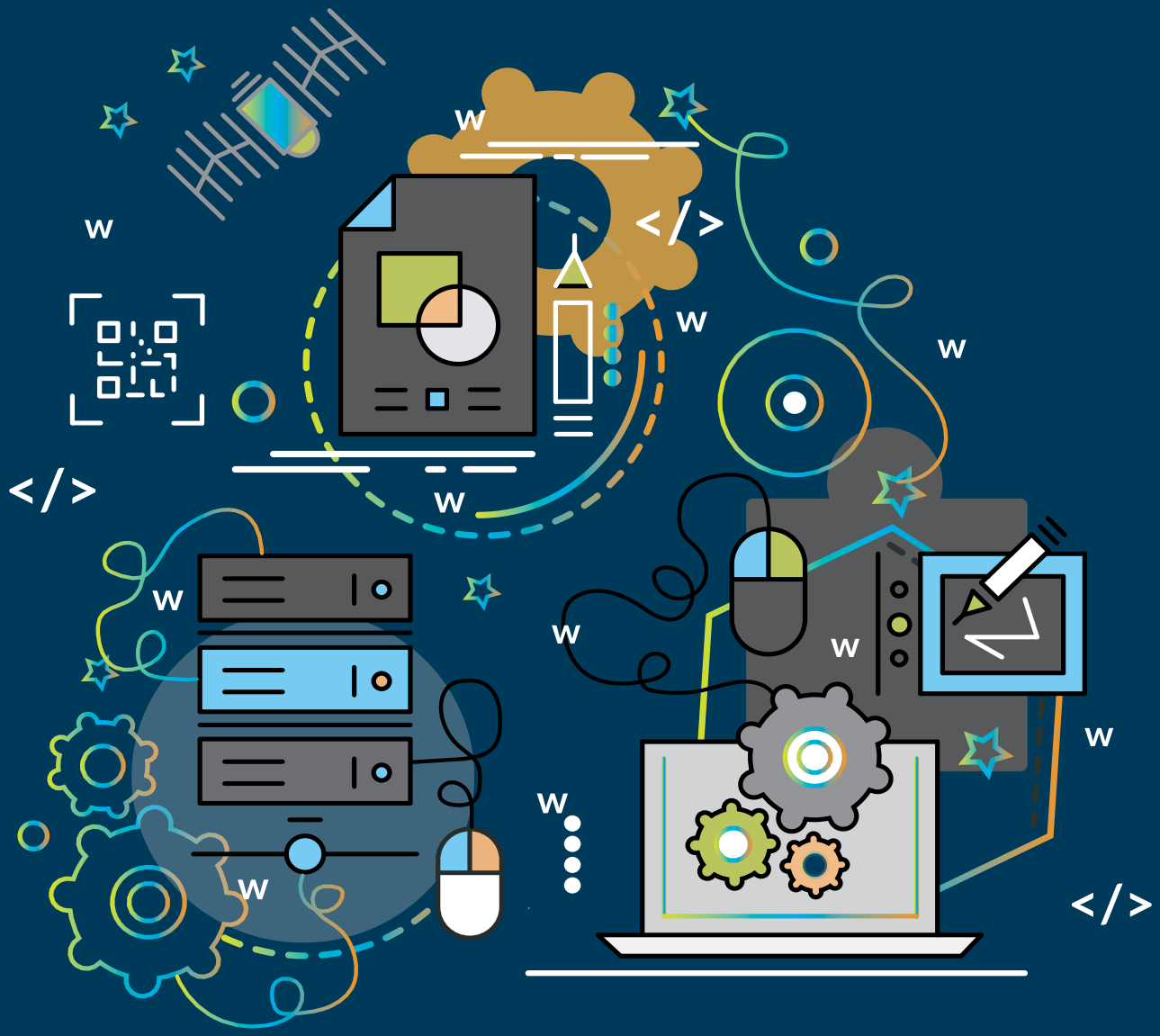
aws | Chief Executive Group

Driving Growth Through Digital Transformation

A sweeping survey of more than 500 leaders at U.S. companies in nearly every industry and size category by Chief Executive Group and Amazon Web Services reveals a sizable shortfall in the organizational behaviors needed to drive business growth in the digital age—as well as huge opportunities to learn and leapfrog your competition.



Despite more than a decade of work to become more digitalized, U.S. businesses undertaking digital transformation remain in the minority, a November 2021 survey of more than 500 C-Suite executives and public company board members found.

The vast majority of companies surveyed are yet to transform meaningfully to true data-driven cultures: a top-down approach to decision-making persists, with product-planning still the sole purview of senior leadership. And despite having plenty of data, most companies said it isn't being used as effectively as they would like; most companies seem to be stuck in the analysis phase—trying to figure out the best way forward—vs. making progress.

There is, of course, a bright side to all of this—a huge opportunity. The slow pace of change means business leaders who fear they've been left behind are still in the majority. Those who choose to get going on adopting new ways of working have an unprecedented chance to leapfrog competitors. Those who don't will remain in the herd of laggards.

"The key is to fail fast and to also get some wins, even if they're not huge ones," says Susan Fleming, a board member with RLI Corp., who has been working to transform the company. She was one of more than two dozen C-Suite executives and public company directors who were interviewed in depth as part of the study. "That's what enables you to take on the projects that are on a bigger scale and have the support and buy-in of the whole organization behind you."

