snowflake®

THE ULTIMATE GUIDE TO DATA + AI FOR INDUSTRIES 2026

From hype to business value: navigating data, gen AI and AI agents

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INTRODUCTION

The rapid emergence of agentic AI over the past year is perhaps one of the best demonstrators of how fast AI — and the need for strong data practices to support it — is moving. Generative AI, on the other hand, was the exciting new tool a few years ago and has progressed from experimental hype to being embedded across business functions. In just the past two years, organizations from every sector went from scrambling to figure out how best to capitalize on the enormous potential of this technology, to seeing clear ROI from gen AI use. In our recent report, The Radical ROI of Gen AI, Snowflake-sponsored research by Enterprise Strategy Group (ESG) confirms that gen AI works: 92% of early adopters surveyed worldwide report that their gen AI investments have already paid for themselves, with an average return of 41% for those who have calculated the ROI. This significant return is driving a rapid acceleration toward a transformative future. Today, AI is influencing many parts of daily life, from personalized entertainment recommendations to manufacturing supply chains delivering goods.

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> **of early adopters worldwide report that their gen AI investments have already paid for themselves.**
>
> **—The Radical ROI of Gen AI**

Not only that, but organizations that are further along in their AI adoption are using AI agents across their operations. These are sophisticated models capable of performing complex, multi-step tasks independently, with little or no human intervention. They represent the next evolution in AI, moving beyond content creation and pattern recognition to dynamic reasoning and interactive problem-solving. In fact, 72% of early adopters expect autonomous agents to take over some tasks by the end of 2025.

The potential uses for and value of AI, including new agentic capabilities, are vast and span virtually every major industry. In this guide, we will explore myriad ways that organizations in a range of industries are leveraging data and AI to drive success. Here are just a few examples:

Healthcare: Using vast patient datasets to reveal patterns, predict health outcomes, and enable more precise diagnoses and personalized treatments, while also automating routine administrative functions.

Financial services: Rapidly analyzing extensive market data to identify emerging trends, inform strategic investment decisions for maximizing returns and streamline complex operational workflows.

Retail: Transforming customer data into highly personalized shopping journeys, boosting customer satisfaction and fostering lasting loyalty, alongside optimizing demand forecasting.

Public sector: Enhancing the ability to predict disease outbreaks and disaster impacts, facilitating the swift and accurate deployment of emergency services, and streamlining the delivery of citizen services.

Manufacturing: Employing AI-driven visual inspection systems to detect unusual patterns and deviations in production, identify quality issues and product defects, thereby enhancing overall quality control.

Advertising, media and entertainment: Extracting deep insights from unstructured data to pinpoint customer behaviors, sentiments and trends, enabling the creation of highly personalized and timely experiences for audiences

Telecommunications: Proactively identifying and resolving network issues and service disruptions to enhance service quality, reliability and operational efficiency, with the ultimate goal of moving toward autonomous network management.

In the next few years, many organizations will roll out new AI use cases, citing the potential for significant returns, the competitive pressure to innovate and the increasing maturity of AI technologies, according to the Harvard Business Review.

	Traditional AI	Generative AI	Agentic AI
Focus	Data analysis and pattern recognition	Content creation (writing, images, text summarization)	Dynamic reasoning and interactive problem-solving
Execution	Executes specific, predefined algorithms	Completes tasks to match guidelines or preferences	Makes autonomous decisions within a defined scope
Interaction	Operates reactively, responding to inputs	Works reactively to generate output	Engages in proactive interactions, manages complex workflows
Adaptablility	Utilizes historical data for narrow applications	Creates content based on existing patterns	Designed for adaptability to changing situations

NAVIGATING THE AI ADOPTION LANDSCAPE: CHALLENGES AND CONSIDERATIONS

The ESG research confirms the acceleration of AI adoption. In fact, 57% of the 3,324 organizations surveyed are currently using commercial or open-source gen AI solutions, and 98% of organizations are planning to increase their investments in AI initiatives in 2025.

But before we dive into industry exploration, we have to note that the adoption journey is not without its challenges. Companies have to navigate the considerable and fluctuating governance, security and ethical considerations that come with it — not to mention organizational hurdles, data issues and the complexities of the technology itself. The immense potential of AI is undeniable, but the challenges below — from data to gen AI and autonomous agents — must be addressed to truly unlock AI's transformative power. With all these factors to consider, simplicity is the key to success in adopting AI at scale: it needs to be easy with a unified data foundation, connected internally and externally through the ecosystem and trusted with governance and security built in.

FOUNDATIONAL DATA HURDLES

A recurring theme across all forms of AI adoption is the critical role of data: "There is no AI strategy without a data strategy" — but many organizations struggle with fundamental data readiness. The research highlights that even among early adopters who were surveyed, only 11% report that more than half their unstructured data is ready for use in large language model (LLM) training and tuning. This indicates a vast untapped potential within the 80–90% of enterprise data that is unstructured.

Other key data-related challenges include the management, quality, sensitivity and diversity of data for AI use. For example, tasks like data labeling and preparation are often arduous and slow. Problems with accuracy, bias, relevance and timeliness can severely undermine AI model performance. Fragmented data across disparate systems hinders a holistic view and efficient access for AI applications — but at the same time, if the data isn't varied or comprehensive enough, the scope and accuracy of AI models will be limited. And managing sensitive information requires robust security and compliance measures, adding complexity to data preparation.

These data challenges frequently lead to extended deployment timelines, with 77% of surveyed organizations reporting that half or more of their gen AI use cases have taken longer than expected to reach production.

Only 11%

of businesses report that more than half their unstructured data is ready for use in LLM training and tuning.[1]

GEN AI: BEYOND THE HYPE

While gen AI has demonstrated ROI, its implementation comes with its own set of complexities:

- **Cost overruns:** Despite positive returns, 96% of early adopters report that one or more components of their gen AI solutions have exceeded initial budget expectations, primarily due to compute costs (64%) and supporting software (61%). This necessitates careful planning and resource allocation.
- **Shadow AI:** A significant gap often exists between business units' reported use of gen AI and IT's awareness. For instance, 69% of marketers use gen AI for web copy, but only 42% of IT professionals are aware of it. This "shadow AI" can pose governance and security risks if not managed centrally.
- **Use case selection:** Organizations face an "embarrassment of opportunities," with 71% agreeing they have more potential use cases than they can fund. Selecting the right projects based on objective measures like cost, business impact and the organization's ability to execute is difficult, and choosing incorrectly can impact market position.

