

CAPS

a **wipro** company

THE CAPCO INSTITUTE
JOURNAL
OF FINANCIAL TRANSFORMATION

ORGANIZATION

Transforming organizations
through AI: Emerging strategies
for navigating the future of business

FENG LI | HARVEY LEWIS



GenAI

2024/2025 EDITION

THE CAPCO INSTITUTE

JOURNAL OF FINANCIAL TRANSFORMATION

RECIPIENT OF THE APEX AWARD FOR PUBLICATION EXCELLENCE

Editor

Shahin Shojai, Global Head, Capco Institute

Advisory Board

Lance Levy, Strategic Advisor

Owen Jelf, Partner, Capco

Suzanne Muir, Partner, Capco

David Oxenstierna, Partner, Capco

Editorial Board

Franklin Allen, Professor of Finance and Economics and Executive Director of the Brevan Howard Centre, Imperial College London and Professor Emeritus of Finance and Economics, the Wharton School, University of Pennsylvania

Philippe d'Arvisenet, Advisor and former Group Chief Economist, BNP Paribas

Rudi Bogni, former Chief Executive Officer, UBS Private Banking

Bruno Bonati, Former Chairman of the Non-Executive Board, Zuger Kantonalbank, and President, Landis & Gyr Foundation

Dan Breznitz, Munk Chair of Innovation Studies, University of Toronto

Urs Birscher, Professor Emeritus of Banking, University of Zurich

Elena Carletti, Professor of Finance and Dean for Research, Bocconi University, Non-Executive Director, UniCredit S.p.A.

Lara Cathcart, Associate Professor of Finance, Imperial College Business School

Géry Daeninck, former CEO, Robeco

Jean Dermine, Professor of Banking and Finance, INSEAD

Douglas W. Diamond, Merton H. Miller Distinguished Service Professor of Finance, University of Chicago

Elroy Dimson, Emeritus Professor of Finance, London Business School

Nicholas Economides, Professor of Economics, New York University

Michael Enthoven, Chairman, NL Financial Investments

José Luis Escrivá, President, The Independent Authority for Fiscal Responsibility (AIReF), Spain

George Feiger, Pro-Vice-Chancellor and Executive Dean, Aston Business School

Gregorio de Felice, Head of Research and Chief Economist, Intesa Sanpaolo

Maribel Fernandez, Professor of Computer Science, King's College London

Allen Ferrell, Greenfield Professor of Securities Law, Harvard Law School

Peter Gomer, Full Professor, Chair of e-Finance, Goethe University Frankfurt

Wilfried Hauck, Managing Director, Statera Financial Management GmbH

Pierre Hillion, The de Picciotto Professor of Alternative Investments, INSEAD

Andrei A. Kirilenko, Reader in Finance, Cambridge Judge Business School, University of Cambridge

Katja Langenbucher, Professor of Banking and Corporate Law, House of Finance, Goethe University Frankfurt

Mitchel Lenson, Former Group Chief Information Officer, Deutsche Bank

David T. Llewellyn, Professor Emeritus of Money and Banking, Loughborough University

Eva Lomnicka, Professor of Law, Dickson Poon School of Law, King's College London

Donald A. Marchand, Professor Emeritus of Strategy and Information Management, IMD

Colin Mayer, Peter Moores Professor of Management Studies, Oxford University

Francesca Medda, Professor of Applied Economics and Finance, and Director of UCL Institute of Finance & Technology, University College London

Pierpaolo Montana, Group Chief Risk Officer, Mediobanca

John Taysom, Visiting Professor of Computer Science, UCL

D. Sykes Wilford, W. Frank Hipp Distinguished Chair in Business, The Citadel

CONTENTS

TECHNOLOGY

08 Mindful use of AI: A practical approach

Magnus Westerlund, Principal Lecturer in Information Technology and Director of the Laboratory for Trustworthy AI, Arcada University of Applied Sciences, Helsinki, Finland

Elisabeth Hildt, Affiliated Professor, Arcada University of Applied Sciences, Helsinki, Finland, and Professor of Philosophy and Director of the Center for the Study of Ethics in the Professions, Illinois Institute of Technology, Chicago, USA

Apostolos C. Tsolakis, Senior Project Manager, Q-PLAN International Advisors PC, Thessaloniki, Greece

Roberto V. Zicari, Affiliated Professor, Arcada University of Applied Sciences, Helsinki, Finland

14 Understanding the implications of advanced AI on financial markets

Michael P. Wellman, Lynn A. Conway Collegiate Professor of Computer Science and Engineering University of Michigan, Ann Arbor

20 Auditing GenAI systems: Ensuring responsible deployment

David S. Krause, Emeritus Associate Professor of Finance, Marquette University

Eric P. Krause, PhD Candidate – Accounting, Bentley University

28 Innovating with intelligence: Open-source Large Language Models for secure system transformation

Gerhardt Scriven, Executive Director, Capco

Tony Moenicke, Senior Consultant, Capco

Sebastian Ehrig, Senior Consultant, Capco

38 Multimodal artificial intelligence: Creating strategic value from data diversity

Cristián Bravo, Professor, Canada Research Chair in Banking and Insurance Analytics, Department of Statistical and Actuarial Sciences, Western University

