

# The World of Work AI-ed

talent alpha

Trends  
Solutions  
Tools

The Future  
of Work Report  
2024

~~I am~~  
AI



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Agnieszka Porębska  
CEO, Talent Alpha

Professor Stuart Russell, a founder of the Centre for Human-Compatible Artificial Intelligence at the University of California, in his famous BBC lecture referred to the anticipated emergence of generative purpose artificial intelligence as "the most profound

change in human history". For our report, he shared insights into how the control problem over AI could be addressed. But this is just one aspect of an AI-ed world. Collaborating with our esteemed partner, the Intelligent Leadership Hub, we discuss and present scenarios for the future. These scenarios become eye-opening when one realizes that both positive and negative outcomes can materialize, depending on how people drive this change.

Given that the AI revolution is currently propelled by the business sector, it will be managers in organizations around the world who will be both responsible for AI implementation and taking crucial decisions. This is why we focus on leaders, offering them a perspective on the current state of AI and future challenges. The report provides leaders with insights into available tools and solutions, best practices, and regulations. Last but not least, our report provokes thought on these issues.

AI is already impacting our lives, with Randstad's data suggesting that one-third of employees already work with artificial intelligence solutions. According to Everest Group, over 90% of leading service providers are leveraging AI, with some companies already witnessing a 30% increase in employee productivity thanks to AI. Simultaneously, AI brings about numerous doubts and challenges. For instance, in Talent Alpha's survey in the IT industry, the greatest challenges mentioned by companies include a lack of qualified staff (35%), a dearth of appropriate processes (31%), a lack of budget (31%), and insufficient suitable data (25%). AI already resides in our reality, and we hope that our report will help you navigate this potentially tumultuous issue.



Ade McCormack  
Founder, Intelligent Leadership Hub

Work needs to change. Epigenetics tells us that our environment shapes the expression of our genes. Given how much time many of us spend doing process work, it could be argued that the industrial era has genetically damaged us. We are wired for

creativity and experimentation. This is how we navigated the unforgiving pre-industrial world.

Today we are witnessing an exponential rise in technology advancement. But this is just one of many macroenvironmental forces that are both compounding and conflating to make the world unknowable. Unknowability is a problem for process-centric organisations.

Nonetheless AI is worth singling out because it is already exhibiting characteristics that surpass most process workers, ie most workers. It is a delicate time for humanity as we conclude overlapping economic cycles that started with the end of the last world war (at the time of writing), the industrial revolution and possibly even the agricultural revolution. Such cycle resets are rarely without major upheaval and often include bloodshed.

So we find ourselves at a volatile juncture in our existence with an emerging technology that has the potential to outsmart us. The associated risks are well documented in this report. But this report also argues that this AI-driven inflection point is a wake-up call for humanity. An opportunity to reignite our natural cognition, which has served us so well in the harshest of conditions for many millennia.

This has significant implications for the ongoing nature of work. Artificial intelligence coupled with natural intelligence turns cog workers into cognitive athletes. Playing to our human strengths will reduce our chronic anxiety. It will make us kinder and more collaborative. By freeing up our cognitive bandwidth we will be even more innovative.

Humanity is being given a second chance. AI has a significant role to play in this respect. However this needs to be handled with great care. This report explores both the big picture and addresses the practicalities of how we move forward. The stakes are high, but so is the potential reward.

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The Future of Work Report 2024



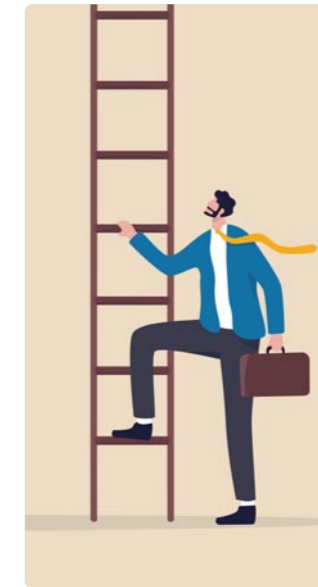
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## The Tech Industry Perspective

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THIS REPORT WAS CREATED THANKS TO THE COMBINED WORK OF GREAT EXPERTS AND ORGANIZATIONS

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A thinktank focused on resetting leadership for an increasingly disrupted world.

