

JORGE CALVO - CARLOS ESCAPA

The AI driven business

Leading, Competing,
and Thriving in the Age
of Artificial Intelligence

Libros de Cabecera

The AI driven business

JORGE CALVO - CARLOS ESCAPA

We are already in the era of AI-augmented enterprises. The advantage does not lie in the technology itself, but in how you—as a leader—choose to apply it. Are you ready to lead in an environment where artificial intelligence is reshaping strategy, competition, and the future of your business?

This book is not about algorithms; it is about leadership and vision. It provides the roadmap you need to transform your organization and position it at the forefront of change.

You will learn how artificial intelligence multiplies value, unlocks opportunities, and turns uncertainty into advantage. Through clear insights, compelling examples, and actionable frameworks, Jorge Calvo and Carlos Escapa—renowned international experts—demonstrate how to embed AI at the very core of business. Covering cases that span professionals, entrepreneurs, SMEs, and large corporations, they offer a perspective that is both realistic and ambitious, connecting strategy with execution.

This is not a book for technicians, but for leaders who understand that the greatest risk is not misusing AI, but ignoring it. Here, you will find the keys to building a smarter, more resilient, and more competitive enterprise. Above all, you will learn to lead with augmented intelligence, vision, and boldness.

The time to act is not tomorrow—it is now.

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Leading, Competing and
Thriving in the Age of Artificial
Intelligence

**Jorge Calvo
Carlos Escapa**

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PREFACE

A Vision for the Future of AI-Augmented Business

Dear Reader,

We live in a world where technology constantly redefines the boundaries of what is possible. Among the forces driving this transformation, Artificial Intelligence (AI) stands out as the most critical enabling technology of our era. Over decades in senior executive roles, we have witnessed firsthand the profound industrial, digital, and organizational shifts that have reshaped global business. Today, as strategic advisors and leadership educators, we have the privilege of helping companies and executives not only understand AI but also apply it pragmatically and effectively in their organizations.

Throughout our careers, we have held leadership positions in multinational technology firms and academic roles in leading business schools. This dual experience—executive and academic—has provided us with both breadth and depth in understanding how to transform business strategy and culture through intelligence rather than trends. This is precisely what we aim to offer in this book: a rigorous yet accessible guide to leading with AI, moving beyond the utopias and dystopias often portrayed in today's media.

Our combined experiences have given us a deep understanding of the challenges and opportunities businesses face in the digital age. This perspective has enabled us to develop a comprehensive and practical approach to implementing AI in corporate environments.

Since 2020, we have led the executive program AI in Business at ESADE Executive Education, where over 1,400 executives have designed their own AI-driven transformation plans using our learning-by-doing methodology. Nearly 5,000 professionals have also been trained through executive programs and corporate initiatives focused on applied AI. This experience, along with our advisory work across multiple sectors

and regions, has allowed us to identify common patterns, recurring mistakes, and proven success factors for integrating AI as a true driver of business transformation.

While many texts address AI from a technical perspective, and a few examine its business implications, this book seeks to bridge that gap in management and business strategy by bridging both worlds. We will explore AI as a strategic tool—not only for better-informed decision-making and process automation but also for enhancing and enriching human capabilities. Our goal is to foster a future where technology acts as a genuine ally rather than an adversary.

As Stephen Hawking wisely noted shortly before his passing, “AI could be the best or the worst thing to happen to humanity. We cannot simply ignore it.” In this book, we adopt a stance of rational optimism, positioning ourselves as pragmatists committed to showing how, with the right approach, AI can be a powerful ally that amplifies our capabilities and helps us address global challenges collaboratively. In the words of futurist Ray Kurzweil, “AI will allow us to transcend our cognitive and biological limitations and expand our creativity.”

In October 2024, AI reached a historic milestone when two Nobel Prizes were awarded for its contributions: in Physics, to Geoffrey Hinton and John Hopfield for their foundational work on neural networks; and in Chemistry, to Demis Hassabis, John Jumper, and David Baker for their groundbreaking advances with AlphaFold. In 2025, UNESCO strengthened the global implementation of its Recommendation on AI Ethics by introducing practical tools such as the AI Readiness Assessment Methodology (AI RAM), which evaluates countries’ preparedness to adopt ethical and responsible artificial intelligence. This discussion extends far beyond algorithms—it is about the future, responsibility, and global leadership.