46 GenAI and robotics: Reshaping the future of work and leadership

Natalie A. Pierce, Partner and Chair of the Employment and Labor Group, Gunderson Dettmer

ORGANIZATION

56 How corporate boards must approach AI governance

Arun Sundararajan, Harold Price Professor of Entrepreneurship and Director of the Fubon Center for Technology, Business, and Innovation, Stern School of Business, New York University

66 Transforming organizations through AI: Emerging strategies for navigating the future of business

Feng Li, Associate Dean for Research and Innovation and Chair of Information Management, Bayes Business School (formerly Cass), City St George's, University of London

Harvey Lewis, Partner, Ernst & Young (EY), London

74 The challenges of AI and GenAI use in the public sector

Albert Sanchez-Graells, Professor of Economic Law, University of Bristol Law School

78 AI safety and the value preservation imperative

Sean Lyons, Author of Corporate Defense and the Value Preservation Imperative: Bulletproof Your Corporate Defense Program

92 Generative AI technology blueprint: Architecting the future of AI-infused solutions

Charlotte Byrne, Managing Principal, Capco

Thomas Hill, Principal Consultant, Capco

96 Unlocking AI's potential through metacognition in decision making

Sean McMinn, Director of Center for Educational Innovation, Hong Kong University of Science and Technology

Joon Nak Choi, Advisor to the MSc in Business Analytics and Adjunct Associate Professor, Hong Kong University of Science and Technology

REGULATION

104 Mapping GenAI regulation in finance and bridging the gaps

Nydia Remolina, Assistant Professor of Law, and Fintech Track Lead, SMU Centre for AI and Data Governance, Singapore Management University

112 Board decision making in the age of AI: Ownership and trust

Katja Langenbucher, Professor of Civil Law, Commercial Law, and Banking Law, Goethe University Frankfurt

122 The transformative power of AI in the legal sector: Balancing innovation, strategy, and human skills

Eugenia Navarro, Lecturer and Director of the Legal Operations and Legal Tech Course, ESADE

129 Remuneration on the management board in financial institutions: Current developments in the framework of supervisory law, labor law, behavioral economics and practice

Julia Redenius-Hövermann, Professor of Civil Law and Corporate Law and Director of the Corporate Governance Institute (CGI) and the Frankfurt Competence Centre for German and Global Regulation (FCCR), Frankfurt School of Finance and Management

Lars Hinrichs, Partner at Deloitte Legal Rechtsanwaltsgesellschaft mbH (Deloitte Legal) and Lecturer, Frankfurt School of Finance and Management



CAPCO CEO WELCOME

DEAR READER,

Welcome to our very special 60th edition of the Capco Journal of Financial Transformation.

The release of this milestone edition, focused on GenAI, reinforces Capco's enduring role in leading conversations at the cutting edge of innovation, and driving the trends shaping the financial services sector.

There is no doubt that GenAI is revolutionizing industries and rapidly accelerating innovation, with the potential to fundamentally reshape how we identify and capitalize on opportunities for transformation.

At Capco, we are embracing an AI infused future today, leveraging the power of GenAI to increase efficiency, innovation and speed to market while ensuring that this technology is used in a pragmatic, secure, and responsible way.

In this edition of the Capco Journal, we are excited to share the expert insights of distinguished contributors across academia and the financial services industry, in addition to drawing on the practical experiences from Capco's industry, consulting, and technology SMEs.

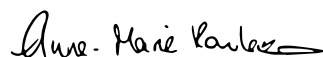
The authors in this edition offer fresh perspectives on the mindful use of GenAI and the implications of advanced GenAI on financial markets, in addition to providing practical and safe frameworks for boards and firms on how to approach GenAI governance.

The latest advancements in this rapidly evolving space demonstrate that the potential of GenAI goes beyond automating and augmenting tasks, to truly helping organizations redefine their business models, processes and workforce strategies. To unlock these benefits of GenAI, I believe that firms need a culture that encourages responsible experimentation and continuous learning across their organization, while assessing the impact of the potential benefits against a strategic approach and GenAI framework.

I am proud that Capco today remains committed to our culture of entrepreneurialism and innovation, harnessed in the foundation of our domain expertise across our global teams. I am proud that we remain committed to our mission to actively push boundaries, championing the ideas that are shaping the future of our industry, and making a genuine difference for our clients and customers – all while ensuring to lead with a strategy that puts sustained growth, integrity and security at the forefront of what we do.

I hope you'll find the articles in this edition both thought-provoking and valuable as you create your organization's GenAI strategy and future direction. As we navigate this journey together, now is the time to be bold, think big, and explore the possibilities.

My greatest thanks and appreciation to our contributors, readers, clients, and teams.

