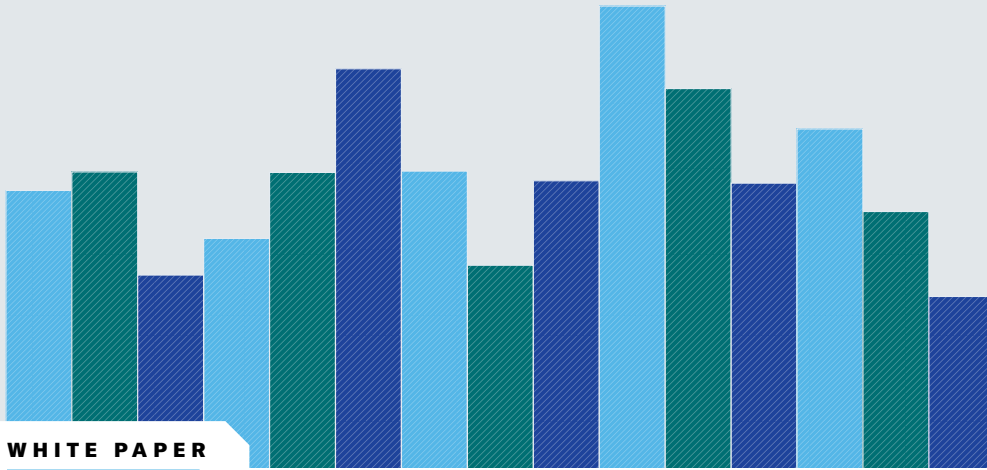




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ANALYTIC SERVICES



WHITE PAPER

Preparing for a Future Powered by Generative AI



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The race is on for companies to harness the power of generative AI (gen AI) and translate the potential of this revolutionary technology into real results. As the CEO of Slack from Salesforce, I'm privileged to witness and contribute to this remarkable evolution. Every week, I meet with C-suite leaders who are on the front lines of this transformation, determining how their company can securely leverage artificial intelligence (AI) tools to take their business to the next level—whether that's unlocking efficiencies, driving growth, or empowering their people to be more productive.

One question I've heard time and again from business leaders is: What should I prioritize as I'm developing my organization's blueprint for AI? My answer: business value. At Salesforce, we believe that AI tools must be deeply trusted, intuitively embedded in the flow of work, and grounded in your business's unique data and metadata in order to really transform business outcomes.

That's the approach we've taken with Slack's own AI capabilities. Earlier this year, we released native generative AI experiences in Slack—including AI-powered search, channel and thread summaries, and daily recaps—that empower our customers to access the collective knowledge they've built up in Slack so they can work smarter, move faster, and spend their time on things that spark real innovation and growth. They can also easily integrate leading generative AI apps from our partner ecosystem into their Slack workspace or build custom generative AI apps tailored to their business needs on the Slack platform.

And this is just the start. We're designing Slack to be the AI-powered conversational platform for work. With Slack and Salesforce, our customers can connect every part of their business in an intelligent command center that surfaces insights, prioritizes tasks, automates workflows, and drives key actions across all their people, apps, and systems—including their most valuable customer data.

The possibilities are thrilling, but the real value of generative AI hinges on whether these tools can be trusted. Trust is our core value at Salesforce, which is why we're building Slack's AI capabilities within our secure infrastructure. Our customers control their data—period.

While we've seen immense innovation in the past year, it's clear that we've just scratched the surface of AI's potential. In this white paper, you'll hear from executives across a variety of industries, including some Slack and Salesforce customers, who are seizing this unprecedented moment and using generative AI to boost productivity, innovation, and customer success. Read on for insights and examples that will help you develop a blueprint for your own AI strategy.



