



# Gen AI in business operations



## Table of contents

<b>Gen AI in business operations</b>	<b>1</b>
AI to gen AI and BPO adoption	3
Evolution of AI in the workplace	3
Gen AI: Applications, challenges and the future	4
Business expectations in the gen AI era	5
<b>Expert voices weigh in on gen AI's impact at workplace</b>	<b>6</b>
McKinsey's view on gen AI and workforce transformation	7
BCG's perspective on gen AI and job satisfaction	8
<b>Cognizant's gen AI positioning</b>	<b>9</b>
Our case studies of gen AI applications	11
<b>Gen AI's impact on business process outsourcing sector</b>	<b>12</b>
<b>Stay relevant and capture maximum market share</b>	<b>14</b>
<b>Invest in gen AI today for tomorrow's edge</b>	<b>17</b>
<b>About the authors</b>	<b>18</b>

## AI to gen AI and BPO adoption

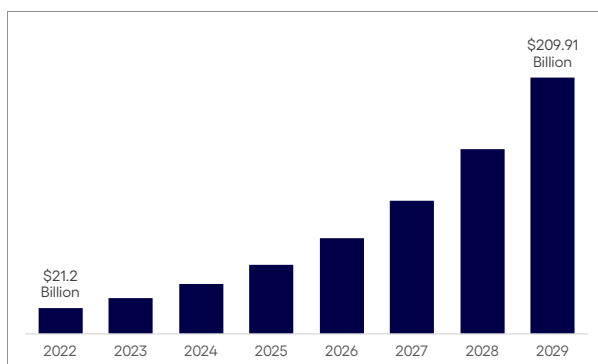
The formal foundation of AI as a scientific discipline was established in the mid-20th century. The Dartmouth Conference in 1956 marked the birth of AI as a field of study, where pioneers like John McCarthy, Marvin Minsky and Allen Newell explored the potential of creating machines that could simulate human intelligence. Since then, AI has undergone significant transformations, leading to the current state of generative AI (gen AI). This evolution has had a profound impact across various industries. In this white paper, we delve into the historical context and evolution of AI to gen AI and examine its impact on the business process outsourcing (BPO) sector, which is yet to fully leverage this latest technological advancement.

## Evolution of AI in the workplace

The initial applications of AI in the workplace were limited due to technological constraints. In the 1970s and 1980s, expert systems were designed to mimic human decision-making, and robots began automating repetitive tasks in manufacturing, improving efficiency and precision. Significant advancements in machine learning (ML) during the 1990s and early 2000s marked a transition from rule-based systems to data-driven approaches. This allowed AI to handle more complex tasks such as data mining for valuable insights, and understanding and generating human language, leading to the development of chatbots and virtual assistants.

Today, AI is deeply integrated into the workplace, transforming how we work and interact with technology. The advent of deep learning and neural networks has enabled AI to achieve unprecedented levels of accuracy and efficiency, facilitating automation, predictive analytics, and personalization. Gen AI refers to AI systems capable of learning, adapting and evolving. Unlike traditional AI, which relies on predefined rules and data, gen AI leverages ML algorithms to improve its performance over time. It represents a convergence of human and machine intelligence, leading to unprecedented possibilities.

The journey to gen AI has been marked by several milestones, from rule-based expert systems to deep learning neural networks. The availability of massive computing power, big data and breakthroughs in algorithms has accelerated this evolution. Gen AI builds upon these foundations, promising to transform industries and redefine work. From creativity and innovation to adaptability and human-like interactions, there has been a significant transformation with the shift from AI to gen AI.



The global ML market is expected to grow from \$21.17 billion in 2022 to \$209.91 billion by 2029, at a CAGR of 38.8%.

Source: <https://www.hashstudioz.com/blog/how-machine-learning-solutions-are-driving-growth-in-2024/>



## Gen AI: Applications, challenges and the future

Gen AI, a subset of AI, focuses on creating models that generate new content such as text, images and music. These models, often built using neural networks such as generative adversarial networks (GANs) and variational autoencoders (VAEs), learn patterns from large datasets to produce realistic outputs.