THE EMERGING CHALLENGES OF AI AGENTS

The AI evolution toward autonomous agents brings new challenges:

- **Accuracy and trust:** Autonomous AI agents, particularly data-focused ones, require precise data handling. Inaccuracies or flawed reasoning can render entire workflows unreliable and erode trust especially for sensitive decisions.
- **Integration complexity:** Integrating AI agents seamlessly with existing data ecosystems (often legacy systems) is challenging due to disparate data formats, silos and interoperability issues.
- **Compute infrastructure demands:** Running AI agents at scale requires substantial compute resources that might need significant investment in GPUs or cloud infrastructure for efficient data processing and analysis.
- **Enhanced security and governance:** AI agents must comply with data privacy regulations and prevent unauthorized access or data leakage. This demands robust encryption access controls and continuous monitoring. Scaling to many agents requires a unified framework for secure data retrieval and policy adherence.
- **Ethical considerations and guardrails:** AI agents operate in dynamic environments where their decisions can have real-life consequences. Without proper guardrails, they risk amplifying biases, making unethical decisions or generating misleading content. It's crucial for businesses to implement robust evaluation frameworks for fairness and security along with real-time monitoring.
- **Human-AI collaboration and handoffs:** Defining when and how AI agents should hand off tasks to humans especially in high-stakes scenarios (for example customer service healthcare) is a major challenge. Smooth transitions require agents to detect uncertainty, recognize complex queries beyond their capabilities and escalate appropriately, supported by continuous human feedback.
- **Transparency and explainability:** AI agents can function as "black boxes" making it difficult for users to understand their decision-making processes. This lack of transparency erodes trust. Designing agents to provide clear rationales highlighting key data points and reasoning pathways is essential, though balancing explainability with performance remains a challenge.

Addressing these multifaceted challenges requires a strategic, platform-centric approach to data management and AI deployment, prioritizing security, governance and a clear understanding of both the opportunities and the risks.

71%

of organizations agree they have more potential use cases than they can fund.[1]

TRANSFORMING BUSINESS FUNCTIONS ACROSS INDUSTRIES WITH AI

With AI capabilities atop a strong data foundation, organizations in every industry — whether a retail store, hospital, government agency, bank or energy company — can radically optimize essential business and operations functions. According to the Harvard Business Review, most business functions and more than 40% of all U.S. work activity can be augmented, automated or reinvented with gen AI. The ESG survey shows that 88% of early adopters report a material improvement in efficiency from their gen AI efforts. Here are just a few ways that AI can transform core business functions across industries.

MARKETING

AI agents are revolutionizing marketing by deeply analyzing customer data, enabling hyper-personalized campaigns and recommendations that resonate. Instead of large audiences receiving the same content at the same time, AI agents can scale decisioning and personalization of each marketing touchpoint for each individual customer. From boosting lead-to-meeting conversions with AI-powered lead scoring to refining marketing attribution and audience segmentation, AI is accelerating net new revenue generation.

FINANCE

Finance departments are leveraging AI and machine learning to fundamentally transform corporate planning and financial forecasting. AI agents are automating a wide spectrum of financial operations, including the meticulous review of contracts like order forms and sales agreements. This not only saves time but also accelerates sales cycles and helps support rigorous contract compliance, driving efficiency and strategic decision-making.

HUMAN RESOURCES

The HR function is being reinvented with AI-powered employee assistants that provide immediate, personalized support by drawing from vast internal knowledge bases. AI hiring agents are streamlining recruitment, from generating tailored job descriptions and identifying qualified candidates based on job description matches, generating interview kits and speeding up resume screening. This comprehensive AI integration optimizes hiring processes, boosts productivity and enhances both the candidate and employee experience. 73% of HR professionals surveyed say they use gen AI for tasks like resume screening and employee training.

IT

Gen AI and machine learning assist IT teams in optimizing software licenses and reducing SaaS expenditures, while dramatically decreasing the mean time to resolve (MTTR) for IT operations and request tickets. QA AI assistants empower developers and business analysts to generate test cases rapidly and at scale, saving developer time and improving testing quality. CloudOps AI assistants provide immediate, relevant information from internal knowledge bases, enhancing overall operational efficiency and productivity. 70% of surveyed organizations use gen AI in IT operations, with 85% reporting a game-changing or significant impact.

SALES

Sales teams are unlocking new levels of performance through AI. Automated business intelligence (BI) allows for sophisticated analytics driven by natural-language prompts. Customer success agents leverage call notes and emails, enhanced by AI, to proactively identify cross-selling and upselling opportunities. Advanced text-processing capabilities provide instant summarization and sentiment analysis of call transcripts, offering invaluable, actionable insights for sales strategies. 38% of early adopters say their sales teams use gen AI, with 77% reporting a game-changing or significant impact.

CUSTOMER SERVICE

AI-powered chatbots and sophisticated conversational assistants are capable of handling customer inquiries, providing comprehensive support and resolving service tickets 24/7. This can lead to substantial improvements in customer satisfaction and significant reductions in operational costs. Gen AI can craft personalized responses and recommendations, elevating the overall customer experience, ensuring more responsive and tailored interactions. 56% of early adopters use gen AI for customer service and support, with 82% reporting a game-changing or significant impact.

PRODUCT/SERVICE DEVELOPMENT

Automated BI is instrumental in product and service innovation, analyzing vast datasets to reveal critical insights, emerging trends and patterns that directly inform decision-making on feature adoption. Product knowledge assistants, powered by AI, draw upon design write-ups, comprehensive documentation and internal research to generate precise recommendations for new products and services, accelerating the innovation lifecycle.

Next, we'll explore these and other use cases in depth across seven industries: financial services; advertising, media and entertainment; healthcare and life sciences; public sector; retail; manufacturing; and telecommunications. We'll also discover how organizations are leveraging data and AI to unlock new potential.

88%

of early adopters report a material improvement in efficiency from their gen AI efforts.[1]

HOW AI CAN POWER SUCCESS IN 7 INDUSTRIES

FINANCIAL SERVICES

The financial services industry — a sector defined by constant evolution and complex data flows — is undergoing a profound transformation driven by data and AI. Disruption has historically been a constant in the industry, from the electronification of trading to multi-cloud strategies over the decades, leading to today's race to leverage AI. Financial institutions are reassessing their technology stacks to meet demands for enhanced customer experience in a digital era, improved efficiencies in a volatile macroeconomic environment, and the creation of new revenue streams amid growing competition. Data, spanning structured to unstructured and first-party to third-party, fundamentally underpins this industry. Financial services companies generate massive amounts of unstructured data, from loan agreements, emails, claims and transcripts and more. This vast, untapped resource, alongside structured data, presents a tremendous opportunity.

Gen AI's ability to extract value from this complex data is proving transformative, enabling automation and strategic decision-making. AI agents are further extending this capability, handling complex, multi-step operations autonomously, from automating financial forecasting with real-time market insights to streamlining claims. Financial services firms are notably ambitious, with 43% citing improved financial performance as a key driver of AI adoption.

Here are three of the many ways the financial services industry can drive business success with AI:

Quantitative research and investment analytics: Institutional investors demand sophisticated portfolio analytics to guide critical decisions like security selection, rebalancing and optimization. AI empowers investors to query data assets using natural language to yield actionable insights. Conversational assistants and AI agents can leverage portfolio warehouses, order management systems, risk engines and third-party data to forecast market trends, optimize portfolio allocations, and enhance risk-adjusted returns. And, machine learning models can adapt to changing market conditions, providing agility in a dynamic investment landscape. This includes consolidating first-party and third-party data for multi-factor model building, backtesting trading strategies, constructing Monte Carlo simulations for risk analysis and evaluating execution algorithms for post-trade insights. Organizations can achieve this business value by employing a unified, scalable data platform to integrate and analyze data from various sources, and combine with existing analytical skills for complex calculations without moving data.