Denise Dresser
CEO
Slack from Salesforce

Preparing for a Future Powered by Generative AI

Generative AI (gen AI) tools are taking the world by storm. Companies from industries such as finance, health care, and entertainment are investing billions in developing and adopting gen AI technologies. And for good reason: In an era of heightened competition, talent shortages, and supply chain disruptions, gen AI can revolutionize the ways workers perform, increasing productivity by an average of 14%, according to an April 2023 study by the National Bureau of Economic Research.¹

Yet enterprise-wide adoption of gen AI tools has been slow. According to a Gartner survey of 1,400 executive leaders in the third quarter of 2023, 45% reported that their organization is piloting or experimenting with gen AI, and another 10% said they've already gone live with solutions.²

“We’re at this experimental phase in corporations where almost everyone now has tried one of today’s generative AI tools,” says Mike Walsh, a futurist and CEO of Tomorrow, a United States-based consultancy that specializes in designing companies for the 21st century. The next step, he says, is for companies to “move from the novelty of a new set of tools to developing a new workflow and way of thinking. The critical question now is, ‘How do we make the leap from experimentation to true transformation?’”

Organizations such as ManTech International Corp., Spotify Technology SA, DIRECTV Group Inc., and Alnylam Pharmaceuticals Inc. are finding ways to harness the power of gen AI and accomplish feats never before possible. For instance, ManTech, a Herndon, Va.-based company that specializes in delivering technology solutions and services to the U.S. government, is using gen AI to safeguard its systems and networks.

HIGHLIGHTS

Companies from industries such as finance, health care, and entertainment are **investing billions in developing and adopting generative AI technologies.**

However, **harnessing the power** of generative AI requires overcoming significant **technological, operational, and cultural challenges.**

Fortunately, **best practices**, such as safeguarding data, training employees, embedding generative AI into everyday workflows, and aligning leadership with a clear vision can **ensure this technology has a material impact on productivity and other business advantages.**



“We’re at this experimental phase in corporations where almost everyone now has tried one of today’s generative AI tools,” says Mike Walsh, a futurist and CEO of Tomorrow. The next step is for companies to “move from the novelty of a new set of tools to developing a new workflow and way of thinking.”

“There are nation-state actors that attempt to hack into our network every day because of the work that we do,” says Mike Uster, ManTech’s chief technology officer (CTO) and chief information officer (CIO). “We need sophisticated defenses to prevent those attacks.” Using gen AI to create code, ManTech can better protect its systems.

However, harnessing the power of gen AI requires overcoming significant technological, operational, and cultural challenges. Data security concerns, fears around job loss, and a shortage of skilled talent can prevent organizations from gleaning value from gen AI.

Fortunately, best practices such as safeguarding data, training employees, embedding gen AI into everyday workflows, and aligning leadership with a clear vision can ensure this technology has a material impact on productivity and other business advantages.

This report explores the potential impact of gen AI on work; the cultural, organizational, and technological challenges of deploying and driving adoption of gen AI systems; and the best practices some of today’s top companies are putting in place to establish the leadership, talent, and culture required for business outcomes such as increased productivity and enhanced communication.

Consider, for example, DIRECTV. According to Craig Reines, DIRECTV’s vice president, customer technology transformation office, the El Segundo, Calif.-based multichannel video programming distributor has long relied on a “linear process” to deliver its products and services to customers across the United States. In the past, when a DIRECTV dealer sold a particular product, such as a satellite dish, it would trigger a series of time-consuming and manual processes across the organization, from gathering customer information and coordinating with field service technicians to provisioning back-end systems and managing orders.

Today, gen AI streamlines this end-to-end process by automatically distilling work order information into step-by-step instructions for greater productivity and faster response times. “The worker who is responsible for provisioning a particular system does not have to wait for a field technician to manually trigger that workflow,” says Reines. “It really reduces manual handoffs and having to look for instructions on how to complete a particular task.” In fact, Reines says, DIRECTV sees the potential of up to a 30% reduction in back-office manual work with the integration of gen AI capabilities—legwork that can be reallocated to more meaningful tasks.