At the heart of responsible adoption lies a crucial but often blurred distinction: the difference between optimization and automation. While optimization aims to replace low-value cognitive tasks and free up resources for higher-value work, automation seeks to replace entire processes through applications. A common mistake is to automate tasks that require judgment, creativity, empathy, or contextual understand-

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ing. This can lead to dehumanized processes, degraded user experiences, and paradoxically, reduced work quality alongside greater mental health risks.

This book offers a strategic and practical journey through more than sixty real-world cases of companies applying AI to transform their operations, products, and business models. We have selected representative examples from organizations of all sizes and levels of digital maturity, across diverse sectors and countries. These cases illustrate how AI adapts to context and creates value in different ways. Their richness and diversity provide valuable insights into AI's potential and the varied paths companies can take to integrate it successfully into their strategies.

Beyond case studies, you will find a maturity diagnostic model, a strategic framework, and key reflections on ethics, employment, sustainability, and leadership in this new era. You do not need to be an engineer to benefit from this content; you need only vision, responsibility, and a willingness to change.

We also examine the broader economic and social impact of AI, addressing its "myths and legends" while exploring issues such as the future of work, sustainability, ethics, and privacy. AI represents not just a technological revolution but also an unprecedented opportunity to tackle global challenges with new tools.

As Andrew Ng has put it, "AI is the new electricity." Yet as Stephen Hawking warned, its impact depends on how we choose to use it. Other experts, including Sundar Pichai, CEO of Google, have suggested that AI may influence humanity even more profoundly than Gutenberg's printing press. Until 2024, companies using AI were considered a distinct category. Today, it is rare to find businesses that do not leverage it. Just as we no longer speak of "electrified" companies, AI has evolved from being a competitive edge to a fundamental necessity for survival and growth. With AI as your strategic ally, you can unlock new opportunities for both your organization and your career. Throughout these pages, we will guide you on a journey of discovery, learning, and transformation, equipping you with the tools and knowledge to fully harness AI's potential in your business.

THE AI DRIVEN BUSINESS

The book is structured into five complementary parts that take you from strategic reflection to practical action. Part I establishes the fundamentals of AI and dispels key myths that hinder adoption. Part II examines AI's transformative impact on business models, functions, and value chains. Part III explores how to lead change from a human and organizational perspective, with a focus on executive and team leadership. Part IV presents case studies of companies beginning their AI transformations. Finally, Part V highlights organizations aspiring to become fully AI-first. Each section is designed to help you advance along your own roadmap, regardless of your company's starting point.

We encourage you to approach this content with curiosity and openness, ready to explore new concepts and challenge established assumptions. Together, we can lay the groundwork for a future where AI serves as a catalyst for innovation, efficiency, and sustainable growth. In doing so, we will not only drive organizational success but also help shape a brighter tomorrow for all.

Are you ready to begin? Welcome to the AI-driven transformation. Those who fail to adapt risk obsolescence, but those bold enough to lead will shape the future.

INTRODUCTION

A Technology in Constant Change

On November 30, 2022, Sam Altman, CEO of OpenAI, introduced ChatGPT to the world. This AI-based language model revolutionized how we interact with technology. The news spread rapidly, and the impact of AI-Generated Content (AIGC)—likely the most disruptive innovation of the century, which we had been monitoring closely since 2017, became evident within weeks, leaving little time for society to process it.

Altman was a guest of honor at the World Economic Forum held in Davos, Switzerland, from January 16 to 20, 2023. Business leaders, politicians, and academics from around the globe gathered to discuss the challenges and opportunities presented by the fourth industrial revolution driven by AI (World Economic Forum, 2023). Altman held private meetings with political and business leaders, coinciding with Satya Nadella, CEO of Microsoft. Both were preparing the ground for an announcement that OpenAI and Microsoft would make a few days later. On January 23, 2023, Microsoft announced an investment of \$10 billion in OpenAI. This strategic partnership focused on developing and commercializing generative AI, with a total estimated commitment of \$13 billion. However, only a fraction of the funds would be transferred directly to OpenAI; the remainder was allocated as compensation for OpenAI's use of Microsoft's cloud computing resources. The computational power provided by Microsoft enabled OpenAI to elevate its models to unprecedented levels, technically referred to as large-scale supercomputing. Meanwhile, Microsoft's Copilot application would deliver this technology to over 400 million users. This was a significant strategic move orchestrated by two visionary leaders, breaking conventional molds and redefining the concept of disruptive innovation.