"It's not uncommon to launch into a transformation effort without fully understanding, or agreeing on, what success looks like." —Phil Le-Brun AWS Enterprise Strategist

Digital transformation isn't just about implementing new technology; it is also about using technology to drive growth. Leaders who envision reinvention for their business begin taking steps to invest in their strategy, process, people and culture. These changes are not about scope size but rather impact. By making incremental changes, leaders begin to lay the foundation for transformation. A shared vision between the CIO or CTO and their C-Suite counterparts can provide the cornerstone for long-term success. Many companies often feel that they're behind on digital transformation but despite the talk about the rapidly approaching new digital era, it's still early in the game. Experts estimate that only a small percentage of global IT spending has moved to the cloud. Most businesses have yet to take advantage of next-generation economies of scale, speed, automation and intelligence, all of which have the potential to disrupt entire industries. The starting point for every organization is relative. Gaining the organizational momentum needed to embark on digital transformation takes a dedicated effort. It's a challenge that every company faces, and the consensus in the C-Suite is clear: digital transformation through the cloud is integral to achieving growth.

"The key is to fail fast and to also get some wins, even if they're not huge ones." —Susan Fleming, Board Member, RLI Corp.

Perhaps the biggest question to emerge from the research is the one that's proven the hardest to answer: Why, despite a decade or more of effort, are so many companies still lagging when it comes to digital transformation? In the interviews conducted as part of this investigation, of those who said they were behind the state of the art—or behind even where they thought they should be—few could

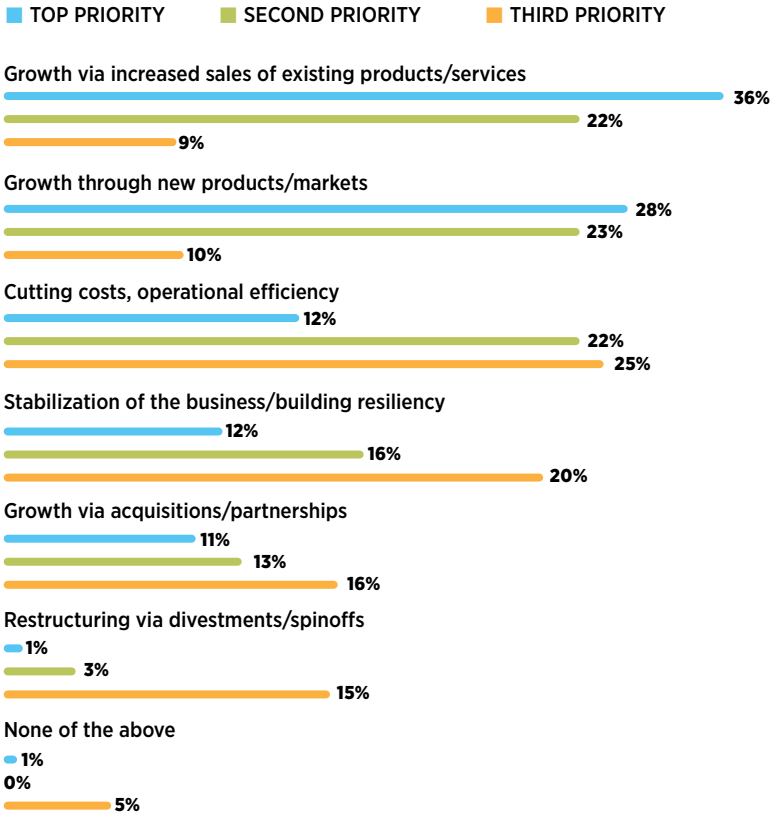
really articulate why a more data-driven culture had not taken hold in their organizations. "One of my favorite questions to ask for the last few years is, 'What problem are we trying to solve?'" says AWS Enterprise Strategist Phil Le-Brun. "Often, we race into solutioning a poorly defined problem. It's not uncommon to launch into a transformation effort without fully understanding, or agreeing on, what success looks like."

Complicating matters further, the data also suggests that many senior executives believe they are on a path to transformation, yet their reported behaviors don't support that view. While more than half of those surveyed listed growth through either new (28 percent) or existing (36 percent) products or markets as their company's top priority for the year ahead, the vast majority lacked the behaviors, processes and organizational structures exhibited by companies that have really harnessed the power of digital transformation for growth.

That's because many companies are putting the technology before the business—and therefore the cart before the horse, says AWS Enterprise Strategist Jonathan Allen. "It's nice to think that everyone starts a transformation journey at the same logical time and place, and it's easy to assume everyone understands 'the why' and 'the how' of that transformation. But even leadership teams that are seemingly aligned—and I have sat on many—often 'think' they are agreeing on the scope of the same problem but never actually have the conversation to align properly and calmly on the 'why' and the 'how' in the clear contextual map of the world their business lives in."

INNOVATION-FUELED GROWTH A TOP PRIORITY

Which of the following would you consider the top three priorities of your organization's leadership team over the next year?



LEARN MORE:

What are your cloud transformation principles?

By Jonathan Allen, Enterprise Strategist & Evangelist, Amazon Web Services

KNOWING CUSTOMERS, PRIORITIZING CUSTOMERS

OF ALL THE AREAS where we found companies lagging the true state of the art, the biggest shortfall came with how data was being used to better understand customers. To discern what their customers want—and how to give it to them—most businesses we surveyed still rely on anecdotal comments or conversations (23 percent), customer service data (21 percent) and ongoing tracking of NPS scores (15 percent). Just 2 percent had adopted advanced techniques such as AI-driven insights to help them understand and get ahead of their customer needs.

