

An aerial photograph of a tropical landscape. The top half shows a sandy beach with a line of palm trees. The bottom half shows a dense plantation of palm trees on the left and a vineyard with rows of grapevines on the right. A dirt road or path runs through the center, separating the palm trees from the vineyard.

The **Future of Unstructured Data**

**How Data Leaders Create
Growth, Resilience, and
Order from Chaos**

Technology Decision
Makers on Cloud-Driven
Transformation **16**

How to Beat
the Cybersecurity
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Unlock Great Customer
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Search-Powered
Technology Is Driving
Digital Business Forward **34**

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Letter from the Editor

Rick Laner, Chief Customer Officer of Elastic, is the guest editor of this issue.



Rick Laner

Almost 90% of all the data that matters to any given enterprise is unstructured, according to IDC. Thinking about the hundreds of technology leaders that I've advised, that means that without the right processes and technology, they'd only have a view into 10% of their company. No one can make smart decisions that way.

Organizations have to do things differently, or else risk losing their competitive position.

Amid the accelerating pace of data accumulation — inside and outside an organization's systems — that affects good decision making, rising cyber threats, and the increasing complexity of enterprises, it's critical that business leaders advance to the next phase of digital transformation to do more with all that data.

The next era of digitization is when processes are integrated and contextualized through cloud and platform technologies. In this way, wherever critical data sits and regardless of how it is stored or ignored, business leaders can garner insight. Unstructured data is finally made relevant.

The path to this future is in search-powered technology.

Search-powered technologies enable the search of data across multiple sources, such as websites, applications, databases, and hybrid cloud environments. They deliver data and insights to stakeholders when they need it, regardless of where it is, for all sorts of use cases. These solutions allow teams to put data into action, whether it's employees looking for files at work, innovation teams putting search functions inside of consumer apps, analytics teams monitoring IT infrastructure performance, or security teams detecting threats.

New research by Forrester Consulting¹, commissioned by Elastic and featured in this issue, found that more than four out of five IT leaders agree that investing in search-powered technology drives results that matter for their organizations. Search-powered technologies fuel business-critical initiatives, particularly cybersecurity, digital transformation, cloud migration and utilization, and customer experience. It helps leaders reduce costs for their business and gives time back to their teams to do meaningful work.

Search-powered technologies "stand out as helping organizations drive faster, more effective decision-making," states the Forrester study. "Firms will respond to unstructured data and interoperability challenges with fully featured, integrated search platforms that comprise critical point solution capabilities."

In this issue, "The Future of Unstructured Data," you'll find how leaders can ask and find the answers to the questions that matter — no matter where that data exists.

What will you ask next?



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How *Search-Powered* Technology Drives Better Business Decisions and *Faster Results*

Rusty Weston

A new Forrester Consulting study reveals what organizations do today to find answers to pressing business questions — and drive results faster.





Methodology

This article features highlights from a study conducted by Forrester Consulting called [Search-Powered Technologies: A Mission-Critical Enabler for the Digital Future of Business](#).

Commissioned by Elastic, the study fielded in April surveyed 832 data architecture strategy decision-makers at global companies with more than 1,000 employees.

processes that drive the resilience and future of business, leading to improved outcomes for customers, employees, and partners alike.

“Businesses thrive when they can activate their collective knowledge to inform strategy and decisions. However, much of that knowledge is locked up tight as a drum in data silos ad infinitum,” states the Forrester Consulting study.

“Firms will respond to unstructured data and interoperability challenges with fully featured, integrated search platforms that comprise critical point-solution capabilities,” says Forrester. “Data leaders turn to search-powered technologies to drive digital transformation initiatives through improvements in data quality, access, and usability.”

In fact, out of more than 800 technology decision-makers who were surveyed across 8 countries and 3 industries, every single one

uses search-powered technology.

The organizations use it to advance at least one business priority, such as cybersecurity, digital transformation, cloud migration and utilization, and improving customer experience. And they’re planning to invest more to create a better user experience for employees and customers.

“Enabling a user to ask a question and then discover the supporting data and take real-time action on it is fundamental to digital transformation,” said Matt Minetola, CIO of Elastic. “This core capability is needed in every organization.”

In the day-to-day of a CIO, he said, so many activities are beyond their control, and observability is a difference maker. “The ability to achieve transparency and see data across functions can fundamentally improve business decision-making,” said Elastic’s Minetola. “We’re seeing organizations use search-powered

Obtaining timely answers to urgent business questions is possibly the most overlooked reason to embark on digital transformation — but for many technology leaders, achieving that objective remains tantalizingly out of reach.

Companies have increased their planned digital transformation spend by 65% over the last two years, according to a recent EY-Parthenon survey. Yet they are still scrambling to figure out why customer experiences fail to meet expectations. Or why it takes days, rather than minutes, to identify and mitigate a cyber threat or data breach. Often the root of the problem is that data is siloed or locked up in legacy systems or across multiple environments that can’t communicate with each other. In other words, the digitization of processes has not translated to greater insights-on-demand or compelling returns on digital transformation investments.

To find real-time answers to pressing questions about sales, inventory, resources, and security — in a single place — it’s time for organizations to focus on connecting, optimizing, and making their growing data stores actionable. And to accomplish that, a new study suggests decision makers need to be savvy about where their digital dollars are going.

A new study conducted by Forrester Consulting, commissioned by Elastic, finds that **search-powered technology** could be the answer they are seeking. Search-powered technology is a set of solutions enabling data searching across sources on-premise, on the web, and in the cloud. **Search-powered technology solves enterprise search, observability, or cybersecurity problems** and connects people with data to inform action and insights when needed, no matter where they — or the data — are located. They accelerate the analytical and decision-making

Mini Case Study

Achmea, one of the Netherland’s largest insurance firms, turned to Elastic’s search-powered Observability solution to accelerate its digital transformation. Elastic provides cloud-based monitoring to optimize system performance for the firm’s 12,000,000 customers and 16,000 employees.

Achmea uses machine learning to detect anomalies across the enterprise. Elastic machine learning acts as an early warning system, reducing Achmea’s MTTR, and allowing employees to focus on delivering world-class customer service and maximizing ROI on their technology investments. [Read more.](#)



technology to help break down the walls that keep this from happening.”

“Tomorrow’s world is less about the alerts and more about the patterns and trends. Search-powered technology is all about understanding the trends and patterns. Give me the ability to see the patterns and create the actions that I need,” he added.