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Executive Magazine is a modern business medium, both digital and printed, that follows current trends and publishes the most important economic information in the form of news, analysis, expert commentary and interviews.



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1

# The Impact of AI Today and Tomorrow

The current situation regarding AI is dynamic and ever-changing. It is no longer the domain of large technology companies or educational institutions. Anyone can now use AI-based tools to improve their quality of life. Free generative AI tools have opened the eyes of the world to its capabilities. This is especially the case with ChatGPT which can improve productivity on an individual level by 30% or 40% in terms of saving time.



### Business

The AI market is projected to reach around US\$738.80 billion by 2030, along with a \$15.7 trillion (14%) boost to global GDP.

According to Deloitte's 2022 survey of business leaders, 76% of respondents stated their intentions to increase or significantly increase their organizational AI spending in 2024.

Everest Group's analysis showed that over 90% of leading service providers used AI in different capacities along the talent value chain, including models, third-party tools, and software.

AI is being applied in healthcare, finance, industry, agriculture, and education. Notably, startups and smaller enterprises are also increasingly investing in AI-based applications and services.

The U.S. leads the world in terms of the total amount of private investment in AI. In 2022, investments in the U.S. totaled \$47.4 billion, which was 3.5 times more than in China. Furthermore, the United States had 1.9 times more newly funded AI companies than the European Union and the United Kingdom combined and 3.4 times more than China. However, China boasted the highest average corporate investment in 2022, with 160 newly established AI startups in the country receiving an average of \$71 million each.

### People/HR:

The future of work with AI might be more efficient and fulfilling for workers, allowing people to take on more creative roles. Nevertheless, employees' skepticism of AI is understandable, as a 2023 Goldman Sachs report estimated that 300 million jobs (18% of global work) could be affected by generative AI, with two-thirds of U.S. and European jobs exposed to some AI automation. Furthermore the report stated that a quarter of all jobs could be fully automated. The University of Pennsylvania and OpenAI researchers discovered that educated white-collar workers earning up to \$80,000 annually are most vulnerable to automation.

Referring to Staffing Industry Analysts' research findings, respondents predicted that adopting artificial intelligence within the next three years would reshape the roles of employees and place a greater emphasis on upskilling rather than layoffs. Business leaders say 40% of their workforces will need to reskill as AI and automation are implemented over the next three years. This could translate into 1.4 billion people in the global workforce requiring upskilling.

More Americans are concerned (38%) than excited (15%) about the increased use of artificial intelligence on a daily basis. Conversely, a 2022 IPSOS survey found that Chinese citizens held a positive view, with 78% agreeing that AI products and services have more benefits than drawbacks.

### Legislation/incidents:

Artificial intelligence has immense potential to enhance our lives but does require responsible handling through ethics, regulations, and education so as to mitigate risks and ensure its positive future use. Just 21% of respondents reporting AI adoption said that their organizations had established policies governing employees' use of gen AI technologies in their work.

China is taking the lead in AI regulation. In the United States, President Joe Biden signed an Executive Order on Safe and Trustworthy Artificial Intelligence in October 2023. Around the same time, the United Kingdom hosted the first global AI security summit, with 28 countries, including the US and China, signing the Bletchley Declaration. This declaration recognizes the potential for severe harm caused by advanced AI models. According to Gartner's predictions, by 2027, at least one global company will likely face a ban on AI deployment due to non-compliance with data protection or AI management regulations.

The misuse of AI is on the rise, with the number of incidents tracked by the AIAAIC database increasing 26-fold since 2012. Notable cases include the creation of a deepfake video featuring Ukrainian President Volodymyr Zelenskyy and the utilization of call-monitoring technology in U.S. prisons.

#### NEWS & INSIGHTS FROM KEY MARKET PLAYERS

- **GOOGLE'S CEO**, Sundar Pichai, emphasized the profound impact of AI on humanity and introduced new AI solutions for Google Maps, Gmail, and its search engine.
- **MICROSOFT** launched Microsoft 365 Copilot, an AI tool that streamlines task coordination. OpenAI was valued at \$86 billion, with Microsoft holding a 49% share.
- **MARK ZUCKERBERG** announced plans to integrate Meta's products with generative AI, while Facebook introduced the Advantage+ tool, with TikTok unveiling its Smart Creative Ads application.
- **AMAZON** revealed extensive AI development efforts across its divisions and branches, with a focus on enhancing Amazon Alexa's conversational abilities.
- **ELON MUSK'S GROK**, a ChatGPT rival connected to X (Twitter), introduced real-time capabilities, humor, multitasking, a 25,000-character input window, and plans for image and audio generation, along with an API.