- **GANs:** Consist of a generator and a discriminator, trained together to create and evaluate new data
- **VAEs:** Encode data into a latent space and decode it back, allowing new data generation from this space

### Applications of gen AI

- **Content creation:** Generates text, images and videos for marketing and media
- **Healthcare:** Assists in drug discovery by generating molecular structures
- **Art and design:** Enables artists to create unique artworks
- **Gaming:** Creates realistic characters and environments

### Gen AI challenges

- **Quality control:** Ensuring accuracy and avoiding biases
- **Intellectual property:** Addressing ownership and copyright issues
- **Ethical use:** Preventing misuse like deepfakes and misinformation

### The future of gen AI

The future of gen AI is promising, with advancements leading to more sophisticated and diverse outputs. Addressing ethical and societal implications is crucial for its responsible use that benefits all. While it opens new opportunities for innovation, productivity and efficiency, it also raises concerns about job displacement. It necessitates reskilling and upskilling of the workforce.

## Business expectations in the gen AI era

Customer service has evolved from basic in-person interactions to complex and multichannel experiences. Gen AI marks a significant shift, enhancing efficiency, personalization and customer satisfaction.

Traditionally, customer service relied on human agents through phone calls, emails and face-to-face meetings. This model had limitations in scalability, response time and consistency. The digital revolution introduced chatbots, automated email responses and social media support, allowing businesses to handle more inquiries efficiently. However, these solutions often lacked personalized and contextually relevant responses.

Gen AI represents a transformative leap in customer service. Unlike traditional AI, which relies on predefined rules, gen AI uses advanced machine learning models to generate human-like text, based on conversation context—enabling natural and engaging interactions.

### Key benefits of gen AI in customer service



#### Personalization

Analyzes customer data to provide personalized responses, enhancing satisfaction and loyalty



#### Scalability

Handles unlimited customer interactions simultaneously, ensuring timely responses



#### Consistency

Ensures consistent quality in interactions, reducing human error



#### 24/7 availability

Provides gen AI-powered solutions that operate around the clock, enabling global support



#### Cost-efficiency

Reduces operational costs, allowing human agents to focus on complex tasks



#### Trust and credibility

Evaluates the credibility of information sources, ensuring customers take decisions based on reliable information



#### Simplified decision making

Helps navigate information overload by filtering and curating information based on preferences—simplifying decision-making



#### Enhanced product discovery

Aids in product discovery by identifying patterns and trends, helping customers stay informed about the latest offerings



#### Enhanced shopping experiences

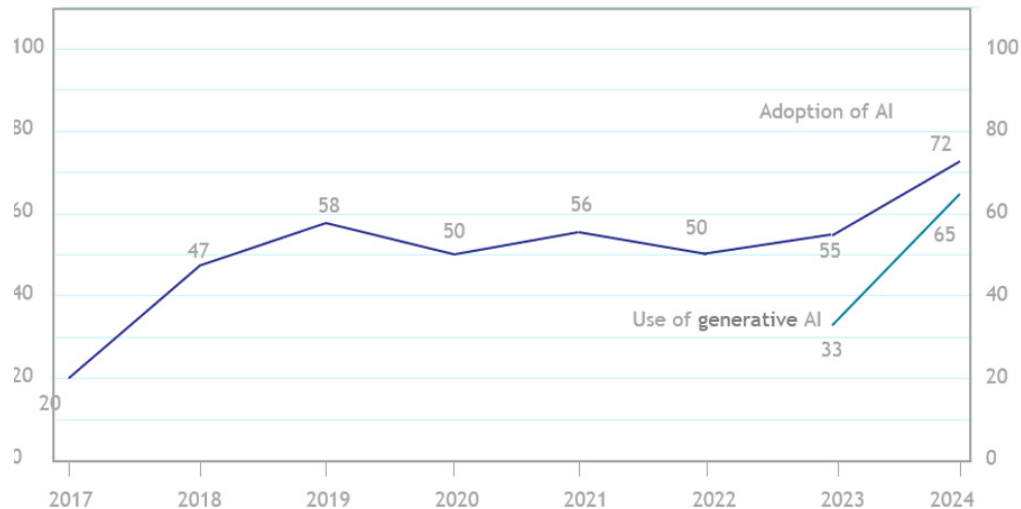
Enables virtual try-ons, personalized product recommendations and AI-driven chatbots, improving customer satisfaction and loyalty



# Expert voices weigh in on gen AI's impact at workplace

## McKinsey's view on gen AI and workforce transformation

Gen AI is revolutionizing the workforce, and McKinsey & Company, a global management consulting firm that provides professional services to corporations, governments and other organizations, has extensively analyzed gen AI's impact and potential. In a survey titled, Gen AI's next inflection point: From employee experimentation to organizational transformation, McKinsey & Company provides a comprehensive understanding of how gen AI is transforming various industries and reshaping the future of work.