Some smaller company CEOs see the latter as out of reach. Farmers & Merchants Bancorp, for example, invested in front-end technology from vendors like FIS, Fiserv and Jack Henry that has been useful, says board member Lars Eller, but those vendors haven't caught up with the more sophisticated tools yet. "The bigger guys with their bigger budgets, they're working on those things, being able to predict through behavior what the next product is, but we're not as fortunate—we just don't have the budget."

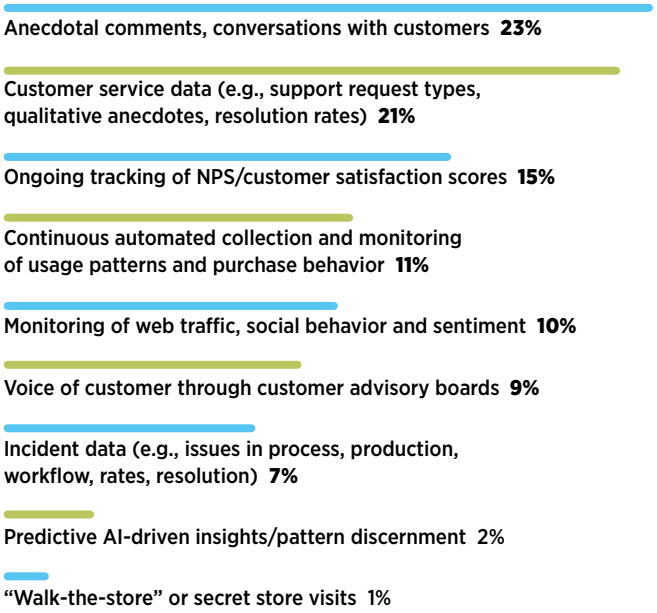
But those perceived cost barriers may be hindering companies more than they ought to. "In many cases, enterprises that have undertaken a major move to the cloud first got started by learning and experimenting with the migration of a single application," says Phil Potloff, global head of AWS Enterprise Strategy. "This smaller step allowed them to gain confidence with the technology, economics, and skill sets that are part of a bigger leap into the cloud."

The data suggests, too, that leaders are overly focused on methodology or tools, such as cloud technology, AI and machine learning, while the bigger roadblock is a culture lacking the necessary data-driven framework or mindset.

That's partly because leaders who grew up in a more traditional business environment have no frame of reference or "mental model" for operating in the new world, says Ishit Vachhrajani, an AWS enterprise strategist who spent decades developing technology-driven cultures at companies including NBC Universal and A&E Networks. "Technology will only get you so far. Being a data-driven organization means culturally treating data as a strategic asset and then building capabilities to put that asset to use not just for big decisions but also for everyday action on the frontline."

USE OF CUSTOMER DATA AN OPPORTUNITY

What are the top two sources of intelligence that your organization most relies on to understand your customers' needs?
(Select only top 2 sources.)



In their ebook, *Why You Need an Agile Mindset—and How to Get One*, AWS Enterprise Strategists Phil Le-Brun and Mark Schwartz posit that, "while many accounts of digital transformation focus on technology, a sense of psychological safety is a prerequisite for such agile behaviors as experimentation, speed and autonomy. Sure, you can simply move to the cloud and enjoy the technology's benefits. But the true advantage will come from also embracing a new, agile mindset."

Companies that are able to shift their mindset and culture to adopt new processes and behaviors are rewarded. For some, Covid forced that change. That was true for OGGI, an Anaheim, California housewares products manufacturer that's a mainstay at Bed, Bath and Beyond and other big retailers. The company had been struggling with old-fashioned, paper-based record-keeping and a 20-year-old ERP. Everyone knew the old systems were not ideal, but inertia had kept things at status quo. "It was stable, it was easy, and everyone knew how it worked," says CEO Will Symonds.

Then Covid hit, and demand for products—particularly the casing they make for antiseptic wipes—exploded. "We just found ourselves unable to cope," he says, adding that it was a perfect storm of hiring challenges and supply chain issues. "All of that coming together at once, we realized we needed to bite the bullet" on tech investment.

"Interestingly, this need to cope with unexpected crises resembles our everyday challenges in the digital economy," notes AWS's Mark Schwartz, "where we already know we'll need to respond to unanticipated competitor moves, disruptive newly funded startups, quickly changing consumer behavior, game-changing new technologies and unpredictable usage surges on the internet. Organizations, and especially IT departments, have already been acquiring the agility to better cope with uncertainty."