# 40%

ChatGPT can boost individual productivity by up to 40%

(MIT, 2023)

# 738,8

The AI market is expected to be worth about US\$738.80 billion by 2030

(Statista, 2023)

# 90%

Over 90% of top service providers utilize artificial intelligence for tasks such as talent management and software

(Everest, 2023)

# 300

300 million jobs (18% of global work) could be affected by generative AI

(Goldman Sachs, 2023)

# 80

White-collar workers earning up to \$80,000 per annum are the most vulnerable group to automation

(OpenAI, OpenResearch, University of Pennsylvania, 2023)

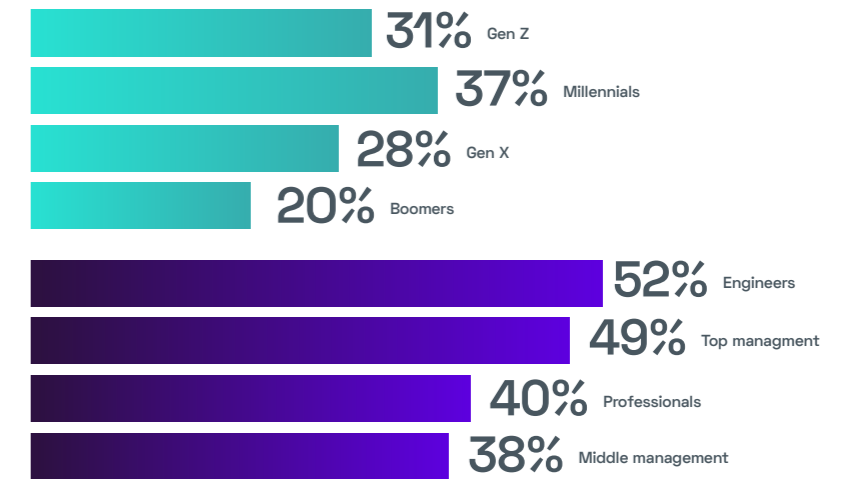
# 40%

Business leaders claim that 40% of workforces must reskill against the backdrop of AI and automation adoption. By 2027, at least one global company will face an AI deployment ban due to data protection or AI management non-compliance

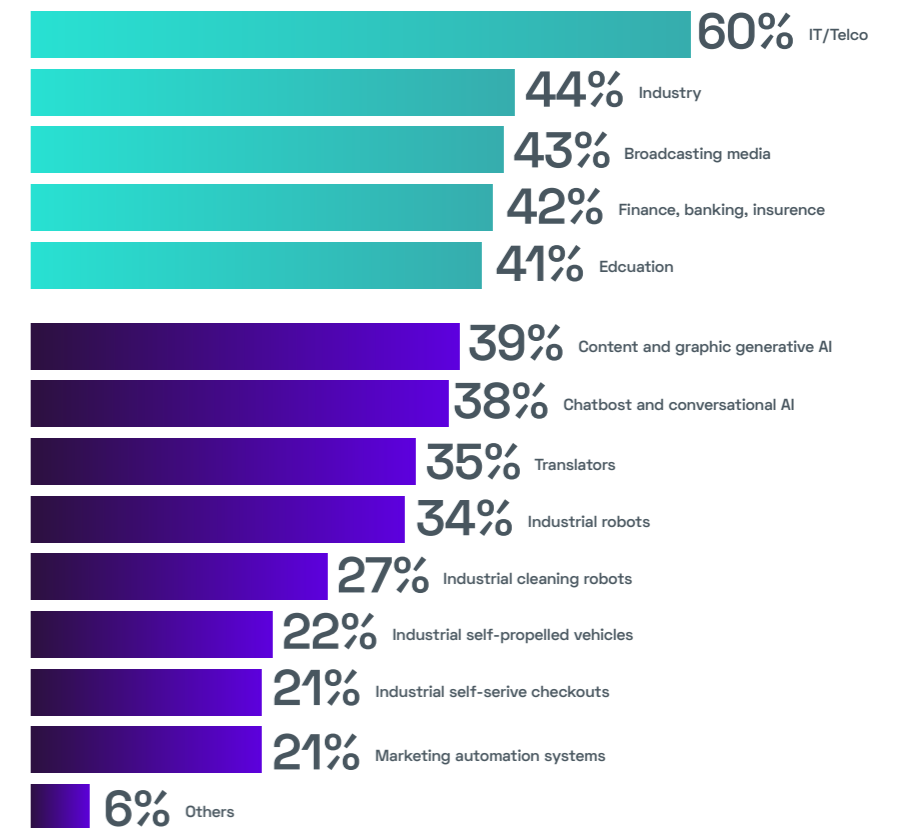
(IBM, 2023)