Growing Interest in Generative AI

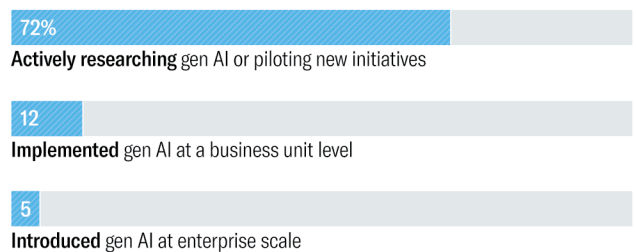
Adoption of gen AI technology is growing as organizations from a wide array of industries discover its ability to deliver benefits ranging from accelerated workflows and increased productivity to faster time to market and greater innovation. In fact, according to a 2023 AI Priorities study from Foundry, which canvassed 965 global IT decision makers about their artificial intelligence (AI) and gen AI plans, 72% of respondents said they are actively researching gen AI or piloting new initiatives.³ **FIGURE 1**

Seventy-two percent of respondents to the Foundry survey said they were actively researching gen AI or piloting new initiatives, while 12% have implemented the technology at a business unit level; only 5% have introduced gen AI at enterprise scale. There were only nominal differences based on company size.

FIGURE 1

The Generative AI Maturity Curve

Most organizations are already exploring the advantages of generative AI (gen AI)



Source: Foundry, AI Priorities survey, 2023

Employees at Alnylam are also experiencing the transformative power of generative AI to change the way work has long been accomplished for greater speed and productivity. The Cambridge, Mass.-based biopharmaceutical company developed an intelligent search digital assistant (app) that uses large language models (LLMs) and gen AI to provide real-time responses to employee queries on everything from travel reimbursements to company pay policies, thereby “shortening the amount of time it takes for employees to find relevant information,” says Murtaza Cherawala, Alnylam’s senior director of data management.

No wonder 56% of respondents in the aforementioned Foundry survey said they are most interested in using gen AI for chatbots and virtual assistant use cases, closely followed by content generation (55%), industry-specific applications (48%), and data augmentation (46%). **FIGURE 2**

But Cherawala says it won’t be long before the company’s use of gen AI extends to other areas, such as clinical development and drug discovery. For instance, he says, developing a clinical trial protocol involves “a large team of people who must research information, write drafts, have them reviewed and then approved. This is a very time-consuming and resource-intensive workflow.” However, gen AI can be used to quickly analyze and extract key information from previous trial protocols and suggest optimal design elements based on performance data. As a result, Cherawala says, gen AI could “allow the team to focus on core content. By synthesizing



“It can take people half an hour to write a short email, but if you can create one in three minutes using AI, that’s a real game changer,” says Alexandra Samuel, a Vancouver, British Columbia-based journalist and author.

knowledge and automating tasks, AI augments expertise to accelerate high-quality protocol development.”

Some pharmaceutical companies, including Cambridge, Mass.-based Moderna Inc., are even using gen AI to respond to regulators and meet compliance standards in a highly regulated industry. “Moderna is using large language models to answer complex questions that are posed by regulators about the safety of the manufacturing process,” says Walsh of consultancy Tomorrow. A single email from a regulator can contain dozens of questions about a new drug.⁴ Large language models, trained on their own proprietary data, can read these questions and write a response, which is then read and validated by experts, for significant productivity gains, he says. In fact, gen AI not only is able to respond to email messages but can create them—a boon for workers who spend much of their day drafting communications with clients and colleagues. For instance, Alexandra Samuel, a Vancouver, British Columbia-based journalist and coauthor of *Remote, Inc: How to Thrive at Work...Wherever You Are*, points to the AI-powered writing features in many of today’s communication and collaboration platforms, which can automatically convert bullet points or a topic sentence into an entire email message using the appropriate tone, style, and context.

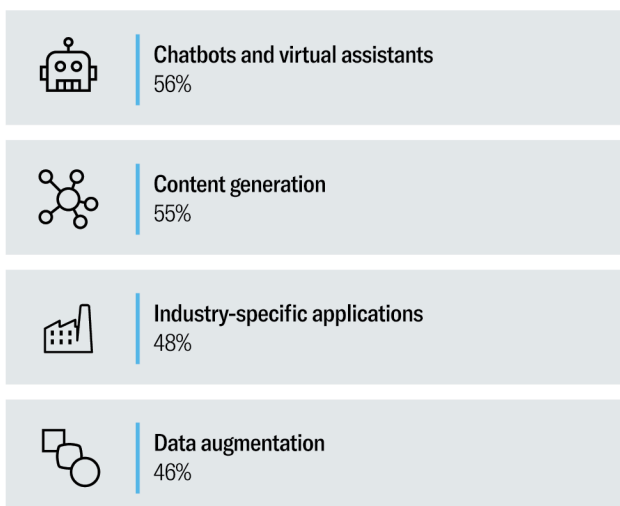
“It can take people half an hour to write a short email,” says Samuel. “But if you can create one in three minutes using AI, that’s a real game changer.”