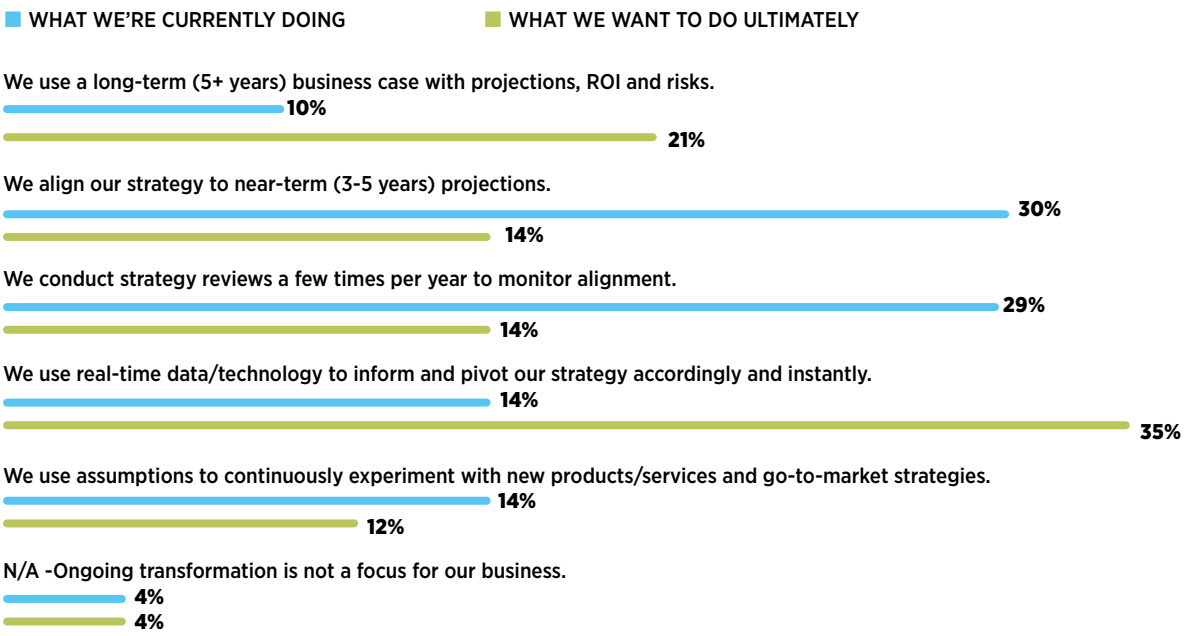
Symonds quickly moved to dispense with paper and the old ERP, and he invested in a cloud-based system that allowed him and his team to see the business with a whole new level of clarity. The pandemic-fueled changes proved providential. Information is now shareable both internally and with partners up and down the supply chain—and at speeds that make a difference. Teams see trends earlier: which products are selling well, which aren't, and with a level of detail—colors, sizes—unfathomable to his staff just months before. "We're not doing the math in our heads anymore—we'll actually have a database," says Symonds. "It looks at our demand profile, our forecasts, our sales history and our real factory lead times—not what we think they are. It will tell us what to order, and when."

"Technology will only get you so far. Being a data-driven organization means culturally treating data as a strategic asset and then building capabilities to put that asset to use, not just for big decisions but also for everyday action on the frontline."
—Ishit Vachhrajani, Enterprise Strategist, AWS

The revolution going on inside of OGGI isn't all about technology, however. It's primarily about culture—one that moves faster, with ready access to data enabling more decentralized decision-making.

PATHS TO PROGRESS

Which of the following best describes how your organization ensures it is continuously adapting to consumer trends and behavior?



That is the real game-changer. "We're not spending time getting the data—the data is kind of there," says Symonds. "It's more a case of what we do collaboratively as a team with the data that these cloud systems are giving us now."

It's a concept OGGI is still learning—and Vachhrajani notes that ideally, the company will be in a continuous mode of learning from here on out. "This is not a one quarter or six-month thing you can come back and say, we're done," he says. "You get started, and positive changes start to take place. You might pick one thing, but then you're not done. You're operating in a model where you're constantly learning."

Real-Time Analytic Aspirations

The changes to culture—the way decisions are made, etc.—may be a primary reason most leaders we surveyed report that they are not where they ultimately hope to be. When asked how their companies ensure that they are adapting to consumer trends and behavior, some 30 percent said they still align strategy to three- to five-year projections, while 29 percent conduct strategy reviews a few times a year, and 10 percent rely on business cases and projections looking out a full five or more years. Yet nearly half, or 47 percent, of those surveyed said they would ultimately like to use real-time data to inform and change strategy "accordingly and instantly" or to "continuously experiment with new products or services—but just 28 percent said they were currently doing that.

"Today's rapid pace of change requires that we tweak our personal and organizational worldviews to look at opportunities and issues differently," says AWS's Le-Brun. "We often loosely call this change 'digital transformation,' although I have a problem with this phrase. It suggests a definitive end state achieved by executing a few technology initiatives." In reality, he says, the goal of enterprise "digital transformations" is to develop the ability to continually match the pace of the outside world. "Too often, data initiatives start with what we want from the customer, rather than what the customer values. Customers give companies data on themselves and their behaviors in return for a better experience, a personalized offer or some other quid pro quo. Without this two-way value exchange, there is no business or data. As with any initiative, understanding the customer value proposition should precede anything else."

Only 15 percent of the C-Suite executives surveyed said they rely on continuous monitoring of purchase or usage behavior to bring customers into the product design process, and only 3 percent do it at scale, algorithmically, based on large-scale data collection and historical information. The vast majority (82 percent) most often rely on longstanding, non-digital practices for bringing customers into the development process, including co-development with a small group of strategic customers (14 percent), anecdotal feedback from sales reps (12 percent), customer advisory boards (12 percent), one-on-one based on customer specs (29 percent) and focus groups (15 percent).