Yet this series of events was only the beginning. A few months later, in October 2023, a dramatic turn occurred: OpenAI's board of directors

decided to dismiss Altman due to “irreconcilable differences in strategic vision.” OpenAI, founded in 2015 by Altman as a nonprofit with support from Elon Musk and other board members, aimed to develop safe and beneficial AI in response to the growing dominance of tech giants. But the path was far from smooth. As OpenAI shifted to a dual-entity model, public-benefit and for-profit, through its partnership with Microsoft and the commercial launch of ChatGPT to meet increasing financial demands, its commitment to foundational ideals was questioned. Controversy emerged around the secret development of the new Q* (Q star) model, seen as a potential breakthrough toward Artificial General Intelligence (AGI), further complicating relationships within the board.

In its early years, OpenAI took a distinctive approach, emphasizing ethical and open-source AI. However, the need to cover rising costs led to the creation of a for-profit subsidiary, fueling debates about the company’s commitment to its public-benefit mission. The most widely circulated account suggests that Altman failed to inform the board about Q*. At the same time, two executives reported psychological abuse from Altman, and the Q* episode became the final tipping point for board members Tasha McCauley and Helen Toner, who supported a motion by co-founder and chief scientist Ilya Sutskever to remove him. Sutskever, responsible for ensuring that superintelligence aligned with human interests, believed Altman was overstepping foundational boundaries. However, he quickly reversed course when a majority of employees threatened to resign, publicly apologized, and reinstated support for Altman. McCauley and Toner resigned a few days later. The episode underscored the tension between profitability, ethics, and the organization’s original vision. Sutskever’s leadership was short-lived, constrained by growing dissatisfaction among employees who were awaiting the fulfillment of Altman’s promise of multimillion-dollar stock-based compensation in recognition of their commitment and efforts.

When AI became accessible to consumers

The market fit of ChatGPT was extraordinary. In just two months, the platform reached 100 million users, a milestone no other application had achieved so quickly (Statista, 2023). This success marked a turning point in how AI became embedded in everyday life. Until then, AI had

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been primarily deployed in a B2B (business-to-business) model, where companies developed and sold AI solutions to other businesses. Consumer interaction with AI was limited to voice assistants and basic customer service chats, which required users to phrase requests correctly. With the arrival of ChatGPT and other generative AI applications, AI transitioned to a B2C (business-to-consumer) model, reaching users directly. For the first time, consumers could use AI freely without any prior knowledge.

By April 2024, leading generative AI platforms such as ChatGPT, Claude, Gemini, and Stability.ai were receiving over two billion daily visits (Similarweb, 2024). This figure is striking, particularly given that ChatGPT had launched only eighteen months earlier. The rapid growth and widespread adoption of these tools highlight both their strong market fit and the societal demand for generative AI.

To put this into perspective, daily visits to these AI platforms are comparable to those of Amazon.com, the global e-commerce leader and a pioneer in commercial AI. Amazon has made substantial investments in applying AI across its business, from personalizing recommendations to optimizing logistics and operations (Amazon, 2021). It also markets AI as a service through Amazon Web Services. The fact that generative AI platforms now attract traffic on par with Amazon.com underscores their relevance and impact in the consumer sector. It also confirms that generative AI is not a passing trend but a transformative technology that will continue to evolve.

In December 2024, OpenAI launched Sora, enabling ChatGPT users to generate video clips of up to 20 seconds in 1080p quality. The feature includes storyboard tools, visual remixing, and safeguards against sexual deepfakes and unwanted manipulation. This expansion into video represents a major leap in creative content generation: an AI capable of producing audiovisual narratives without cameras, budgets, or technical equipment. Almost simultaneously, the DeepSeek-VL model, developed by the DeepSeek team and released open-source in March 2025, gained attention for its multimodal reasoning capabilities, integrating text and images. It outperformed several US commercial models in complex visual interpretation tasks for the first time. This milestone not only accelerated AI development in China but also intensified

the global “AI Race” for advanced cognitive capabilities, prompting governments to design industrial policies to protect their sovereignty in this field.