Enhancing easy access to information can also boost employee productivity. ManTech, for example, has developed a natural language processing chatbot, dubbed ManTech Enterprise Smart Assistant (MESA), that uses gen AI to unlock critical information contained in the company’s enterprise content and knowledge bases. Rather than burden customer support teams with queries, the proprietary app “automatically retrieves information from ManTech’s knowledge base and generates a series of answers to employee questions” on

FIGURE 2

Top Generative AI Use Cases

Chatbots and virtual assistants are among the most popular uses for generative AI



Source: Foundry, AI Priorities survey, 2023

subjects ranging from travel reimbursement to vacation pay, says company CTO/CIO Uster.

“One of the ways generative AI is transformative is in its ability to drive self-sufficiency,” he says. In fact, Uster predicts, by providing answers to employee queries without the aid of humans, ManTech will achieve a double-digit percent savings in support costs.

Similarly, Reines of DIRECTV foresees a time when enterprise knowledge will be a valuable resource managed primarily by machines.

“The days of maintaining a static set of knowledge articles that constantly have to be updated by a human are disappearing,” he says. Rather, he adds, gen AI will be able to mine thousands of knowledge articles and automatically provide “the most relevant information in a concise and customized way that’s relevant to that particular moment.”

In fact, organizations would be wise to carefully consider gen AI’s power to not only improve business processes but reinvent existing business models. “There is no company on the planet that shouldn’t be asking the question, ‘How do we properly leverage AI to reinvent what we do?’” says Walsh. “It’s not enough to simply take an existing process and do it a little bit better. We need to ask, ‘What is our value delivery model? And how can it be transformed in an age of smart machines?’”

For example, Walsh points to Japanese automobile manufacturer Toyota, whose research arm, Toyota Research Institute (TRI), recently released a new gen AI technique. TRI’s designers rely on text-to-image gen AI tools to aid in the creative process of designing a new vehicle.⁵ Yet complex engineering and safety standards can render a design unviable in the real world. Toyota’s new technique addresses this issue by incorporating design sketches and engineering constraints, such as chassis dimensions, into the generative AI process. It’s an innovative approach that, Walsh says, not only promises to reduce the number of iterations required to design a new vehicle but upends the notion of how a product should be designed in order to bring the most value to customers who are using it.

Indeed, organizations are already beginning to explore the next stage of gen AI, in which large action models (LAMs) expand beyond simply generating new content to accomplishing entire tasks independently. These active and autonomous software units, or agents, promise to elevate AI from a passive tool to a collaborative colleague capable of performing tasks while learning from its experiences.

Obstacles to Overcome

Organizations are at a turning point, where gen AI technology has the potential to deliver distinct competitive advantages, including increased productivity, enhanced communication, and cost savings. However, “while there’s a huge amount

of interest in generative AI, there is also a great degree of uncertainty and fear of getting it wrong,” says Walsh.

Stoking these fears and uncertainties are significant cultural, organizational, and technological challenges, including a challenging regulatory environment. In late 2023, President Joe Biden issued an executive order that outlines “new standards for AI safety and security, protects Americans’ privacy, advances equity and civil rights, stands up for consumers and workers, promotes innovation and competition, advances American leadership around the world, and more.”⁶ Similarly, in December 2023, the European Union worked to finalize its artificial intelligence law, which would institute a broad regulatory framework for reducing the risks of AI.⁷ And regulations are constantly evolving, challenging teams to keep pace. “At the same time that companies are actively pursuing and implementing gen AI, regulations are still being defined. We don’t really know what the final regulatory environment will be,” says Cherawala of Alnylam. “Companies have to predict and use their best intent and expertise for the responsible use of AI for regulations that don’t fully exist yet.”