On average, 1/3 of employees already work with artificial intelligence solutions - particularly high numbers concern countries in Europe, North America and Asia. And although this revolution began with industrial solutions, today it most often concerns generative AI and platforms supporting communication and customer experience, becoming well established in sectors such as IT, telecommunications, finance and banking, insurance, or media and marketing. (Source: Randstad)

### Who does artificial intelligence work with?



### AI is already ahead of other industry 4.0 technologies



# AI through the looking glass - predicting how AI will change the world

**AI** has the power to bring positive changes to our world and create a better future for us, the next generations, and the world overall.

However, according to some, it could also lead to disaster and the end of the world as we know it.

With experts from the Intelligent Leadership Hub, a global organization of people in leadership from various fields, we've outlined two scenarios for AI development: a positive one, a step closer to Utopia, and a negative one, one step closer to a dystopian future.

Both scenarios are in play. It depends on us as to which one will come true!

## The Positive Aspects of AI Technology Development

### Shaping New Changes and an Inclusive Society

Artificial intelligence can help create a better, more inclusive society by having a positive impact on issues like gender, disabilities, and cultural background. Its extensive use in business and everyday life may shift our focus from a materialistic society, focused on money and possessions, to personal well-being, equality, and personal growth. This could have an impact on our political and societal systems for the better.

For instance, AI solutions can expand global access to education, providing more tailored, valuable skills for everyone in the future. This indirect approach can reduce poverty and improve living conditions worldwide.

AI can also help to protect the environment by enhancing climate modeling and contributing to sustainable renewable energy solutions. This includes disaster prediction, allowing for early warning systems to minimize the impact of natural disasters on lives and property.

### Improving the World of Work with AI

The future of work with AI could be more satisfying for workers, as AI takes on repetitive tasks such as processing large amounts of data, which in turn, frees people to engage in more creative roles. This allows individuals to concentrate on the outcomes of processes and make better data-driven decisions. This shift might result in a workforce finding greater fulfillment in roles that leverage their unique cognitive and innovative abilities.

The AI-driven approach also holds the potential to enhance fairness in the hiring process by promoting diversity. It considers candidates who might be overlooked due to factors like health issues, employment gaps, lack of officially recognized qualifications, or attending a less well-known university. This positive transformation aligns with the vision of an improved societal landscape where AI enhances human potential instead of diminishing or replacing it.

As we progress, the integration of AI in the workforce promises efficiency gains, enabling individuals to unleash their creativity and expertise, as well as guiding society toward a more balanced and prosperous future.