These tools are now integrated across a wide range of sectors, from education and healthcare to entertainment and e-commerce. Their accessibility has enabled people of all ages and backgrounds to benefit from AI in daily life. The shift from B2B to B2C has profoundly democratized access to tools once reserved for large corporations, opening new avenues for creativity, innovation, and problem-solving. This transition has also spurred a proliferation of generative models from both established companies and startups, fueling growth in art, design, and beyond. Generative AI, along with transformer-based multipurpose models, has refined its ability to produce original content, with applications ranging from digital art to generating molecular structures for drug discovery.

By the end of 2024, AI surpassed humans for the first time in most key technical benchmarks, according to Stanford’s AI Index Report. This included tasks such as image classification (ImageNet), visual reasoning (VQA), mid-level reading comprehension (SQuAD 2.0), English language understanding (SuperGLUE), and multi-task language understanding (MMLU). Models like Gemini Ultra and GPT-4 reached or exceeded human performance thresholds. Yet AI still lags in more complex cognitive challenges, such as competitive mathematics and advanced reasoning and planning.

This leap is attributed not only to algorithmic progress but also to a sharp reduction in processing a single inference cost around \$2,500 in 2017, whereas today it can be as little as \$0.08 for equivalent tasks, thanks to advances in hardware optimization, algorithmic efficiency, and economies of scale. This decline stems from hardware optimization, better algorithms, and economies of scale. As a result, the marginal cost of AI is approaching zero.

Does this mean AI is smarter than humans? Not quite. AI is faster and more efficient in specific tasks, but it does not possess intelligence in the human sense. It excels at speed, large-scale data processing, and consistency, but lacks the creativity, intuition, and deep contextual un-

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derstanding that define human intelligence. While AI surpasses humans in many benchmarks, its intelligence remains fundamentally different and domain-specific.

This rapid growth has also raised significant challenges. On August 1, 2024, the EU AI Act came into effect, establishing the first globally applicable legal framework for AI. It introduced a risk-based classification system, transparency requirements (for example, chatbots must disclose they are not human), and labeling obligations for AI-generated content. Rules for general-purpose models (such as GPT, Gemini, or LLaMA) began to be enforced in August 2025, requiring developers to provide greater transparency around training and governance.

These technological and regulatory shifts are already having tangible effects. On June 11, 2025, Disney and Universal filed a lawsuit against Midjourney, accusing the model of using copyrighted works without permission. This marked the first major litigation against AI developers in the audiovisual industry and set a precedent for future negotiations over compensation for voice, image, or style.

In summary, OpenAI's launch of ChatGPT and Microsoft's initial \$13 billion investment ignited a revolution in how we interact with AI. The shift from B2B to B2C has brought AI to billions worldwide, transforming industries and everyday life. And AI has become a central geopolitical concern.

This new era is defined not only by generative AI but also by the rapid adoption of related technologies shaping societies and economies. Among the most notable trends in 2023, Tiny Machine Learning (TinyML) emerged as a promising field, extending AI capabilities to low-power devices and fostering localized computing. This improves privacy, reduces energy consumption, and enables real-time decision-making. It reflects a broader shift toward decentralized data processing and more efficient interactions with emerging technologies.

As we move into 2025, new architectures for generative AI are taking shape. Technical capability alone is no longer sufficient; legitimacy will depend on ethical design, transparency, and respect for rights and agreements with creators. The AI revolution is no longer simply a race

for power or adoption but a process of establishing institutions, laws, and practices that integrate AI sustainably and fairly into society.

The adoption of data flow-oriented architectures and real-time analytics, especially in Internet of Things (IoT) applications, highlights the demand for instant insights and effective data management. This is critical for enabling agile responses in both business and consumer contexts, marking a shift in how organizations approach data-driven decision-making.

In computer vision, advances in AI hardware developed by NVIDIA have pushed the boundaries of computational power for deep neural networks. This enables the creation of hyper-realistic images and videos, expanding generative models' ability to produce detailed digital art and animations. Looking ahead, the integration of augmented reality, robotic vision-language models, and a stronger focus on ethics in computer vision are expected to play key roles in extending this technology across healthcare, security, and environmental monitoring.