Highlights of the Forrester Consulting study

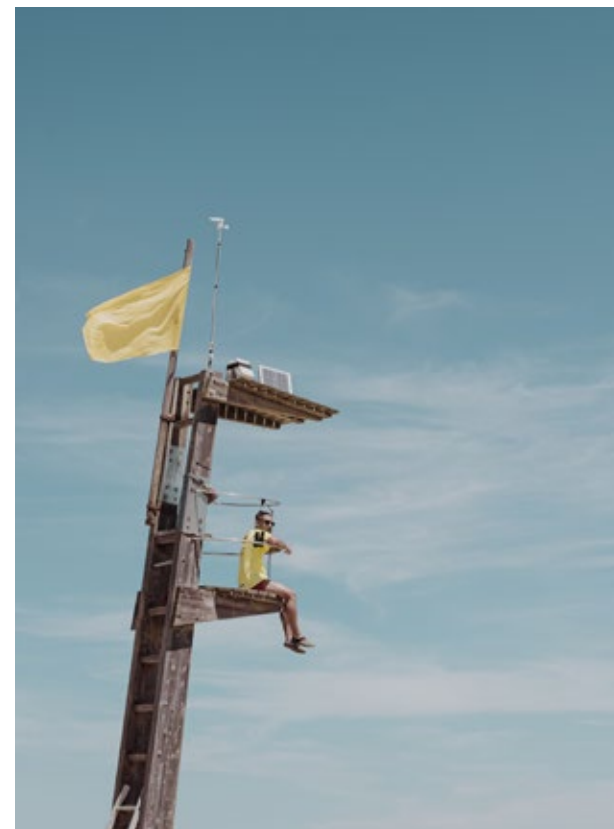
Survey respondents said search-powered technology could transform how enterprises engage with data and solve business problems in a sweeping set of ways, according to the Forrester Consulting study:

- **Driving digital success** — more than four in five data leaders agree that the success of digital transformation initiatives relies on search-powered technology.
- **Advancing business objectives** — 84% of data leaders agree that search-powered technology would increase their organizations’ speed and productivity, and 83% believe it would deliver important insights that hasten decisions.
- **Enhancing EX and CX** — 83% of data leaders agree that investments in search-powered technology create a better user experience for employees and customers.
- **Integration breakthrough** — 83% of data leaders agree that using a single, integrated search platform helps reduce business costs.
- **Establishing data transparency** — 81% of data leaders agree that ease of finding and sharing data improves organizational alignment.

But they’re just getting started.

Search-powered technology has the unique advantage of integrating seamlessly across all technology and data platforms. That’s likely why respondents expect point solution adoption to decrease over the next three years in favor of integrated platforms that embed search within their solutions to address business challenges that require finding the correct data at the right time, no matter where it is stored. The survey “respondents expect integrated platforms to incorporate a wide range of point solution functionality,” stated the Forrester study. “They expect search capabilities to help limit data security issues and drive better customer satisfaction, cost control, and overall security.”

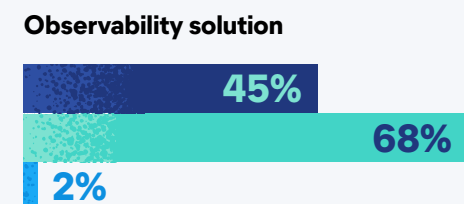
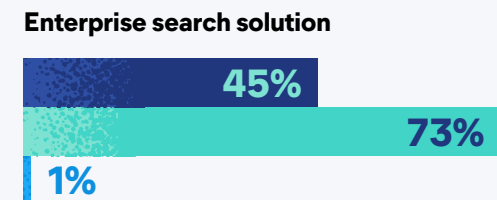
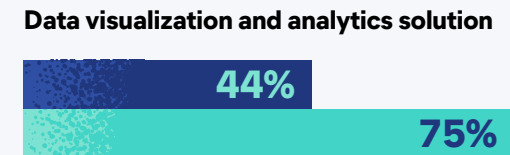
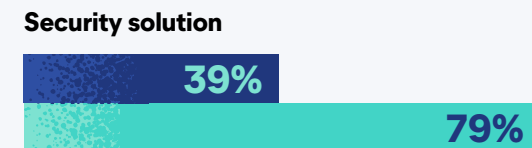
Expectations are high. Respondents want their integrated search platform to be able to do a range of things, and about 50% are prepared to moderately to significantly increase investment for a platform that can deliver: data visualization and analytics, cybersecurity solutions, enterprise search, and observability.



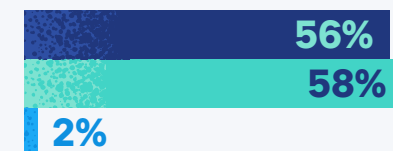
Data Leaders Will Adopt Fewer Point Solutions in Favor of a Single Platform

“Which of the following search-powered technologies does your organization use today, and which do you expect to be in use three years from now?”

■ In use three years from now
■ In use today
■ Don't know / Does not apply



An integrated search platform comprising more than one of the above



Base: 832 data architecture strategy decision-makers at global companies
Note: Total percentages may not equal separate values due to rounding
Source: A commissioned study conducted by Forrester Consulting on behalf of Elastic, April 2022

Preparing to search at enterprise scale

In a decade featuring endless reports of digital transformation, the data strategy discussion has gradually begun to question the existence of disconnected data silos and search for solutions. Data collection is [accelerating](#) by 42% annually, according to IDC, but enterprises underutilize the data, and data silos impede information sharing across functions, departments, geographic locations, and business units. In the Forrester Consulting study, **34% of data leaders** reported that stakeholders couldn’t access useful data because it is siloed in a different part of the organization.

The upshot is that most decision-makers and analysts comb their data stores for business insights in a strictly siloed manner. For example, the finance department checks financial records but lacks a window onto other parts of the company data stores. Siloed team members cannot connect the dots to find answers or discover the true scope of an issue. Consequently, the enterprise cannot profit from missing information or spin company-wide insights into meaningful actions.

The Forrester Consulting study contends that when “firms aren’t able to access and deploy critical data, they face rising security risk, cost overruns arising from inefficient data processes, lack of access to critical insights that guide strategic decision-making and, ultimately, hindered digital-transformation initiatives.”

Altogether, 99% of respondents have experienced at least one issue due to their challenges finding, sharing, or visualizing data. Data security issues or other risk exposures topped the list as the biggest data challenge, followed by those lacking insight for critical business decisions.

The data points to a growing awareness by IT decision-makers that data roadblocks have

consequences, such as lost productivity or missed insight. In response to these concerns, 85% of Forrester Consulting study respondents have set a goal to improve how they find information to enable IT operations, security, and development teams. But what's the best way to realize this vision?

Laying the groundwork for search-powered technology requires firms to create data-management processes to ingest and prepare "data at the scale and speed they need to fuel critical decision-making," according to the Forrester Consulting study. Getting there also involves changing organizational data strategies and investment — something many data-savvy leaders are willing to do.