A handwritten signature in black ink, reading "Annie Rowland". The signature is fluid and cursive, with a long horizontal stroke at the end.

Annie Rowland, **Capco CEO**

TRANSFORMING ORGANIZATIONS THROUGH AI: EMERGING STRATEGIES FOR NAVIGATING THE FUTURE OF BUSINESS

FENG LI | Associate Dean for Research and Innovation and Chair of Information Management,
Bayes Business School (formerly Cass), City St George's, University of London

HARVEY LEWIS | Partner, Ernst & Young (EY), London¹

ABSTRACT

The rise of artificial intelligence (AI), particularly generative AI (GenAI), presents both significant opportunities and challenges for business leaders. This paper explores how AI can reshape business models, operations, and the nature of work, drawing lessons from past technological revolutions and emerging insights from leading global organizations. It argues that AI's true potential lies not just in automating tasks but in fundamentally rethinking organizational processes and business models. The paper offers practical strategies for senior leaders to navigate this evolving landscape and successfully steer their organizations through an AI-driven future.

1. INTRODUCTION

There is so much conflicting information about the business implications of AI, particularly around generative AI (GenAI). On the one hand, investor enthusiasm and media hype remain high, fueled by numerous analyses projecting significant productivity gains.² On the other hand, concerns are mounting about the imminent bursting of the “AI bubble” and the subsequent “AI winter”.

This stark contrast between hype and pessimism, with seemingly no middle ground, only adds to the confusion. This is not helped by the conflicting messages around “productivity” versus “transformation”. Should AI be used simply to make existing work faster, or can it drive much deeper change within an organization, potentially altering business models, organizational processes, and the nature of work itself?

With such mixed signals, what strategies should senior business leaders adopt to navigate the future of business?

Drawing insights from how past technologies transformed businesses along with our ongoing research with leading organizations from the U.S., China, and Europe, we explore how AI transforms organizations and present new strategies for succeeding in an AI-driven future.

2. THE HYPE AND DESPAIR

There is no shortage of strong views about the future of AI. Leading consulting firms and investment banks, from McKinsey, BCG, to Goldman Sachs and JP Morgan, have made bold projections on multi-trillion-dollar additional economic growth from AI deployment, ranging from U.S.\$2.6 to U.S.\$4.4 trillion annually between now and 2030,³ to up to

¹ The views reflected in this article are the views of the author and do not necessarily reflect the views of the global EY organization or its member firms.

² While numerous analyses from institutions like the World Economic Forum and International Monetary Fund estimate AI's potential impact on productivity, these are often based on subjective judgments about AI's task capabilities. They also tend to overlook the fact that AI saving time on tasks does not automatically lead to increased productivity, as the time saved may not always be used productively.

³ <https://tinyurl.com/jcpxh2vd>

U.S.\$16 trillion by 2030.⁴ Meanwhile, strong warnings have been made about the threats of AI, from privacy and security erosion, mass job displacement and economic disruption, to the ultimate threat to human existence.

According to Goldman Sachs, AI could replace the equivalent of 300 million full-time jobs globally by 2030.⁵ Discussions about universal basic income (UBI) also resurfaced, and Elon Musk was not alone in believing that due to the development of AI, “no job is needed”.⁶ The godfather of deep-learning, Geoffrey Hinton, went so far as to resigning from Google in order to speak freely about the danger of AI: “If I were advising governments, I would say that there’s a 10% chance these things will wipe out humanity in the next 20 years. I think that would be a reasonable number”. He went on to say that “[b]etween 5 and 20 years from now there’s a probability of about a half that we’ll have to confront the problem of [AI] trying to take over.”⁷

In practice, however, such warnings have largely been overshadowed by AI’s huge potential in improving productivity and transforming business and society. As Sam Altman jokingly remarked: “AI will most likely lead to the end of the world, but in the meantime, there will be great companies...”⁸

It is beyond the scope of this paper to adjudicate such debates. Our focus is on how AI transforms organizations and its strategic implications. We believe that the excessive focus on how AI will automate tasks and replace jobs is misguided. Indeed, simply automating tasks and jobs will not suffice to unlock AI’s full potential or justify the huge investments in its development and deployment. Moreover, current discussions of productivity enhancement via AI are not the same as “transforming business and society”.⁹ True transformation demands a more profound reimagining of organizational processes, business models, and the integration of human talent in an AI-driven world.

If history serves as our greatest teacher, then the true potential of AI will likely be realized through its ability to transform organizations and institutions – a process that historically takes decades rather than years. Meanwhile, it is important to note that while the transformation driven by AI may resemble past transformations, there are also reasons why it might be

different – faster, more uneven, and less predictable. These differences may arise because we are fundamentally dealing with a digital transformation rather than the mechanical transformations of the past. This has significant implications for the strategic approaches that senior business leaders should adopt to navigate the future of business

3. WHAT IS AI?

AI is commonly defined as technologies that mimic human intelligence and problem-solving abilities, but in practice, it often means different things to different people. The large variety of interpretations often lead to confusion in both casual conversations and formal decision making.

