

State of Enterprise Tech 2023



Annual insights from hundreds of the world's top technology leaders on the emerging trends impacting enterprise strategies.

Trade names may be used in this presentation to refer to either the entities claiming the marks and/or names or their products and are the property of their respective owners. The information contained in this presentation by Insight Venture Management, LLC ("Insight") disclaims proprietary interest in the names of others.

→ Contents

Overview	3
Profile of respondents	4
Cybersecurity	6
Data & AI	11
Modern Infrastructure & Engineering	18
Digital Experience	24
Final takeaways	29

→ Overview

The technology landscape for enterprise businesses is constantly evolving.

With each new market challenge that arises, innovative solutions emerge to tackle them. As a result, tech stacks and strategies are constantly and rapidly being augmented to support the way enterprise businesses operate, serve customers, and scale.

Insight Partners is uniquely positioned to understand how the corporate community thinks about technology. Insight Partners is a global software investor partnering with high-growth technology, software, and internet startup and ScaleUp companies that are driving transformative change in their industries. With over \$80B in regulatory assets under management, Insight Partners has invested in more than 750 companies worldwide, and has seen over 55 portfolio companies achieve an IPO.

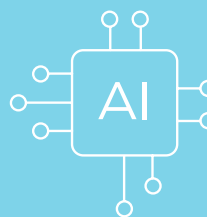
Insight Partners' IGNITE network is an ecosystem of 2000+ enterprise tech executives from more than 850 of the world's leading businesses, whose perspectives on key priorities, budget shifts, and trends inform this report. Each year, a sample of the network is surveyed, digging deep into four core technology categories. The result is a proprietary State of Enterprise Tech report that provides exclusive and in-depth insights about digital change inside enterprise businesses.

Whether you're looking for a benchmarking guide, or simply trying to better understand the mindset of senior tech buyers, this report will inform and ignite your tech strategy.

To find out more about Insight Partners and IGNITE, visit www.insightpartners.com/ignite



CYBERSECURITY



DATA & AI



MODERN INFRASTRUCTURE
& ENGINEERING

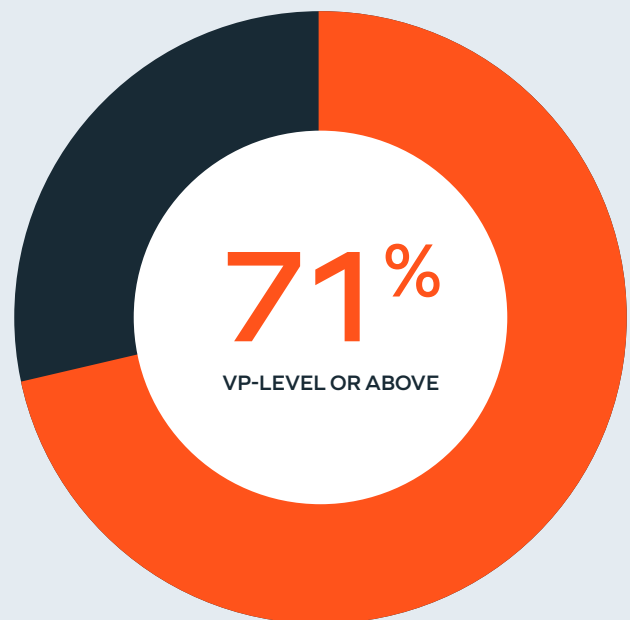
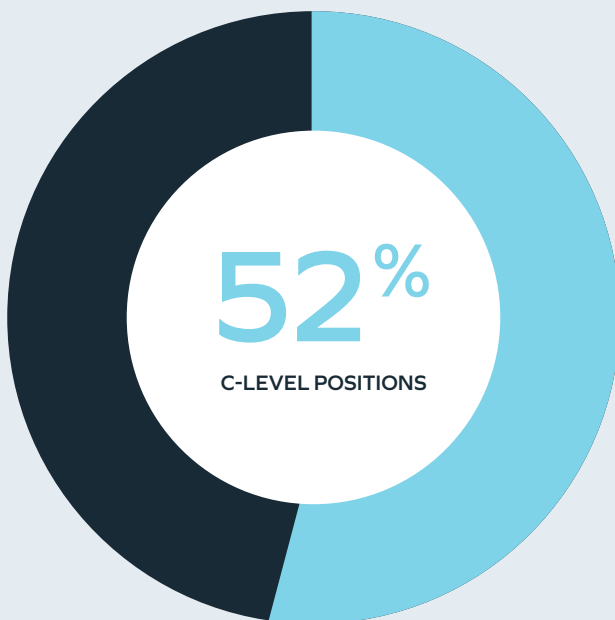


DIGITAL EXPERIENCE

Profile of respondents

The executives surveyed hold high-level positions within some of the world's most impactful businesses.

52% of respondents are in C-level positions; all are senior and influential decision-makers. Their perspectives are invaluable in understanding the B2B technology landscape, and how technology can be strategically deployed to drive exceptional business outcomes. **71% of respondents are VP-level or above.**

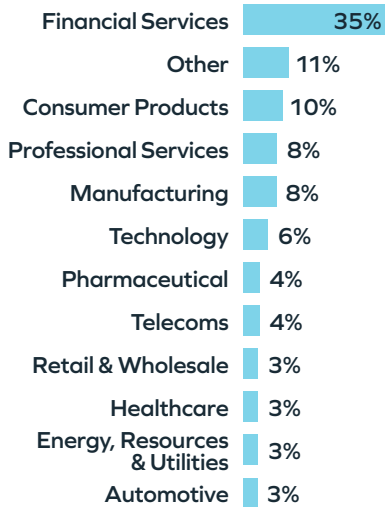


A unique set of 319 senior leaders at the world's leading enterprise businesses

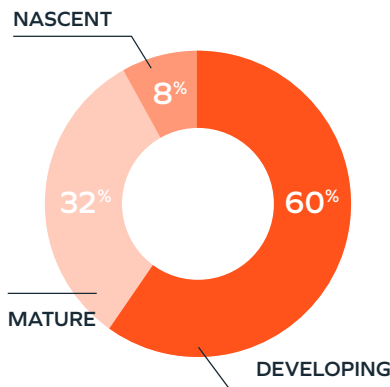
319 Respondents, including 52% C-level executives and >70% from enterprises with >\$10B in revenue

COMPANIES BREAKDOWN

INDUSTRIES

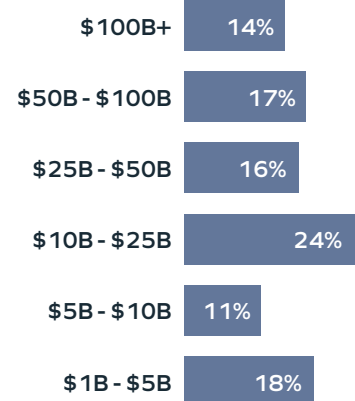


DIGITAL MATURITY



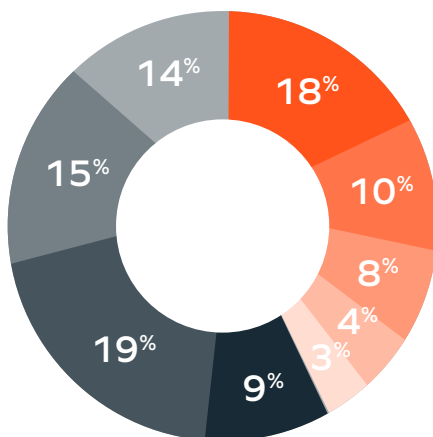
Nascent: Tech and digital is a support function to the core business
Developing: Tech and digital is a support function, with some contribution to business growth
Mature: Tech and digital drive business growth and adaptability

REVENUE RANGES



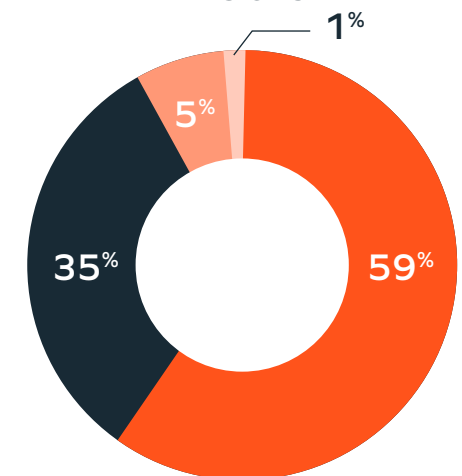
RESPONDENTS BREAKDOWN

ROLES



● CIO/CDiO ● CISO ● CTO ● CDaO ● CEO / Board member
● Other C-level ● EVP / SVP / VP ● Senior director / Director ● Other Director

REGIONS



● North America ● EMEA ● APAC ● RoW



Cybersecurity

Cloud & Infrastructure Security is the top Cybersecurity priority for enterprises in 2023.

It's no surprise: with businesses continuing to adopt Cloud services, and collect and leverage growing volumes of data, security of the Cloud environment remains a priority.