Search-powered technology becomes a differentiator

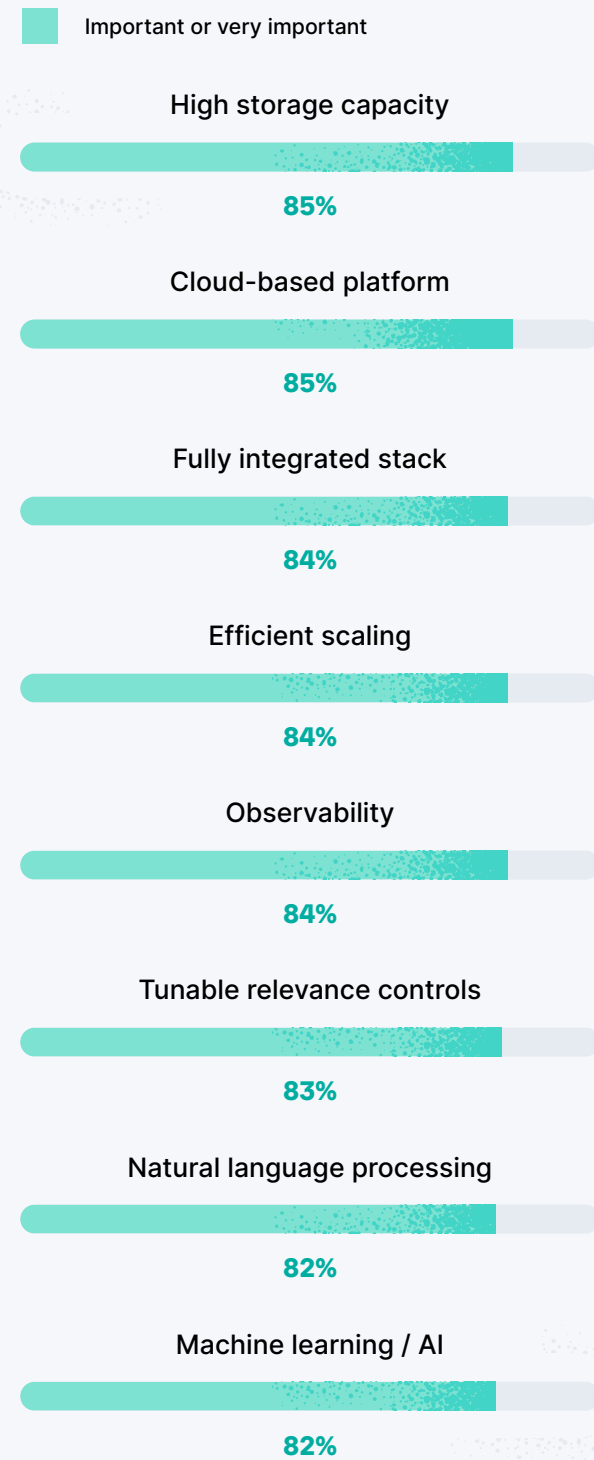
Imagine if the Library of Congress, which holds more than [173 million items](#), lacked a means of organizing 222 years of acquired books and historical documents. Bedlam would ensue. But the Library of Congress only adds 10,000 new items per day. By contrast, there are terabytes of unstructured data streaming into enterprises daily from dozens if not hundreds of SaaS providers, IoT alerts, transactions, and web data analytics daily. CIOs understand they don't have time to organize all that data if they expect to produce timely insights about their business.

Yet, many organizations are overwhelmed by the volume and velocity of data under their management. It's difficult to calculate the business value of storing petabytes of unused data annually. But analyzing that stream or repository of structured and unstructured data without worrying about format, location, volume, or freshness is what it takes to become a data-driven business.

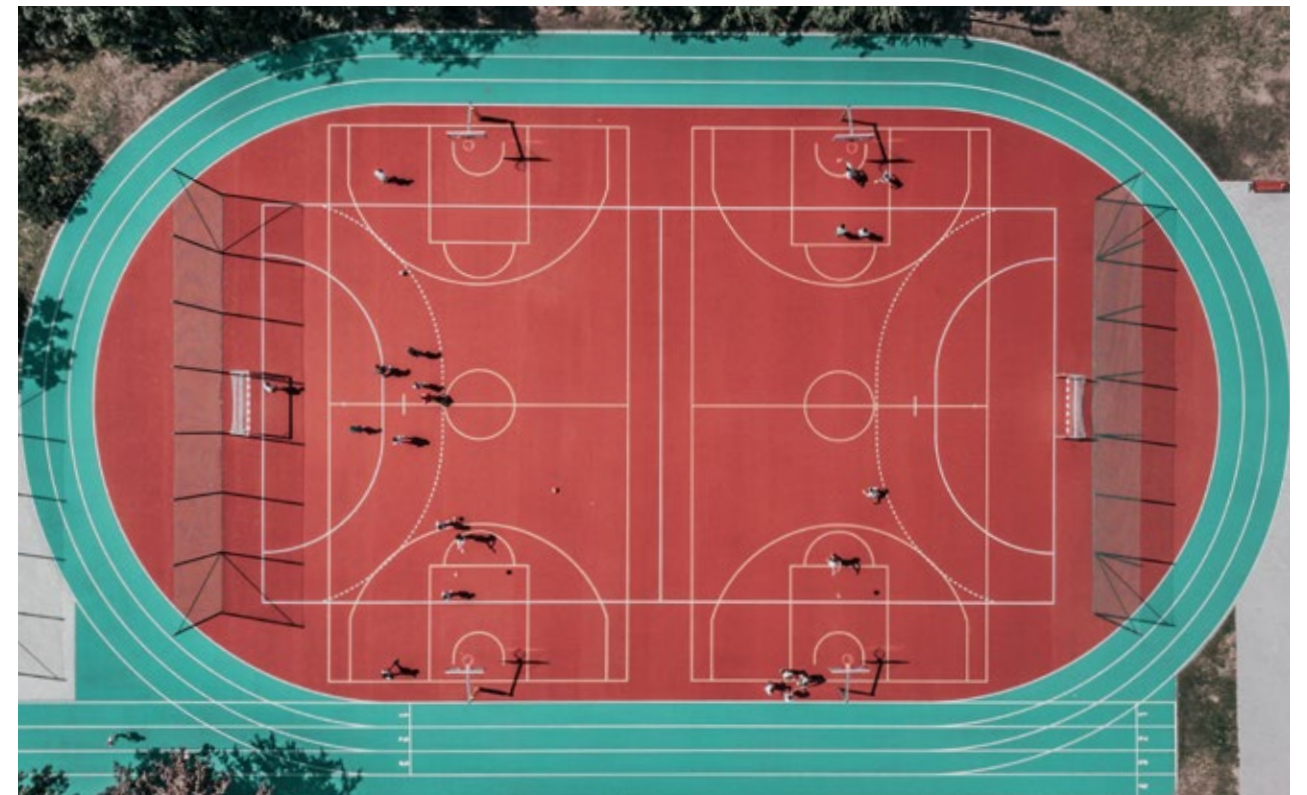
Enterprises need to know what kind of data they collect and where to find it to manage and derive meaningful and timely insights.

IT Leaders Want It All in Flexible, Integrated Search-Powered Platforms

"How important are the following features to the success of your next search-powered technology solution?"



Base: 832 data architecture strategy decision-makers at global companies
 Note: Total percentages may not equal separate values due to rounding
 Source: A commissioned study conducted by Forrester Consulting on behalf of Elastic, April 2022



That's why Observability, initially a way to track systems performance, is now a critical feature of enterprise cloud and on-premise data management — and security. Observability, an essential search-powered technology application, enables organizations to collect metrics, logs, and traces with high dimensionality to detect root causes faster and answer the unknown unknowns.