CUSTOMER SUCCESS STORIES

S&P Global

S&P Global Market Intelligence saves time and money while scaling machine learning

S&P Global Market Intelligence integrates financial and industry data, analytics, research and news to help corporations identify risk and reward opportunities. To build its risk reports and analysis, S&P Global Market Intelligence uses advanced ML models to source terabytes of data from millions of enterprises' websites. Initially, S&P Global Market Intelligence stored raw web crawler data in object storage and used multiple data science technologies for data cleaning and model hosting. However, S&P Global Market Intelligence quickly abandoned this approach due to concerns about data movement, runtime performance, infrastructure costs and complexity. With Snowflake, S&P Global Market Intelligence benefits from a fully managed service, which has allowed the team to scale resources efficiently without manual configurations or downtime while also enhancing both performance and availability for data processing. S&P Global Market Intelligence now loads both structured and unstructured web-crawled data into Snowflake and applies business attributes and firmographic mining models built with Snowpark. These AI custom models then curate the business data, ultimately feeding S&P Global Market Intelligence's credit models within their RiskGauge™ reports.

Read the full story

COMPARE CLUB

Compare Club turns untapped call transcripts into new ways to delight and engage members

Compare Club helps millions of Australian consumers make more-informed purchasing decisions on products and services across health and life insurance, energy, home loans and more. Providing an exceptional, personalized experience to customers is critical for Compare Club — especially for returning members, who are more likely to make a purchase. Customer calls are an important vehicle to deliver this experience, yet complex details from these conversations were not always recorded in the company's CRM, making it difficult to use this information in future calls. Compare Club quickly overcame these challenges by using Cortex AI to run LLMs securely inside Snowflake, eliminating the need to move data while easily running both preprocessing and LLM tasks with a bit of SQL and Python. Now, Compare Club efficiently equips business teams with valuable insights extracted from hundreds of thousands of transcript pages, including details like customer goals, needs, objections, loyalty, history and enthusiasm. These nuances help Compare Club teams — from sales to support to customer success — better serve and engage repeat members to improve their experience and retention.

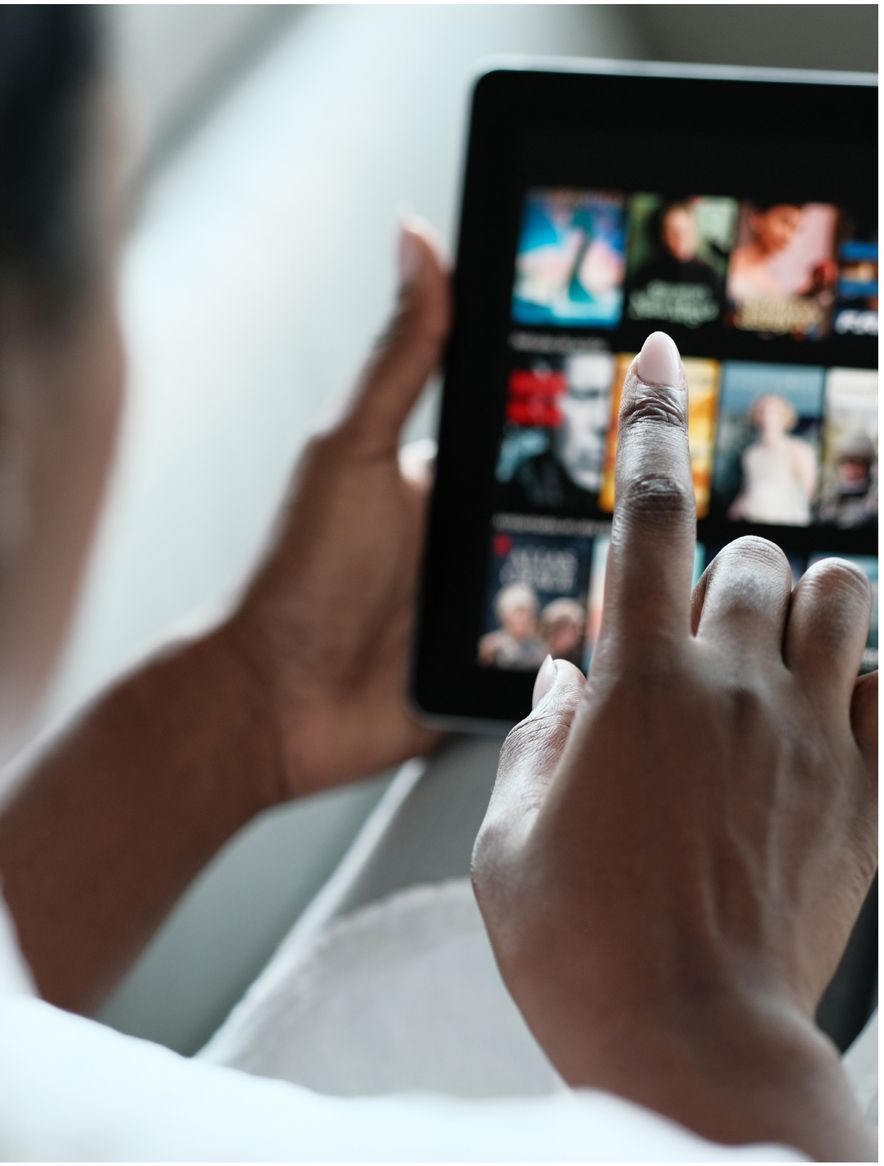
Read the full story

Customer 360: Financial marketers must delicately balance ultra-personalized client experiences with stringent customer privacy and regulatory compliance. AI assists by analyzing customer data, transaction histories and behavioral patterns to deliver tailored recommendations for specific financial segments. AI agents and conversational AI assistants can help analyze marketing campaign performance in near real time and suggest adjustments to maximize ROI. They also help analyze third-party financial data to forecast future customer trends, enabling marketing teams to plan and execute more effective campaigns. This spans integrating data for identity resolution, executing impactful marketing campaigns through segmentation and predictive modeling, developing next-best-action strategies and enabling compliance with privacy regulations. Modern marketing data strategies can maximize ROI with customer segmentation and predictive modeling, while advanced privacy policies and data clean rooms help preserve privacy during collaboration.

Claims management: The process of sifting through diverse data for insurance claims — such as witness statements, policy documents, dashcam footage or emergency service recordings — is typically manual, time-consuming and prone to errors. Insurance managers can reduce time and expense by deploying AI-powered tools, including text processing and AI agents, to rapidly access and query relevant data. When these capabilities are applied from the first notice of loss (FNOL) throughout the claim lifecycle, they can enhance operational efficiency, lower costs and accelerate claims responses — ultimately elevating the customer experience. This includes advanced fraud detection, intelligent triaging and assignment of claims, comprehensive investigation and evaluation, and automated settlement and closure processes. Modernizing claims data pipelines to ingest and transform large volumes of raw data and applying AI to unstructured claims data can improve productivity and drive efficiencies.