What's changed in enterprise budget allocation for Cybersecurity is not so much the amount, but where it's invested. At the time this research was conducted, 98% of respondents planned to maintain or increase their Cybersecurity budgets. This is now starting to change. Due to the ongoing macroeconomic and geopolitical challenges, enterprises are being forced to review where capital is allocated. Cybersecurity is not immune to this.

Enterprises still plan to preserve as much Cybersecurity budget as possible, but the allocation of spend is changing.

Innovation initiatives are being deprioritized and instead, consolidation and operationalization of the existing stack is the focus for CISOs. Investment in security technologies is being refocused to ensure there is sufficient coverage of controls across the environment, while minimizing net new tooling. Many are exploring platform strategies as opposed to individual point solutions to reduce operational overheads and complexity.

This strategic shift reflects what's happening in the innovation space. Those solutions that offer platforms, rather than features, and that can drive risk reduction and efficiency through automation, are gaining good traction.

44%

OF CISOs SELECTED CLOUD & INFRASTRUCTURE SECURITY AS THEIR MOST RELEVANT CYBER TECH CATEGORY IN 2023

Key takeaways

- Cloud & Infrastructure Security is the top priority. 34% of respondents overall and 44% of CISOs ranked it highest.
- At the time of this research, 98% of respondents planned to maintain or increase their Cybersecurity budget in 2023. However, the sentiment we've been hearing from the industry is that due to ongoing macroeconomic and geopolitical challenges, these forecasts are actively evolving.
- Zero Trust Network Access (ZTNA) solutions topped the CISO priority list for security capabilities. ZTNA enables businesses to control and monitor access to the decentralized Cloud landscape.

“

The transition to Cloud and digitalization continues to be a core focus for enterprises, and is driving the attempts to ringfence Cybersecurity budgets. As the enterprise landscape changes, businesses can't justify spending less on Cybersecurity and leaving themselves in a potentially vulnerable position.”

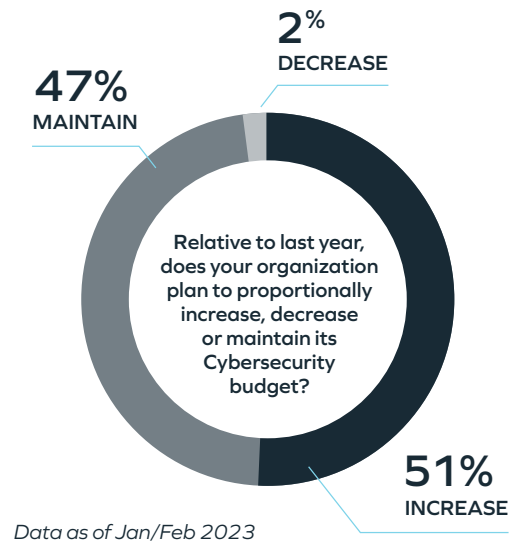


Steve Ward
MD at Insight Partners

Changes in budgets for 2023

- Enterprises with over \$10B revenue are driving the average increase in security spend. At the time of this research, 51% of them planned to increase their budget.
- Overall, those that planned to increase their budget targeted to do so by an average of 22.8%. The seemingly steep increase may be attributed to two factors. First is that the scope of the CISO is expanding. Second is that Cloud and Infrastructure costs are increasing, and the security features of those environments are shifting under the security budget.

With other parts of the wider business stack now coming under a compressed Cybersecurity budget, CISOs and CIOs are changing the way they approach their tooling. The context of the macro-environment means operational efficiencies are critical. Security leaders are starting to consider how they can consolidate.



“

CIOs plan to spend more on Cybersecurity in 2023 than in 2022, but their overworked teams are buckling under the tidal wave of information generated by their current tech stack, and failing to exploit all of its functionality. New vendors are routinely challenged to identify one or more existing tools they can replace. The security tool arms race that's currently underway cannot continue indefinitely.”



Mark Settle, Former CIO at Okta

Changing Cybersecurity priorities

Cloud & Infrastructure Security remains the number one priority for enterprises in 2023.

Threat & Vulnerability Management has moved up the priority ranking as businesses grapple with expanding technology landscapes and alert fatigue. Leaders are moving away from buying more security tools that find more problems, and focusing instead on fixing the vulnerabilities that their current tools are flagging. Streamlining and consolidating technology, and automating the existing stack and processes, are key goals.

Application Security ranks lowest among the top priorities, although digitally mature companies still see this as an important area of focus.



Organizations are looking for a radically different approach to managing vulnerabilities. It's an area that has been static for so many years, and more security tools detecting a much larger number of issues across a growing enterprise landscape has led to an unmanageable situation for IT and security teams."



Betsy Wille
Director at The Cybersecurity Studio & Former CISO at Abbott

TOP CYBERSECURITY PRIORITIES FOR ENTERPRISES IN 2023



¹% of respondents who ranked the following tech categories as top priority for their enterprise's Cybersecurity strategy

Cloud-first architecture is dominating Digital and Cybersecurity strategies, with the need to better identify threats and manage vulnerabilities across an increasingly decentralized environment. Industry consensus ranks Cloud & Infrastructure Security as the top Cybersecurity priority in 2023.

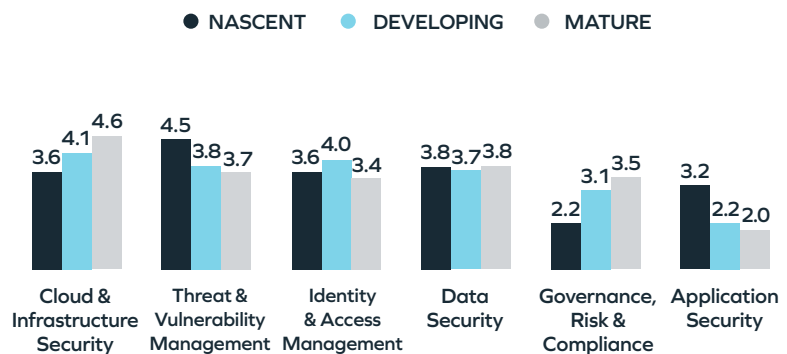
Last year, several high-profile software vulnerabilities put Application Security in the spotlight. This year, the focus has shifted to securing the Cloud platform and managing its access effectively.

MOST RELEVANT CYBERSECURITY PRIORITIES, BY ENTERPRISE DIGITAL MATURITY

As enterprises mature digitally, focus shifts from embedding governance and good practice to security improvements that drive efficiencies.

The most pronounced gap between nascent and mature businesses is in their prioritization of Application Security, and Governance, Risk and Compliance. Nascent organizations are implementing tooling, and defining core policies and risk management. Mature businesses, having established security foundations like DevSecOps, are focusing on areas where they can realize the greatest efficiency gains.

AVERAGE SCORE BY MATURITY STAGE WITH 6 REPRESENTING HIGHEST PRIORITY & 1 LOWEST PRIORITY



Top Cybersecurity capability areas

Cloud and data capabilities are the combined top priorities for the enterprise.

Businesses are migrating to the Cloud, SaaS environments are expanding, and the regulatory landscape is shifting. Knowing where data is and who has access to it, and having confidence that it's in a secure, controlled environment, are therefore paramount.



As networks go from physically defined and centralized hub-and-spoke architectures to software-defined and decentralized endpoint-to-Cloud architectures, it requires a new security paradigm."



Thomas Krane
MD at Insight Partners

TOP 15 MOST SELECTED CYBERSECURITY CAPABILITY AREAS

NUMBER OF TIMES CAPABILITY IS RANKED AS TOP PRIORITY

Cloud Platform Security	80	Privileged Access Management	54	Endpoint Protection	42
Data Access Governance	73	Authentication	51	DevSecOps	39
Zero Trust Network Access (ZTNA)	68	Application Vulnerability & Security Testing	49	Container Security	37
Data Loss Prevention	62	Attack Surface Management	46	Data Encryption	36
Identity Governance & Administration	57	Identity Threat Detection & Response (ITDR)	46	Multi-Factor Authentication (MFA)	36

● Capability areas highlighted below

TOP CAPABILITY TO DEVELOP IN CLOUD SECURITY

Cloud Platform Security

Securing the Cloud platform is a foundational step as enterprises expand their digital footprint. Businesses are seeking solutions that tackle the multi-faceted nature of security in a single platform, or a set of tightly integrated solutions.

TOP CAPABILITY TO DEVELOP IN DATA SECURITY

Data Access Governance

Understanding where data is stored, how it travels, who has access to it, and what policies apply, is critical to managing Data Risk and Compliance obligations. This is an important first step towards a mature Data Management and Data Loss Prevention strategy.

TOP CAPABILITY TO DEVELOP IN IDENTITY & ACCESS MANAGEMENT

Identity Governance & Administration

The shift to Cloud has led to the enterprise environment expanding – not just in terms of infrastructure, applications and data, but also the identity landscape. The need to manage identities, accounts and permission sets, and consolidate them across hybrid and multi-Cloud environments, has driven Identity Governance & Administration to the top of IAM priorities.