This kind of information gathering can be difficult, if not impossible, to scale. Another issue, says Jaime

Superbet's Customer-Centricity Transformation

Superbet, the largest sports-betting operator in Romania, offers casino games, live sports, pregame sports, lottery and more. Backed by Blackstone, the company was looking to get a better handle on who its customers were and what they wanted, and how it could use data to grow quickly. "When we started with AWS, we had about 150,000 monthly active users, with the goal to get to a million," says CEO Johnny Hartnett.

Using AWS's small team approach, they created a new loyalty program called "Super Club," which gave customers in the retail network a loyalty card and offered them products and bonuses. After a national TV advertising campaign, the program got 100,000 sign-ups within two weeks. "That was unbelievable given that the loyalty program was just a talk bubble five-months earlier," says Hartnett. "The journey from idea to delivery was really fast and has made a big difference to our customer base and business."

Superbet grew to 250,000 monthly active users, with 70 percent online and 30 percent retail, "and the engagement we're getting through Super Club is an order of magnitude greater than before."

Covid super-charged the online business, as the retail network was closed for the better part of six months, he adds, "but Super Club helped ensure that our retail customers chose Superbet online rather than one of our many online competitors." The transition was seamless because they had already fulfilled the Know-Your-Customer requirements and had already offered rewards for that segment. "This was hugely important for sustaining business through the crisis."

While Super Club was designed to help the company better understand retail customers, it's been so successful that it has been extended to online customers. Superbet is now able to gather data about their habits and preferences, and can then build products that fit their needs.

Punishill, chief marketing officer for Lionbridge Technologies, which provides translation and localization services, is that customers often don't know what they want until they get it. "People are exceedingly good at describing their pain, but they are exceedingly bad at prescribing a solution for that pain," he says. "And where we see customer pain isn't necessarily manifest in how they use our applications."

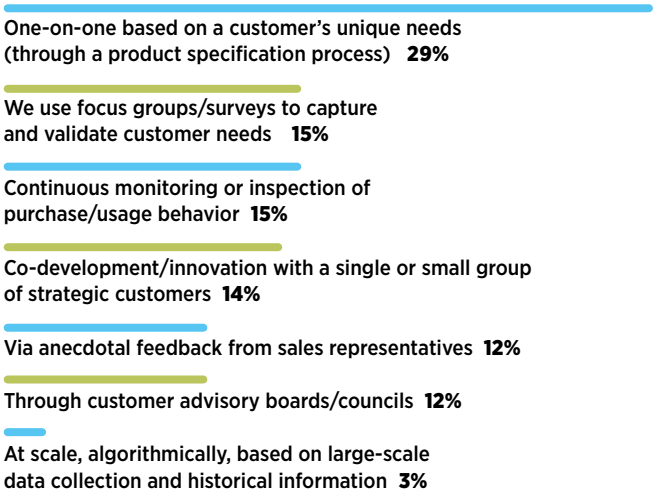
That means that companies that rely on data regarding how customers have been using a product or service in the past won't necessarily be able to predict what enhancements they would like to see or which new products they would buy if offered.

The reliance on backward-facing data also slows things down—which can be deadly for any company, as customer tastes change at unprecedented rates. "Loyalties can shift in the time it takes to read a tweet," says AWS's Vachhrajani. "And if you're waiting for some of those trailing indicators—surveys and all of that, which show up a quarter later—that's too late."

Ziosk, who makes tabletop ordering and payment tablets for restaurant chains like Chili's and Olive Garden, takes the idea of high-velocity taste change to extremes. As CEO Jack Baum explained in an interview, algorithms sift data from their devices constantly, helping the team make educated bets—at the tempo and granularity of a single customer's meal. "Based on what people are ordering, we can predict whether they're going to order [just] coffee or whether they're going to order dessert," says Baum.

CAPTURING CUSTOMER INSIGHTS

Which of the following best describes how your organization ensures it is continuously adapting to consumer trends and behavior?"



Waiters can, in real time, make decisions about where to try selling additional items and which tables will likely just want the check. Ziosk also uses that data to test new products or enhancements on a small sample size of restaurants to see what sticks. "What people think is going to work isn't necessarily what does work," he says. "Our format allows us to do a lot of experimentation, and there are some crazy things that'll get results."

LEARN MORE:

Why you need an agile mindset—and how to get one.
By Phil Le-Brun and Mark Schwartz, Enterprise Strategists, Amazon Web Services

MAKING DECISIONS

TAKING TRUE ADVANTAGE of all this information requires more than just collecting the data—it demands avoiding the trap of data-driven analysis paralysis. That's not a small thing. A stunning 97 percent of those we polled say their companies need 50-90 percent of all potential information to make day-to-day decisions—even decisions that do not impact the company's overall, long-term business strategy. Very few respondents said their culture felt comfortable making these kinds of choices with little information, likely because they had little experience in doing so.

In a 2016 annual shareholder letter, Jeff Bezos talked about his approach to decision-making, which continues to be a driving force of innovation across Amazon and AWS. He suggested that while it's always nice to have access to all of the information someone wants, in the vast majority of cases, waiting until you know everything you should know is a problem. "Most decisions should probably be made with somewhere around 70 percent of the information you wish you had," Bezos wrote. "If you wait for 90 percent, in most cases, you're probably being slow."