Indeed, according to the aforementioned August 2023 survey from Foundry, the factor most likely to discourage enthusiasm for gen AI is legal issues related to its output. The study reveals that 41% of respondents overall, and 42% of IT leaders, are concerned about issues related to the law, including copyright concerns, privacy violations, and liability for acting on poorly trained or implemented AI systems.

Then there are the inherent risks of working with gen AI. For example, gen AI models are prone to hallucinations—a phenomenon where an AI model provides responses based on fabricated data or creates patterns that are nonexistent in large data sets used to train it, resulting in nonsensical or altogether inaccurate outcomes and problematic workflows.

“The hallucination problem with generative AI can create a lot of issues,” says Reines. “In a service-related industry or in a job where you’re interacting with a customer, you can’t rely completely on generative AI to solve problems.” Data security is also a big challenge. In early 2023, a popular gen AI-powered chatbot experienced a data breach that partly exposed chat histories and some users’ personal details, including email addresses and the last four digits of their credit cards. Although the exploit, caused by a bug in an open-source library, was addressed quickly with seemingly little damage, it prompted some organizations to restrict employees from using the tool over fear of data leaks.

In addition, data needs to be properly prepped and cleansed to ensure that it’s accurate, contextually relevant, and free of harmful bias before it can be trusted. When the data used to train LLMs contains biases, the content, insights, and recommendations generated by these models can be harmful and misleading.



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Ways to Win with Generative AI

Yet companies are finding ways to overcome these obstacles. For starters, proper data management can help deal with the hallucination problem. For example, Walsh says, “When you’re building LLMs, you need to be able to reference the specific sources of your data so that you can be certain you can trust and validate the results.”

As for data security, companies should take steps to manage data in a secure and trusted environment. Uster says ManTech “has specifically implemented generative AI within a contained area where our employees can work within the confines of our own security environment” rather than in external applications.

In addition to establishing and following data security and management practices, organizations must create a clear and concise roadmap that focuses on business needs for deploying generative AI solutions. For example, Cherawala says Alnylam relies on its AI Center of Excellence to carefully identify high-impact use cases for generative AI. No more than four to six use cases are selected at a time for implementation.

Furthermore, Cherawala says Alnylam makes it a priority to “reuse” AI capabilities. For instance, the biopharmaceutical company is using gen AI to automate and glean critical insights from the data produced in business workflows. The workflows can then be automated using gen AI informed by key data gleaned from AI, and then be submitted for “human in the loop” review.

Although workflow automations are designed to streamline a specific process, Cherawala says, “the same architecture, concept, and approach” could be reconfigured and reused for other use cases across the organization. The results, he says, are a better and more streamlined process and, in parallel, a simplification of Alnylam’s IT landscape.

But even the most carefully designed apps are unlikely to be adopted by employees if they don’t know how to benefit from using them. Employee training can help develop the necessary skill sets. Sweden’s Spotify, a digital music service provider, hosts Training Tuesdays, weekly one-hour sessions in which employees are free to acquire skills in emerging technologies such as gen AI. And Dan Walsh, Spotify’s head of business strategy and operations, says leaderboards that show the rates of technology adoption among employees are also helping drive usage of new tools.

Yet organizations must also teach employees how to change the way they work, especially as AI overhauls workflows and redefines roles. Case in point: Spotify is currently using an AI-powered platform to automatically capture and update sales data, providing unprecedented visibility across the entire sales pipeline, and to recommend next steps to sales teams. Hours once dedicated to manually inputting information on customer interactions can now be reallocated to sourcing new prospects and meeting customer needs.



“We don’t want our salespeople doing anything but selling. We want them in the field, meeting with customers as much as possible. The administrative task of creating notes and next steps and funneling them across the business is time-consuming,” says Dan Walsh, head of business strategy and operations at Spotify.

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In fact, Spotify’s Walsh foresees a time when gen AI will help salespeople prospect, “unlocking unsold opportunities” by identifying “coveted audiences” for marketers that want to advertise on Spotify. These AI-generated discoveries could change how sales teams drive revenue for the company by letting them quickly package deals based on real-time shifts in consumer behavior.

However, as new ways of working emerge, organizations must examine the expertise of their employees and identify widening skills gaps. Walsh of the consultancy Tomorrow offers the example of using cloud-based AI tools that help software programmers create code.