Source: <https://www.wire19.com/state-of-ai-in-2024-mckinsey-survey-reveals-key-insights-for-cios/>

### Organizations that have adopted AI in at least one business function

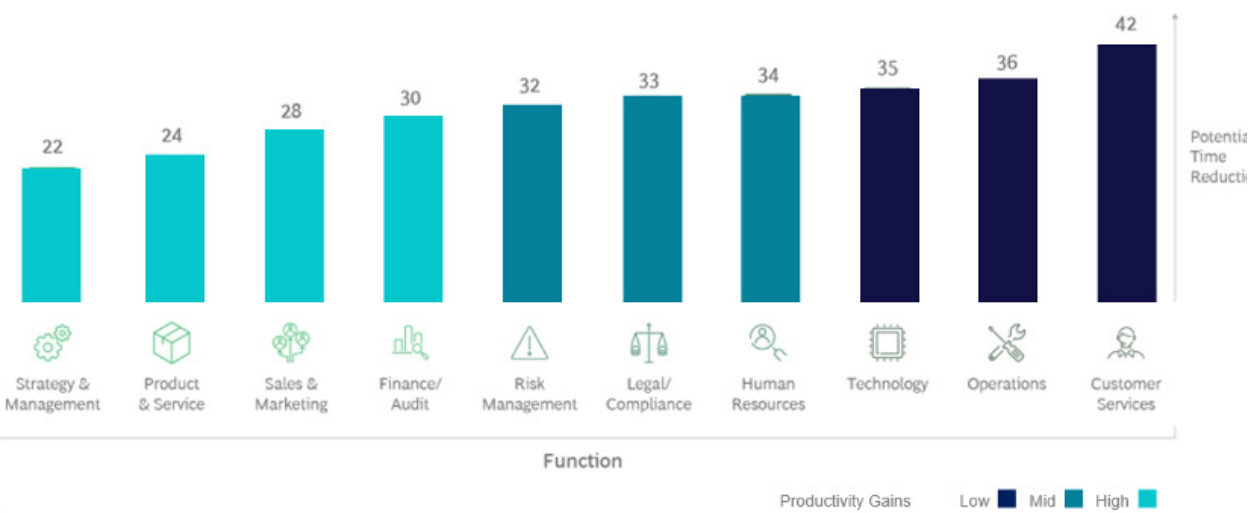
#### Key findings about gen AI

- Gen AI creates new content by learning from existing data. McKinsey highlights its surge in adoption by organizations—to enhance productivity and innovation. This technology is a catalyst for significant changes in work performance.
- By 2030, up to 30% of hours worked in the US could be automated due to gen AI, affecting routine tasks and allowing employees to focus on complex and creative aspects.
- McKinsey predicts 12 million people in the US will need to transition into new roles by 2030 due to gen AI advancements, requiring substantial reskilling and upskilling.
- The company envisions a future where gen AI and humans collaborate seamlessly, achieving greater efficiency and innovation.

# BCG’s perspective on gen AI and job satisfaction

Gen AI is transforming the workplace, and the Boston Consulting Group (BCG), a global management consulting firm known for its expertise in business strategy and innovation, has analyzed gen AI’s impact on job satisfaction. Gen AI enhances content creation, automation and decision-making, offering substantial efficiency gains. However, its positive impact on job satisfaction depends on shared benefits and supportive leadership.

BCG’s research, The Path to Generative AI Value Begins with a Workforce Diagnostic, shows that workers now prioritize job security, appreciation and work-life balance. Despite AI advancements, most workers do not see gen AI as a threat but as a tool for enhancing roles and creating growth opportunities.



Source: <https://www.bcg.com/publications/2023/assessing-the-impact-of-generative-ai-on-workforce-productivity>

BCG in an article titled, How Gen AI Can Make Work More Fulfilling, suggests that employee adoption of gen AI hinges on shared benefits and supportive leadership. This approach boosts productivity and job satisfaction by making work more engaging and meaningful.