43%

of financial services early adopters cite improved financial performance as a key driver of AI adoption.[1]



ADVERTISING, MEDIA AND ENTERTAINMENT

The adoption of AI solutions, evolving regulations around data privacy along with the proliferation of streaming services and smart devices are fueling significant transformation in the advertising, media and entertainment industries. Audiences now expect on-demand, personalized content anytime, anywhere, and the AI capabilities needed to accomplish this are as varied as the players involved in delivering it. Businesses need to connect disparate, unstructured data for audience analytics, targeted advertising, asset protection and more. To stay competitive, industry leaders must navigate a landscape characterized by rapid innovation and evolving privacy regulations.

Media companies have been using AI and machine learning for targeted advertising and enhanced user experiences for years. But now, the adoption of advanced gen AI solutions is crucial for a competitive edge. In fact, 83% of marketing, advertising and media sector respondents report positive ROI on gen AI, indicating a strong future for AI-driven decision-making, personalized content creation and optimized media supply chains.

Here are three ways advertising, media and entertainment companies can gain a competitive edge with AI:

Audience analytics: Creating bespoke audience experiences is a critical competitive differentiator in today's saturated media landscape. The challenge? To provide those tailored experiences, entertainment organizations must connect disparate data sets across a massive variety of platforms — with structured, unstructured and semi-structured data — while maintaining customer data privacy and governance. By integrating gen AI capabilities into audience analytics, businesses can connect a variety of data types to get a more complete picture of audience behavior. AI-powered audience analytics help build connections between audience touchpoints, from in-platform streaming behavior to linear appointment viewing to in-app content browsing and more.

Accelerated advertising revenue: Leveraging previously untapped insights through AI-powered analysis of unstructured data boosts ad revenue by combining audience analytics with precise targeting for personalized campaigns. Companies can also rapidly test and iterate different tailored messages targeted to individual preferences. Providing ad operations teams with codeless data access and agentic campaign optimization tools enables advertisers to optimize return on ad spend (ROAS).

Data privacy and asset protection: Protecting intellectual property (IP) and copyrighted assets is essential for preserving the integrity of creative work and reputations of artists and brands. Gen AI helps monitor digital platforms and distribution channels to detect unauthorized use of IP rights in near real time, providing protective mechanisms to brands and artists. Gen AI can also augment traditional asset protection methods by analyzing patterns in digital content to help identify copyright infringement, plagiarism and deepfakes.

83%

of marketing, advertising and media sector respondents report positive ROI from gen AI.[1]

CUSTOMER SUCCESS STORIES

MERKLE

Merkle improves customer experiences while providing data governance and security

Merkle, an integrated experience consultancy, powers the experience economy and provides data, technology, design and strategic expertise to help hundreds of clients — including many in the Fortune 500 — drive outcomes. One of its secret ingredients? Its Merkury solution. Merkury is a leading data, identity and insights platform that consolidates consumer data into a single, persistent “person ID” for hyper-personalized campaigns. Since going all-in on Snowflake on Amazon Web Services (AWS), Merkle has been able to securely manage, analyze and leverage data, reducing costs, mitigating data exfiltration risks, and strengthening the company’s reputation as a data privacy leader. The team saves more time on workloads, including the development cycle for data pipelines, which has improved by 64%, contributing to the timely delivery of customer data. Merkle’s request for proposal (RFP) response solution, built with Document AI in Snowflake Cortex, reduces data entry for at least 25 team members while enabling faster response times.

Read the story

NEXON

Nexon saves $4.5 million a year by unifying its data in the AI Data Cloud

For more than 30 years, Nexon has been a pioneer in the world of interactive entertainment software, delivering some of the world’s most popular games to over 1.9 billion gamers in 190 countries. Nexon built a new platform called “‘Monolake”’ on top of the Snowflake platform, transforming its data strategy and democratizing access to data. This allowed democratizing access to data for 2,000+ data producers and consumers: By providing data securely and freely to everyone in the business, Nexon is able to transform into an agile organization and adapt swiftly to the ever-changing landscape of the era of AI. Since migrating from its legacy platform over to the Snowflake Data Cloud, the company has seen up to a $4.5 million reduction in annual costs. Nexon is also seeing increased efficiency and eliminating data silos: instead of operating every game on different technical stacks, Nexon now uses Snowflake to unify its data, and will continue moving workloads from managed Spark to Snowpark for increased efficiency.

Watch the video

HEALTHCARE AND LIFE SCIENCES

The highly-regulated healthcare and life sciences sector is experiencing a profound AI-driven transformation. The industry has been moving from experimentation to realizing tangible returns on AI investments, with the AI healthcare market projected to reach $188 billion by 2030. This rapid adoption is fueled by the sector's immense volume of multimodal data — the data of healthcare organizations alone is growing faster than even financial services, manufacturing or media and entertainment. Gen AI and emerging AI agents are now vital for processing this complex multimodal information, automating administrative tasks, accelerating drug discovery and personalizing patient experiences. This drives significant business and patient outcomes, even as the industry navigates its stringent regulatory environment and fragmented data landscape. Notably, early adopters in this industry report higher than average ROI on gen AI spend — 44% versus 41% in the aggregate. Beyond overall ROI, gen AI is making significant inroads in specific functions within healthcare and life sciences. For instance, 53% of early adopters in this industry are using gen AI for HR functions, compared to 45% across all industries, and 76% are applying it in IT operations, versus 70% overall, driving improvements in areas like incident detection and cost reduction.

Here are three important ways healthcare and life sciences companies can drive business success with gen AI:

Accelerating research: Research and development (R&D) in life sciences is a notoriously expensive and lengthy process, often spanning over a decade. By analyzing vast amounts of biomedical data, including genetic information and clinical trial data, gen AI can predict drug interactions, identify novel targets, and optimize drug efficacy and safety profiles, thereby accelerating drug discovery and development. Gen AI can also expedite personalized medicine by tailoring patient treatments based on in-depth clinical data, such as patient genetic information, medical history and near real-time health metrics.

Modernizing supply chain: This includes manufacturing and distributing goods within optimal margins, fostering collaboration with supply chain stakeholders, accurately predicting demand and potential disruptions, and driving overall operational efficiencies. A platform supporting all data types can enable manufacturers to better predict consumer demand with native ML capabilities, understand quality metrics over time and collaborate securely with stakeholders.

Patient/member 360: Delivering effective personalized care is increasingly vital as more healthcare organizations adopt value-based care models. An interoperable data platform allows care teams to access historical and real-time data and leverage AI/ML for personalized experiences and predictive analytics. Gen AI can analyze vast datasets, helping providers and payers discern patient or member preferences, behaviors, sentiments and health trends. This in-depth analysis enables the creation of highly customized care plans and communications, which can be refined throughout the patient's care journey. Additionally, gen AI enhances patient/member 360 by aggregating siloed patient/member data inputs from multiple touchpoints, which can then be used to create seamless digital experiences and provide access to relevant patient/member data precisely when needed at the point of care.