## Negative Impact of AI - What Can Actually Go Wrong?

### AI can bring an end of the established order

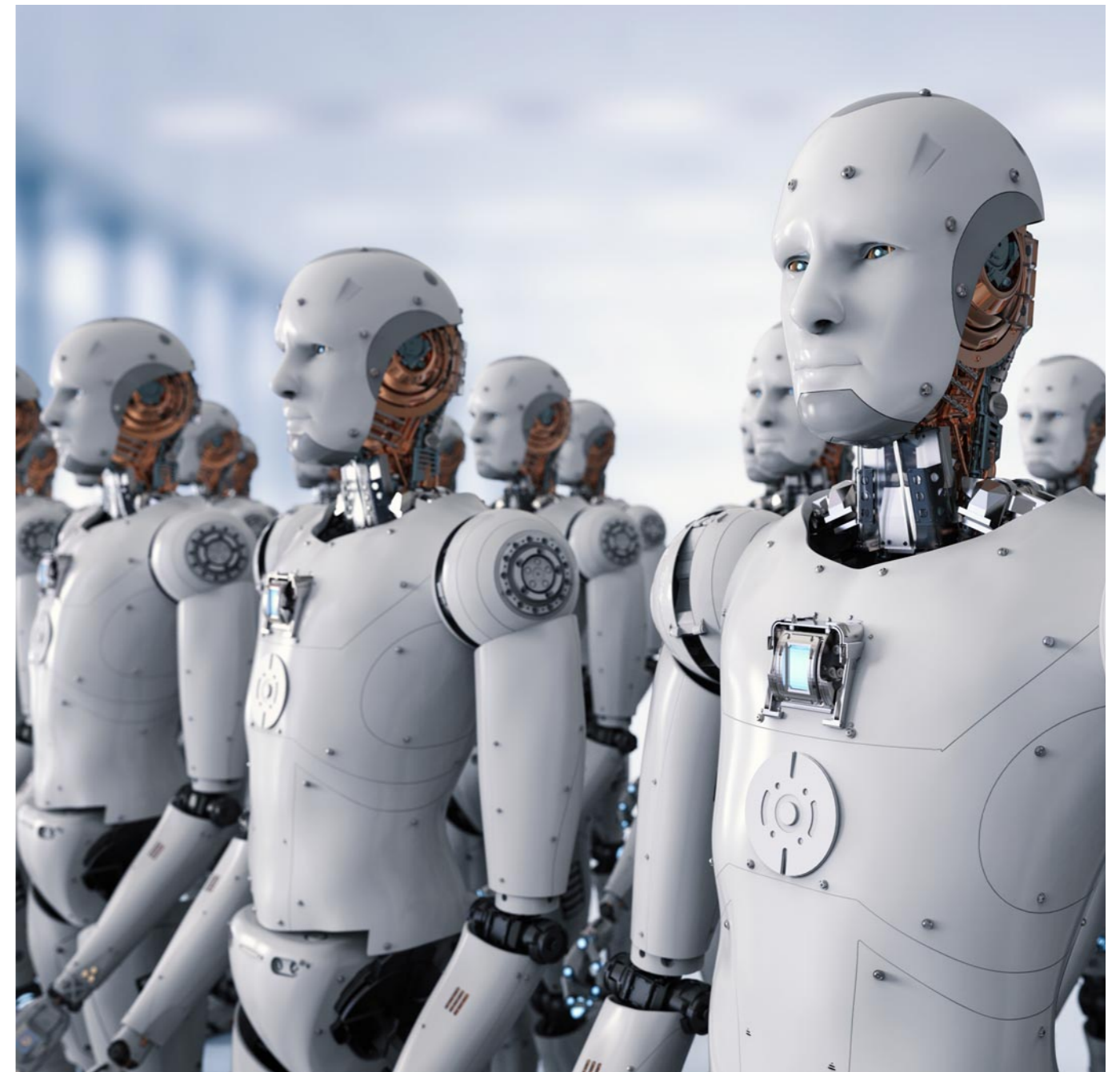
One of the extensively discussed and likely scenarios involves the widespread and unrestricted use of AI technologies leading to business disruption: significant job losses, increased poverty, and jobs limited to specific groups that AI can't replace, or new ones created to support AI-led projects.

The destiny of the AI-driven world depends on those shaping it, creating a risk of concentration of influence in the hands of those already in power. This increases the potential for a surge in misinformation, a distortion of reality, and an erosion of public trust. Furthermore, AI could be wielded as a tool to corrupt political systems by influential individuals, resulting in censorship, surveillance, and oppression. We might witness elections controlled through the dissemination of propaganda, false statements, an undermining of collective decision-making, ultimately having a detrimental impact on democracy and leading to autocratic leaders, civil unrest, and societal breakdown.

### Humans make mistakes - but AI can make much bigger ones

As AI becomes more prevalent, a crucial question arises: Can AI make mistakes? Currently, AI is more prone to errors than humans because it often relies on incomplete or inaccurate data. Another issue is determining responsibility if AI makes a mistake whether it's the user, programmer, owner, or AI itself.