BCG emphasizes the importance of responsible AI implementation, addressing data privacy issues, and ensuring transparency. By tackling these concerns, businesses can foster a positive perception of gen AI among employees.



# Cognizant's gen AI positioning

Cognizant is leveraging gen AI to revolutionize business through human-machine collaboration. Cognizant Neuro® AI, now enhanced with multi-agent orchestration, accelerates adoption in a flexible, secure and scalable manner. Cognizant predicts gen AI could inject \$1 trillion into the US economy over the next decade. We emphasize critical thinking and communication skills, preparing the workforce for future challenges and opportunities.

“The growing demand already convinced Cognizant to invest about \$1 billion in its gen AI capabilities over the next three years, focusing on areas including platform modernization, infrastructure, recruiting and upskilling.”



**-Ravi Kumar S,  
CEO Cognizant**

## Our case studies of gen AI applications

Gen AI is revolutionizing business operations, enhancing efficiency, productivity and innovation. We have implemented gen AI solutions across various industries. Here are some notable case studies:

- **Enhanced productivity with GitHub Copilot:** A multinational e-commerce platform saw a twofold productivity increase, 50% reduction in rework and 15% savings in automated scripting efforts with GitHub Copilot
- **Generative AI-powered insights for a Fortune 100 company:** Implementing a fully automated solution on Microsoft Azure Cloud led to an expected 50% year-on-year growth, 20% performance increase and \$7.5 million savings over five years
- **Optimized regression testing for a global insurance leader:** Gen AI in software testing is expected to save 40% in efforts, optimize regression testing by 35% and cut QA costs by 32%
- **Semantic search for a global biopharmaceutical:** An intelligent search tool reduced decision-making time from days to minutes and enabled comprehensive report analysis
- **Enterprise agility for a UK insurance company:** Gen AI solutions resulted in 18% QA cost savings and a 90% reduction in data framework development time
- **Business intelligence for a major airline:** A Gen AI SQL generator is expected to deliver an 80% efficiency gain by streamlining access to analytics data

**These case studies highlight gen AI's transformative impact—driving digital transformation and enhancing competitiveness.**





# Gen AI's impact on business process outsourcing sector

The BPO industry is transforming with gen AI—enhancing efficiency, productivity and innovation.

### BPO automation trends

- **NLP and chatbots:** AI-powered chatbots provide real-time and personalized customer support, reducing human intervention
- **Predictive analytics:** AI analyzes historical data to predict customer behavior, optimize processes and improve satisfaction
- **Automated data entry and management:** AI tools streamline data tasks, reducing errors and increasing productivity
- **Enhanced quality assurance:** AI-driven systems monitor interactions and provide real-time feedback, ensuring high service standards
- **Intelligent process automation:** Combines RPA with AI to handle complex tasks requiring decision-making

### Skillset evolution

- **AI and automation literacy:** Understanding AI technologies and their impact on business processes
- **Technical proficiency:** Skills in using automation platforms and AI-powered tools
- **Data analysis and interpretation:** Ability to work with AI-generated insights and make data-driven decisions
- **Customer-centric skills:** Despite the rise of automation, human interaction remains crucial in the BPO sector, requiring professionals to have strong communication and interpersonal skills to handle complex customer issues
- **Adaptability and continuous learning:** Willingness to upskill and stay updated with AI advancements
- **Ethical and responsible AI use:** Awareness of data privacy, bias and ethical implications of AI

### Opportunities

- **Enhanced efficiency and productivity:** Automating tasks such as data entry and customer support
- **Improved customer experience:** AI-powered support enhances satisfaction and loyalty
- **Cost reduction:** Reducing operational costs through automation
- **Advanced analytics and insights:** Leveraging AI for deeper insights and informed decisions
- **Scalability:** Quickly adjusting capacity with AI-driven automation
- **Innovation and new services:** Offering AI-driven consulting and predictive analytics

### Opportunities

- **Workforce displacement:** Managing the transition with reskilling opportunities
- **Data privacy and security:** Ensuring robust data protection measures
- **Integration complexity:** Seamless integration of AI solutions
- **Ethical considerations:** Adopting ethical AI practices
- **Dependence on technology:** Ensuring robust IT infrastructure
- **Regulatory compliance:** Staying updated with AI and data protection laws



Stay relevant and  
capture maximum  
market share

The BPO industry is transforming with advancements in gen AI. While gen AI is reshaping various aspects, several areas still lack mature solutions. This section explores key points where gen AI can be leveraged to stay relevant and capture market share.