Today, much of the excitement about AI is related to AGI, or artificial general intelligence. Such AI will possess capabilities that are comparable or superior to humans in reasoning, conceptual learning, common sense, planning, cross-domain thinking, creativity, self-awareness, and emotions. However, AGI still does not exist today and there is no consensus on when (or if) it can be realized.

Today’s AI is far from AGI, even though it is important to note that in narrow slices of intelligence, it is already demonstrably superior to human capabilities. While this is not artificial “general” intelligence, we do not need it to be general before it is transformative. Narrow AI is already widely used in organizations, powering Google search, Amazon and Alibaba recommendations, and Uber and Didi ride-hailing matches, delivering significant efficiency gains and economic and social impact behind the scenes.

There are several popular AI classifications, but from a business perspective, it is useful to categorize AI in the current era into traditional analytical AI and GenAI. While analytical AI is widely used, GenAI is only beginning to make significant inroads in certain sectors (software development, media, creative services) and use cases (assistants/chatbots, for example).

Analytical AI, often referred to as “discriminative AI”, is primarily designed to follow predetermined rules and logic, and is widely used in applications that require consistency, precision,

⁴ <https://tinyurl.com/yvfz4e9j>

⁵ <https://tinyurl.com/4c6ru66z>

⁶ <https://tinyurl.com/4ytefys6>

⁷ Geoffrey Hinton during the Annual Romanes lecture at the University of Oxford in 2024: <https://tinyurl.com/4rjep5nz>

⁸ <https://tinyurl.com/ycx8pdfp>

⁹ When discussing productivity, the focus often shifts to AI’s potential to augment rather than replace workers. Some argue that we should be more candid about AI’s ability to replace people and take over many existing tasks, while also emphasizing its potential to create new work opportunities through AI-driven transformation.

and the ability to perform well-defined tasks. Examples include data analysis, decision making based on structured data, and rule-based problem solving. Analytical AI is often described as a fantastic “left brain”, as they are logical and precise.

In contrast, GenAI can generate new content or data that may or may not resemble the training data. Based on large language models (LLMs) powered by various architectures, including transformers, GenAI relies on machine learning models (particularly deep-learning and neural networks) to learn from vast amounts of data and generate outputs that are novel and original. GenAI is characterized by its adaptability, creativity, and capacity to handle ambiguous or incomplete information. Compared to analytical AI, GenAI is more effective for tasks requiring innovation and the generation of new ideas. Examples include applications that create text, images, music, and other forms of media. It has often been described as a new “right brain”, capable of creativity and generating new ideas.

It is important to note that despite their apparent differences, the distinction between these two forms of AI is becoming less clear, as LLMs are capable of either being analytical or of autonomously creating applications that are analytical.

The evolution of AI from systems that strictly adhere to human-defined rules to those capable of learning from data and creating new outputs is sparking significant new excitement. Analytical AI is foundational and remains crucial for large-scale applications in real operations, with most current AI applications relying on these technologies. GenAI is often viewed as a significant leap forward in AI's ability to mimic human creativity and problem-solving capabilities, but large-scale deployment in actual operations remains sparse due to its inherent limitations (such as hallucinations) and the vast array of organizational and institutional barriers to its effective use in different domains.

4. AUTOMATING TASKS AND JOBS

Debates regarding the business implications of AI have advanced on several distinct levels. On one level, a significant body of research focuses on AI's ability to automate a broad array of tasks and jobs. On another level, we can draw valuable insights from how past technologies have transformed

organizations and institutions. These lessons are essential for unleashing the full potential of AI and provide crucial guidance for its adoption and exploitation. On a third level, we need to engage in future-thinking and “future scaping”, using our imagination to conceive of the changes that AI can bring about in our economies and society. Arguably, it is the failure of imagination that is holding us back more than anything else.

Many extant studies have examined how AI can automate tasks and jobs, but so far, most projections based on such studies have not materialized. On November 24, 2016, the Godfather of AI, Geoffrey Hinton, famously argued that “People should stop training radiologists now. It's just completely obvious that within five years, deep learning is going to do better than radiologists.”¹⁰ However, seven years after that remark, there is still a 29% shortfall of radiologists and 15% shortfall of clinical oncologists in the NHS in the U.K.; and the six-week waiting list for CT and MRI scans is still increasing, not decreasing.¹¹ The experience in the U.S. is similar.

The reasons for such wildly off the mark predictions are complex, but a cursory look at the 30 or so tasks that radiologists routinely perform shows that no more than a handful can be automated by AI, requiring human radiologists to continue to perform the majority of the tasks (Table A1, in the Appendix).¹² In addition, radiologists must also consider other important issues such as technology skills, specialist tools, and they must work closely with other specialists and professionals and navigate the complex organizational and regulatory environments for health services. In 2024, Nvidia CEO Jensen Huang made similar predictions that AI would soon eliminate the need for coders. This prediction is probably not going to age well.¹³

It is important to note that while research reports and media headlines often emphasize that AI systems outperform humans on various benchmarks, from reading comprehension to professional exams, this does not necessarily mean AI surpasses human capabilities in the tasks these benchmarks represent. AI performance on benchmarks often fails to accurately predict how it will perform in real-world scenarios.