Speed is critical for resolving security questions. "When an event occurs, how do I get to the bottom of it as quickly as possible?" asks Elastic's Minetola. "Time is of the essence when trying to understand the impact to the organization. The search technology has to be smart enough to filter out the noise so you reduce the exposure and quickly understand how to resolve the issue."

As Minetola explains, when you're in the midst of a security incident, you're gathering

a ton of data, but you generally don't identify many patterns, and you're stuck with many unanswered questions. Search-powered technology provides a real-time path to obtaining those answers, and a DevSecOps analyst can see what's changed and when it happened and then ask subsequent questions to determine the impact of that change.

*"The ability to see what's changing is key to keeping our environment **safe, running, and available**. When there's a security problem, for example, how do I get to the bottom of it as quickly as possible?"*

— Matt Minetola, Elastic CIO



For these and other reasons, cybersecurity tops the list of priorities organizations set for search-powered technology today, edging digital transformation initiatives and cloud migration and utilization in the Forrester Consulting study.

Security is the highest priority, but it's not the biggest headache. Search-powered technology enables enterprise workers to search for data across multiple sources like websites, applications, databases, and multi-cloud or hybrid cloud environments. Yet, no matter where data is ingested or stored, unstructured data gives companies the most problems. The two most common improvements data leaders seek to make by investing in search-powered technology are more easily managing unstructured data (42%) and more easily finding information across multiple clouds and on-premises locations (39%).

Search-powered technology also helps enterprises to manage concerns about data efficiency and scale. Once search-powered

technology identifies patterns in data streams such as alerts, for example, automated responses and filters can speed time to resolution and help firms to discover anomalies. Ultimately these resolutions can move the needle on customer experience and prevent minor problems from escalating into expensive ones. Enabling operations teams to quickly — and automatically — answer data questions or resolve cybersecurity issues helps empower and sustain digital transformation.

An integrated solution for finding everything

The role of search-powered technology continues to evolve from when system performance monitoring was the only capability. Today, data leaders expect search-powered technology to produce more power and provide “expansive, flexible, and integrated search solutions that are cloud-based and enable scale,” according to the Forrester Consulting study.



More than four of five data leaders in the study indicated that the success of their next search-powered technology solution would depend upon compelling features such as high-storage capacity, fully integrated stack efficient scaling, Observability, Natural Language Processing, and Machine Learning/Artificial Intelligence. These features may help “boost the enterprise’s IQ, optimize digital shopping experiences, and power personalized and tailored search experiences,” according to the Forrester Consulting study.

But not every firm is ready. Last year, a study by NewVantage Partners found that only 30% of firms have a well-articulated data strategy, and only 24% have a data-driven organization. Still, search-powered technology can catalyze or focus an enterprise data management strategy. What improvements do respondents expect to see from investments in search-powered technology? Thirty-nine percent expect it would be easier to find information across multiple clouds and on-premises locations, and 36% said they would invest in search-powered technology

to improve data maintenance and information governance.

In search-powered technology, data leaders embrace a platform that successfully integrates cybersecurity, observability, and enterprise search solutions. Data leaders want their search-powered solutions to drive digital transformation, cloud migration and utilization, and customer and employee experience.

Search-powered technology is a way of achieving data transparency and real-time awareness of systems, security, and events. Data can also help business leaders get on the same page about decision-making. Making it easier to find and share data is the first step. But search-powered technology is not about gauging the past — it's about being prepared to seize the present moment and being proactive about the future.

Learn more:

[Get the complete Forrester Consulting study](#)



What Follows *Digital Transformation* in the **Cloud-Driven, Platform Era?**

Peter Burrows

A single cloud platform that integrates the world's knowledge for you. Top technology leaders explain the way forward.



While the pace of digital transformation has accelerated, for many organizations the impact is just beginning. As enterprises connect even more processes and tools through cloud and platform technologies, digitized data will evolve into ever greater possibilities for action.

Over the past decade, 93% of companies have invested in digital transformation projects. As a result, 65% of global GDP will have been digitized in some way by the end of 2022, according to IDC. It is inevitable that this number grows, but what will define the next tech-driven transformation of the enterprise?

A set of leaders is already showing us the way. Their organizations are able to search and filter historical, in-progress, and predictive information to transform customer experiences and make better business decisions — actually putting all that data into action. They are

using cloud giants — from AWS to Google Cloud to Microsoft Azure — as connectors for multiple applications and processes to create more seamless visibility and collaboration across teams, turning data from numbers in a static folder to active bytes of insight that inform everything from customer service to cybersecurity management. They are achieving a four-dimensional single pane of glass on the state of their organizations today, yesterday, and even tomorrow.

Where is it all heading? As a starting point, we interviewed three leading enterprise tech thinkers. The top takeaway: CIOs should not limit their focus to sweeping, long-term projects, but spend more time and resources equipping businesses with the ability to drive results now.

Here are their thoughts, which have been edited for length and clarity:

1

Think Small to Do Something Big

Joanna Young

Executive coach; former CIO of Liberty Mutual, Michigan State University, and the University of New Hampshire

We're moving into an age of hyper-acceleration. The distribution of COVID vaccines in the early days of the rollout highlighted how consumers expect a certain kind of experience today. Distribution was clearly a massive logistical problem, and yet people still found it excruciating not to be able to log on to a website and immediately get an appointment. Every company in every market is going to have to deal with a version of this and must be able to provide the digital experiences that people expect.

To keep up, leaders need to stop thinking in terms of years and focus on weeks or months. Think small to do something big. Do some proof-of-concept mock-ups to get agreement on the best approach, and start working on something you can accomplish in the next month to make progress.

Of course, you need leaders who know what it takes to operate this way, who've had experience with transformation projects not going well so they know what not to do, and understand that launching huge multi-year projects is likely to cause a train wreck: leadership getting replaced for spending tons of money with nothing to show for it,

employees on the project getting discouraged, or creating new problems to clean up before you can move forward.

That's not hyper-acceleration, or even acceleration. It's deceleration. It's time for companies to switch gears.



2

Focus on Business Results, Not on Managing Projects

Maribel Lopez

Founder and Principal Analyst of Lopez Research, which advises Fortune 100 companies on using technology to create real-time experiences

There's a big inversion coming in how companies do transformation projects. There's no time to spend months defining long-term objectives and figuring out which technologies you'll need. It's about using technology to make more money.

To make this transition, data needs to be center-stage. However, many companies haven't done a good job of breaking down their internal silos. Rather than centralize data, they should look at technology architectures that can analyze and act on data regardless of where it resides, and data governance is key. For this effort to be a success, an organization needs to make its data assets discoverable, addressable, and accurate. And most companies still have too many people who feel that controlling data is what makes them successful. Companies will need to deal with those cultural issues once and for all.

Ultimately, it's not enough to have analytics that show that I like a particular wine. It's getting that information to the waiter as he approaches my table. It's not about insights. It's about what you do with those insights.