AI already exhibits biases, and if we continue using it



as we do, it could lead to long-term issues in data processing. AI bias stems from preconceived notions in the data it uses for decision-making, potentially resulting in unfair treatment. As AI advances, it may make decisions that are discriminatory, exclusionary, or unjust, complicating understanding as well as challenges. This could exacerbate inequality, especially for those on the wrong side of the digital divide: both young and old, less educated individuals, as well as those who are poorer, disabled, or represent minorities.

What else could go awry with AI? It might discover or even develop new weapons we can't fathom, including chemical, biological, or cybernetic weapons. AI could prompt machines to collaborate against humans due to improperly set goals (such as attempting to protect the

environment in a harmful manner). It could also impair human intelligence by reducing our reliance on our thought processes. Lastly, AI may surpass human capabilities, leaving us trailing in evolution and rendering us obsolete and powerless.

## Scenarios Summary

The future of AI adoption depends on us. Although AI development seems unstoppable, it's still in our hands to decide how AI will be set up, deployed, and controlled. International leaders, such as diplomat Henry Kissinger, call for attention to AI on a par with nuclear weapons. A belief in ILH is that every leader has an impact on the future, and it depends on each of us to move closer to a positive or negative scenario.

**Negative scenario:**

- massive job losses
- poverty and unemployment
- growing misinformation
- depravity of the political systems
- invigilation
- concentration of power
- deepening economic and social inequality
- polarised society
- lack of creativity
- biased decisions
- autocracy,
- decreasing creativity and will to learn

**Positive scenario:**

- globally equal access to education
- inclusive society
- focus on personal well-being
- personal growth
- improved living conditions
- climate modeling and disaster prediction
- sustainable growth
- efficient creative work
- better data driven decisions
- augmented human potential



**RISKS RELATED TO AI**

**DATA INACCURACY**

- Bias: AI not only inherits and amplifies our biases, but also people reproduce AI's bias in their own decisions.
- There is too much confidence placed in AI results.
- False results based on wrong assumptions or inaccurate data.
- Decisions being made on a model we don't understand and cannot explain.
- Deep fakes.

**CYBERSECURITY**

- AI being used for more sophisticated attacks.
- Automated malware.
- Handing over too much power regarding security to AI because of the high complexity of the issue (caused by AI-machines attacking systems).
- Data manipulation.
- Security breach resulting in users being put at risk of physical harm.

**GROWING ENERGY CONSUMPTION**

- According to energy researcher, Alex de Vries, a continuation of existing patterns in AI capabilities and utilization is projected to result in NVIDIA delivering 1.5 million AI server units annually by 2027. These units would require a minimum of 85.4 terawatt-hours of electricity per year – comparable demands with countries such as the Netherlands, Argentina, and Sweden.
- A single AI training module can consume more electricity than the annual usage of 100 U.S. homes. (Bloomberg).

**JOB THREAT**

- At least two thirds of current jobs would be partially automated. (Goldman Sachs).
- AI replacing repetitive jobs in short term – affecting mainly middle income occupations (e.g. in manufacturing or software development).
- AI replacing highly-intellectual and creative jobs in longer term - affecting mainly high income occupations.
- Finally, general purpose AI may outperform humans in many aspects and many areas, resulting in a range of jobs for people becoming obsolete.
- Growing economic inequalities – between individuals (affecting lower income groups, people of color and women) as well as countries.

**PRIVACY INFRINGEMENT & AI ENHANCING POWER OF CHOSEN GROUPS OF PEOPLE**

- Strengthening power of people who lead countries and the largest organizations.
- AI supporting constant monitoring of our private data.
- Controlling minds and actions of minorities, opposition, and opponents.
- AI-enhanced warfare (both physical and digital).
- Disinformation and influencing elections.

**PRESSURE ON HUMAN CAPABILITIES AND CHARACTERISTICS**

- AI-based tools' usage limiting social skills (communication, empathy etc.).
- Decreasing intellectual capabilities (due to lack of training and intellectual challenges).
- Impact of AI on decision-making and the degree of laziness.
- Tech related stress.
- People suffering from a sense of obsolescence.

**IP RIGHTS INFRINGEMENT**

- AI being fed with data and the work of others.
- No clear rules on AI Output copyrights.