Additionally, even for the tasks and roles that AI can fully automate, the transition period may be lengthy. Carl Benedikt Frey of the University of Oxford uses the “lamplighter” as

¹⁰ <https://tinyurl.com/3ctvhfea>

¹¹ <https://tinyurl.com/vzrrt8zh>

¹² <https://tinyurl.com/32z673yb>

¹³ It is important to note that coding is becoming increasingly democratized through AI. In time, anyone will be able to generate working code or software applications with AI assistance, even without coding knowledge. This shift will push specialist coders into more niche areas, though the full evolution of this process may take considerable time.

an illustrative example. Initially, when streetlights were gas-powered, individuals were employed to light each lamp at dusk using a flaming wick on a long pole.¹⁴ With the advent of electric bulbs, lamplighters continued to work, manually switching on each light. However, as cities implemented block-wide switches and later, timers and light sensors, manual intervention became obsolete. Frey suggests that AI might undergo a similar evolution.

It is also worth noting that many studies, including those from Frey and his colleagues, also suggest that additional jobs will be created – either because greater efficiency leads to increased demand (Jevons Paradox) or entirely new jobs are required. This aspect is often missing from many of the debates about AI's impact on employment. We currently see minimal job displacement, and this could give a false sense of security. Nevertheless, the full impact could take many years, if not decades, to unfold, giving people time to adapt.

5. TRANSFORMING ORGANIZATIONS AND INSTITUTIONS

To understand the full economic and social impact of AI, we need to look beyond the automation of tasks and jobs to explore how AI transforms organizations and institutions. History suggests that if AI changes our lives, it will not occur overnight but more likely to unfold over decades rather than years. At first, these changes are likely to be gradual, integrating into existing organizational settings and lifestyles first, gradually transforming them through experimentations, disruptions, and generational transition.

However, we must also question whether future projections based on past lessons will prove accurate in this case. As Ernest Hemingway famously remarked when asked how he went bankrupt: “Gradually, then suddenly”. The risk with AI is that its impact may appear slow to develop, only to arrive abruptly and dramatically. Digitalization has already demonstrated how quickly and unexpectedly such sweeping changes can happen, highlighting the need to address these challenges now.

Considering incremental versus transformative change, Clayton Christensen's “The Innovator's Dilemma” provides an important lesson for understanding how disruptive technologies, like GenAI, can reshape industries.¹⁵ In this context, LLMs and increasingly multimodal AI represent

potentially disruptive innovations that may initially seem limited but are rapidly evolving in terms of price, availability, and capability. Traditional firms face a dilemma: they must balance serving existing customers and markets with the need to adapt to these emerging technologies. The rapid advancement of GenAI is likely to outpace market expectations – no matter how skeptical people are – potentially rendering some existing products and services obsolete.

As a result, established companies may struggle to adapt their existing value networks and capabilities to the new AI paradigm. This creates opportunities for more agile, AI-native firms to gain footholds in emerging markets. To navigate this landscape successfully, traditional firms will need to reskill their workforce, reconsider their business models, and adopt more flexible, experimental approaches to innovation. The democratization of AI capabilities may erode some competitive advantages of larger organizations, forcing them to find new ways to create and capture value in an AI-driven world. One consequence is that, instead of a single “big bang”, numerous small, incremental (and radical) changes will slowly and cumulatively reshape how we live and cooperate over time – a process that may continue for decades and span generations.

The history of technological advancements during the Industrial and Digital Revolutions does, though, offer several valuable insights for understanding the transformative potential of AI. The Industrial Revolution began in the late 18th century but took over a century to realize its impact. Early adopters gained some competitive advantages, yet the widespread transformation of industries occurred incrementally. Similarly, the introduction of computers, the internet, and mobile reshaped businesses and consumer behavior, but again, this was a gradual transition that spanned decades.

5.1 Industrial Revolution

During the Industrial Revolution (1760-1840), textiles were the first industry to see factories filled with machines that automated many tasks. This shift was powered by new energy sources like coal and steam, leading to the rise of large industrial cities and rapid urbanization. The advent of mechanization, such as the spinning jenny and power loom, alongside the development of factories, centralized production and drastically increased efficiency. However, the transition unfolded over many decades, with gradual adoption and incremental advancements, eventually revolutionizing how goods were produced and reshaping society.