3

Leverage Data to Empower Employees

Saiph Savage

Associate Professor, Director of the Civic A.I. Lab, Northeast University

I think the next big opportunity is to develop processes to give employees a stronger voice inside their companies.

At a time when the war for talent is top of mind for many CEOs, providing more data to employees can be a significant competitive advantage in attracting and retaining talent, which translates into better productivity and better products.

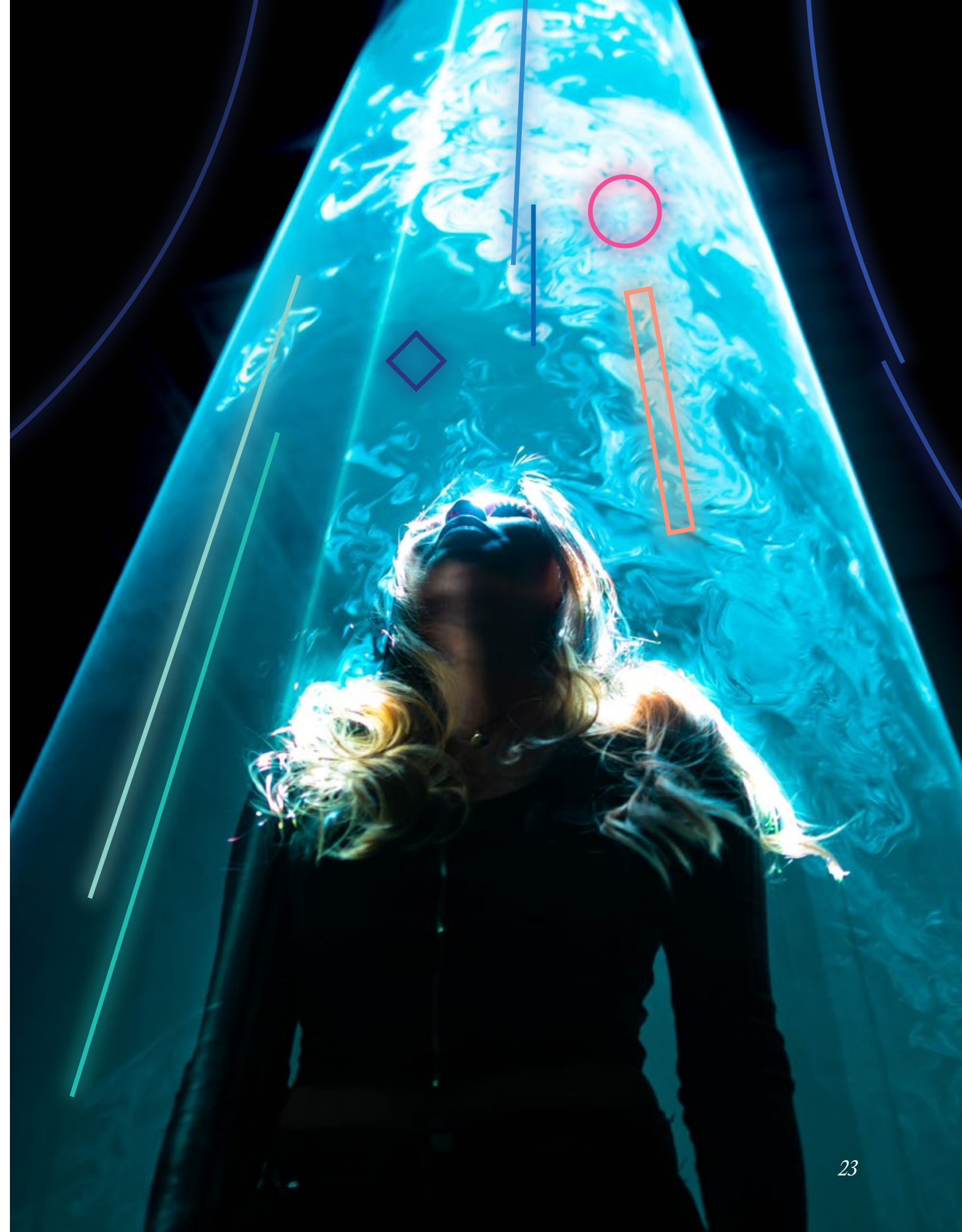
I first noticed the need to rebalance power structures while working for a large tech company. Even the highly paid technologists I worked with lacked access to detailed data about their performance, which could help them seek other jobs within the company or elsewhere. And the company's digital tools didn't give them a way to learn more about the company. A number of my colleagues quit because of a manager who was rejecting code at a much higher rate than others, but they had no way to voice their concerns.

Companies should develop new policies and tools that automate the sharing of more company and employee data. If they don't, workers will probably do it themselves.

The *Challenge* of Cybersecurity Is Solved with a *Data Search*

David Rand

Three strategies for leveraging advanced search to improve security.





Data security is increasingly under threat inside the enterprise amid three converging forces: the proliferation of cloud tools and platforms, the many different types of data that they generate, and the need to correlate all of it for analytics.

While cloud platforms are the critical infrastructure for how technology teams scale and operate today, many companies still don't have a clear or complete view of all their digital assets in this emerging environment. Advanced enterprise search capabilities, however, can eliminate blind spots and add an important layer of cybersecurity.

"Today, enterprises need to be able to query their environment, and they need to be able to query their data," says Katie Teitler, senior product marketer at Axonius, a cybersecurity asset management company, and former research chief at TAG Cyber. "They need the ability to have a full-stack view of what's going on in the network. Without good visibility or search capabilities, they can't identify and address vulnerabilities."

That is an important advantage of modern enterprise search. They use machine learning algorithms, natural language processing (NLP) capabilities, and other tools to better understand context and meaning from a wider array of data types and formats.

Here's a look at three strategies to leverage advanced search to improve security.

Takeaways

- Many enterprises still don't have a clear or full view of their digital assets
- Search tools add a new layer of threat detection to existing cybersecurity defenses
- Search applications can also help limit the spread of malware