TOP CAPABILITY TO DEVELOP IN APPLICATION SECURITY

AppVulnerability & Security Testing

Ensuring a comprehensive testing strategy to identify vulnerabilities in applications is still a high priority. The use of third-party code and the growing exposure from APIs is an increasing area of focus across Application Security.

→ CISO deep dive

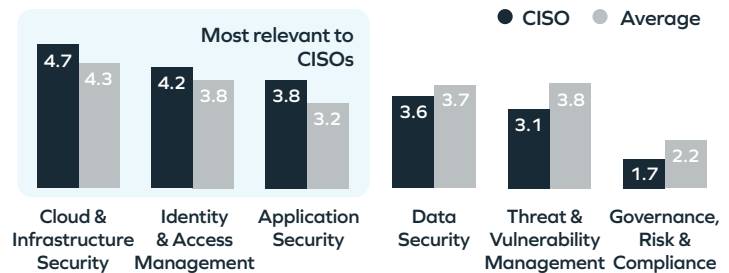
CISOs rank Cloud & Infrastructure Security, IAM and Application Security higher than their peers.

MOST RELEVANT CYBERSECURITY CATEGORIES FOR CISOs IN 2023

Cloud & Infrastructure Security dominates within CISO Cybersecurity strategies, aligning with the overall business objective to move towards a Cloud-first, digital environment.

IAM continues to move up the priority list for CISOs. IT has traditionally taken responsibility for IAM, but more recently CISOs have taken some or total ownership. Many CISOs are now looking to better understand and consolidate this inherited landscape – especially as identity-related attacks increase in volume

AVERAGE RANK WITH 6 REPRESENTING HIGHEST PRIORITY & 1 LOWEST PRIORITY



TOP SIX PRIORITY CAPABILITY AREAS FOR CISOs

1. Zero Trust Network Access **47%**
2. Cloud Platform Security **44%**
3. DevSecOps **44%**
4. Data Loss Prevention **38%**
5. Privileged Access Management **34%**
6. Container Security **34%**

As enterprises move to the Cloud and remote working becomes commonplace, capabilities core to a Zero Trust strategy are top of mind for CISOs for 2023.



The high-level CISO priorities haven't really changed significantly over time. It's the technology that's enabling innovation that has moved forward, and is also enhancing our ability to implement the right level of control across the environment."



Steve Ward, MD at Insight Partners

HIGHEST VARIATION IN PRIORITIZATION BETWEEN CISOs AND OTHER LEADERS

CISOs rank DevSecOps and IAM capabilities higher than the rest of the enterprise, as CISO responsibilities broaden to incorporate improving secure access to SaaS and Cloud platforms through passwordless and MFA initiatives, and implementing shift-left across often siloed developer teams.

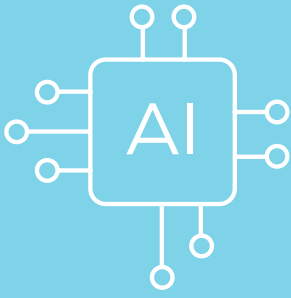


CISOs are acutely aware that while they may have already deployed Application Security tooling, adoption and embedding security practices into often fragmented developer teams is an ongoing challenge, in many cases requiring a refocus of investment."



William Blackwell, Director at Insight IGNITE

CISO PRIORITY	INDEX VS OTHER LEADERS
DevSecOps	118%
Authorization	102%
Passwordless	94%
Container Security	80%
Firewalls & IDS/IPS	-100%



Data & AI

Perhaps the fastest-moving and most consequential aspect of the enterprise technology landscape is AI.

AI has become a critical enabler of businesses across almost all industries, and as new technologies like Generative AI gain traction, it will continue to transform the way those businesses operate. Enterprise leaders are starting to gain a deeper understanding of the power of AI, its potential applications and network effects. Consequently, they're increasing spend to develop capabilities while mitigating risk.

While digitally mature businesses were the fastest out of the gate to invest in and adopt Generative AI over the past few months, we've begun to see businesses across maturity levels leveraging Generative AI without MLOps or BI investments to improve customer service, risk assessment, and marketing.

59%

OF RESPONDENTS REPORTED AN INCREASE IN THEIR DATA & AI BUDGETS COMPARED TO THE PREVIOUS YEAR

Key takeaways

- Data & AI budgets will see the highest increase across the four technology spaces covered in this report.
- Developing a Modern Data Stack is the number one technology priority. Predictive Analytics is the number one capability priority.
- Generative AI has come to the foreground this year. As it grows, businesses will need to strike a fine balance between enabling productivity and mitigating enterprise risk.

“

It's remarkable how quickly Generative AI has become a key topic in every boardroom. We are in the midst of a Cambrian explosion with AI, and companies are eager to understand both the tremendous opportunities to improve products and drive efficiencies, and the existential threats and security concerns.”



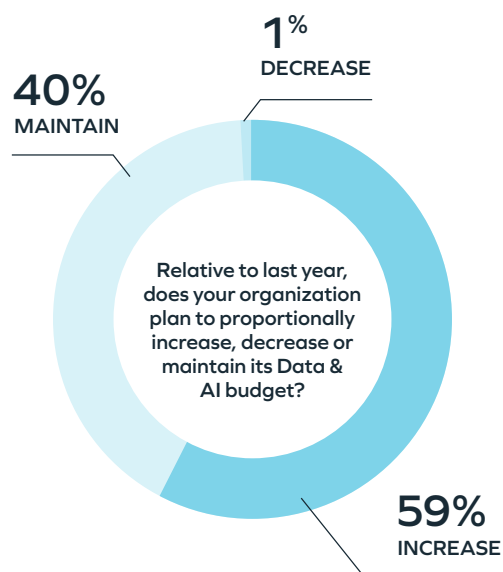
Nikhil Sachdev
MD at Insight Partners

Changes in budgets for 2023

The rise in Data & AI budgets shows that effective data strategies are now crucial for businesses to retain and grow a competitive position.

- Of the technology areas covered in this report, Data & AI has the largest number of budget increases and the lowest number of budget decreases.
- Digitally mature companies are most likely to increase their Data & AI budgets; 70% of this segment reported an increase.
- The average reported increase is 26% and the median increase is 20%, showing a significant rise in enterprise spending in Data & AI.

As budgets increase, leaders should seriously consider how tooling will be implemented to best effect.



“

CIOs love to invest in best-of-breed data exploitation tools, assuming their companies will find the human resources and adopt the business practices needed to achieve a return on such investments. When it comes to Data & AI technology, however, nothing could be further from the truth. CIOs need to soberly assess the talent resources within their own organizations and the data maturity of their companies before purchasing Data & AI tools.”



Mark Settle, Former CIO at Okta

Changing Data & AI priorities

Enterprise leaders are investing more time and money in understanding capabilities of AI and mitigating associated risks.

New technology like Generative AI represents an opportunity to transform and monetize new areas of the business. Industry leaders like Bloomberg and Zurich Insurance are already leveraging this technology, and emerging Generative AI solutions are seeing increased attention from investors. **According to leading data and analytics firm GlobalData**, 3,198 AI startups received \$52.1 billion funding across 3,396 VC funding deals during 2022.

“

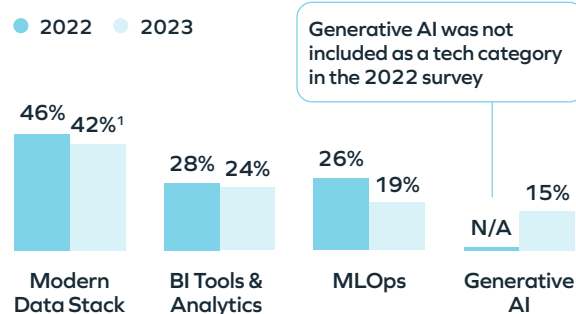
As foundation models, especially Large Language Models come into production, we will need greater trust, explainability, and alignment of our AI systems to accelerate enterprise adoption.”



George Mathew
MD at Insight Partners

As such, enterprise businesses are developing twofold strategies: investing in AI that creates new opportunities (like Generative AI), and investing in underlying data infrastructure that ensures AI can be implemented effectively.

YOY SHIFT IN TOP PRIORITIES FOR ENTERPRISES WITH >\$10BN IN REVENUE



¹% of respondents at enterprises with >\$10b in revenue who selected the following tech categories as most relevant to their Data & AI strategy in each given year

Anecdotally, through our enterprise partnerships, we’ve seen a shift in focus since Q1 2023 due to the rapid acceleration of Generative AI. While businesses are starting to prioritize Generative AI, the highest priority for enterprises is a Modern Data Stack. Consolidating, aggregating, and organizing data is becoming more complex, and there is a greater need for governance in order to effectively implement data across the business.

Additional resources continue to be allocated to BI Tools and MLOps to lay firm foundations for their transition towards new technologies.