¹⁴ <https://tinyurl.com/y2ta2j2z>

¹⁵ <https://tinyurl.com/4s6hnu9r>

The shift from steam to electric power was also gradual. In 1879, Thomas Edison famously unveiled the electric light bulb, yet by 1900, only 3% of U.S. households had electricity, reaching 50% only by 1920 after over 40 years. The adoption of electric power in factories was even slower. This highlights the slow and gradual integration of new technologies into daily life and industry. Importantly, the real benefits of electrification did not come from reduced costs from cheaper power, and there were significant transitional costs involved. Unlike steam power, electrification facilitated the use of distributed, fractionalized power by allowing electric motors to be mounted on individual machines. This enabled a shift from the traditionally vertical, multi-story, cramped factory designs centrally powered by steam to more efficient horizontal layouts. Initially, electrification was adopted in emerging industries of the time, such as tobacco and transport equipment, rather than in incumbent industries such as textiles. This is similar to the adoption of AI so far, which has shown parallel trends, initially being embraced in emerging areas such as search, e-commerce, social networking, and online streaming, rather than more traditional industries in manufacturing and services. However, it is important to note that the adoption of AI has also been focused on automating and augmenting existing work-related tasks and processes, particularly in back-office functions, such as IT, finance, legal, marketing and HR, exactly as when electricity was introduced to factories. It is only when organizations realize that they need to change the fundamentals of work, tasks, and entire functions and business models that we will start to see the real benefits of AI.

5.2 Digital Revolution

The patterns observed during the Digital Revolution were similar. Mainframe computers were first introduced in the late 1950s and 1960s, progressing to distributed computing in the 1980s and 1990s with the advent of mini-computers, PCs, and distributed architecture. The consumer Internet was commercialized in early 1990s, followed by the mobile internet in the late 1990s and 2000s. This expansion significantly accelerated with the advent of smartphones and 3G and 4G mobile networks, starting with devices like Blackberries and Palms, and iPhones from 2007. However, the productivity paradox, articulated by Robert Solow as “you can see the computer age everywhere but in the productivity statistics,”¹⁶ persisted throughout this period, except for 1994 to 2005. Since the late 2000s, productivity has stagnated again, a trend that continues to this day.

5.3 The AI Revolution

AI's impact on organizations is likely to follow a similar trajectory. Currently, AI has made significant progress in powering complex systems like Google search, Amazon and Alibaba recommendations, and Uber and Didi matching. These advancements demonstrate its capabilities in automating tasks, streamlining processes, enhancing user experiences, and enabling new business models. However, as AI expanded into more traditional sectors, it encountered significant hurdles. For instance, despite decades of anticipation for self-driving cars since the 1980s, successful implementations have been elusive. Tesla has repeatedly postponed the debut of fully autonomous vehicles, while companies such as Apple abandoned their autonomous driving projects, and Uber dissolved its self-driving unit. In retail, ventures like Amazon Go, introduced as cashier-less stores in 2018, have not achieved broad acceptance, casting doubt on their feasibility. Similarly, initiatives like Freshippo (Hema), central to Alibaba's “New retail” strategy, have only made modest contributions, highlighting the complexities and uncertainties surrounding AI's integration into these sectors. Such developments call for significant organizational and institutional changes, which require time to evolve and get right.

These examples primarily come from B2C organizations, shaped by consumer attitudes and behaviors towards AI. In contrast, B2B and other areas of B2C business may present a different narrative. The challenge is not just about having the technological capability to drive substantial change, but also about successfully implementing AI at scale and transforming existing cultures and processes.

From the steam engine and electricity to the computer and mobile phone, integrating new technologies into business operations has historically taken decades. While this demonstrates the need for business leaders to develop a long-term strategy for AI integration, they must also navigate the delicate balance between managing expectations of a gradual transformation and the possibility of rapid change. The challenge lies in determining where this balance is and finding the right language to communicate it effectively.

One approach is to adopt Daniel Kahneman's concept of “Thinking fast and slow” – some tasks in business need to be done quickly, while others can progress more slowly. Focusing solely on speed or caution is not the right solution. Doing some

¹⁶ <https://tinyurl.com/6nr6w7dm>

¹⁷ <https://tinyurl.com/yz8yk5dp>

things quickly enables the slower elements to be improved, as the business learns and iterates. Recognizing and balancing these nuances is essential for achieving sustainable success.

6. MANAGING THE TRANSITION

Technological advancements often happen rapidly, but organizational and institutional changes tend to occur more slowly and are iterative and fraught with complexities, involving adjusting regulatory frameworks and societal norms and overcoming resistance to change. As Clay Shirky noted, “Institutions will try to preserve the problem to which they are the solution.”¹⁸ Successfully managing the transition to new technologies and new organizational designs requires navigating these complexities. Simply automating tasks and jobs will not be sufficient to unlock AI’s full potential. Instead, AI should be used to reimagine operational processes and business models, and the wider institutional environment. Regulatory frameworks, educational systems, and ethical standards will need to be updated to accommodate the rapid development of AI. This includes addressing issues such as data privacy, the ethical use of AI, intellectual property rights, transparency in AI-driven decisions, individual protection from algorithmic bias, and importantly, ensuring that AI advancements benefit society. Such organizational and institutional changes tend to be much slower than the pace of technological developments.