Growth and competitive position of the global AI market in 2025

A 2025 survey by Deloitte among technology leaders reveals that 69% of organizations plan to expand their teams due to the integration of generative AI solutions. Additionally, 25% of companies already using this technology will launch pilots for autonomous agents within the year. The global AI market is estimated at \$390–407 billion USD in 2025, growing at 26–36% annually. It has established itself as one of the fastest-growing sectors in technology, surpassed only by cloud computing (\$723 billion USD, growing more slowly at around 22%) and far ahead of cybersecurity (\$213 billion USD, growing at 10%) and the AI-applied IoT market (\$93 billion USD, growing at 6–7%). Projected spending on generative AI could reach \$644 billion USD in 2025, confirming that the expansion of this market has far exceeded initial expectations and positioning it as the most dynamic engine of the digital economy.

AI has arrived in business and in our lives to stay. According to a global survey published by Harvard Business Review in 2023, approximately 89% of large companies are undergoing digital transformations based

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on AI. This high percentage reflects the critical importance of AI-driven business modernization and efficiency, although only a fraction of the anticipated economic potential has been realized. Sooner or later, 60% of non-strategic tasks will be automated. We will work in smart companies with hybrid organizations where augmented human talent is freed from routine tasks by AI, and we will live in smart homes and cities. The explosion of AI is driven by five key factors that will disrupt how we do business and live:

- 1. Big data:** There is a pressing need for new methodologies to analyze vast amounts of current data and the data generated daily from diverse sources. In 2023, half of all data in human history was created, yet companies effectively utilize only 5% of the data they store.
- 2. 5G:** The global rollout of 5G connects billions of devices and generates enormous amounts of data that must be processed in real time. This capability will enable automated decision-making, create unique value, and provide strategic insights that differentiate organizations from competitors.
- 3. The Internet of Things (IoT):** Machines will interact with humans, making decisions in real time. Smart devices and social robots are entering factories and homes, autonomous vehicles are beginning to navigate our streets, and drones are taking to the skies.
- 4. Exponential Computing Power:** Computing power doubles—per constant dollar—approximately every 18 months, halving costs and enhancing the three factors above. This growth is also fueled by the mass production of smartphones with AI chips and the booming market for computer gaming, which increasingly relies on powerful graphics processing units (GPUs).
- 5. Intelligent Robotics:** Robotics is pushing the boundaries of AI. Equipped with advanced sensors and machine learning algorithms, robots, autonomous vehicles, and drones are performing tasks with efficiency and precision that rival traditional human capabilities. Intelligent robotics is poised to surpass the entire generative AI market.

As a result, AI is transforming the global labor market, impacting both advanced and emerging economies. In advanced economies, approximately 80% of jobs are expected to be affected by AI in the future,

leading to potential productivity and efficiency gains. The perception of AI's impact on employment has evolved. A few years ago, there were fears of immediate large-scale job losses, but reality has proven less drastic. AI tends to automate specific tasks rather than replace entire jobs, since roles encompass multiple functions and AI is not capable of exercising judgment or adapting to unfamiliar contexts. The paradigm is not AI versus workers; it is employee empowerment, freeing time for more creative, sophisticated, and complex work. This mirrors previous digital transformations, such as the shift from analog to digital photography. Consider Kodak, which invented digital photography but failed to capitalize on its potential. Ultimately, companies and individuals that embrace AI will outpace those that do not, as business contexts also change and evolve.

Let us examine an example of how to forecast future scenarios while maintaining the logic of the past. In 2016, Geoffrey Hinton, a Nobel Prize-winning physicist and one of the most influential scientists in AI, suggested that universities should stop training radiologists because AI would soon perform their jobs more effectively. This statement sparked widespread debate about AI's impact on specialized professions like radiology. Contrary to Hinton's prediction, the job market for radiologists has not only remained robust but has also experienced growth and rising salaries as professionals adopt AI-driven imaging equipment. The implementation of AI-based diagnostic systems has significantly expanded the scope and efficiency of treatments. AI's ability to analyze medical images quickly and reliably has led to earlier disease detection, improved health outcomes, extended life expectancy, optimized treatments, and reduced hospital costs while minimizing absenteeism. This example shows how AI, rather than replacing professions, can complement and enhance human work, creating new opportunities in healthcare. Throughout the following pages, we will explore this approach of human empowerment facilitated by AI—known as augmentation—while also addressing the challenges that lie ahead. Although the purpose of our work may remain constant, the way we accomplish it is continually evolving, which is why we need to develop super-skills to remain relevant and competitive.