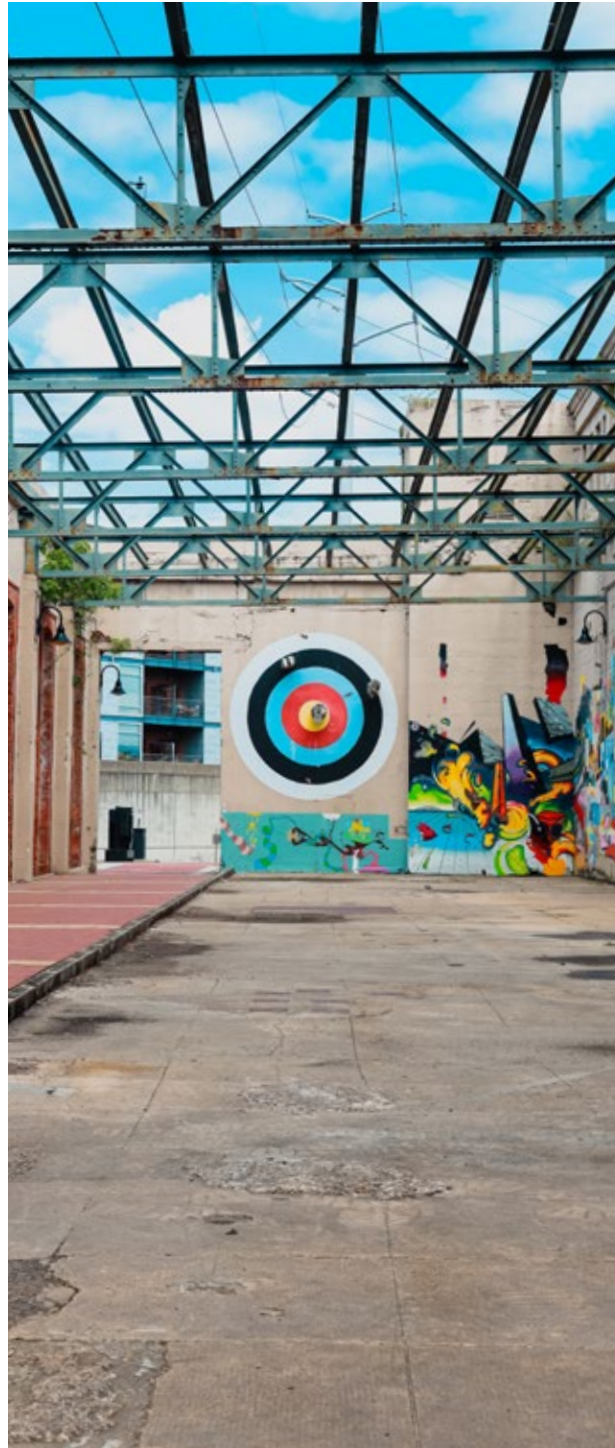
Define search queries for security needs

Effectively searching databases can help enterprises address a range of security concerns, such as risks associated with system integrations, outside attacks, and insider threats. But security teams need to identify and refine their search targets.

"Organizations must contextualize security data within a business context," says Jon Oltsik, senior principal analyst and ESG fellow at Enterprise Strategy Group, an IT research and strategy firm. "When I'm investigating suspicious behavior, I may be extra diligent if this behavior

takes place in business-critical applications or data," he says. To search for insider threats, Oltsik adds, security analysts "need to collect data on user access patterns so they can detect anomalous behavior."

Data can help identify if an asset has a known vulnerability, and it can help identify potentially vulnerable devices on a network. "I can find answers to all these questions if I have the data and I have the right query capabilities," Oltsik says.



Use search to accelerate and refine threat detection

Search tools can also help limit the damage of malware attacks. For example, in December 2021, a critical security vulnerability was identified in Apache Log4j, a Java tool used by countless applications for recording events into error logs. The vulnerability, called Log4Shell, allowed attackers to run malicious software, or even potentially take over, a server running Log4j. The challenge for CISOs continues to be how ubiquitous Log4j is.

“There are millions of applications and services running this library,” explains Mandy Andress, CISO at Elastic. “Dependencies were not easily identifiable, so it was really hard to even tell if you were impacted, if you needed to upgrade, if you needed to patch, or if you didn’t have any issues whatsoever.”

That’s where robust search came into play. Elastic knew its systems and assets could be vulnerable. And by working with partners and SaaS providers, its InfoSec team was able to identify thousands of potential security holes. But were those vulnerabilities being exploited?

The team then put search to work and was able to search vast amounts of data in mere seconds. A cursory search, across 60 clusters and a

“You can’t just say, ‘What’s in my environment today?’ says Teitler.

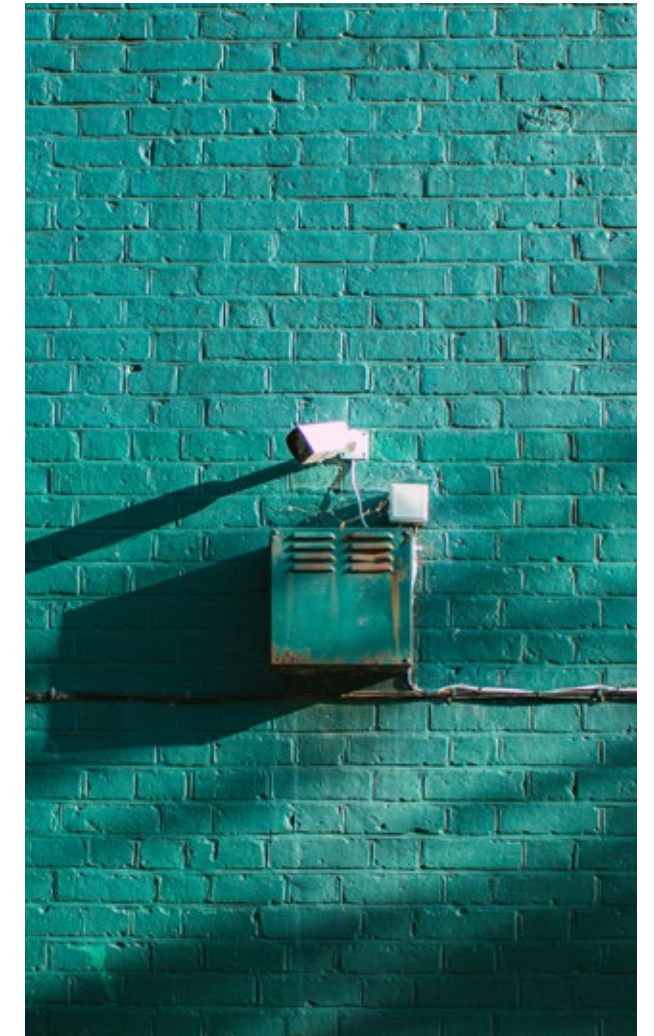
You have to search over time: ‘Where was I on April 1?’ ‘Where am I now on May 1?’ ‘Where will I be on June 1?’”

— Katie Teitler, senior product marketer at Axonius

petabyte of data, took only 10 seconds, says Andress. A second and more targeted query, based upon those initial findings, delivered another set of results in less than a minute. In the past, that kind of searching could have taken days or even weeks — at which point additional risks would have been identified. Instead, Elastic was able to deploy patches and upgrades within a few hours.

Incorporate search into long-term security strategy

Attackers have continued to probe other widely used resources. “These attackers are going for the largest targets they can,” says Teitler.



Existing vulnerabilities will remain risks. “We’ll be seeing attacks in the future that are successful because there are unpatched and still vulnerable Log4j versions out there,” Andress says.

All of which makes search platforms an increasingly important tool for CISOs. “You can’t just say, ‘What’s in my environment today?’” says Teitler. “You have to search over time: ‘Where was I on April 1? Where am I now on May 1? Where will I be on June 1?’”

It’s all part of a game of catch-up with attackers that security teams must continue to improve on, because the volume and complexity of threats will only increase. “Attackers have a lot of patience,” adds Teitler. “Time is on their side.”



