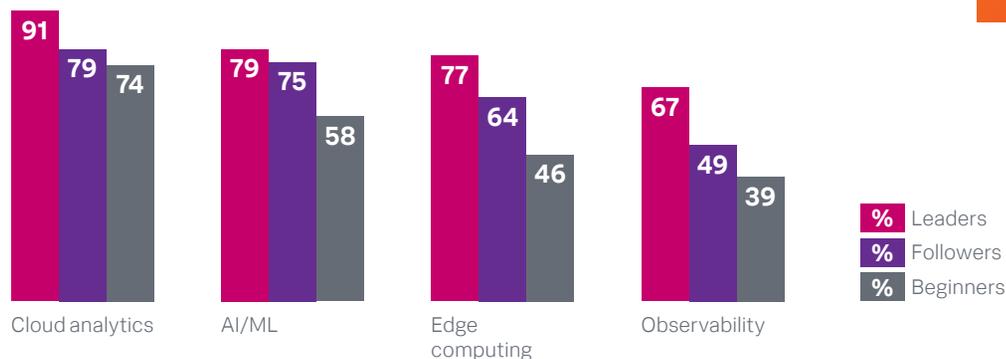

	Prioritize speed of innovation over ensuring market reception	Balance speed with knowing the innovation will be well-received	Prioritize ensuring market reception over speed of innovation
% Leaders	29	23	47
% Followers	17	54	28
% Beginners	13	66	19

3. **Cloud analytics is fundamental; observability is cutting edge.** When asked which tools help them innovate, respondents across the board most often lean on cloud analytics (78%), followed by AI/machine learning (66%), edge computing (55%) and observability (45%). That ranking more or less matches how well-established those technologies are in the marketplace, with the technologies further down the list more likely to be only in the hands of early adopters.

That appears to be borne out when we break it down by innovation maturity: While leaders are only slightly more likely to employ cloud analytics, they're way ahead of the pack in edge computing and observability.

The lesson: Embrace newer technologies that will give you the outcomes and advantages you need to innovate.

"Further investment into cloud platforms and how the company stores data has helped us better innovate with our data. That, paired with an increased use of AI/ML on cloud platforms, is allowing us to uncover insights that were often neglected."

— IT manager, oil and gas company, Canada

Leaders Use Technology to Drive Outcomes

Leaders are ahead on adoption of key technologies, especially newer ones, like edge computing and observability.

	Cloud analytics	AI/ML	Edge computing	Observability
Leaders	91	79	77	67
Followers	79	75	64	49
Beginners	74	58	46	39

% Leaders
% Followers
% Beginners

4. **Leaders dig deeper into their data.** We found that the data sources that fuel innovation vary by maturity. Across the board, the four most popular are customer data (cited by 35%), operational technology and systems data (32%), and service transaction/performance data (28%). But when we asked which data source provided the biggest innovation lift, we saw a clear distinction based on maturity level.

Customer data is most often cited by beginners (38%) and followers (36%), but less often by leaders (22%). Similarly, sales data is key for 27% of beginners and 25% of followers, but only 9% of leaders. So what data is getting leaders to the next level?

– 37% of leaders cited application/transaction performance data, versus 28% of followers and 27% of beginners.

– 33% of leaders cited network data, versus 25% of followers and 22% of beginners.

– 29% of leaders cited sensor/IoT data, versus 28% of followers and 21% of beginners.

– 28% of leaders cited physical/virtual server data, versus 14% of followers and beginners.

5. **Leaders incentivize innovation.** Great employees often bring a pure passion to their jobs. But when every new idea faces tremendous headwinds, if not a complete lack of interest and support, those same employees may shift gears to just getting the basic job done — and save the great ideas for their next employer.