The transition to new technologies and institutions is rarely cost-free. Our research with senior business leaders from the U.S., Europe, and China shows that strategic initiatives often fail, not because the ideas are intrinsically flawed, but due to leadership failure to effectively manage the transition to new technologies, organizational designs, and business models.¹⁹ There is typically too much focus on the technology and its promise and not enough on all the other elements necessary for successful transformation – especially people and change.

The case of digital health illustrates the gap between their promised potential to reduce costs and increase efficiency in healthcare, and the reality of their slow deployment in real operations. Despite significant investment, integrating new digital technologies into healthcare systems has been fraught with challenges around the world. Usability issues, inadequate training, concerns over patient data security, and necessary changes to medical or administrative procedures are common hurdles. Overcoming these obstacles requires comprehensive

“

To understand the full economic and social impact of AI, we need to look beyond the automation of tasks and jobs to explore how AI transforms organizations and institutions. ”

planning, active engagement with key stakeholders, significant new resources, and iterative testing to align new technology with the needs of stakeholders.

Moreover, these changes must be implemented while the existing systems are fully operational, often under conditions where staff are already facing high pressure and have little capacity to adopt new processes. The frustrations are palpable, as illustrated by the CEO of a major NHS hospital who exclaimed in an interview with one of the authors: “I am going to punch the next son of a b**** who tells me his technology is going to save me money!” Managing the transition means maintaining the existing operation while finding additional resources to support the new processes, and it will lead to increased overall cost in the short to medium term – and the long-term savings are by no means guaranteed – and the process often outlasts the tenure of many senior leaders in these organizations. This vividly highlights the practical challenges of integrating new technologies into established healthcare infrastructures. Deploying AI is unlikely to escape such constraints, and the transition process must be effectively managed.

7. IMAGINING THE FUTURE – STRATEGIC VISION FOR AI TRANSFORMATION

While using AI to automate tasks and jobs may yield short-term gains, its true transformative potential lies in its ability to fundamentally redesign how organizations operate and shape their environments. However, AI itself cannot redesign organizational structures; it is up to people to rethink operating models and business processes based on AI’s capabilities. Managing this transition will be challenging, as many large

¹⁸ <https://tinyurl.com/d9ztnkrd>

¹⁹ Li, F., 2020, “Leading digital transformation: three emerging approaches for managing the transition,” *International Journal of Operations and Production Management* 40:6, 809-817

organizations may resist change, particularly if their industries remain profitable. As a result, radical innovations are more likely to emerge in startups within developing sectors, setting the stage for future industry disruptions and reshaping traditional landscapes. These shifts will not occur overnight; as progress will likely be uneven, with both small and large leaps forward, making the transition unpredictable and difficult to navigate.

For senior business leaders, the traditional linear approach to strategy development and implementation is no longer fit for purpose. Instead, strategy formulation and execution must become iterative and intertwined, especially when both the path and destination for the organization may undergo frequent adjustments. This approach allows strategies to evolve in real-time, informed by ongoing execution and feedback. By adopting such iterative processes, organizations can continuously adapt to new intelligence and align with shifting goals and market conditions.²⁰

Learning from historical technological transformations is crucial for successfully integrating AI into their strategic planning and operational processes. Business leaders must look beyond immediate efficiencies gained from AI automation and prepare for broader organizational and institutional changes. There will be many challenges that we cannot currently foresee, but by developing a deep, nuanced understanding of AI's potential, rooted in both historical insights and emerging realities, leaders will be better equipped to navigate and succeed in the rapidly evolving AI era.

8. CONCLUSION: BEYOND TRANSFORMING BUSINESS AND INSTITUTIONS

The advent of AI has also ignited discussions about creativity and innovation, particularly concerning AI's role in activities traditionally seen as distinctly human, such as art. Contrary to common perceptions about AI's capabilities, art is fundamentally about intent and communication, serving as a medium to evoke emotions and convey messages. Controversially, a renowned artist remarked when asked about how AI will likely transform art: "Art is exactly the opposite of AI. Art emerges from intent, from a desire to express something, to communicate something, to make someone else feel something. Art, in all its forms, is primarily about communication, not just a collection of colors or words. If you view AI-generated art as competition, it might be time to reconsider the reasons behind your own writing or painting."

AI will also have a significant impact on society. It is crucial to remember that the introduction of AI into organizations should benefit the entire society, not just a privileged few. The policy implications have not been fully understood. As one senior policymaker noted, "It's about power dynamics and how we choose to organize ourselves as a society. Until we find a better way to manage our resources, every change will adversely affect the unprivileged."

These issues are fundamentally important in the AI-driven era, and further research is needed to understand the long-term business and societal implications. While AI offers significant opportunities for efficiency, innovation, and transformation, it also challenges traditional notions of creativity and raises complex societal concerns. Balancing technological progress with business goals, ethical considerations, and equitable access will be crucial. Policymakers, organizational leaders, and individuals must work together to address these challenges and ensure AI enhances human potential without exacerbating inequality. The strategies business leaders choose will play a key role in shaping the future of work and society.