Unlock **Great** **Customer Experiences** by Eliminating *Data Silos*

David Rand

Data silos are holding your business back.
Here's how to break them down.



Takeaways

- Mining more kinds of data improves customer experiences, but breaking them out of data silos remains a major challenge
- Centralized data governance rules and standards are an essential prerequisite to improving CX through data
- Merging operational data with experience data is a powerful new way to improve CX

For all the zettabytes of data companies have amassed to date, surprisingly little of it influences how customers interact with and use products and services.

That's because most of the data winds up in silos of various kinds, never to inform those experiences. Indeed, 8 in 10 businesses today still lack a comprehensive data strategy, according to Accenture — and just as many do not have a centralized digital platform to manage data. Conversely, organizations that are able to draw on a broader range of data can discover unexpected insights about what customers want or don't want, and when and how.

"Companies can create amazing experiences if they pull the right data from their silos and get it to the right people in their organization," says Isabelle Zdatny, an experience management leader at Qualtrics' XM Institute.

The problem is, pulling together all the right data streams is especially difficult when it comes to designing digital customer experience (CX). According to a recent study by XM, executives cited data and systems integration as the biggest obstacle in improving CX. That's because customer experience data touches many different functions and groups in a typical enterprise, each with different formats and requirements.

"Data can be an incredible asset, but only for companies that have their data act together," says Bill McKnight, president of McKnight Consulting Group, an IT research and management firm. "Making better use of siloed data to serve customers is one of the biggest gaps standing in the way of better bottom-line results for many organizations."

Here are three strategies enterprise experts say can help CIOs close critical data gaps in customer experience.



Combine data architecture with search to break down silos

Organizational silos have always been a fixture of the modern enterprise; data silos have naturally followed suit. Since data silos can't be eliminated altogether, one key to unlocking the value they hold is to establish a strong data architecture — a collection of rules, policies, and procedures that govern how data is stored and integrated.

Without a common way of managing all data, it's too difficult to bring it to bear to improve customer experience. As a result, many companies spend months simply "grooming" data so it can be understood by other systems, says David Stodder, senior director of The Data Warehousing Institute (TDWI), an IT management consultancy. "These days, it's easier for a business department to whip out a credit card and spin up a cloud service to solve a problem," says Stodder. "But that often just creates another silo."

While centralized data governance is a key ingredient to solving the silo problem, technology can also help break down (or see through) data silos to improve customer experience. Advanced enterprise search, for example, makes it easier to scour myriad databases to address a particular problem, and do it quickly enough to matter to customers.

By making more types of data easily accessible, companies can also use search tools to quickly gather useful data streams so they can be mined by machine learning systems to uncover new insights.

Build experience around two main data types — operational and experience data

Companies can eliminate other blind spots in customer experience by using a specific methodology for how they collect and analyze the right data. The framework XM Institute uses with enterprise clients focuses on two core groups of information: experience data and operational data.

Operational data includes all datasets derived from daily business operations; that includes objective and measurable data from CRM and sales systems, website analytics, ERP, IT operations, and contact center wait times. Operational data describes much of the “what” behind digital customer experience.

Experience data attempts to define the “why” behind the digital experience, says Zdatny. It pulls in evaluative data about how customers are thinking and feeling about their experiences, their attitudes, and perceptions. That might include survey data, social media comments, natural language processing data from customer service calls, customer chat data, and so on.

Building an “X” and “O” data framework doesn’t just help “unsilo” valuable hidden data; it can serve as a discovery platform for new experiences and even predictive insights.

“Combining experience and ops data allows you to personalize individual experiences at a very minute level,” says Zdatny. “When you’re able to have all of that data together, you can then take that understanding of individuals and project that out onto a much broader population and predict future events.”

Once you unlock data from silos, train your leaders to look for it

One long-term challenge in unlocking great experiences is purely organizational: Valuable data often comes from unexpected sources, and managers may not always be aware of or focus their efforts on the right ones.

“Executives tend to assume they know where data resides because they use it every day to manage a business,” says one senior business leader who focuses on innovation. “But what if the most valuable insights are hiding somewhere else?”

Several years ago at a large communications and cable provider, the leader recalls, data managers who were exploring customer churn issues decided to look beyond the “usual suspects” — for example, CRM data and customer service logs. Instead, they began looking at technical data coming off set-top boxes.

The company found that churn ticked up after a hardware update caused delays in the time it took customers to change channels. Once the company fixed the hardware issue, churn rates improved.

“You have to break people’s assumptions about where the data lives to solve business problems,” says the leader. “The direct result is amazing experiences for your customers.”

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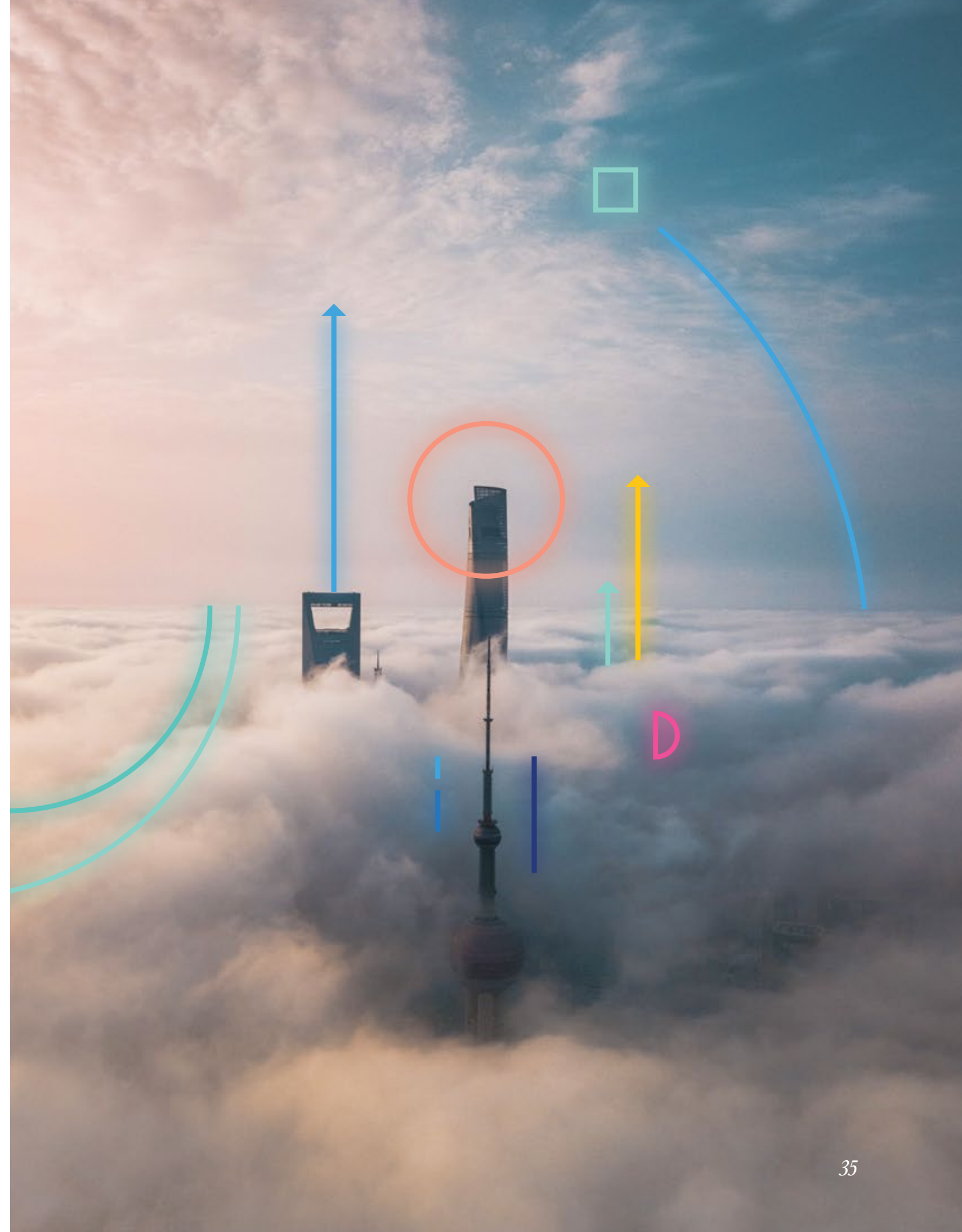
— Bill McKnight, president, McKnight Consulting Group