MOST RELEVANT DATA & AI PRIORITIES BY ENTERPRISE DIGITAL MATURITY

The primary difference between traditional AI, such as image classification and prediction systems, and Generative AI is how much easier it is for companies to implement Generative AI without significant investment. Massive teams of data scientists, intricate data pipelines, machine learning infrastructures, and extensive training and feedback data aren’t as necessary with Generative AI.

Nevertheless, enterprises continue to invest in and make progress with traditional AI. Healthcare is one area where this is prevalent, with applications ranging from improving the clinical trial process to powering medical education platforms to train healthcare professionals on the latest medical knowledge and techniques.

“It’s also important not to lose sight of the progress in more traditional, discriminative AI. One area where we’ve invested a lot already and where we’re likely going to see continued huge progress in 2023 is in applied computer vision AI in healthcare. Healthcare is one area where an enormous amount of exciting AI capabilities that people have been talking about for decades has finally started to work.”

Lonne Jaffe, MD at Insight Partners

¹<https://www.globaldata.com/media/business-fundamentals/artificial-intelligence-startups-raise-over-50-billion-venture-capital-funding-in-2022-reveals-globaldata/>

TOP THREE CAPABILITIES ENTERPRISES ARE PRIORITIZING WITHIN THE MODERN DATA STACK

Based on the % of respondents who selected it as a priority area

Data Management & Governance

48%

Data Management & Governance is critical – especially as enterprises look to Data & AI for new revenue opportunities. Data Management is the foundation for leveraging AI; regulatory compliance, consent and cookie management are important as new products come to market. Respondents in EMEA prioritized Data Management 11% more than those in North America, likely due to stricter data privacy regulations in Europe.

Data Catalogs

34%

Data Catalogs were prioritized significantly more often by Chief Data & Analytics Officers (CDAOs) and respondents from digitally mature companies. Data Catalogs enable employees to find and use data more easily, reduce data silos, and promote collaboration across teams and departments. Implementing Data Catalogs aligns with the core responsibilities of CDAOs, and is the next logical capability area for digitally mature enterprises.

Data Lakes

36%

Digitally mature businesses selected Data Lakes as a priority 240% more than digitally nascent ones. Mature businesses are more likely to have sophisticated data architectures, and a need for the flexibility and scalability that Data Lakes provide. Nascent companies that are still developing their data infrastructure don't have such complex needs.

“

Data Lakes democratize data, but really mature companies will need to leverage additional scaffolding, like Orchestration and Observability. Data Lakes are great for centralizing data, operationalizing insights, and building Generative AI applications.”



George Mathew
MD at Insight Partners

TOP THREE CAPABILITIES ENTERPRISES ARE PRIORITIZING WITHIN BI TOOLS & ANALYTICS

Based on the % of respondents who selected it as a priority area

Predictive Analytics

70%

Predictive Analytics is by far the most selected capability area across Data & AI in 2023, and is the top priority for CDAOs. Predictive Analytics is in a relatively mature phase. It has moved from describing to predicting, and is now being leveraged to enable hyper-personalization and drive revenue-boosting opportunities.

Visualization Dashboarding

44%

CIOs selected Visualization Dashboarding as a priority 40% more often than all other roles. As businesses become increasingly data-driven, CIOs need clear and effective data visualization so they can lead with insights and report on performance.

AI-enhanced Insights

42%

More enterprises are using AI for risk reduction and fraud prevention. It's now frequently being deployed to detect strange behavior and patterns, and enables enterprises to scale their risk mitigation as internal and external threat landscapes evolve.

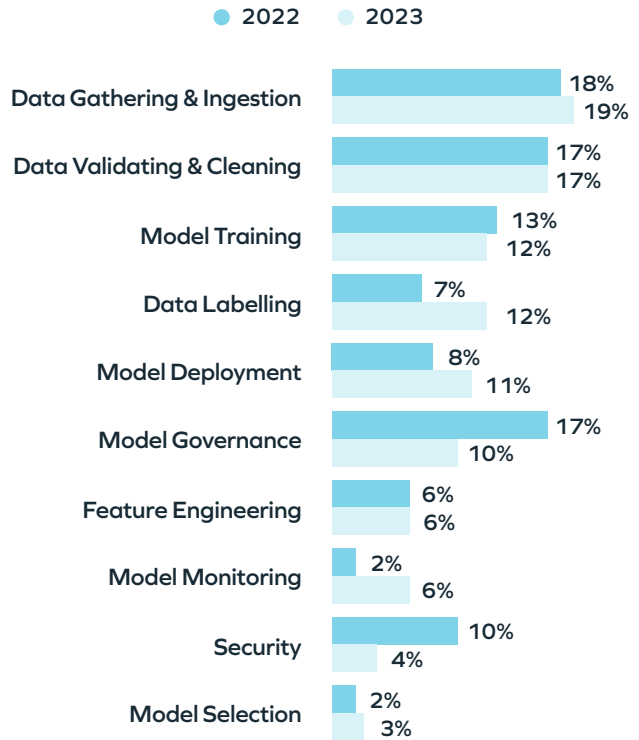
YOY COMPARISON OF THE PRIORITIZATION OF MLOPS CAPABILITIES

(Enterprises with >\$10B revenue)

The priority capabilities for MLOps are still primarily at the top of the pipeline. Data Gathering & Ingestion and Data Validating & Cleaning remain critical pain points for enterprises, and need to be addressed before they can start to deploy machine learning and Generative AI solutions. MLOps is the precursor to Generative AI for many enterprises, enabling model management, guardrails, explainability, and data access.

The YoY drop in both Model Governance and security as priorities suggests that these functions are increasingly coming under the Cybersecurity budget and team. As machine learning gathers traction across the enterprise, ML security has ceased to be a niche issue and is now being owned centrally by the CISO.

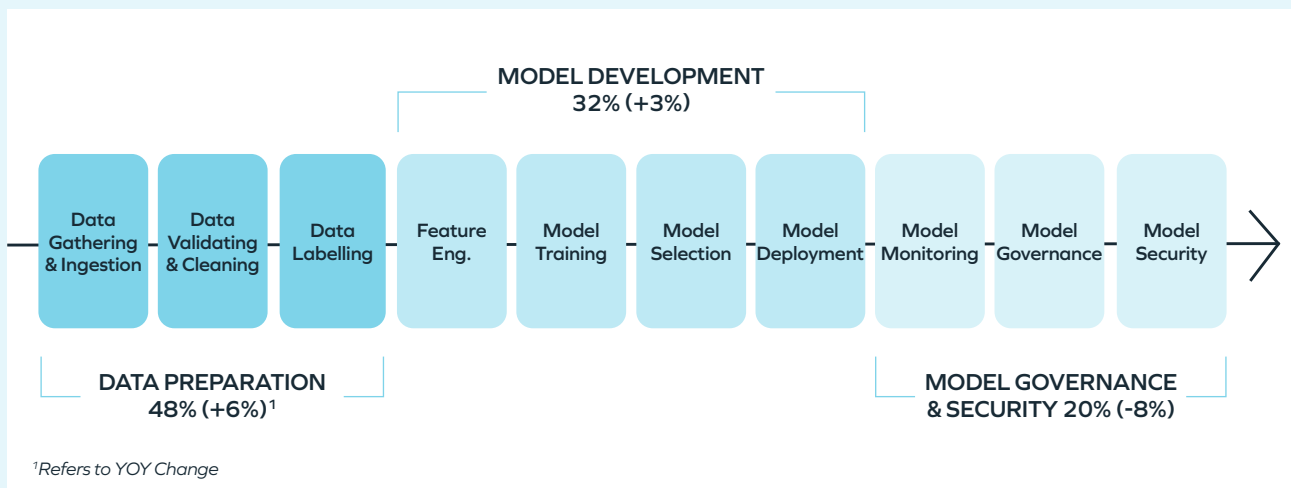
TOP PRIORITY TECH AREA(S) IN MLOPS AS A % OF TOTAL MLOPS CAPABILITY AREAS SELECTED



MLOPS EXTENDS INTO MODEL DEVELOPMENT

While focus remains at the top of the pipeline, MLOps investment has started to shift towards model development, with Model Training and Model Deployment rising up the list of priorities.

As enterprises become more sophisticated in their data science and MLOps, they may lean towards specific point solutions. While these products will require greater technical knowledge to maintain and deploy, they allow for much more control, depth, and complexity.



→ The Generative AI opportunity

Generative AI featured as an investment area for the first time in 2023.

Currently, businesses are using Generative AI to create efficiency internally – usually replacing and simplifying engine mechanisms to search for information within the enterprise. But revenue-driving use cases are starting to emerge, and more use cases are being discovered every day.

Experimentation with Generative AI is happening across the enterprise. Cybersecurity, Modern Infrastructure & Engineering, and Digital Experience teams are already finding use cases that drive real business outcomes and ROI. Further opportunities are extending into R&D, as well as across business functions including legal, procurement, marketing and field services.