Strong innovators incentivize employees to bring forward new ideas, and establish processes for weighing and acting upon them. Not surprisingly, when it comes to incentives, leaders are significantly ahead in every case:
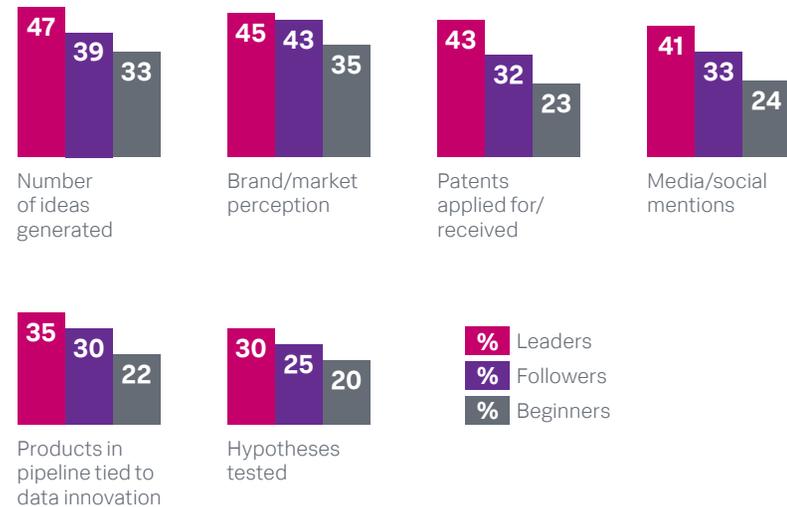
– 66% of leaders offer seed funding or budget for employees to kick-start ideas, versus 51% of followers and 39% of beginners.

– 65% of leaders offer dedicated time for employees to innovate, versus 52% of followers and 43% of beginners.

– 64% of leaders provide employee bonuses tied to nonfinancial innovation metrics, versus 53% of followers and 40% of beginners.

– 45% of leaders offer equity/bonuses tied to new products or services, versus 37% of followers and 21% of beginners.

6. **Leaders measure innovation.** If you want to improve something, you have to measure it. But innovation is extremely difficult to measure. Even if you track the end result, such as the number of new products in the past *X* number of months, and the percentage of revenue attributable to those new products, that won't tell you the *why* behind the results.

Our research found that data innovation leaders are more likely to use nonfinancial metrics to measure innovation. From numbers of ideas generated and hypotheses tested to patent applications and market perception, leaders employ nonfinancial measures about 60% more often than beginners.

Data Leaders Measure Innovation

Leaders are more likely to track a range of innovation metrics.

	Leaders	Followers	Beginners
Number of ideas generated	47	39	33
Brand/market perception	45	43	35
Patents applied for/received	43	32	23
Media/social mentions	41	33	24
Products in pipeline tied to data innovation	35	30	22
Hypotheses tested	30	25	20

% Leaders
% Followers
% Beginners

7. **Leaders make innovation someone's *job*.** Leaders in data innovation are more likely to employ executives in innovation-centric roles.

   – **94% have an exec role for customer experience, such as chief customer officer, versus 79% of followers and 63% of beginners.**

   – **97% have an exec role for data analysis, such as chief data officer, versus 85% of followers and 69% of beginners.**

   – **96% have a dedicated innovation exec, such as chief innovation officer, vs. 82% of followers and 59% of beginners.**

   – **91% have an exec for innovation-essential cloud infrastructure, such as a cloud architect, versus 79% of followers and 69% of beginners.**

8. **Leaders continue to improve the software development life cycle.** In one of the most dramatic differences between leaders and the rest of the pack, leaders have pulled significantly ahead in DevOps and DevSecOps practices.

   – **DevOps: 79% of leaders say they use DevOps extensively (compared with 28% of followers and only 9% of beginners).**

      ○ **Only 2% of leaders say they have some adoption or none at all, versus 42% of beginners.**

   – **DevSecOps: Similarly, 88% of leaders say they've extensively incorporated security processes and controls into their DevOps, versus 53% of followers and 18% of beginners.**

      ○ **30% of beginners haven't gotten started yet.**

9. **You gotta spend money to make money.** Finally, leaders know that investing in data is essential to driving faster, smarter innovation.

   They spend up to 50% more of their tech budgets on data-centric solutions and staff (18% of budget, versus 12% for beginners and 15% for followers).

"We've been able to curtail data misuse and analyses based on partial data by consolidating company-wide infrastructure instead of relying on a variety of mismatched technologies."

— Software engineering management, tech company, UK

More Lessons From Leaders

■ Leaders are 4.8 times as likely as beginners to make better data utilization their top priority.

■ Leaders prefer a platform approach to data-centric technologies by 3:1.

■ Leaders are 4.8 times more likely to have significantly accelerated major data innovation projects since before the COVID-19 pandemic.

The research is clear: In addition to having their data house in order, leaders are changing processes, incentivizing creative thinking, making executives accountable and measuring success by more than the bottom line.

