



Beyond the spotlight

Uncovering hidden value
through back-office AI

Contents

Revolutionizing the routine: Rise of back-office AI	3
From sideline to frontline: Revolution in the ranks	5
Back-office AI in action	6
Full speed ahead fueled by demographic drive	8
The need to act now	9
Contacts, acknowledgments, and endnotes	10

Revolutionizing the routine: Rise of back-office AI

As we navigate the digital age, artificial intelligence (AI) has evolved from being a pipe dream of the future to an indispensable tool in our business arsenal. As organizations continually strive to meet shareholder expectations through groundbreaking innovation and unparalleled service delivery, AI has stepped onto the scene as a transformative force. Platforms harnessing Generative AI (GenAI), such as ChatGPT, and user productivity applications like virtual assistants have seized global attention.

“Artificial intelligence (AI) applies advanced analysis and logic-based techniques—including machine learning (ML)—to interpret events, support and automate decisions, deliver experiences, and take actions.”¹



While much of the market spotlight has been on Generative AI, it is crucial to understand that it's just a subset of the broader, more comprehensive AI landscape. By harnessing the full spectrum of AI capabilities, organizations can holistically transform their business operations. Here, we explore the five levels of AI, each encapsulating the next and their potential in revolutionizing back-office functions:

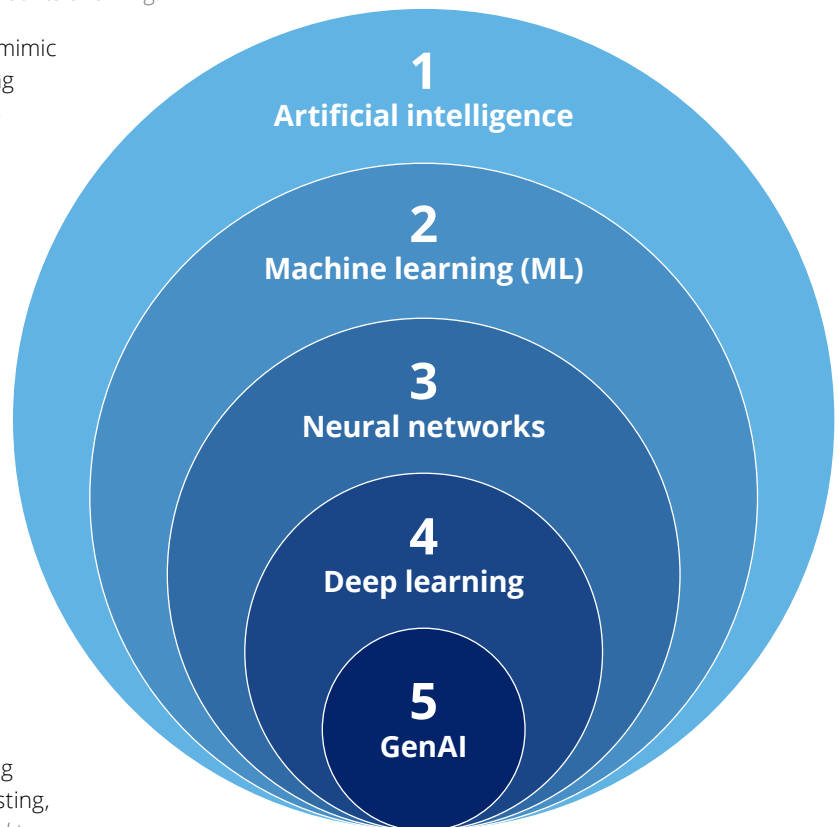
1 Artificial intelligence is the cornerstone of intelligent computing—enabling computer systems to perform humanlike, cognitive tasks (e.g., visual perception, speech recognition, and data-driven decision-making). AI can automate routine tasks, reduce errors, and expedite service delivery—transforming the efficiency and effectiveness of business operations. *Back-office example: AI can enhance supply chain management by predicting supply and demand fluctuations, optimizing inventory levels, and automating warehouse operations.*

2 Machine learning (ML) is the algorithmic engine that fuels AI. It is a program that identifies patterns and relationships in existing data and captured in a model. This trained model is then applied to new data to make predictions, enabling proactive management and optimized resource allocation. *Back-office example: A supervised ML model can be used to analyze patterns in expense data and categorize transactions as potentially fraudulent based on learned criteria from historical data, such as unusual expense amounts or timing.*

3 Neural networks are computer models designed to mimic aspects of the human brain with elements representing neurons and interconnections. These neural networks comprise layers of virtual neurons that recognize patterns in different kinds of input data, such as numerical data, texts, images, and sounds. *Back-office example: For invoice management, neural networks can classify and tag documents by analyzing and learning patterns from the textual and visual data within the documents, effectively sorting them based on content, type, and relevance.*