Insight Partners is seeing first-movers bring Generative AI-powered use cases to market in the following key areas:

1. Legal services:

- A. Contract negotiations
- B. Document review cycle

2. Life sciences R&D:

- A. Product documentation
- B. Pharma-specific use cases (e.g.: molecule creation)

3. Cybersecurity:

- A. Real-time threat intelligence
- B. Incident management

4. Software Development:

- A. Code generation
- B. Refactoring and debugging

5. Digital Experience:

- A. Customer call centers
- B. Script optimization
- C. Sales team enablement

Risks and concerns around the use of Generative AI persist, especially regarding cost, and data privacy and security. Many are still experimenting with and evaluating the best ways to manage AI within their organizations. Some are creating new roles, and assigning discovery to specific people or hubs. Others are building sandboxes with synthetic data, so a broader spread of teams can experiment and innovate. Enterprises are having to think critically about which models they want to buy and which they want to develop in-house, as they navigate the new frontier in enterprise technology.

While much remains uncertain about the future of Generative AI, it's clear that the value of the AI ecosystem will increase exponentially. As more Generative AI use cases emerge, so too will infrastructure to support them.



In the next decade, much of the value creation from AI will be in the adjacencies it creates. Solutions that help organize, discover and map data so that it can be leveraged by AI models will become a key innovation area."



Chris Stephens, Adjunct Faculty at Carnegie Mellon University & Former CDO at GEICO

As a result, Generative AI in 2023 will be a balancing act between enabling productivity and controlling enterprise risk. Uncertainty about Generative AI persists across the enterprise and in fact, CDOs rank Generative AI significantly lower than other respondents, largely due to concerns about control, security and explainability. As of Q1 2023, only 7.7% of CDOs ranked Generative AI as their most

relevant technology category, compared to 12% on average. The space is changing rapidly however, and Insight Partners believes Generative AI is becoming a focus area for the majority of CDOs.

Within Generative AI, CDOs are most interested in developing text generation capability, while CISOs are most focused on code generation. This suggests they are trying to control the risk of code generation tools that employees can use on their personal devices. The concerns for CISOs are around data privacy, and ensuring that the information eventually produced by Generative AI models is accurate. Employees could share sensitive information into ChatGPT, for example, so the priority is to isolate environments and make sure datasets are protected within the technology layer.

The transformative impact of Generative AI across industries

Technology and professional services ranked Generative AI as most relevant.

Financial services ranked Generative AI as less relevant to their industry – but, as testament to how rapidly this field is gaining traction, attitudes have started to shift since this research was conducted. Banks including Bloomberg and Morgan Stanley are experimenting with Generative AI use cases.

Bloomberg GPT is trained on financial data, and will be integrated into Bloomberg's terminal software to improve existing financial NLP tasks.

Morgan Stanley is testing an **OpenAI-powered chatbot** to help financial advisors better leverage the bank's repository of research and data.

“

Before the release of ChatGPT, I think many people had been underestimating the progress that AI has been making over the last few years and will make going forward. ChatGPT was like a spark that lit the fire of startup innovation around Generative AI, along with a renewed fundraising dynamic.”



Lonnie Jaffe
MD at Insight Partners

Priority capabilities to develop in Generative AI

Enterprises are starting to identify use cases for Generative AI, with early applications including content creation, customer call centers and chatbots, automated code generation and review, and healthcare research and development.

“

Enterprises are still in the initial stages of exploring and implementing AI to foster innovation, enhance customer value, and streamline operations. One area witnessing rapid early adoption across industries is AI-assisted coding, which boosts developer productivity. And I think enterprises are excited to see the extent to which AI-assisted coding can transform in time into a comprehensive AI-driven software development approach, covering all aspects of autonomous creation, monitoring, and maintenance of software.”



Nikhil Sadchev
MD at Insight Partners



Modern Infrastructure & Engineering

“

Seasoned CIOs will remember the early claims of Cloud Computing vendors regarding the cost advantages of moving their operations to the Cloud. Cloud operations were reputed to be so much cheaper than the cost of maintaining proprietary data centers. Fast forward to 2023, and now everyone is concerned about their ability to control Cloud costs.

The number one infrastructure investment during this coming year will or should be tools that can anticipate the cost consequences of Cloud usage, and automatically invoke control mechanisms to cauterize the bleeding of unnecessary Cloud spending.”

Mark Settle, Former CIO at Okta

34%

OF RESPONDENTS
SELECTED API'S AS THE
MOST RELEVANT TOPIC
TO THEIR ENTERPRISE'S
MI&E STRATEGY IN 2023

Key takeaways

- APIs are the top priority for digitally mature respondents, who are now ready to start utilizing APIs at scale. 43% of all digitally mature respondents named APIs as their top priority in 2023.
- DevSecOps is the top priority in DevOps, showing the growing need to bridge the gap between security and DevOps teams. 51% of all respondents selected DevSecOps as a priority area.
- Cloud Management is emerging as a high priority, as enterprises try to control costs, maintain security, and maximize flexibility. 41% of all respondents selected Cloud Management as a priority area.

Generative AI has an important role to play here, too. The old approach, of humans writing software, is increasingly being replaced by a new approach, whereby machines use data to write software, often paired with human-written software. It means new business models, moats and talent can be unlocked.

“

In 2022, we reached peak complexity and specialization in Cloud Infrastructure, and the pendulum is swinging back. Developers want to simplify their stack and ship code faster.”

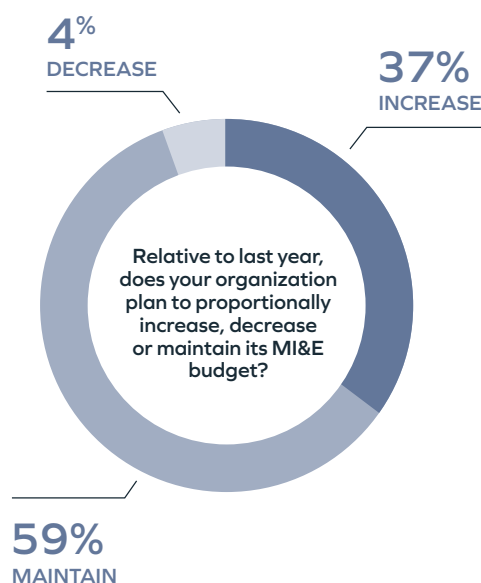


Teddie Wardi
MD at Insight Partners

Changes in budgets for 2023

Modern Infrastructure & Engineering budgets continue to grow, though at a slower rate than the other three technology areas. This comparative slowdown could be because enterprises have made significant investments in their Cloud transformation and tech modernization over the past few years. These programs are now on-going, so investment is relatively flat. Modern Infrastructure & Engineering is a critical part of any technology strategy, but it's natural for the rate of growth to stabilize after a period of significant investment.

- Those that are increasing their budgets will do so by 20% on average. The median increase is 15%.



“

‘Flow’ is a state which describes developers at their productive best. AI copilots promise to abstract away the complexity of modern development environments – multiple languages, frameworks, and policies – enabling developers to stay in Flow, and focus on building amazing products. Copilots are way beyond code generation engines: they fulfill the promise of DevSecOps, seamlessly integrating security into the developer workflow. It’s a great time to be a developer!”



Praveen Akkiraju, MD at Insight Partners

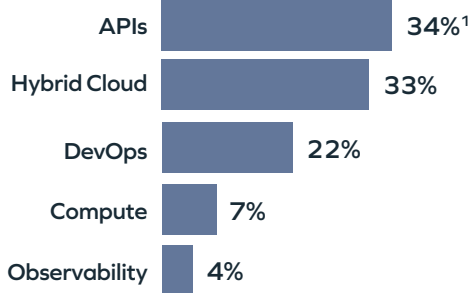
Modern Infrastructure & Engineering priorities

API-first Development ranked as the highest priority for enterprises in 2023.

It has long been recognized as the most critical component of Modern Infrastructure strategies for digitally mature enterprises, who are now far-enough along in their modernization journeys to start utilizing API and Modern Architectures at scale. For nascent businesses, APIs are a close second to developing Hybrid Cloud Computing capabilities.

The two go hand-in-hand: as the enterprise environment expands, businesses are relying on APIs to interact internally. **Research by Postman**, a leading collaboration platform for API Development and Insight Partners investment, reveals that today, the number one factor in the decision to consume an API is how well it integrates with internal apps and systems. This suggests that APIs are starting to replace traditional information-sharing methods like file transfer, database sharing, and email.

TOP MODERN INFRASTRUCTURE & ENGINEERING PRIORITIES



¹% of respondents who ranked the following tech categories as most relevant to their enterprise's MI&E strategy

Insight Partners believes that API-first Development is the future. Our research shows that business leaders feel the same. All services and AI models are becoming accessible through APIs, marking a transition towards an API-first economy. And with Generative AI's ability to auto-generate APIs or software development kits, the adoption and value creation of Generative AI – and the democratization of technology – can be unlocked at a much faster pace.