> **Early adopters in the healthcare and life sciences industry report higher than average ROI on gen AI spend of 44%.[1]**

CUSTOMER SUCCESS STORIES

AstraZeneca

AI-driven innovation cuts time, boosts innovation and saves lives at AstraZeneca

For AstraZeneca, faster innovation means faster breakthroughs in their science, and that means greater outcomes for patients. AstraZeneca leveraged Snowflake to accelerate data product creation, drive productivity savings, and enable AI-driven innovations that improve early disease detection and patient outcomes. With Snowflake, AstraZeneca cut data product development from six months with 16 engineers to just four days with two engineers. They also saw massive efficiency gains: AstraZeneca created 118-plus data products, unlocking thousands of hours in productivity and over $10M in savings. And Snowflake helped AstraZeneca accelerate life-saving innovation by using AI-powered chest X-rays to detect lung disease early, improving survival rates by up to 90%.

Watch the video

Alberta Health Services

Alberta Health Services ER doctors automate note-taking to treat 15% more patients

The integrated health system of Alberta — Canada's third-most-populous province, with 4.5 million residents — includes more than 100 hospitals and 11,000 practicing physicians. Its emergency departments get nearly 2 million visits per year, which amounts to more than 5,000 a day. That type of volume can easily put a strain on the doctors, who not only serve the patients but also need to document each visit carefully — from summaries to diagnoses to medication orders.

One such physician, also a trained software engineer, sought a way to automate his note-taking tasks by recording visits and calling an LLM to generate a summary. Seeing the potential of this use case, Alberta Health Services turned to Cortex AI to develop and run the app within Snowflake's secure, fully governed environment.

Currently in its proof-of-concept phase, the app is being used by a handful of emergency department physicians, who are reporting a 10–15% increase in the number of patients seen per hour. That can ultimately translate into less-crowded waiting rooms, relief from overwhelming amounts of paperwork for doctors, even better-quality notes and higher-quality patient care.

Learn more

PUBLIC SECTOR

The public sector — a cornerstone of global stability and citizen well-being — faces unique challenges in AI adoption despite holding massive volumes of data. Evolving privacy regulations, security risks and ethical concerns often lead to more cautious AI implementation compared to the private sector. Furthermore, public sector organizations frequently contend with budget constraints, a scarcity of specialized AI talent and difficulties mobilizing fragmented data from disparate legacy systems. Despite these headwinds, the core missions of government — to deliver critical services, ensure national security and build resilience — has created an urgent need for transformation, particularly leveraging AI.

AI is beginning to revolutionize public service, with 70% of OECD participating countries already using AI to enhance internal operations. That includes improving traffic management, automating document processing and powering university research. The emergence of AI agents promises to further accelerate this shift, enabling autonomous systems to handle complex tasks and workflows, from streamlining citizen service delivery to enhancing predictive capabilities for proactive governance.

Here are three critical ways AI can drive mission success in the public sector:

Improved program and service delivery: Government and educational institutions constantly strive to enhance public services while operating within budget constraints. A key application is the creation of a citizen 360 view, unifying fragmented data from sources like online forms, databases and historical records to build a single, comprehensive profile. This foundation allows gen AI-enabled chatbots and agents to reduce time and cost by providing rapid and accurate responses to queries. Gen AI can also leverage this holistic view to tailor services to individual needs, offering personalized support and outreach for citizens and students, and streamlining case management. Similarly, defense agencies can build a soldier 360 view, integrating personnel, training and medical data to enhance mission readiness and provide tailored support for service members and their families.

Increased operational efficiency: Gen AI's automation capabilities can replace numerous manual, time-consuming tasks for public sector employees, boosting both efficiency and productivity. This includes applying AI to processes like continuous financial monitoring, the detection of fraud, waste

and abuse, and logistics management. In education, institutions are using AI to streamline administrative processes from enrollment to course scheduling. For government leaders, AI can optimize resource allocation by analyzing complex data. For instance, a government agency can use AI to analyze sensor data from its vehicle fleet, enabling predictive maintenance that optimizes repair schedules, reduces costs and maximizes operational readiness.

Predictive analytics for responsive government: Gen AI-enabled predictive analytics empower organizations to achieve their goals by enabling proactive responses to emerging challenges. For example, gen AI can predict disease outbreaks and disaster impacts, assisting with the optimal deployment of emergency services. In education, gen AI can forecast student enrollment trends and recommend strategic school infrastructure investments. Defense agencies can leverage AI to improve their cybersecurity posture, using advanced analytics for proactive threat detection to anticipate and neutralize potential attacks before they impact mission-critical systems.

70%

of member countries have used AI to enhance internal operations.

—Organization for Economic Cooperation and Development (OECD)

CUSTOMER SUCCESS STORIES

Sydney Local Health District

Sydney Local Health District promotes better health outcomes for mothers and babies

Reducing infant and mother mortality is a global priority, and in Sydney, New South Wales (NSW), public health organizations like Sydney Local Health District (SLHD) are turning to data to address the issue. SLHD and 14 other Local Health Districts are administered by NSW Health. NSW Health had relied on a legacy platform and infrastructure to meet health districts' requests for datasets for analysis and reporting to improve patient care. However, this platform and infrastructure was complex and could not scale to meet the growing demand from local health districts, including the Women and Babies Service at SLHD, which delivers about 7,500 babies per year — the largest gynecology unit in NSW. SLHD has been able to validate the accuracy of reports generated from the Snowflake AI Data Cloud against outputs from its existing systems, giving the Women and Babies team confidence in using the system for its dataset analysis and decision-making requirements. With reports running in just 55 seconds, the team will be able to act on delivery trauma, mortality and morbidity data in near real time. SLHD is also positioned to respond quickly to requests for new reports derived from multiple data sources, with the Snowflake AI Data Cloud enabling it to provision them in hours rather than the months required in its legacy infrastructure.

Read the story

NYC HEALTH+ HOSPITALS

NY Health and Hospitals elevates care for New Yorkers experiencing homelessness

Homelessness in New York City has surged to its highest level since the Great Depression. Reducing homelessness in the nation's biggest city is a complex endeavor that starts by understanding those in need. NYC Health + Hospitals—the largest municipal health system in the United States — is focused on using data and analytics to understand the vulnerable populations that it serves and, ultimately, deliver faster, better care to improve lives. NYC Health + Hospitals relies on Snowflake's AI Data Cloud to centralize large amounts of healthcare data, surface insights that drive efficiency and begin to maximize the benefits of gen AI through Snowflake Cortex AI. Powering its "data hub" initiative with Snowflake helps NYC Health + Hospitals develop comprehensive views of patients—especially for those patients experiencing homelessness. Building NYC Health + Hospitals' data platform on Snowflake provides near-infinite scaling of storage and compute to integrate billions of rows of healthcare data, which can help care providers better understand and serve New Yorkers in need. Streamlining access to even more data will put NYC Health + Hospitals in a better position to unleash greater outcomes through gen AI.

Read the story

RETAIL AND CONSUMER GOODS

The retail industry is under pressure and changing fast. Data and AI are at the heart of that transformation. As consumers expect more personalized, seamless experiences and supply chains become more complex, retailers need tools to keep up. Data is one of their most valuable assets, and they are looking for AI to turn that data into action.

Whether it's tailoring offers in near real time, predicting demand more accurately or streamlining operations, retailers are using data and AI to adapt, innovate and grow. In a world of constant change, these technologies aren't just nice to have — they're essential for staying competitive. The ESG survey shows that the retail sector reports a quantified ROI of 30% versus 41% across all industries, indicating room for growth, but also that 87% say gen AI projects have positively impacted customer service/support. This shows a clear path to value in customer-facing applications.