"A company can assert values like being disruptive and thinking differently, and being open to new voices and new ideas," says Splunk's Shawn Bice, "but talking about those values is one thing. … It's living them that gets results."
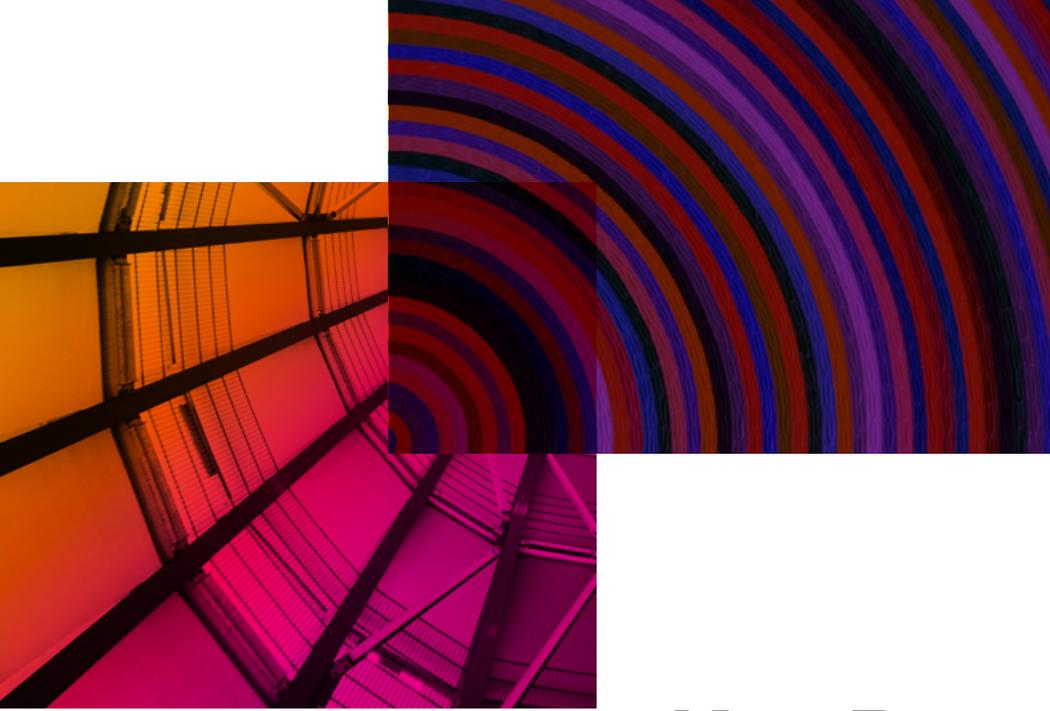
Key Recommendations

Innovation is not a discrete muscle that you develop. It's more of a full-body workout. Put differently, organizations that want to fire up their innovation engine need to look holistically at just what makes that engine work. How do we encourage employees to think and bring forward new ideas? How do we give them both the time to develop those ideas and the cross-team collaborative support to vet, test and deploy them? How do we use data to improve both the quality of experimentation and the speed of execution? How do we measure not only the success of a deployed innovation, but the success of our efforts to be more innovative?

The most innovative organizations focus on these questions as much as the end products and make continual improvements. Key steps:

1. Focus on data.

Innovation is the answer to a question: What's a new or better way for this organization to succeed? You can't answer a question without data. You can't assess success without data. In the digital era, you can't do much of anything without data. So optimize the entire data continuum, from how you classify, consolidate and clean your data to how you tool up and train the right teams to draw insight from information. Then layer in automation to make it all faster, more reliable and more efficient.

2. Get the right staff and solutions in place.

More on training and tooling: Once you've got the data, you have to make sure the right people can use it. Secure, appropriately accessed data is essential to roles throughout your organization, but different tools, skills and access are needed for different roles. Understand how to empower every employee to access data to inspire and validate creative thinking, and make sure that employees have a clear, welcoming process for moving an idea across teams and up the chain of command.

3. Measure innovation to make innovation a priority.

Figuring out how to measure your innovative practices and results (not *just* the results) will force an interesting conversation: How do you measure innovation? How do you measure innovative practices? What *are* innovative practices? Answer those questions, figure out how to track them, then share the metrics in the same meetings where you show sales numbers or application performance stats.