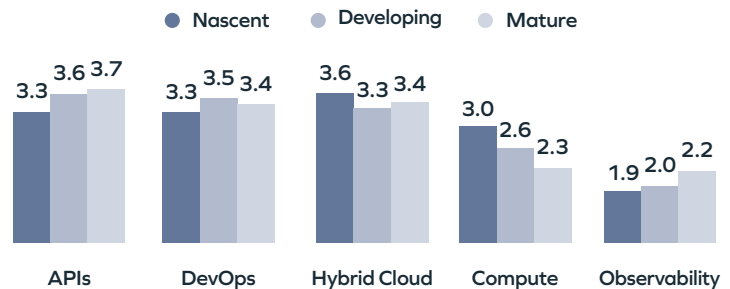
Developers at API-first companies are happier, ship faster, eliminate threats sooner, and build better software, according to **research by Postman**. Over half of their respondents cited APIs as a key driver of efficiency and productivity.

MOST RELEVANT MODERN INFRASTRUCTURE & ENGINEERING PRIORITIES, BY ENTERPRISE DIGITAL MATURITY

More mature businesses understand that API-first Development is critical to achieve seamless integration across a sprawling SaaS landscape.

Digitally nascent companies that are earlier in their transition to the Cloud continue to prioritize computing in an effort to bridge the capability gap, and enable Cloud-native Development.

AVERAGE RANK BY MATURITY STAGE WITH 5 REPRESENTING HIGHEST PRIORITY & 1 LOWEST PRIORITY



In an increasingly complex and hyperconnected landscape of vendors, tools and apps, CISOs need to have confidence that things are talking to each other by design – not as an afterthought. API-first Development gives CISOs confidence that integrations are robust and secure from the outset.”



Kevin Brown, COO at NCC Group & Former Managing Director at BT Security

The prioritization of DevSecOps, API Security & Governance, and Hybrid Cloud Security indicates a growing awareness of the critical role security plays in Modern Infrastructure.



Companies are continuing to shift their operations to the Cloud and SaaS, which requires an increased need for monitoring and remediation that can protect multiple Cloud environments and network traffic. As the software supply chain becomes even more complex and intertwined, bad actors can use a vulnerability in one system to infiltrate another.”



Thomas Krane
MD at Insight Partners

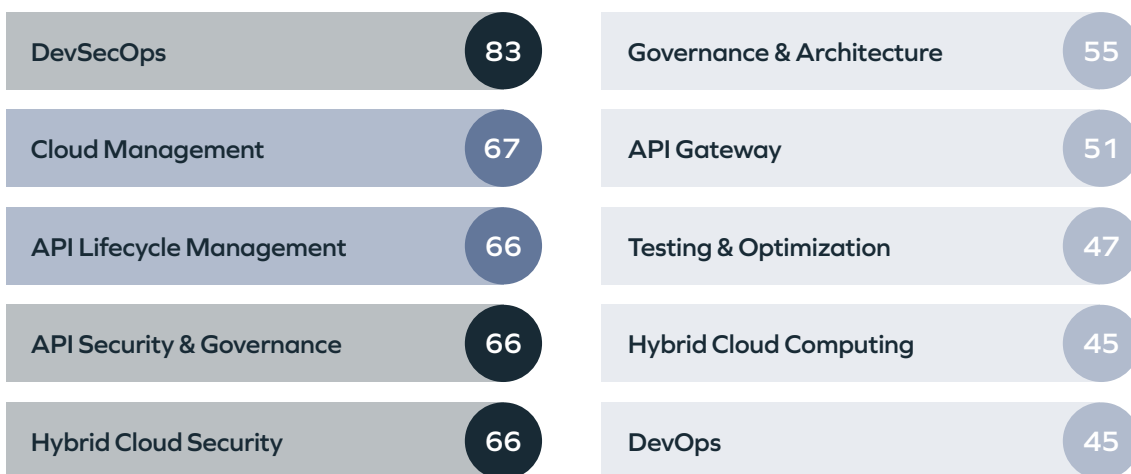
TOP MODERN INFRASTRUCTURE & ENGINEERING CAPABILITY AREAS

The growth of SaaS solutions within enterprises enables productivity at low cost, but also increases enterprise exposure to risk. SaaS has reached an inflection point and, if left unchecked, can drain budgets and increase the threat of cyber attacks in a remote environment.

It is therefore essential for enterprises to develop a comprehensive Cybersecurity strategy that covers all components of their digital infrastructure. Consequently, DevSecOps, Cloud Management, and API Lifecycle Management are rising up the list of priorities.

The prioritization of API Security & Governance and Hybrid Cloud Security show enterprises are also aware of the importance of monitoring tool usage. The focus on management capabilities indicates concerns not only about SaaS security, but also costs. Enterprises are keen to control costs by optimizing the SaaS resources they already have, rather than investing in more tools which add complexity to their tech stack.

NUMBER OF TIMES CAPABILITY IS RANKED AS TOP PRIORITY



● Capability areas related to Cybersecurity ● Capability areas related to Management

Trends in the future of software development

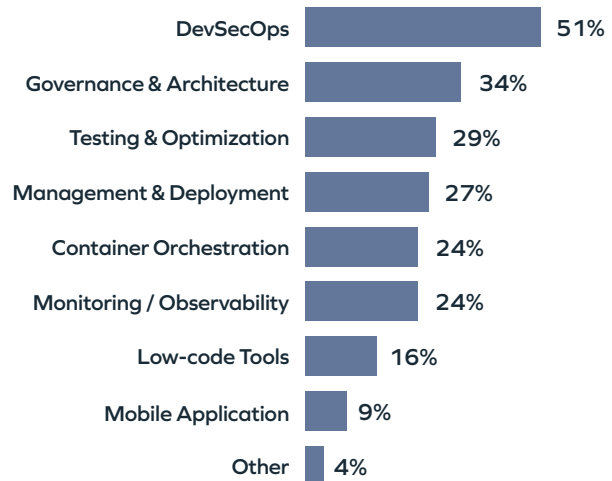
There are two trends shaping the future of software development. One is **API-first Development**; the other is **DevSecOps**, which was selected as the top priority in DevOps.

TOP CAPABILITY AREAS IN DEVOPS

The prioritization of DevSecOps indicates the growing need to address a historical disconnect between security and DevOps teams.

This challenge is more organizational and talent-related than tool-related. According to Conway's Law, organization design systems and communication mechanisms will be reflected in the way organizations build their software. Therefore, it's important to look at the organization first, before trying to understand their software architecture. DevSecOps is not an exception – the disconnect originates from the misalignment in the organizational structure and the divergent talent pools of the teams involved.

% OF RESPONDENTS WHO SELECTED DEVOPS AS A PRIORITY



With the complexity of Cloud-native Development at an all-time high, it's much easier to teach developers basic security principles than to teach security teams the intricate details of a microservice. Hence, we see security joining developers and operations to collaborate around a common set of tooling and practices."



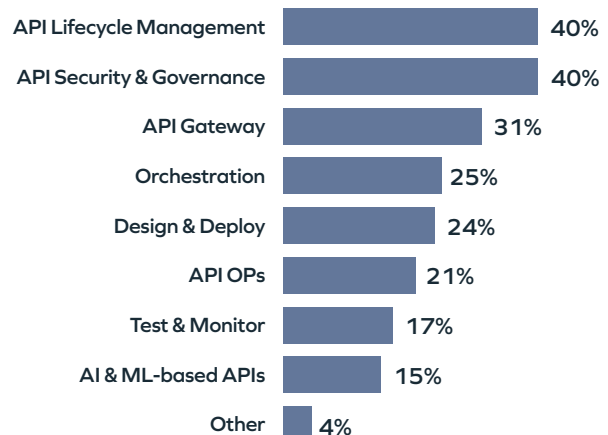
Teddie Wardi, MD at Insight Partners

TOP CAPABILITY AREAS IN API

The top three priorities selected (API Lifecycle Management, API Security & Governance, API Gateway) show that API-first Development is still an emerging category. Enterprises are focusing on integrating security and governance into their API-first approach from the outset. The focus on API Gateway suggests that enterprises are looking to create a centralized point of control for their APIs, to further simplify management and improve security.

Optimizing the way these tools are designed, developed, enhanced and tested are lower priorities. Insight Partners predicts growth in these areas in the not-so-distant future, as API-first Development rises to prominence.

% OF RESPONDENTS WHO SELECTED API AS A PRIORITY



Cloud Management and Interoperability are the two key trends currently shaping the Cloud Computing landscape.

TOP COMPUTE CAPABILITY AREAS

While public Cloud continues to grow, Hybrid Cloud remains the dominant strategy across both private and public clouds. It's top of mind for many enterprises as they attempt to control costs, maintain security, and maximize flexibility.