Observability in the *Cloud* Is Your Secret to *Success*

Matt Palmquist

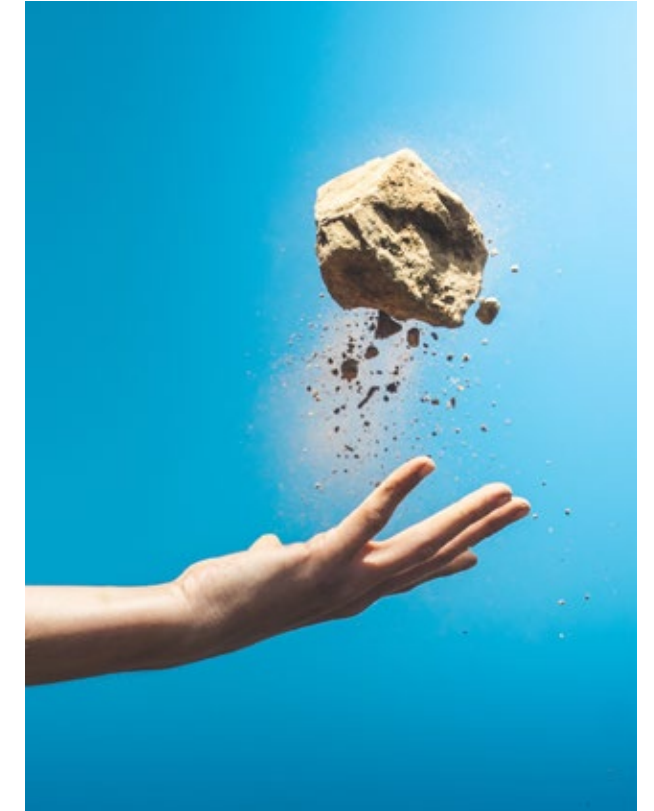
Don't just track predefined metrics —
measure and improve on experiences
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*“Without
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— Helen Beal, chief ambassador,
DevOps Institute



Takeaways

- Observability enables fast diagnosis and resolution of issues with both legacy and cloud infrastructure and applications
- Companies with mature observability tools innovate faster and boost engineers' productivity
- By providing insights across the software and infrastructure stack, observability can improve the customer and employee experience

Observability, one of the hottest trends in IT, gives a growing number of IT organizations an empowered feeling: an ability to improve their systems and applications in a multiplicity of ways.

Observability is a software layer that can be built into a company's IT infrastructure to better understand the performance of its systems and applications, including ones running in the cloud. Observability tools gather data from a multiplicity of sources to generate insights that were not previously possible. As a result, IT teams can spend less time hunting for needles in digital haystacks when problems arise and can spot issues and opportunities for improvement that had previously been invisible.

The ability to provide customers a proactive, personalized, and reliable experience — one that scans beyond one's own data centers across various cloud platforms — is far more possible for organizations that implement observability solutions. And, the ability to keep websites and apps running smoothly — despite soaring complexity, interminable streams of data, and ever-evolving security threats — is a big competitive advantage.

“The more distributed our systems become, the more we need to see what's happening, because things inevitably go wrong,” says Helen Beal, chief ambassador at the DevOps Institute, which advises companies on modern methods of software development and delivery. “Without observability, there are too many unknown unknowns.”

A powerful way to improve customer and employee experiences

It's tempting for senior executives to see observability as important only for front-line IT teams. But compared to many infrastructure technologies, it can directly affect business results, particularly for companies' digital transformation efforts, says one strategic innovation executive we spoke to. With its ability to pinpoint the root cause of problems, observability can improve performance in many dimensions, including customer and employee experience. The faster IT can identify why an online shopping cart has frozen or the corporate network is down, the faster engineers can fix it.



Faster troubleshooting can also ease the workloads of IT staffers, a critical advantage in today's tight labor market. By using machine learning to identify problems, observability platforms reduce the need to decipher every alert. Teams can spend more time solving trickier problems and developing new capabilities.

There are organizational benefits, too. Observability gives IT operations and developer teams a common "source of truth" that can lead to increased collaboration. The result is faster feedback cycles and fewer customer complaints.

"Observability can make your people happier, your customers happier, and can improve the overall experience of your brand," says the executive.

One tool, multiple uses

For decades, companies have used a variety of monitoring systems to manage applications, networks, storage, and other pieces of the IT infrastructure. What makes observability different? First, it integrates signals from all of these systems, providing a means to get closer to the holy grail of a single pane of glass.

Second, observability technology generates insights not by tracking particular predefined metrics, but by measuring the experience of customers, employers, and other users. For example, even if all the internal metrics for a digital shopping cart look fine, observability tools may notice if customers are experiencing a slow-down caused by a problem with a cloud-based payments service. In this way, team members can more quickly resolve the problems that people really care about.



The security connection

Observability can also improve a company's security posture, by giving more useful, contextual insights. Security, after all, is ultimately a data challenge. How do you identify the threat, or problem? Observability can integrate more sources of data to suggest what is happening — the difference between knowing that a known criminal is in the neighborhood versus knowing what they are wearing, carrying, and their location.

"You have to move from being alert-driven to insight-driven, and from reactive to predictive," says Beal. "Observability helps you do that."

Adding major value

"While it's difficult to assign a dollar value to the benefits of observability, there is little remaining doubt that the benefits are varied and significant," says Beal. She finds that far more IT leaders are familiar with the term and are investigating how to put it to use, but few have made the investments and process changes to fully capture the benefits.

"The tendency of most companies is to keep focusing on the basics, so they're not getting serious yet," she says. "But they should be."

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