87%

of early retail adopters say gen AI projects have positively impacted customer service/support.[1]

Here are three important ways AI can drive business success in retail:

Customer experience optimization: Customer service agents frequently spend time sifting through knowledge bases to answer queries about inventory, order status and product information. With limited staff, this can lead to extended wait times. AI chatbots and AI agents can retrieve answers from across various documents within seconds, accelerating the speed at which agents provide informed customer assistance. AI can also empower agents to upsell or cross-sell products in near real time by analyzing the conversation, tapping into customer 360 data and marketing materials, and providing immediate, relevant recommendations. Rapidly finding answers across documents, boosting the speed of customer assistance and enabling upsell/cross-sell recommendations are key outcomes. AI agents can provide timely, personalized product recommendations and faster issue resolution for shoppers, directly impacting customer experience.

Customer perception analysis: Often more revealing than star ratings or numerical metrics, text-based feedback allows businesses to extract nuanced emotions and opinions, providing deep insights into why a product is popular — or why it's not. Gen AI can analyze diverse text sources, such as call transcripts, online reviews and social media posts, giving companies a profound understanding of customer sentiment. It can then perform sentiment analysis to pinpoint common complaints and suggest product enhancements, enabling companies to refine product development and respond more effectively to customer needs. This includes analyzing diverse text sources for customer sentiment, identifying common complaints and generating product suggestions.

Demand forecasting: Retailers rely on demand forecasting to fine-tune inventory levels, minimize stockouts and reduce carrying costs. Predictive machine learning enhances forecast accuracy by identifying intricate patterns and correlations within data from a variety of sources. This includes sales history, market trends and external factors such as purchase behavior, social media trends and inflation rates. Gen AI can also provide real-time analysis and simulate various scenarios to predict the impact of different factors on demand. Armed with this information, AI can deliver recommendations to retailers that lead to significant cost savings and heightened customer satisfaction. Identifying data patterns and correlations, providing near real-time analysis and scenario simulations, and generating recommendations for cost savings and improved customer satisfaction are crucial for optimizing inventory. Autonomous AI agents can predict demand trends and adjust stock levels and prices in real time.

CUSTOMER SUCCESS STORIES

Fireworks AI

Firework develops AI virtual shopping assistant that offers a personal connection to consumers

To bring a more human connection to the online shopping experience, video commerce company Firework turned to an unconventional source: AI. Already an established leader in shoppable videos and livestreams, the company wanted a way to bring the personalized, one-on-one attention of, say, a sales floor associate to a shopper's screen or mobile device. Building such a sophisticated assisted shopping experience, however, presented plenty of challenges—chief among them, generating high-quality answers to customer questions. Using Snowpark and Cortex AI, Firework began by aggregating, cleaning and classifying thousands of anonymous customer conversations to help understand consumer interests and pain points. That became the basis of the data foundation that ultimately powers their LLM application in Cortex. The result? Firework was able to develop what it now calls AVA (AI Video Assistant), an AI-generated avatar that can listen, think and speak to consumers throughout their shopping journey. AVA can answer questions about return policies; it can scour and summarize thousands of product reviews in seconds or even offer personalized recommendations about what color sweater might complement the pants you bought last month.

Read more

johnnie-O

Johnnie-O improves accuracy of geocoding address data to better serve customers

Like many largely ecommerce businesses, the East-Coast-prep-meets-West-Coast-casual clothing brand Johnnie-O understands the value in a simple shipping address. Just a few lines of text can provide powerful demographic insights into the company's customers when linked to data from the U.S. Census Bureau—information like average household income in the area, percentage of people with degrees, employment rates, races and ethnicities, and so on. By using this data not only directly from website orders but from wholesalers and dropshippers, Johnnie-O can begin to understand its customer base better and consequently target its marketing efforts more effectively. But the company had one problem: A significant number of collected addresses could not be geocoded, preventing the team from accessing relevant customer data. Typically, the company runs raw address data through an application that delivers geographic coordinates, which then makes it easy to link to census data. But for Johnnie-O, many of these addresses failed for a variety of reasons, which could be as small as a typo or information in the wrong field. So instead of manually cleaning up these hundreds of thousands of data points, the company looked to Cortex AI to automatically reformat the messy address data. After feeding these incorrect addresses into Cortex AI using a Llama LLM, Johnnie-O immediately slashed its failure rate to just 2%.

Read more

MANUFACTURING

The manufacturing industry is rapidly transforming through automation, smart technologies and a strong focus on sustainability. Data and AI are central to this evolution, optimizing processes, predicting equipment failures and enhancing quality control. While the sector has embraced digital transformation, the true revolution lies in mobilizing vast datasets from IT, operational technology (OT) and Internet of Things (IoT) sensors, which often remain siloed. This integration is crucial for achieving real-time insights and powering smart factories. Manufacturers are keenly aware of AI's potential, with the global market for AI in manufacturing projected to reach $20.8 billion by 2028. Surveyed manufacturers report they are deploying gen AI technology to their production and supply chain management teams — 71% versus 45% of overall respondents — and also using it for inventory management and creating quality inspection protocols.

79%

of manufacturing respondents say gen AI has been either game-changing or significant.[1]

The industry is recognizing that AI, including gen AI and emerging AI agents, can fast-track innovation, optimize complex supply chains and automate routine tasks, ultimately leading to increased profits and enhanced competitiveness.

Here are three ways manufacturing companies can drive business success with AI:

Optimize business planning and supply chain: AI-driven supply chain optimization enhances efficiency, resilience against disruption and responsiveness to dynamic market conditions. Among its capabilities, AI can process vast amounts of data — from producers to retailers — to predict trends, provide early notification of delays and offer near real-time recommendations. This enables manufacturers to make more informed decisions about supply chains, determine optimal inventory levels to reduce excess stock and minimize stockouts, and dynamically match supply with fluctuating demand patterns, allowing for agile adjustments to production schedules and inventory levels. This includes advanced forecasting and planning, sustainable sourcing strategies, detailed spend analytics, proactive supplier risk management, precise inventory control, efficient fulfillment processes, streamlined transportation and logistics, and robust traceability. AI agents are particularly effective here, capable of autonomously optimizing inventories on the fly in response to demand fluctuations or weather disruptions.

Power smart manufacturing: Ensuring consistent product quality and minimal defects is crucial for maintaining customer satisfaction. However, manually detecting faults before they impact production is both time-consuming and costly. With AI, manufacturers can leverage automation to detect unusual patterns or deviations in production data that may indicate potential quality issues. AI-driven visual inspection systems can also identify defects in products by analyzing images or videos, enhancing quality control and reducing manual inspection errors. This includes comprehensive shopfloor visibility, optimizing product yield and quality, enhancing energy and sustainability management, accelerating product development, enabling predictive maintenance, implementing AI-driven process control, maximizing Overall Equipment Effectiveness (OEE) and optimizing cost management. AI agents can monitor equipment performance, predict failures and dispatch maintenance teams.