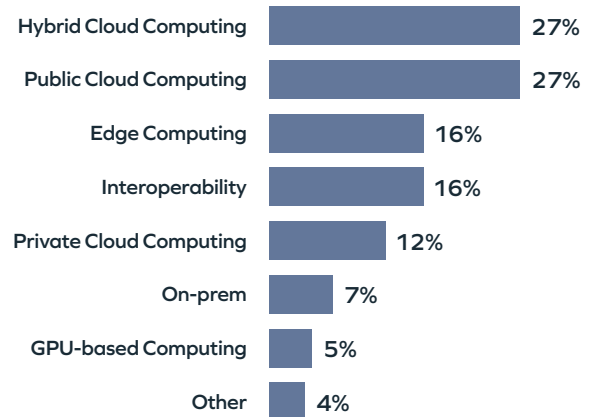
“

In DevOps, cost pressure will bring public Cloud workload adoptions under scrutiny, and reinforce the need to have Interoperability between on-premises IT and Cloud services. This creates opportunities for new vendors in the space.”



Thomas Krane
MD at Insight Partners

% OF RESPONDENTS WHO SELECTED COMPUTE AS A PRIORITY



TOP HYBRID CLOUD CAPABILITY AREAS

Cloud Management is a high priority as tech leaders seek to curb SaaS sprawl and its associated costs.

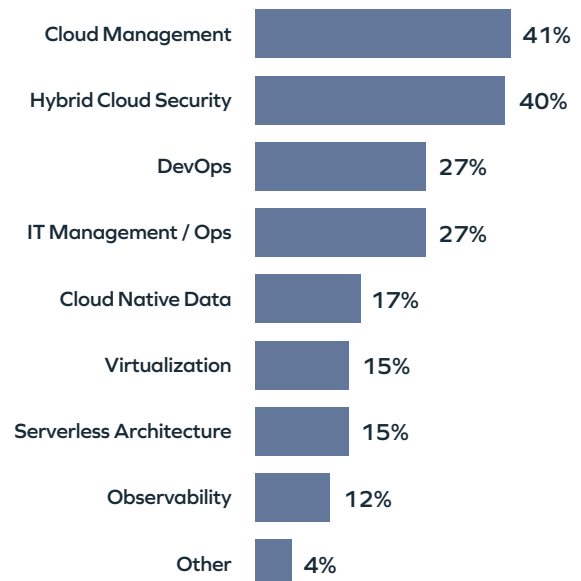
“

We're past the initial shift to the Cloud. The next couple of years will be about optimizing people processes around Cloud operations. That's why we see Cloud Management emerging as a high priority. DevOps and Platform Engineering teams are working to operationalize and automate common Cloud operations. We anticipate Internal Developer Platforms to rise as a new category to help these teams deal with Cloud chaos.”



Michael Yamnitsky
MD at Insight Partners

% OF RESPONDENTS WHO SELECTED HYBRID CLOUD AS A PRIORITY





Digital Experience

Our research shows that businesses are still struggling with the basics of understanding customer journeys in an omnichannel environment.

The prioritization of Customer Data Management & Analytics, and Digital Engagement, show enterprises are still focused on building the ability to effectively track, analyze, and engage with customers across various channels.

New technologies like Generative AI could help accelerate this. Early use cases demonstrate its potential to transform the Digital Experience both for customers and employees. For customers, it unlocks new possibilities in terms of personalization, while for employees, it can automate actions to significantly improve operational efficiency.

65%

OF RESPONDENTS SAID THAT DIGITAL CUSTOMER EXPERIENCE WAS THE MOST RELEVANT ASPECT OF THEIR DIGITAL EXPERIENCE STRATEGY

Key takeaways

- Customer Experience remains the most relevant aspect of the DE strategy: 65% of respondents selected it as their top priority.
- Creating a unified view of the customer in an omnichannel environment still poses a challenge. 59% selected Customer Data Management & Analytics as a priority area.
- Workflow Automation has risen up the rankings, as enterprises seek ways to maximize efficiencies across the organization. 56% selected Workflow Automation & RPA as a priority area.



As enterprises race to meet ever-evolving consumer expectations around omnichannel experiences and personalization, 'Customer Data Management & Analytics' and 'Digital Engagement' remain top priorities. In other words, many businesses are still trying to nail the fundamentals when it comes to understanding customer journeys—and the stakes have only gotten higher to do so with the advent of Generative AI capabilities."

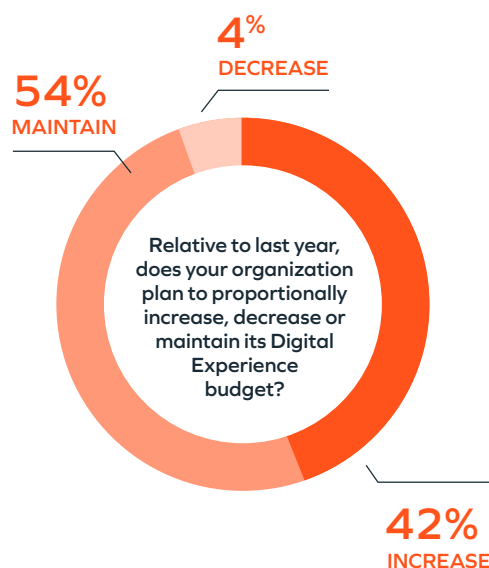


Rebecca Liu-Doyle
MD at Insight Partners

Changes in budgets for 2023

Overall, digital experience budgets are increasing. But there are notable variations among organizational roles and regions. Certain key roles report a lower increase, potentially as a result of being closer to the budget allocation process. Local market dynamics, economic factors, or already-existing emphasis on digital transformations also seem to have an impact on YoY budget changes. Nevertheless, among the companies that are raising their budgets, the large average reported increase indicates a substantial commitment to enhancing digital experiences in 2023.

- North America is the region with the lowest percentage of budget increases, with only 35% of respondents reporting an increase.
- Those increasing their budgets will do so by an average of 16.5%, with a median increase of 10%.



Workplace Productivity has become the obvious first use case for Generative AI applications, and this is also impacting Workflow Automation capabilities. We expect to see an increase in Digital Experience budgets moving into 2024, as marketing and customer service applications are dramatically enhanced with Generative AI. Ultimately, investments in Generative AI will likely be spread across the enterprise – not only the data budget, but also Modern Infrastructure and Digital Experience."

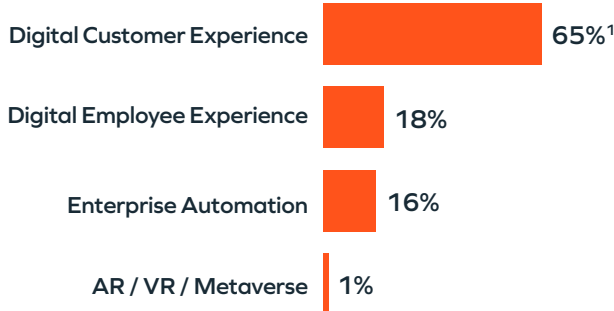


Praveen Akkiraju, MD at Insight Partners

Changing Digital Experience priorities

Despite the heightened publicity surrounding Extended Reality in 2022, the “hype cycle” is not currently being reflected in large enterprise budgets. This reflects the overall trend of focusing on “need to have” vs “nice to have” technologies, as the enterprise tech stack becomes more complex.

TOP DIGITAL EXPERIENCE PRIORITIES



¹% of respondents who ranked the following tech categories as most relevant to their enterprise's Digital Experience strategy

Instead, businesses are primarily concerned with enhancing their Customer Experience. In the enterprise, the customer still comes first: understanding and addressing the needs of the customer remains an outsized priority.

Investments in Employee Experience and Enterprise Automation are seen as significantly less relevant. However, the rise of new technology like Generative AI could see these priorities change in the years ahead.

TOP DIGITAL CUSTOMER EXPERIENCE CAPABILITY AREAS

Generative AI could also have a critical role to play in meeting increasing consumer expectations and improving personalization.

Creating a unified view of the customer in an omnichannel environment is still challenging. This is demonstrated by the balanced distribution across the top four capability areas, which ultimately address different pieces of the same “puzzle”: how can I get a unified view of my customer, and once I have it, how can I best leverage that information?

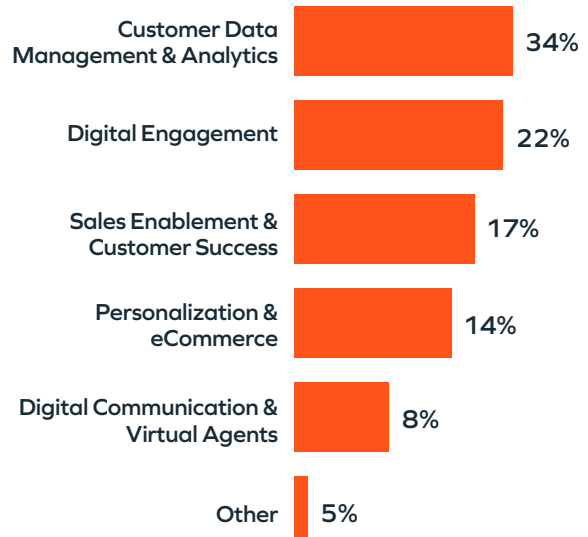


What if any workflow can be automated simply by describing it in natural language? What if repetitive and mundane tasks are automated on the fly with human approval? What if business users can harness the immense capability in a Large Language Model without a single line of code. The era of AI makes all of this and more possible, now!