#### Enhanced workforce management

- **Challenge:** Managing large and distributed teams efficiently
- **Solution:** Gen AI-driven tools for real-time scheduling, workload distribution and performance tracking, predicting peak workloads to optimize staffing

#### Multilingual support

- **Challenge:** Providing accurate multilingual support
- **Solution:** Gen AI models to predict sentiments across languages and communication styles, enhancing customer satisfaction

#### Customer-sentiment analysis

- **Challenge:** Accurately interpreting customer sentiment
- **Solution:** Gen AI models to predict sentiments across languages and communication styles, enhancing customer satisfaction

#### Real-time quality assurance

- **Challenge:** Manual audits missing nuanced issues
- **Solution:** Gen AI systems for real-time quality assurance, analyzing interactions and suggesting improvements

#### Process automation beyond RPA

- **Challenge:** RPA limited to repetitive tasks
- **Solution:** Gen AI-driven automation for complex, non-linear processes, freeing human agents for higher-value activities

#### Predictive client-need analysis

- **Challenge:** Anticipating client needs
- **Solution:** Gen AI models predicting client needs and market trends, offering tailored solutions

### Employee training and development

- **Challenge:** Inconsistent training across locations
- **Solution:** Gen AI-driven training programs providing personalized learning paths and real-time feedback

### Compliance and risk management

- **Challenge:** Ensuring compliance across jurisdictions
- **Solution:** Gen AI tools monitoring compliance activities, predicting regulatory changes and reducing non-compliance risks

### Client acquisition and retention strategies

- **Challenge:** Identifying and retaining clients
- **Solution:** Gen AI-driven systems analyzing market data for client acquisition and personalized retention strategies

### Data security and privacy management

- **Challenge:** Ensuring data security and privacy
- **Solution:** Gen AI systems enhancing data security through real-time monitoring, anomaly detection and automated threat responses





Invest in gen AI today  
for tomorrow's edge

The BPO industry stands at a critical juncture, where embracing gen AI can lead to significant competitive advantages. However, to stay relevant and capture maximum market share, it is crucial to explore and develop gen AI solutions that address the industry's current challenges. By focusing on these underdeveloped areas, BPOs can not only enhance operational efficiency and client satisfaction but also position themselves as leaders in a rapidly evolving market. Investing in gen AI innovation today will determine the market leaders of tomorrow.

Discover how our AI business accelerators can help you quickly adopt GenAI for your business processes—  
[click here to learn more.](#)

## About the authors

**Muthanna TA, Director**

**Jaidev Kudva, Associate Director**

**Prince James, Lead**

**Praveen Pinto, SDM**



Cognizant helps engineer modern businesses by helping to modernize technology, reimagine processes and transform experiences so they can stay ahead in our fast-changing world. To see how Cognizant is improving everyday life, visit them at [www.cognizant.com](http://www.cognizant.com) or across their socials @cognizant.

### World Headquarters

300 Frank W. Burr Blvd.  
Suite 36, 6th Floor  
Teaneck, NJ 07666 USA  
Phone: +1 201 801 0233  
Fax: +1 201 801 0243  
Toll Free: +1 888 937 3277

### European Headquarters

280 Bishopsgate  
London  
EC2M 4RB  
England  
Tel: +44 (0) 20 7297 7600

### India Operations Headquarters

5/535, Okkiam Thoraiakkam,  
Old Mahabalipuram Road,  
Chennai 600 096  
Tel: 1-800-208-6999  
Fax: +91 (0) 44 4209 6060

### APAC Headquarters

1 Fusionopolis Link, Level 5  
NEXUS@One-North, North Tower  
Singapore 138542  
Tel: +65 6812 4000

© Copyright 2025–2027, Cognizant. All rights reserved. No part of this document may be reproduced, stored in a retrieval system, transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the express written permission of Cognizant. The information contained herein is subject to change without notice. All other trademarks mentioned here in are the property of their respective owners.