4. Incentivize innovation.

Respondents told us that most of their data innovators (69%) have other core responsibilities besides sudden inspiration. Only 29% say that their key innovators work only or mostly on innovative/emerging processes. In other words, your innovators tend to have day jobs. You have to help them by carving out time and providing incentives to innovate.

5. Clear organizational roadblocks.

The single biggest blocker of innovation uncovered by this research is the difficulty in enlisting cross-team collaboration. It was the most commonly cited gating factor (by 36% of respondents.) What's the value of a sales person's or support tech's idea to improve the product if they can't get the attention of overworked developers, harried IT teams or executives who think all the ideas come from the C-suite? Innovation breaks normal processes, workflows and mindsets, so make it possible (and appropriately prioritized) for groups to get behind new possibilities and work cross-functionally effectively.

The magic doesn't happen by magic

In a lengthy 2019 report on innovation,[1] McKinsey notes that "Innovation, at its heart, is a resource-allocation problem; it is not just about creativity and generating ideas." While innovation pays measurable dividends, those are dividends on measurable investments: in technology, staff and training, cross-functional teams, and in making time for people to develop, launch and measure new ideas. And the data aspect of innovation requires just as much daily commitment.

"It's your job as an executive to make sure that the data in your organization is democratized, is leveraged in every decision, and informs everything that you do," says Splunk Chief Customer Officer John Sabino. "And that you're making sense out of the data, better and better every day."

We often think of innovation as a sudden change, a strike of inspiration. In fact, innovation is intention, process and investment. That sounds a lot less exciting than being struck by a sudden bolt of genius, but on the upside, we don't have to wait around for the muse of market disruption to sing to us. We can just roll up our sleeves and get down to work.

"We are focused on data so that we can eliminate decisions made on gut feelings or emotion. This has helped achieve improved manufacturing output while also increasing customer satisfaction."

— VP of operations, process manufacturer, UK

1 "The Innovation Commitment," McKinsey Quarterly, Oct. 24, 2019

Industry highlights

Communications and media

Communications and media companies are more likely to be leaders in data innovation: 20% are leaders, far more than in any other industry. Among all other industries, an average of only 7% have reached leader status.

Communications and media companies allocate 16% of IT budgets to solutions and staff that investigate, monitor, analyze and act on data — outpacing financial services (14%), manufacturers (12%), public sector (12%), retailers (12%), and healthcare and life sciences companies (13%).

Forty-seven percent of communications and media companies rate better data utilization as their top business and IT priority for the next 24 months, significantly more than all other industries in the survey (only 20%, on average).

Communications and media companies are the most likely to use observability (59%) and edge computing (70%) to improve data innovation, significantly more than all other verticals surveyed. Only 43% leverage observability to improve data innovation and 53% use edge computing.

Financial services

Financial services firms were the most likely to say financial data is a leading data source to help them unlock innovation (40%), more than communications and media (15%), tech (20%), manufacturers (26%), public sector (18%), retailers (26%), and healthcare and life sciences (24%).

Sixty-one percent of financial services firms surveyed are impacting product/service development with data innovation, the highest percentage of all industries surveyed.

Healthcare and life sciences

Healthcare and life sciences organizations were the most likely to report challenges in not having the right technology to innovate with their data (32%). They were significantly more likely than financial services (22%), communications and media (15%), tech (19%), manufacturers (20%) and retailers (16%) to report these challenges.

Sixty percent of healthcare and life sciences companies report that data innovation helps them engage customers in new channels, a significantly higher percentage than in communications and media (42%), tech (42%), manufacturers (42%), and retailers (38%).

Fifty-two percent of healthcare and life sciences companies innovating based on medical data from sensors and devices report a significant or game-changing impact.

Seventy-five percent of healthcare and life sciences companies tend to prioritize investments in data-innovation platforms (versus point tools), a significantly higher percentage than communications and media (60%), public sector (58%) or retailers (63%). Sixty-four percent of respondents in the other industries report a preference for a data-innovation platform.

Manufacturers

Sixty-three percent of manufacturers are beginners in data innovation, a higher proportion than most other industries, including financial services (52%) and communications and media (47%). Only public sector organizations had a higher percentage of respondents at the beginner level (67%).

Fifty percent of manufacturers applying data innovation to improve materials yields report a significant or game-changing impact, and 54% of manufacturers using data innovation to improve product quality report a significant or game-changing impact.