Meanwhile, within the vast majority of companies we surveyed (88 percent), the senior leadership team is involved in all long-term decisions pertaining to products/services. Only about 4 percent of individual product leaders are empowered to make these decisions; only 4 percent say business-unit leaders can make these type of decisions; and only 4 percent grant small product teams the autonomy to test assumptions and make decisions without input from higher ups.

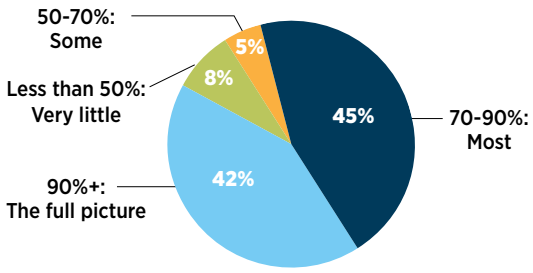
The problem with cultures that rely on this kind of centralized decision-making is that—again—it slows everything down. It also takes key decision-making out of the hands of employees who are best suited to make those calls. "Innovation happens at the edge, which is where we, the company, meet the customer," says Choong Lee, Worldwide Head of the Learning From Amazon Program. "These are the people who are managing products, plus spending half of their time talking to the partners, looking at the data, looking at customer feedback. They know what's going to benefit customers and therefore have those 'innovation ideas.' You have to trust and push down the decision ownership down to that level."

Jim Eickhoff, CEO at Creative Dining, is a convert to this way of doing business. The company, which serves a variety of different clients, including university cafeterias, assisted living facilities and corporate campuses, invested in cloud-based solutions that tip off the team to new food trends, shifts in customer behavior and possible operations challenges they may need to solve for quickly—like the talent shortage.

His team saw that *sous vide* cooking, a new method of food preparation using low-temperatures

DATA DEMANDS

How much data/information do you need before making most day-to-day decisions (i.e., decisions that do not impact the overall, long-term business strategy)?



DECISION OWNERSHIP

Who, at your organization, has the authority to make strategic long-term decisions pertaining to your products/services?
(Participants asked to select all that applied)

Our senior executive leadership team and business line leaders collaborate to make these decisions. 46%

Only our senior executive leadership team has that authority. 42%

Individual product/service leaders have single-threaded ownership and decision rights for their products and services. 4%

Business unit leaders/executives can make these decisions without input from senior leadership team members. 4%

A variety of teams/individuals can test assumptions and make informed data-driven decisions without input from superior functions. 4%

for longer time periods, was taking off. It would mean a significant investment in machinery, but the technique requires very little labor or culinary skills. Eickhoff had been looking at industry staffing data and the turnover in his own locations, and knew he needed to be able to pivot to a smaller staff—quickly.

"It's a little costly as a product, but you don't spend as much on labor, and the food is absolutely delicious," he says, adding that having quick access to data and menuing in the cloud enables his teams on the ground to make fast adjustments when ingredients are delayed because of supply chain snafus. "With our cloud-based ordering connected to our suppliers and on-site menu systems tied together, we have empowered our managers to make decisions to adjust or change menu options in real time based upon product availability without corporate intervention or permission. This has allowed us to keep focused on growing the business along with considering forward-thinking initiatives."

More Profitable Pilot Programs

When new food concepts come out of Creative Dining's Culinary Innovation Council, they can then be piloted at innovation centers across the company's markets. "Sales data comes back very quickly," says Eickhoff. If a new product does well within a three-month timeframe, they ramp up distribution; if not, they pull the plug and move on. In some cases, the new product will replace another that may previously have been performing well but no longer is. "The statistics are now readily available to us," he says. "So, we can look at what concepts are not generating profitability that we maybe need to retire because we are forecasting a 20 percent better markup for the new product than for this other one that is floundering."

Eickhoff adds that the more intense focus on analytics has resulted in an 8 percent to 10 percent increase in savings. "The primary driver is managing inventory levels and not carrying extra food/supplies on the shelves. Managing to set par levels and running those to purchasing trends has allowed us to save both clients and Creative Dining money."

One-Way and Two-Way Doors

The culture problem still plaguing many companies—even those with access to key data—is that management has not distinguished between the two very different kinds of decisions, which require different processes.

1. A "one-way door" decision is one that has significant and often irrevocable consequences—building a fulfillment or data center is an example of a decision that requires a lot of capital expenditure, planning, resources and, thus, deep and careful analysis. These decisions require a slow, methodical process.

2. A "two-way door" decision is one that has limited and reversible consequences: A/B testing a feature on a site detail page or a mobile app is a basic but elegant example of a reversible decision. When you step back and look at the decisions you make, you may find that the most of them are two-way door decisions. And with the ability to easily reverse two-way door decisions, you lower the cost of failure and are able to learn valuable lessons that you can apply in your next innovation. All decisions are relative to the potential value you are creating for your customer, which is why the data is so important—so you can effectively measure the impact of those decisions.

Twisted X, which makes handcrafted footwear, also uses the model of piloting new products to a limited number of retail stores, getting the data quickly and then making fast decisions to keep or toss. CEO Prasad Reddy says he expects 50 percent of new innovations to fail. "But of those, we say, 'Fail fast'—immediately, as soon as we get them to market. If we don't get the reception we expected, we cut them off."

This innovation flywheel allows his company to thrive, he says. Data from customers and retailers feeds a rapid prototyping system powered by advanced computer-assisted design. Quick-turn manufacturing partners allow him to put small batches of new products into stores continuously to learn what's working—and what's not—and do so quickly. "If we get a positive reaction, we invest a lot more," he says. Whatever the outcome, the company learns something, which fuels more innovation.