²⁰ Li, F., 2022, "Sustainable competitive advantages via temporary advantages: insights from the competition between American and Chinese digital platforms in China," *British Journal of Management*, 33:4, 2009-2032

APPENDIX

Table A1: Job duties for radiologists

1.	Prepare comprehensive interpretive reports of findings.
2.	Perform or interpret the outcomes of diagnostic imaging procedures including magnetic resonance imaging (MRI), computer tomography (CT), positron emission tomography (PET), nuclear cardiology treadmill studies, mammography, or ultrasound.
3.	Document the performance, interpretation, or outcomes of all procedures performed.
4.	Communicate examination results or diagnostic information to referring physicians, patients, or families.
5.	Obtain patients' histories from electronic records, patient interviews, dictated reports, or by communicating with referring clinicians.
6.	Review or transmit images and information using picture archiving or communications systems.
7.	Confer with medical professionals regarding image-based diagnoses.
8.	Recognize or treat complications during and after procedures, including blood pressure problems, pain, oversedation, or bleeding.
9.	Develop or monitor procedures to ensure adequate quality control of images.
10.	Provide counseling to radiologic patients to explain the processes, risks, benefits, or alternative treatments.
11.	Establish or enforce standards for protection of patients or personnel.
12.	Coordinate radiological services with other medical activities.
13.	Instruct radiologic staff in desired techniques, positions, or projections.
14.	Participate in continuing education activities to maintain and develop expertise.
15.	Participate in quality improvement activities including discussions of areas where risk of error is high.
16.	Perform interventional procedures such as image-guided biopsy, percutaneous transluminal angioplasty, transhepatic biliary drainage, or nephrostomy catheter placement.
17.	Develop treatment plans for radiology patients.
18.	Administer radioisotopes to clinical patients or research subjects.
19.	Advise other physicians of the clinical indications, limitations, assessments, or risks of diagnostic and therapeutic applications of radioactive materials.
20.	Calculate, measure, or prepare radioisotope dosages.
21.	Check and approve the quality of diagnostic images before patients are discharged.
22.	Compare nuclear medicine procedures with other types of procedures, such as computed tomography, ultrasonography, nuclear magnetic resonance imaging, and angiography.
23.	Direct nuclear medicine technologists or technicians regarding desired dosages, techniques, positions, and projections.
24.	Establish and enforce radiation protection standards for patients and staff.
25.	Formulate plans and procedures for nuclear medicine departments.
26.	Monitor handling of radioactive materials to ensure that established procedures are followed.
27.	Prescribe radionuclides and dosages to be administered to individual patients.
28.	Review procedure requests and patients' medical histories to determine applicability of procedures and radioisotopes to be used.
29.	Teach nuclear medicine, diagnostic radiology, or other specialties at graduate educational level.
30.	Test dosage evaluation instruments and survey meters to ensure they are operating properly.

Source: O.Net Online (<https://tinyurl.com/hmc4n3kd>)

© 2024 The Capital Markets Company (UK) Limited. All rights reserved.

This document was produced for information purposes only and is for the exclusive use of the recipient.

This publication has been prepared for general guidance purposes, and is indicative and subject to change. It does not constitute professional advice. You should not act upon the information contained in this publication without obtaining specific professional advice. No representation or warranty (whether express or implied) is given as to the accuracy or completeness of the information contained in this publication and The Capital Markets Company BVBA and its affiliated companies globally (collectively "Capco") does not, to the extent permissible by law, assume any liability or duty of care for any consequences of the acts or omissions of those relying on information contained in this publication, or for any decision taken based upon it.

ABOUT CAPCO

Capco, a Wipro company, is a global management and technology consultancy specializing in driving transformation in the energy and financial services industries. Capco operates at the intersection of business and technology by combining innovative thinking with unrivalled industry knowledge to fast-track digital initiatives for banking and payments, capital markets, wealth and asset management, insurance, and the energy sector. Capco's cutting-edge ingenuity is brought to life through its award-winning Be Yourself At Work culture and diverse talent.

To learn more, visit www.capco.com or follow us on LinkedIn, Instagram, Facebook, and YouTube.

WORLDWIDE OFFICES

APAC

Bengaluru – Electronic City
Bengaluru – Sarjapur Road
Bangkok
Chennai
Gurugram
Hong Kong
Hyderabad
Kuala Lumpur
Mumbai
Pune
Singapore

MIDDLE EAST

Dubai

EUROPE

Berlin
Bratislava
Brussels
Dusseldorf
Edinburgh
Frankfurt
Geneva
Glasgow
London
Milan
Paris
Vienna
Warsaw
Zurich

NORTH AMERICA

Charlotte
Chicago
Dallas
Houston
New York
Orlando
Toronto

SOUTH AMERICA

São Paulo

THIS UNIQUE IMAGE WAS GENERATED USING MID-JOURNEY, STABLE DIFFUSION AND ADOBE FIREFLY

WWW.CAPCO.COM



CAPCO
a wipro company