These tools are “transforming programming to the extent where almost half of code is written with the assistance of some form of AI,” he says. “As a result, people are asking if we actually need programmers in the future. But that’s the wrong question to ask. The right question is, ‘What is a good programmer in the future?’”

As AI tools increase in popularity, Walsh predicts demand for programmers with strong coding skills will likely give way to greater interest in individuals with expertise in higher-level disciplines such as application design, data security, and even customer experience.

Organizational governance structures must also evolve to accommodate the transformational nature of gen AI. Alnylam’s AI Center of Excellence, for example, is composed of a cross-functional team of leaders who meet regularly to



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evaluate proposed use cases against industry trends and legal, ethical, regulatory, and business impact.

“The privacy and security of our data is paramount—we take it very seriously,” says Cherawala. “The pharmaceutical industry is highly regulated, and protecting confidential information is a top priority in all aspects of what we do. It’s not different with our use of gen AI and therefore [is] part of how we evaluate products and use cases.”

Similarly, DIRECTV relies on its AI council to set “guiding principles and guardrails around how we use AI in our work” while collaborating closely with the company’s corporate risk, audit, and legal teams, says Reines.

But while strategies around data security, employee training, and collaboration are key to driving adoption of generative AI tools, Uster says the greater challenge “is human behavior. How do you naturally change human behavior to gain the working trust of generative AI so that it becomes a reliable source?” Certainly, AI tools can convert natural language prompts into coding suggestions based on a project’s unique context and style. But to accept these suggestions and integrate them into new code, programmers must be willing to trust gen AI.

Fortunately, the right leadership can play a critical part in driving trust and adoption of gen AI, which includes setting realistic expectations and championing change management throughout the organization. “Change management and upskilling are two of the most important areas we are investing in as part of our adoption of generative AI tools,” says Cherawala. “We want to ensure our workforce can think innovatively about the opportunities of this technology—and have the skills and tools to maximize the value.”

That’s not to suggest, however, that gen AI should be sold to the C-suite as a panacea for labor shortages and global competition. “There’s a lot of hype around AI—almost every software vendor has AI in its marketing and sales pitch,” says Cherawala. “One of my challenges is to separate the hype from reality for our executives, making it very clear and transparent what AI can do well—and what it can’t.”

In addition to his advice to set realistic expectations, Walsh warns that many senior executives make the mistake of aspiring to “digital incrementalism rather than true digital transformation” when deploying gen AI. Data security risks, employee resistance, and trust issues can encourage a cautious approach. However, he warns, too much trepidation can

prevent an organization from “redefining its category” with innovative workflows.

Rather, if there’s ever a time for human beings to reassess their role in a world transformed by gen AI, it’s now. “This is the moment where humans need to bring that sense of vision, muster support, and lead a cultural transformation in order to really go beyond just what is table stakes with AI,” says Walsh.

A World of New Possibilities

Although these are still early days, gen AI is already proving its prowess as a technology capable of reinventing workflows. Powered by LLMs, these solutions are helping everyone from salespeople to biopharmaceutical scientists improve access to critical information, accelerate communication, boost productivity, meet stringent regulations, and safeguard critical data. But what’s fascinating about gen AI is its ability to extend beyond simply improving processes to reinventing business roles and creating new opportunities for profitability.

“It isn’t about doing what you already do more easily, more quickly, and more efficiently,” says author Samuel. “The real gains from generative AI come from doing today what you couldn’t do yesterday.”

Change won’t happen overnight. Organizations must adopt the necessary technological, organizational, and cultural best practices to modernize their workforce, foster trust in AI, rally the C-suite, and set clear and concise expectations of AI if they are to stay competitive.

“In the near future, with the rise of generative AI and other forms of AI, the difference will be between companies that are AI-leveraged and those that are not,” predicts Walsh. “In other words, in every category in the market, there will be winners and losers that will largely depend on the degree to which AI has allowed them to reimagine their core business model.”

Adds Samuel: “Generative AI is unfolding much more quickly than any previous kind of technology. Two or three years from now, there will be companies so far ahead that they’re doing things that are currently completely unimaginable with gen AI—and there will be companies just getting started on using AI at all.”

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