Public Sector

Sixty-seven percent of public sector organizations are data-innovation beginners, the highest among all industries and a significantly higher proportion than financial services (52%) and communications and media (47%).

Thirty-three percent of public sector organizations reported they have not accelerated data-innovation projects since the COVID-19 outbreak, a significantly higher percentage relative to financial services (21%), communications and media (14%), tech (14%), manufacturers (19%), retailers (18%), and healthcare and life sciences (17%).

Forty-three percent of public sector organizations agree that public cloud services have the best data-innovation capabilities, the highest percentage in the industries researched.

Fifty-two percent of public sector organizations say that their on-premises environment is more secure than public cloud alternatives, a significantly higher percentage than financial services (38%), communications and media (36%), and retailers (35%).

Retail

Retailers are relatively strong when it comes to consolidating data across business functions: 45% report all company data is available to every line of business where appropriate and allowed, a significantly higher percentage than among manufacturers (34%) or public sector (25%). On average, 39% of companies from other industries report comprehensive data aggregation capabilities.

Retailers were the most likely to say that sales data is a leading data source to help them unlock innovation (40%), more than financial services (26%), communications and media (21%), tech (19%), manufacturers (26%), public sector (22%), and healthcare and life sciences (19%).

Fifty-two percent of retailers using data innovation to personalize offers, product recommendations or customer service report a significant or game-changing impact, and 54% using data innovation to optimize inventory report a significant or game-changing impact.

Technology

Tech companies allocate 15% of their IT budgets to solutions and staff that investigate, monitor, analyze and act on data — significantly more than manufacturers (12%), public sector (12%), retailers (12%), and healthcare and life sciences (13%).

Thirty-one percent of technology companies rate better data utilization as their top business and IT priority for the next 24 months, a significantly higher proportion than manufacturers (16%), public sector (12%), retailers (19%), and healthcare and life sciences (13%).

Forty-five percent of technology companies have made excellent progress automating their data monitoring processes, higher than financial services (29%), manufacturers (21%), public sector (12%), retailers (29%), and healthcare and life sciences (25%).

Thirty-six percent of technology companies strongly agree that data is growing faster than they can keep up with, far more than financial services (26%), manufacturers (20%), public sector (22%), retailers (22%), and healthcare and life sciences (19%).

Tech companies are the most likely to report challenges related to marketing their innovative ideas (34%). They were significantly more likely than communications and media (21%), manufacturers (20%), public sector (17%) and retailers (21%) to report this challenge.

Regional highlights

Asia Pacific (APAC)

Thirty-three percent of APAC organizations rate better data utilization as their top business and IT priority for the next 24 months, a significantly higher proportion relative to both North America (21%) and Europe (17%).

APAC organizations were the least likely to report that financial data has been a major source of innovation (18% versus 31% for North American organizations and 25% for European).

Fifty-four percent of APAC organizations are using observability to improve how they innovate with their data, outpacing North America and Europe (both 42%).

Thirty percent of APAC organizations feel public cloud services offer the best data-innovation capabilities, a lower vote of confidence than in either North America (40%) or Europe (38%).

North America

Fifty-one percent of North American organizations rated as beginners in terms of data-innovation, a smaller proportion than in Europe (58%) or APAC (59%).

North American organizations were the most likely to report that employee data has been a major source of innovation (23%, versus 14% in Europe and 16% in APAC).

Sixty-nine percent of North American organizations tend to prioritize investments in data-innovation platforms (versus point tools), slightly more than in Europe (67%), and notably ahead of APAC (58%).

North American organizations were the least likely to report challenges related to not having the skills to innovate with their data (21%, versus 27% in Europe and 30% in APAC).

Europe

On average, 12% of IT budgets at European companies are allocated to solutions and staff that investigate, monitor, analyze and act on data, trailing North America and APAC (both 14%).

European organizations were the least likely to report hiring a chief innovation officer to drive initiatives (64%, versus 72% in North America and 75% in APAC).

European organizations are the least likely to be investigating collaboration patterns when analyzing data to improve employee productivity and efficiency (44%, versus 57% in North America and 54% in APAC).

European organizations innovating their data monetization practices are most likely to run that business as a complementary offering (55%, versus 50% in North America and 39% in APAC) as opposed to data monetization being core to their business or a separate offering.

Methodology and demography

The survey was conducted in June 2021 by the Enterprise Strategy Group. The 1,250 respondents were drawn from 10 countries. About 84% of organizations were enterprise-size (1,000+ employees) and 16% were midmarket (500-999 employees).