4 Deep learning utilizes multiple or “deep layers” of neural networks to self-learn and adapt from a wealth of data. The self-evolving capabilities allow businesses to drive continuous process improvement and adapt to a changing operational landscape. *Back-office example: Deep learning can help continuously analyze and adapt to evolving workforce data trends to enhance decision-making in talent acquisition, retention, and performance evaluation.*

5 GenAI is a subset of deep learning, focusing on crafting outputs—generating new data or re-creating from existing, learned content. *Back-office example: GenAI can be used to generate financial reports with key descriptions/insights and to support advanced scenario simulations based on historical data.*



From sideline to frontline: Revolution in the ranks

Data analytics and AI have been on the sideline for business leadership. In 2021, CFOs identified their top 15 priorities for the year, resulting in “financial performance” and “cash management” taking the lead and relegating “AI” to an afterthought.² However, in 2024, AI made a stellar leap to the top of CFOs’ priority list, reflecting a rapid and remarkable recognition of its invaluable contribution.³ This change is in line with Gartner’s observation that AI, particularly Generative AI, is now a public-facing technology, notably affecting analytics. Analytics and AI leaders are investing in tool assistants/copilots for analytics and data science as well as platform capabilities for embedding and supporting Generative AI, decision intelligence, and other emerging technologies.

2021

>

2022

>

2023

>

2024

“We need to focus on acquiring top talent”

“Managing costs is our top priority”

“We need to integrate data and analytics into our workstreams”

“How can we start using AI to optimize back-office processes?”

The challenge of effectively leveraging AI for value generation remains significant, as highlighted by 49% of organizations in the 2023 Gartner AI in the Enterprise Survey.⁴ Fortunately, an accessible solution exists in the form of the substantial investments organizations have made over the past decade in enterprise resource planning (ERP) platforms, such as Oracle and SAP, with primary focus on addressing a key priority—financial performance. These ERP investments now present a golden opportunity for AI integration, ushering in a new era of operational efficiency and intelligence. The back office, often seen as the backbone of a business, holds a wealth of immediate cost-saving possibilities that can be unlocked through the power of AI. Integrating AI into these core operations enables organizations to leverage data in more strategic and impactful ways, minimizing risk and creating a ripple effect of value across the entire business. Investing in AI integrations in the back office can drive as much value as in consumer-facing advancements, an area that has traditionally received more attention in the industry.

Back-office AI in action

By infusing AI into core operational processes, organizations can reap benefits that extend beyond the capabilities offered by their existing ERP systems. The incorporation of AI can revolutionize various business functions, such as finance, human resources, and supply chain operations, thereby augmenting efficiency, trimming costs, bolstering decision-making procedures, mitigating risks, and amplifying customer service. Here are some of the use cases demonstrating how AI streamlines back-office processes:

Drive efficiency and reduce costs

Expense management:

Streamline expense processing and approval, identify policy violations, and suggest cost-saving opportunities.

Invoice management:

Streamline invoice management, oversee outgoing payments, track incoming ones—thereby minimizing manual tasks and improving accuracy.

Demand forecasting:

Analyze historical data and market trends to accurately predict future demand, helping to optimize inventory levels and reduce costs.

Learning and development personalization:

Tailor training programs to an employee's role, performance, and learning style, bolstering their professional growth.

Improve decision-making

Budget planning:

Enable more accurate budget forecasting and scenario planning.

Sourcing to contracts:

Identify best suppliers and determine optimal/recommended pricing for contract negotiations.

Delivery optimization:

Optimize delivery routes and schedules, ensuring prompt deliveries.

Talent acquisition:

Improve candidate matching accuracy, reduce bias in hiring, and enhance candidate experience.

Hidden insights in finance:

Uncover hidden process optimization opportunities by identifying and streamlining specific types of transactions that consistently take long.

Mitigate risks

Reconciliation:

Automate the reconciliation process, promptly identifying discrepancies and enhancing the precision of financial records.

Fraud detection:

Detect unusual activities in key accounts, boosting security and trust and driving cost savings.

Employee turnover and retention:

Predict employee turnover, identify factors affecting employee satisfaction, and suggest measures to improve retention and engagement.

Returns management:

Predict return likelihood based on historical data and formulate strategies to diminish return rates.

The application of AI in the back office can be widely integrated across functions, sectors, and industries due to its flexibility. The power of AI lies not only in its theoretical potential but also in its proven, tangible benefits. Let's delve into some success stories where AI has been the catalyst of transformation:



A US-based technology, media, and telecommunications company achieved **\$20 million/year** potential value to collect by reducing write-off amounts with the support of AI in predicting late payments. The AI-based tool uses the power of sophisticated ML techniques to equip finance departments with informed collection strategies by predicting invoice delinquency for business-to-business customers.



By incorporating AI into a predictive maintenance model, a major utilities company in North America was able to identify **70% of the component failures** more than five days in advance. This allowed the stakeholders to take a proactive rather than a reactive approach for planning and maintenance.