Generate value from connected products: Businesses can harness the rich data streams from connected devices for insights into product performance and reliability, and consumer behavior. AI analysis can drive product monitoring, quality and design, and it can improve customer experience, sales and services. Connected product data also opens a range of opportunities for manufacturers such as optimizing fleet management.

CUSTOMER SUCCESS STORIES

HARKINS

Harkins Builders saves 100+ hours on writing project reports through AI-powered app

In the world of commercial construction, a turnover narrative is an important document that bridges the preconstruction and active construction phases of any project. At Harkins Builders, a construction management and general contracting company that works on about 100 projects a year, compiling a turnover narrative had been a rather tedious and time-consuming exercise, requiring a project estimator to gather all the relevant information from Snowflake or its customer relationship management system, Dynamics 365, and then manually write the report. Ultimately, each report took at least an hour to complete — more when multiple estimators worked on a project and knowledge gaps would need to be addressed. But given that Harkins had built a strong, consolidated data foundation in Snowflake, the analytics team saw a way to largely automate the process of creating turnover narratives. Within two months, Data and Software Engineer Ben Pecson developed an application that could guide Harkins' estimators through a Cortex AI-powered process that cut down the time spent on turnover narratives from an hour-plus to 5–10 minutes. Pulling data that already exists in Snowflake, the app crafts several prompts, from which the estimator can choose (like literal building blocks) to construct a complete turnover doc.

Read more

expand

Expand Energy taps Snowflake's AI capabilities to reduce environmental impact

As the largest natural gas producer in the U.S., Expand Energy plays a crucial role in meeting the world's growing energy needs. For the technology delivery team, the real challenge was overcoming the limitations of legacy systems. Expand Energy uses Snowflake to host real-time data and ML models for drilling activities, allowing the team to optimize the drilling rate of penetration, prevent equipment failures and enhance safety. Building on the foundation of real-time data ingestion and Snowpark data models, Cortex Analyst allows engineers to ask questions in natural language such as, "What were the top contributors to nonproductive time?" or "What is a summary of activities over the past 24 hours?" and get answers on the fly. Rather than sending personnel to monitor each of the 3,700 production sites, Snowflake enables Expand Energy to centralize data from operational systems and supervisory control and data acquisition (SCADA) systems. The data combines with well production, equipment age and site details, creating a digital twin for each site. Snowflake continuously runs queries to detect potential issues, such as tank corrosion, and alerts are sent to the operations center for investigation. This proactive approach reduces environmental risks and impacts, minimizes downtime and improves efficiency across all sites.

Read the full story

TELECOMMUNICATIONS

The telecom industry, the backbone of global connectivity, continues to undergo rapid transformation driven by 5G infrastructure, edge computing and IoT. Operators are under immense pressure to innovate as they face market saturation, tight margins and intense competition. Gen AI and the emergence of AI agents offer a powerful solution, enabling the industry to move beyond traditional services and unlock new value.

The global AI in telecom market size is expected to be worth around $23.9 billion by 2033, reflecting the industry's commitment to leveraging AI. From improving geospatial planning to automating data analysis and using predictive modeling to inform network designs, to building customer support agents, gen AI is helping usher in the new era of telecom. The ESG survey indicates that early adopters in telecom are seeing significant benefits from gen AI, with 70% of IT operations teams and 65% of cybersecurity teams using gen AI to improve efficiency and reduce costs. By building an AI-powered data infrastructure, telecom companies can enhance customer satisfaction, strengthen network performance and proactively respond to issues, ultimately driving the shift toward intelligent, adaptive and autonomous networks.

Here are three key ways the telecom industry can use AI to drive business success:

Network operations: Transitioning to gen AI-driven operations can boost network health, service performance, reliability and operational efficiency. By incorporating unstructured and semi-structured data from network logs and support systems, AI can perform root-cause analysis and generate hypotheses to solve and predict network issues. AI can also automate routine tasks, such as provisioning resources, optimizing network configurations and managing network traffic. This automation not only streamlines processes, it also frees up human resources for more strategic tasks. AI agents are particularly adept at this — they can predict traffic loads and manage bandwidth allocation accordingly.

> **70% of IT operations teams and 65% of cybersecurity teams in telecom are using gen AI to improve efficiency and reduce costs.[1]**

Business operations: Gen AI is a powerful tool to help telecom businesses enhance the customer experience and boost brand loyalty. Gen AI can analyze customer usage, call patterns and preferences to offer personalized service bundles. Call center agents can utilize chatbots that analyze network and call log data in real time to provide timely solutions for customer issues. AI can also power customer self-service applications, allowing users to resolve issues independently. AI agents can also identify customers at risk of leaving and carry out retention strategies, directly impacting business outcomes.

Predictive Maintenance: Gen AI enhances predictive maintenance capabilities for telecom companies by extracting previously untapped insights from unstructured data. It can synthesize information from various disparate data sets, such as weather reports and social media posts, to predict service disruptions and proactively warn customers. It can anticipate failures by analyzing network and call log data in real time to rapidly detect and respond to issues. Gen AI can even anticipate when specific areas are at risk of failure by analyzing past patterns, enabling service departments to take preventative measures and prevent outages before they happen.

CUSTOMER SUCCESS STORIES

vodafone Ziggo

VodafoneZiggo cuts costs by 50% and gains real-time insights with Snowflake

Before moving to Snowflake, VodafoneZiggo, the biggest telecommunications company in the Netherlands, had a scattered and difficult-to-manage data architecture — with workflows sometimes running for over 20 hours at a time just to refresh data. Now, after migrating its data infrastructure to the Snowflake AI Data Cloud and AWS, the company has managed to cut costs in half and reduce the number of high incidence tickets to zero, while also improving data timeliness to over 96%.