Respondents consisted of:

- Senior IT (83%) and business decision-makers (17%) with influence over their organization's data initiatives.

Regional Demographics

- North America (U.S., Canada): 40%
- Western Europe (France, Germany, Netherlands, UK): 34%
- Asia Pacific (Australia, China, Japan, New Zealand): 26%
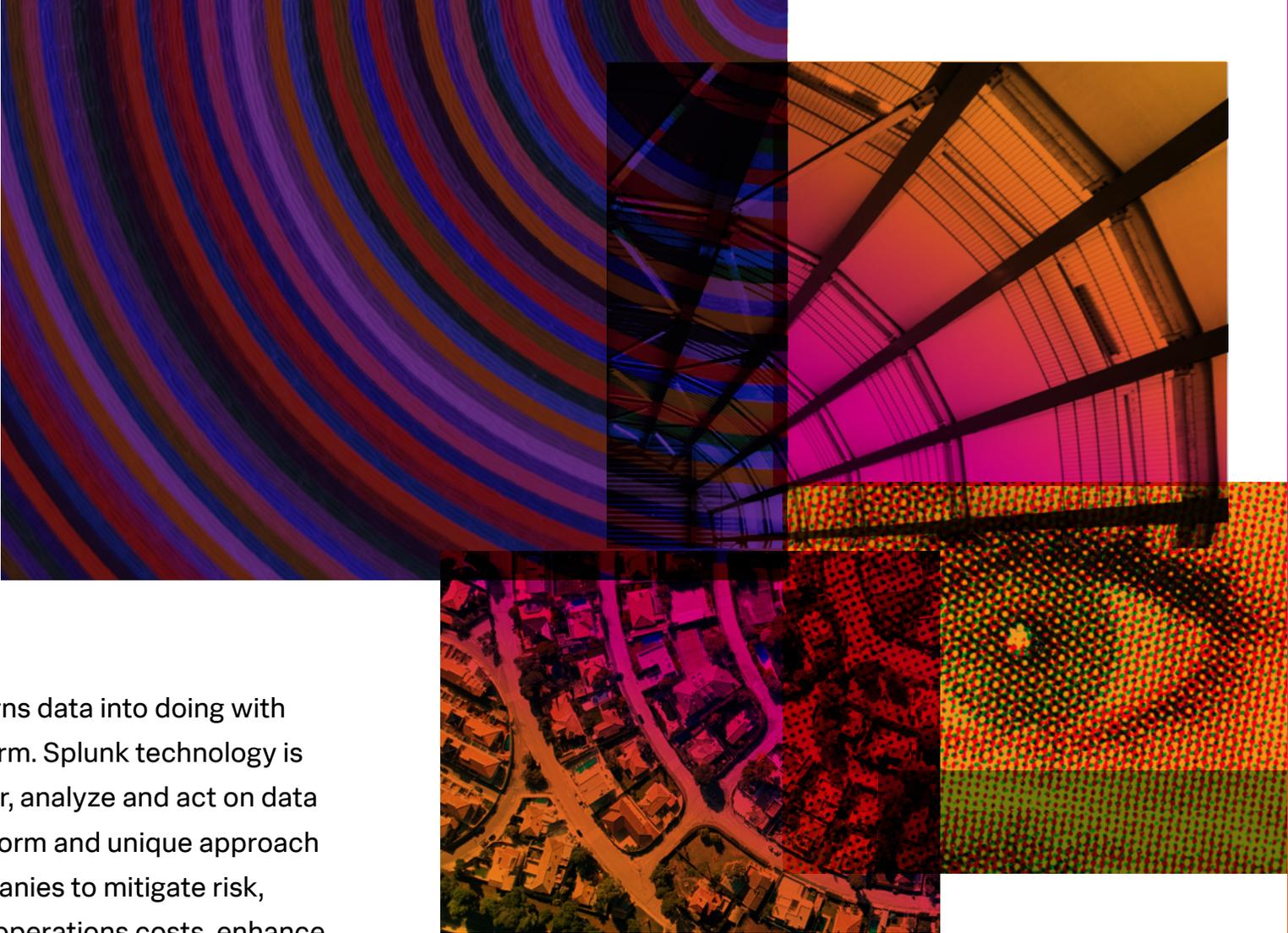
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