LEARN MORE:

The data-driven enterprise
By Mark Schwartz, Enterprise Strategist, Amazon Web Services

TECHNOLOGY AND TALENT

SEVERAL CEOs INTERVIEWED noted that, for legacy companies that have already spent sizable budgets on back-room technology, investing in new digital tools can feel like a leap of faith. "It's scary," says Molly Kellogg, chair, president and CEO of Hubbard-Hall, a $50 million chemical supplier to the finishing industry.

But she knows it's necessary. The company, which has already transitioned to technologies that automate previously manual functions and that add ecommerce ability, has plans to invest significantly in predictive analytics for the supply chain to help it get out in front of problems.

"We probably had a sales record [this year], but we'll make less money because we weren't able to get our costs under control quickly enough or understand the impact on cost of goods," says Kellogg. In specialty chemical manufacturing, products have multiple inputs, she adds. "Once those [raw materials] got lost in the supply chain or tripled in price, that had outsized impacts on our margins." Kellogg knows that getting different siloed systems—ERP, CRM, marketing automation—to work together will be critical. "If we can figure out how to use technology to build that brain to connect intelligence, we can have a holistic view of our customers, our prospects and our operations."

Shon Anderson, CEO of 3D printing company B9Creations, agrees that having a host of legacy technologies that don't speak to each other is a big challenge. "Almost every section of the value stream is leveraging a different system, a different technology," he says, adding that the ERP system offers fairly easy integration for certain functions, but not for others. "So, especially as a small, growing business, we have to make tough decisions about where to spend the money on integration and where, in another part of the business that we may be changing soon, we may not want to spend the money on that integration. Because we can upgrade systems twice, and all of a sudden the money we spent there doesn't work anymore."

"If we can figure out how to use technology to build that brain to connect intelligence, we can have a holistic view of our customers, our prospects and our operations." —Molly Kellogg, Chair, President and CEO, Hubbard-Hall

The other big worry for companies diving deeper into digital transformation is finding the talent to do so. Asked to rate the quality of the digital talent in their organization, only 11 percent reported it was "strong." Far more said it was either "good" (27 percent) or "met expectations" (27 percent). Some 34 percent said it "needed improvement."

"Almost every section of the value stream is leveraging a different system, a different technology."

—Shon Anderson, CEO, B9Creations

But "the perception that you need old-school IT to unlock a lot of innovation is misplaced," says Learning From Amazon Program's Choong Lee. "'If only we could hire enough data scientists and things would happen'—no, not without the right strategy, the right operating model," he says. "There has been a tremendous amount of innovation in recent years in tools and services and tech platforms so that you don't necessarily need those data scientists in your organization to apply machine learning and AI and to unlock significant business benefits."

In devising a plan to train your workforce, an initial step is acknowledging and identifying the specific cloud skills gaps within your organization. To ensure teams build the right skills, consider the cloud initiatives you have planned for the next 12–24 months and what expertise and cloud competencies the organization needs to accomplish these initiatives. The AWS Learning Needs Analysis, a self-assessment tool, can help determine what your

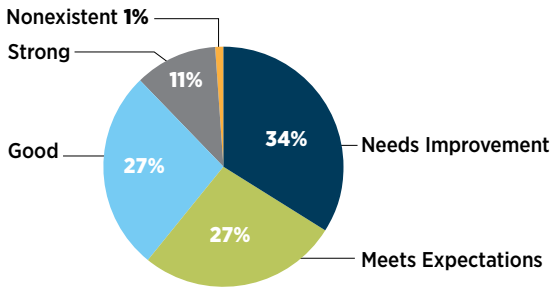
unique training goals should be.

Aimee Peacock, CFO of FLEXcon, which makes pressure-sensitive films and adhesives, is in mid-process with bringing her longtime employees up to speed on new technology. Leading the 60-year-old company's digital transformation process, which began in 2019, she is preparing for a major cloud-based ERP implementation. She knew that getting people who have been with the company for decades to adopt new digital tools would be one of the biggest challenges—but she did not want to risk losing the employees who hold the company's institutional knowledge. "We have a very tenured workforce," she says. So, the company kicked off a digital training program last year to ensure that all operators who don't use a computer for work can operate the software and visual tools that are now in place. "So as we go through the digital transformation and put training programs in place on those specific tools, they'll be able to learn and adapt to those tools as well," she says. "Change management is really going to be one of the most critical aspects of rolling this out within this organization."

And time management will be the biggest hurdle, she adds, because the company will have to, at least temporarily, adjust priorities and may need to put certain goals on the back burner for a time. "Obviously, we still want to grow and we don't want to stop business as usual," she says, "but we also realize that if you don't have the enabling factors to sustain growth, you may see growth in the short-term, but in the long-term you're just going to revert backwards. So, it's having that forward, long-term vision on how we're going to sustain and continuously grow versus that short-term vision."

THE TALENT HURDLE

On a 5-point scale, how would you rate the quality of the digital skills/talent in your organization overall?"