Praveen Akkiraju
MD at Insight Partners

% OF RESPONDENTS WHO SELECTED DCX AS A PRIORITY



Digital Communication & Virtual Agent abilities have improved to a point that incremental progress is no longer a differentiator, so it ranked as the lowest priority area.

Though Digital Employee Experience ranked as the second highest priority for enterprises, not all roles across the organization agree on its relevance to overall Digital Experience strategies.

Disparities in the importance of Digital Employee Experience between seniority levels

The research shows a discrepancy between the perceptions of C-level executives and lower-level employees. C-level executives are ~140x more likely than non-C-level executives to rank Digital Employee Experience as most relevant to their strategy.

Within Digital Employee Experience capability areas, Employee Engagement & Wellbeing is the most polarizing area, with directors and managers selecting it significantly less than C-level roles.

Perhaps unsurprisingly, given the overall

prioritization of Digital Customer Experience, Customer Data Management & Analytics is the highest priority within Digital Employee Experience. Next is developing capabilities in Communication & Collaboration, and Enterprise Automation. This shows enterprises are concerned with not only understanding customer needs, but leveraging insights across the organization to create differentiated experiences, and meet customer demands for efficiency. Again, AI will be a critical enabler; finding operational efficiencies allows employees to adapt ways of working and upskill in the future of work.

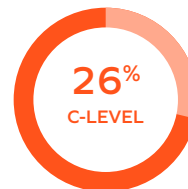


Impactful Employee Experience engagements generally require a senior champion to implement a top-down cultural shift. The data shows the C-level view it as a priority, but internal efforts to promote these programs may be falling short at lower seniority tiers."



Caitlin Maguire, Director at Insight IGNITE

% OF RESPONDENTS WHO RANKED DEX AS MOST RELEVANT TO THEIR ENTERPRISE'S DIGITAL EXPERIENCE STRATEGY IN 2023



10 MOST SELECTED DIGITAL EMPLOYEE EXPERIENCE CAPABILITY AREAS

NUMBER OF TIMES CAPABILITY IS RANKED AS TOP PRIORITY

Customer Data Management & Analytics	104	Sales Enablement & Customer Success	86
Communication & Collaboration	101	DevOps Automation	83
Digital Engagement	100	Personalization & eCommerce	75
Workflow Automation & RPA	99	AIOps / IT Automation	74
Performance & Productivity	91	Employee Engagement & Wellbeing	65

● Capability areas highlighted below

Hybrid work & enterprise

Enterprises are converging around a Hybrid Work Model, with a mix of remote and in-office employee working patterns. Collaborating effectively is critical; virtual communication platforms have yet to effectively recreate an in-person meeting.



We will see a bit more retrenchment from full remote models and a continued shift to hybrid, as many organizations are recognizing their need for in-person osmosis. There will be further investment in dynamic re-skilling and up-skilling of existing employees as companies slow hiring and embrace automation.”



Rebecca Liu-Doyle, MD at Insight Partners

Last year, Low/No Code Automation was a high priority within Enterprise Automation; this year, focus has shifted away from AIOps and towards Workflow Automation & RPA.

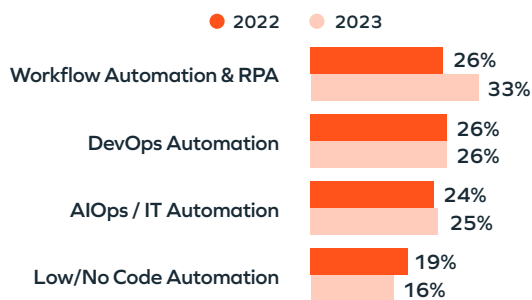
Several factors might explain this shift. First, enterprises are placing a greater emphasis on efficiency, which is directly driven by Workflow Automation. Second, they are progressing in their digital maturity. RPA is a more mature technology than Low/No Code Automation.

It can be easily implemented and is “low-hanging fruit”, offering improved reliability for a larger swath of the business.

AIOps seems to be directly correlated to digital maturity. Digitally mature businesses are 83% more likely than digitally nascent businesses to select AIOps as a priority, suggesting a level of digital maturity is required to see the benefits of AIOps/IT Automation.

YOY SHIFT IN TOP ENTERPRISE AUTOMATION PRIORITIES FOR ENTERPRISES WITH >\$ 10B IN REVENUE

TOP PRIORITY TECH AREA(S) IN ENTERPRISE AUTOMATION AS A % OF TOTAL ENTERPRISE AUTOMATION CAPABILITY AREAS SELECTED



SPOTLIGHT: AIOPS

“Enterprise buyers will be forced to make trade-offs, do more with less, and leverage data to make smarter decisions. During this time, I’ll be watching the AI-driven automation space closely, particularly solutions that are exceptionally simple to implement and serve specific use cases.”

Rebecca Liu-Doyle, MD at Insight Partners

WORKFLOW AUTOMATION, RPA & GENERATIVE AI

There is ongoing debate among experts as to whether RPA is now an outdated approach to process automation, given the rise of Generative AI. While some argue that Generative AI is a more flexible, adaptive, and creative approach to process automation that can replace RPA in certain scenarios, others contend that RPA and Generative AI can work together to create more efficient and effective automation solutions. Ultimately, the decision to use RPA, Generative AI, or a combination of both depends on the specific needs of a business, and the processes they are looking to automate.

“GenAI will have a profound impact on Workflow Automation, transforming widely deployed approaches like RPA and iPaaS. Its ability to generate code and extract information from unstructured data will drive a fundamental shift: Soon, workers will simply be able to describe a workflow and have it created on the fly.”

Praveen Akkiraju, MD at Insight Partners

→ Final takeaways

As the enterprise technology landscape becomes increasingly mature, budgets are rising across all four core areas.

Businesses are adding innovative solutions to their stack in order to develop new use cases and drive revenue; simultaneously, they're shoring up Cybersecurity defenses and data hygiene to manage the growing complexity that disparate tools and environments create.

This research reveals five key trends that are driving enterprise technology strategies:

1 Generative AI is about to transform every aspect of the enterprise

Generative AI is rapidly rising up the agenda for technology leaders, and most businesses are already finding compelling use cases for it. Today, it's largely being deployed to create operational efficiencies, but customer-facing initiatives that leverage Generative AI are starting to gain traction, too. As the technology – and enterprise understanding of its potential – develops, we can expect to see significant value created as adjacent innovations emerge around it.

2 Enterprises are investing in data infrastructure to future-proof their business

While not all businesses are ready to leverage AI today, the prioritization of data management and infrastructure shows they're getting their house in order for tomorrow. Concerns about data hygiene and security persist: enterprises need confidence that their data layer is protected from mounting internal and external threats, and is optimally structured, before they can start incorporating AI models.

3 Enterprises are seeking to streamline Cybersecurity

The rise in Cybersecurity budgets is offset by the fact that security is increasingly being decentralized into other parts of the enterprise. In hybrid working environments, with hybrid data architecture and new technologies being added at pace, the risk surface is becoming increasingly broad and complex. CISOs are keen to find solutions that integrate easily to mitigate existing vulnerabilities, rather than invest in new tools that find more issues, add more risk and require more management.

4 API-first Development will soon become table stakes

As enterprises continue their transition to the Cloud, and SaaS solutions proliferate, robust integrations are paramount. API-first Development is accelerating, as businesses seek to build security and Interoperability into their software development from the outset.

5 Digital Customer Experience remains a priority – and a challenge

Innovation offers exciting new opportunities, but businesses know they need to nail the basics first. Many are still struggling to optimize Digital Customer Experience, and it remains a top strategic priority. Understanding what customers need is still a pain point, and gathering and leveraging insights is only getting harder as channels proliferate, and the internal environment becomes more fragmented. Closing the gaps to make sure data is accessible and actionable is an ongoing challenge.

INSIGHT PARTNERS

Insight Partners is a global software investor partnering with high-growth technology, software, and internet startup and ScaleUp companies that are driving transformative change in their industries. Insight Partners has invested in more than 750 companies worldwide, and has seen over 55 portfolio companies achieve an IPO.

Insight's mission is to find, fund, and work successfully with visionary executives, providing them with practical, hands-on software expertise to foster long-term success. Insight Partners meets great software leaders where they are in their growth journey, from their first investment to IPO.

For more information on Insight and all its investments, visit www.insightpartners.com

INSIGHT IGNITE

Insight IGNITE helps enterprise leaders thrive in a rapidly changing tech landscape.

The IGNITE network offers 2000+ senior enterprise tech executives exclusive access to Insight Partners' investment and market perspectives, portfolio companies and innovative founders, and a network of peers driving digital change.

Find out more at
www.insightpartners.com/ignite