An alcohol production company realized an increase of **95% forecasting accuracy** by incorporating a machine learning model that forecasts independent factors, such as wholesale price indices, end-use industry indices, and trade and supply drivers along with weather and seasonal factors.



After successfully deploying a machine learning model in its supply chain operation, a US government and public services entity **transformed its drug supply chain monitoring system** to generate insights, apply guidance, and identify supply chain vulnerabilities. This multinomial classification ML algorithm helped automate processes, predict outcomes, and ultimately enhance resiliency in dealing with drug supply chain shortage, especially after effects of the COVID-19 pandemic.



With AI technology being used to automate student refunds, deposits, and fee follow-ups, a public college was able to save approximately **3,800 full-time equivalent hours** between the finance office, registrar's office, and roughly 45,000 students.



A major US health care organization saw positive impacts across its back-office operations after the adoption of AI within its system. The AI capabilities implemented—consisting of ML models, intelligent process automation, and intelligent data extraction—have significantly enhanced clinical quality and patient and provider experience as well as lowered administrative costs. As a result, the organization realized up to 70% acceleration in the employee screening and onboarding process, 10%–20% collection improvement for bad debt/self-pay accounts, which consequently led to a **12%–15% reduction** in back-office expenses and increased efficiency.

While these statistics may vary based on different use cases, they serve as a testament to the widespread benefits that companies can reap from embedding AI into their core operations.

Full speed ahead fueled by demographic drive

While the potential for return on investment through back-office optimization is compelling, another substantial change is driving this priority shift—the impending demographic transition. By 2029, a dramatic shift in the workforce composition will occur with millennials making up the majority of the total workforce.⁵ Both millennials and Gen Z bring with them a preference for efficiency, a desire to eliminate monotonous tasks, and an affinity for technology. Their inclination toward companies that leverage AI and analytics is changing the business landscape, pushing for innovation and technological adoption. As the influence of millennials and Gen Z and preferences for companies that embrace AI and analytics intensifies in the workforce, businesses find themselves at a crucial crossroads—adapt their strategies and operations or risk obsolescence. While AI and data analytics continue their move toward prominence in the market, business leaders are waking up to a new reality—these technologies have transitioned from being “nice-to-haves” to “must-haves” in their organizational toolkit.

As the influence of millennials and Gen Z and preferences for companies that embrace AI and analytics intensifies in the workforce, businesses find themselves at a crucial crossroads—adapt their strategies and operations or risk obsolescence.



The need to act now

AI has become a future (if not current) business necessity. While the spotlight often falls on the more glamorous AI applications, such as chatbots or GenAI, the transformative power of traditional AI in optimizing business processes should not be underestimated. The integration of AI into back-office operations transforms the ways in which critical tasks are executed. No matter which ERP system a company has in place, a well-defined strategy is required to fit AI in the organization's back-office ecosystem and to uncover hidden values within its ERP investments. It is crucial that companies act now to avoid being left behind in the current wave of evolution. AI is not just about the future—it is about redefining the present.



For further information, please contact:



Richard Solari

Managing Director
Deloitte Consulting LLP
rsolari@deloitte.com



Sumit Bajaj

Senior Manager
Deloitte Consulting LLP
sumitbajaj@deloitte.com



Christy Kim

Manager
Deloitte Consulting LLP
chriskim@deloitte.com

Acknowledgments

We would like to thank Ariel Chau, Morgan Henry, Jalen Harris, and Rishikesh Sahoo for their overall contributions to this publication.

Endnotes

1. Gartner, [Artificial Intelligence Primer for 2024](#), January 31, 2024.
2. Deloitte, [CFO Signals™ 4Q 2022](#), accessed November 2024.
3. Deloitte, [CFO Signals™ 4Q 2023](#), accessed November 2024.
4. Deloitte, [CFO Signals™ 4Q 2022](#).
5. Elka Torpey, "Millennials in the labor force, projected 2019-29," Career Outlook, US Bureau of Labor Statistics, November 2020.



About Deloitte

Deloitte refers to one or more of Deloitte Touche Tohmatsu Limited, a UK private company limited by guarantee, and its network of member firms, each of which is a legally separate and independent entity. Please see www.deloitte.com/about for a detailed description of the legal structure of Deloitte Touche Tohmatsu Limited and its member firms. Please see www.deloitte.com/us/about for a detailed description of the legal structure of Deloitte LLP and its subsidiaries. Certain services may not be available to attest clients under the rules and regulations of public accounting.

This publication contains general information only and Deloitte is not, by means of this publication, rendering accounting, business, financial, investment, legal, tax, or other professional advice or services. This publication is not a substitute for such professional advice or services, nor should it be used as a basis for any decision or action that may affect your business. Before making any decision or taking any action that may affect your business, you should consult a qualified professional advisor. Deloitte shall not be responsible for any loss sustained by any person who relies on this publication.