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Unmasking your organization's data problem
By Joe Chung, Enterprise Strategist and Evangelist, Amazon Web Services

CONCLUSIONS & THE ROAD AHEAD

Huge opportunity awaits. The majority of C-Suite executives and board members surveyed and interviewed have not yet transformed, which means those that have not taken the leap are not behind—yet. But now is when we will see leaders begin to break away from the pack and position themselves to win market share and increase profitability.

Companies are only scratching the surface with new tech. The data shows many CEOs think they are on a path to digital transformation, when they have barely begun, likely because they remain unclear about what it actually takes to transform or to "be digital." There is no one-size-fits-all answer. Rather, each company needs to figure out their unique solution and what will work best for their customer base.

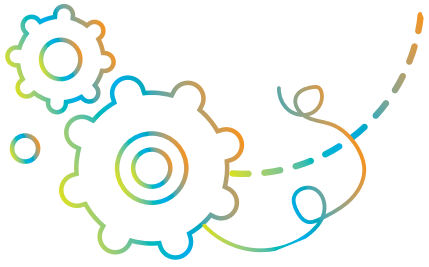
Technology is a critical piece of the puzzle—but can't solve the problem alone. Companies must invest in the right tools—cloud, AI, machine learning—but CEOs must also be able to lead their organizations in a culture change to become data-driven rather than simply data-informed. They must push decision-making down to the edges of the organization, speeding up trial and error so that they can innovate, fail fast, learn from mistakes and move forward. They also need to recognize where innovation happens—at the edge or with the people who spend the most time with customers. Management needs to be able to trust and rely on them to make high judgment business decisions and equip them to execute those decisions. Remember: micromanagement kills innovation.

Companies need to change the way they view change. To be adaptive and nimble, CEOs and their teams need to get comfortable being in a continuous state of change, where the vision is clear, but change will be constant. Be stubborn on the vision but flexible on the details: be rigorous about the strategy and the reason for launching a product but don't apply the same scrutiny to the execution. For "two-way door" decisions, opt for speed over certainty.

There is such a thing as too much data. Just because a thing can be measured doesn't mean it should be. Companies have to figure out which metrics are most useful to their goal of delivering value to the customer, measure those and ignore the rest.

The tools are not out of reach for smaller companies. The cloud offers a range of solutions and while investment will be necessary, it should be easily offset by gains. Companies will also find much-needed capital by wringing waste from the system—and that means not just reducing day-to-day expenses but also finding work that is being done that shouldn't be. CEOs are often reluctant to cancel projects, fearing damaged morale, but that leads to ghost projects that eat away at budgets and never realize ROI. Companies should start by reexamining every project in the pipeline to see whether it still makes sense for the organization given its strategic direction. If it doesn't, shut it down.

This kind of seismic change can't happen overnight. CEOs need to have the patience to start small, get wins, learn and keep moving. It's not a one-and-done.



DEMOGRAPHICS PAGE

Additional breakdowns of data by company size, title of respondent, industry.

INDUSTRY

Advertising/Marketing/PR/Media/Entertainment	3%
Construction/Engineering/Mining	5%
Energy/Utility	4%
Financial Services (Banking, Insurance, Brokerage, Investments)	13%
Government and Non-Profit	3%
Health Care (Providers and Payers)	7%
High Tech/Telecommunications/ Information Technology	12%
Manufacturing (Consumer Goods)	6%
Manufacturing (Industrial Goods)	16%
Pharmaceuticals & Medical Products	3%
Professional Services (Legal, Consulting, Accounting, Architecture)	7%
Real Estate	2%
Retail Trade	4%
Transportation (Airlines, Trucking, Rail, Shipping, Logistics)	2%
Travel and Leisure (Hotels)	1%
Wholesale/Distribution	4%
Other	7%

COMPANY REVENUE

$1 Billion+	11%
$500 Million to $999.9 Million	8%
$250 Million to $499.9 Million	7%
$100 Million to $249.9 Million	14%
$50 Million to $99.9 Million	16%
$25 Million to $49.9 Million	14%
$10 Million to $24.9 Million	10%
Less than $10 Million	20%

PUBLIC OR PRIVATE COMPANY

Public	14%
Private	86%

NUMBER OF EMPLOYEES

Less than 10	5%
10-49	15%
50-99	13%
100-299	24%
300-499	9%
500-999	11%
1000-2499	10%
2500-4999	4%
5000+	9%

BY STATE

Alabama	1%	Michigan	3%	Utah	2%
Alaska	0%	Minnesota	4%	Vermont	0%
Arizona	2%	Mississippi	0%	Virginia	4%
Arkansas	1%	Missouri	2%	Washington	1%
California	11%	Montana	0%	West Virginia	0%
Colorado	1%	Nebraska	1%	Wisconsin	3%
Connecticut	3%	Nevada	1%	Wyoming	0%
Delaware	1%	New Hampshire	0%	Not in the U.S.	8%
District of Columbia	1%	New Jersey	3%		
Florida	3%	New Mexico	0%		
Georgia	1%	New York	5%		
Hawaii	0%	North Carolina	1%		
Idaho	0%	North Dakota	1%		
Illinois	7%	Ohio	3%		
Indiana	2%	Oklahoma	1%		
Iowa	1%	Oregon	1%		
Kansas	0%	Pennsylvania	5%		
Kentucky	1%	Rhode Island	1%		
Louisiana	1%	South Carolina	2%		
Maine	0%	South Dakota	1%		
Maryland	1%	Tennessee	2%		
Massachusetts	4%	Texas	8%		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