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Adaptation and continuous training are essential for the workforce, enabling employees to complement technology rather than compete with it. This underscores the need for ongoing reassignment and reskilling to take advantage of the opportunities AI presents in the future job market. In emerging markets and low-income countries, a smaller percentage of jobs is expected to be directly affected by AI. However, the lack of infrastructure and digital skills could limit these countries' ability to capture the benefits of technology. As AI continues to evolve, it is crucial for all countries to establish policies and regulatory frameworks that promote an inclusive and equitable transition into this new technological era.

Augmented leadership and responsible use of AI as a strategic focus in business

These trends highlight not only the rapid pace of innovation in AI but also the vast potential of these technologies to transform industries and practices. Yet fewer than a quarter of companies using AI have established policies for its responsible use by employees. This underscores the need for greater attention to mitigating inaccuracies and ensuring regulatory compliance.

As Cassie Kozyrkov, former Chief Decision Scientist at Google, reminds us, "AI must be directed and contextualized by those who intimately understand the specific challenges and opportunities of the business. It is imperative that AI adapts to the culture and processes of the company, rather than forcing the company to mold itself around the capabilities of emerging technology." Her statement underscores the necessity of human intervention as the first step in effectively applying AI in business. Technical expertise and the power of machine learning cannot deliver maximum value without the guidance and strategy defined by the organization's leaders and staff. This premise lays the groundwork for further exploration in the following chapters, where AI should be positioned as a core strategic element rather than viewed as an autonomous tool.

We will also examine how strategic implementation of AI requires a deep understanding of business processes and the active involvement of employees at every stage of deployment. We will explore how aug-

mented leadership can cultivate an ecosystem where AI not only creates value but also amplifies human capabilities, fostering an environment of mutual growth and continuous learning. Emphasis will be placed on designing strategies that embed AI into the heart of business planning, ensuring its application is both relevant and aligned with corporate objectives.

With great power comes great responsibility. Competing with AI as an ally entails significant accountability. Any application of AI must therefore be rooted in a carefully designed decision-making framework. AI should enrich and enhance human capacity for decision-making and execution, rather than being treated as an end in itself. This approach can guide the integration of AI into business strategy, ensuring that technology strengthens customer service, human judgment, and, by extension, overall operational effectiveness and efficiency.

The challenge for businesses is no longer whether to adopt AI, but how to do so in ways that enhance employee skills and redefine business processes to achieve the 650% performance gains that AI-driven companies are already realizing, as we will see later. Accenture executives Paul Daugherty and Jim Wilson offer a fundamental perspective: companies that understand how to leverage AI can move much faster, while those that fail to master it, even if they implement it, will fall behind.

The five fundamental principles for using AI proposed in this context serve as cornerstones for successful integration:

- 1. Reimagining business processes:** A radical reevaluation of operations is required, paving the way for innovation and continuous improvement through AI.
- 2. Encouraging experimentation and employee engagement:** A culture that values experimentation and active learning is essential, enabling employees to participate directly in the integration and use of AI.
- 3. Actively steering data and AI strategy:** Leaders must not only understand AI but also design and guide a strategy that aligns with the company's broader vision and objectives.
- 4. Collecting data responsibly:** Ethical data collection and usage are critical, reinforcing that responsibility is essential for AI development.

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- 5. Redesigning work to integrate AI and build employee skills:** Roles and responsibilities should be adapted to enhance data literacy, leverage AI capabilities, and develop skills that enable employees to work effectively with technology.

We cannot expect meaningful benefits from AI without first investing effort ourselves. In the following chapters, we will outline a vital guide for companies not only to survive but also to compete and thrive responsibly in the AI era. This guide highlights the collaboration between AI and humans as not merely an option, but a strategic imperative for success in the 21st century.

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- **Note:** In this index, companies presented as full case studies are highlighted in **bold**, together with the page number where each case begins. Other companies are listed as mentions or brief illustrative examples on the corresponding pages.

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