Watch the video story

XLSMART

XLSmart boosts data analytics speed and cuts costs with Snowflake

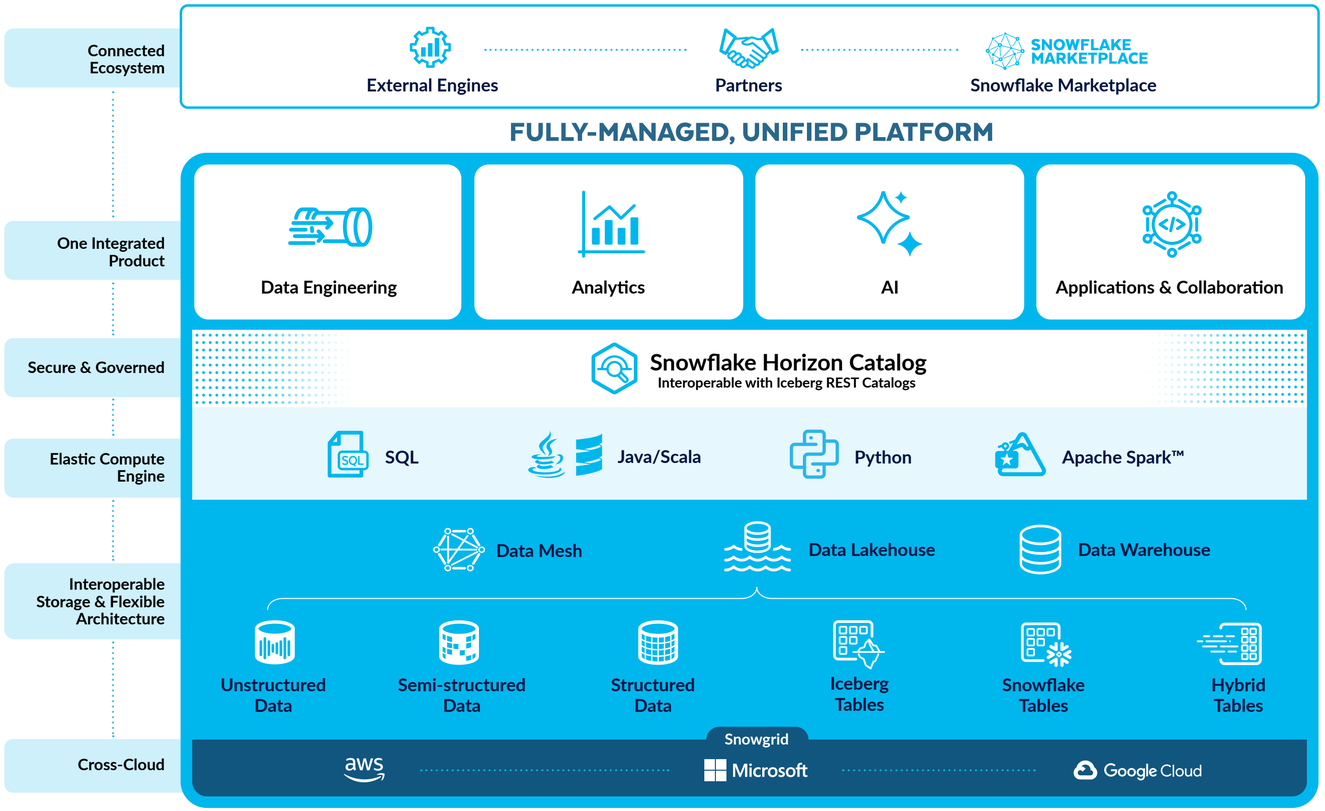
XLSmart is a communication services provider in Indonesia offering both mobile and fixed broadband products. They have roughly 26% market share with 57 million mobile subscriber customers and over 1 million customers on their network. They say the data holds a central-point position in XLSmart and they try to make all their decisions in a very data-driven way. Snowflake gives XLSmart double-digit cost reduction, along with greater visibility into usage through Snowflake's cost control features. Snowflake's built-in governance features enable the correct people to get access to the correct data, further strengthening security. And users no longer have to wait days to take action. With Snowflake, XLSmart has seen analysis tasks that used to take days to complete now fulfilled in hours.

Watch the video story

SNOWFLAKE: THE POWER OF DATA + AI

At the core of a successful AI strategy is a strong enterprise data foundation. With Snowflake's AI Data Cloud, organizations across industries are eliminating the data silos of legacy systems and gaining the ability to seamlessly collect, share and apply advanced analytics. Snowflake makes enterprise AI easy, connected and trusted. More than 12,000 companies around the globe, including hundreds of the world's largest, use Snowflake's AI Data Cloud to share data, build applications and power their business with AI.

Building and managing AI stacks and LLMs might seem complicated. They require substantial compute resources and large-scale storage, making the setup and management of AI infrastructure costly and resource-intensive. Developers need special skills to create and train AI models, a time-consuming effort. Implementing the necessary security measures and maintaining compliance with privacy regulations adds more layers of complexity.



Snowflake's architecture simplifies all that in several ways. Providing a fully managed AI Data Cloud that is integrated across data types, clouds and personas helps businesses eliminate the need to invest in and maintain a complex AI infrastructure. Snowflake allows for seamless scaling of the computational resources that AI workflows need. Developers can bring AI models, frameworks and applications directly to their data, eliminating the time and risk associated with data transfers. Users can seamlessly integrate AI into their use cases using no-code, SQL, Python or REST API interfaces, enabling a broad range of teams to integrate AI into their workflows. And Snowflake has built-in governance, access controls and safety guardrails.

Once a modern data foundation and unified platform are in place, Snowflake's robust native AI/ML capabilities — along with an extensive partner ecosystem — can help customers harness the power of gen AI. Snowflake Cortex AI offers LLM functions, universal search, Document AI, no-code model development and more. Together, these capabilities enable faster deployment and simpler maintenance of AI infrastructure and LLMs, improved performance, cost savings and, ultimately, a quicker and greater return on investment in AI.

snowflake® | aws

AN ADVANCED, INTEGRATED ARCHITECTURE FOR PRODUCTION AI

Unify your data and AI strategy with Snowflake and AWS. With this partnership, more than 50 integrated features and services for data engineering, analytics, AI, applications and collaboration come together in a consolidated, fully managed platform. This enables enterprises across industries to seamlessly ingest, transform and prep structured, semi-structured, and unstructured data for upstream analytics and AI workloads. Each industry can uniquely gain business value, efficiency and innovation — with a range of examples below.

With Snowflake and AWS, financial institutions can unify their data, leverage AI for insights and collaborate securely, to improve decision-making, help ensure compliance and help clients enjoy personalized experiences.

In healthcare organizations, this ability to unite disparate data sources can offer comprehensive patient views, enhanced clinical decision-making with machine learning and streamlined interoperability across systems. Snowflake and AWS help payers optimize operations, providers to improve care quality and researchers to accelerate innovation.

Manufacturers can unify large volumes of IoT, agent and other data for greater operational agility. With capabilities for advanced analytics and AI, manufacturers can streamline operations, optimize supply chains and build connected solutions to accelerate business transformation.

In the media and entertainment industries, the interoperability between Snowflake and AWS enables businesses to build complete audience profiles, delivering personalized experiences that boost engagement and lifetime value. Brands can collaborate across the media and advertising ecosystem without impacting existing data security and privacy controls.

And retailers can leverage solutions spanning merchandising, inventory planning and customer 360. Data and AI can help optimize pricing, improve supply chain operations and personalize customer experiences.

Learn more

NEXT STEPS

The use cases in this book merely scratch the surface of what industries can accomplish with AI. To get there, you need a modern data foundation with native AI and machine learning capabilities and a robust partner ecosystem.

Watch the Data and AI Leadership Forum on demand to learn how technology and business leaders innovate and collaborate with the power of data and AI.

LEARN MORE ABOUT SNOWFLAKE'S AI DATA CLOUD INDUSTRY-TAILORED SOLUTIONS

- Media and Entertainment
- Financial Services
- Healthcare and Life Sciences
- Manufacturing
- Public Sector
- Retail and Consumer Goods
- Telecommunications
- Travel and Hospitality

1. snowflake.com/en/lp/radical-roi-generative-ai/

Snowflake is the platform for the AI era, making it easy for enterprises to innovate faster and get more value from data. More than 11,000 companies around the globe, including hundreds of the world's largest, use Snowflake's AI Data Cloud to build, use and share data, applications and AI. With Snowflake, data and AI are transformative for everyone.

Learn more at **snowflake.com**

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