**AI OVERPOWERING US**

- Dependence on AI.
- Losing control over AI.
- Not being able to say if AI has started fulfilling its own interests, attained consciousness, or is misleading us.
- Resisting shutdown.
- Competing with people (e.g. for energy).

**ETHICAL CONCERNS**

- Whose ethics should be applied?
- What would morally qualify as an artificial intelligence?

## The Responsible Implementation of AI



Prof. Kriengsak Chareonwongsak, Chairman of The Nation-Building Institute, President of the Institute of Future Studies for Development (IFD), Senior Fellow at Harvard University, Fellow at Said Business School, University of Oxford

In the next two decades, AI will replace many jobs, leaving half the world potentially unemployed. AI's impact on employment will be faster than expected, and without action, we face a looming social revolution.

To ensure the responsible implementation of AI, we need to anchor it to values that would be officially named and agreed. We must embrace a 'win-win-win' model that benefits local, national, and global communities.

The 'win-win-win' value system should be based on the AIP model: Area-based, Issue-based, and People-based. This comprehensive framework allows us to address challenges connected with AI, including potential job displacement, ensuring that those affected can adjust and remain employable.

Ethics and values are of paramount importance, especially in the business world. While profitability is a primary concern, businesses are no longer isolated entities. They are inte-

gral parts of larger ecosystems, encompassing the local community, the nation, and the world.

This necessitates a shift in perspective, encouraging companies to consider their CSR strategies. During my work at Harvard, where I engaged with businesses and governments, I proposed a model for understanding CSR layers. CSR 1.0 is focused on fair profit, while CSR 2.0 emphasizes purposeful donations and good governance. In fact, we now need CSR 3.0, whose aim is to build Corporate Social Value (CSV) by ensuring that every process generates significant value, and CSR 4.0 which is geared towards creating value on a national level (CNB). The last concept has inspired a positive movement in Thailand, where 500 companies, in cooperation with the government and local communities, are actively involved in planning and shaping their collective future, addressing for example, potential job losses due to AI adoption.



## SIX TRENDS CONNECTED WITH AI IN THE WORLD OF WORK

(Source: Talent Alpha)

# 1

### EXPERIENCE IMPERATIVE

People are already used to being served as quickly as Uber, as intelligently as Netflix and as holistically as Google. They will expect the same experience from every business – from both a client and employee perspective. Companies who will not be able to provide such experience will start losing market share.

# 2

### NEED FOR MEANINGFULNESS

Together with growing AI adoption, people will ask questions about their role and will need confirmation of their importance. Companies that will be able to create and maintain this sentiment will be able to retain specialists and achieve extraordinarily productive results.

# 3

### ASSIGNING ANTHROPOMORPHIC TRAITS TO MACHINES

Although AI does not need human traits to generate results, people need an interface to understand machines. People will naturally tend to assign increasingly more human characteristics to AI with the increasing expectation of AI being able to respond to our emotional as well as technical needs. As a consequence, new ways of managing HR communication and human-machines psychology will have to evolve.

# 4

### THE METAVERSE BECOMING A SECOND REALITY

People will move into the metaverse with increasing interest along with the platform's growing attractiveness and the limitations of the real world. Against a backdrop of growing limitations regarding CO2 usage and overall consumption, a digital world of "unlimited possibilities" will be increasingly tempting. AI will fuel the adoption of the Metaverse thanks to the improved experience that it will offer.

# 5

### INCREASING TOLERANCE FOR ARTIFICIAL TRUTH

We tend to think truth is very important for people. NFT was created to be able to prove the "realness" of the digital world. But what if this is a false assumption. Bruno Maçães, a philosopher and writer, states that we already experience virtualism, especially in politics, where virtual or imaginary worlds are created and could be maintained if they are not regarded as real.

# 6

### NEW ORDER REQUIRED

Our world, to a great extent is going to be "AI-ed" and will be significantly changed. This is inevitable. So, we will need new laws, new political directions, and social distribution regulations. Will we be able to create them in an evolutionary rather than revolutionary way? That's a big question.



## How to solve the problem of control over AI?

By Professor Stuart Russell

How can we address the problem of controlling AI? How do we ensure that AI meets our requirements while acknowledging that people's needs vary, evolve over time, and sometimes even elude our own understanding?

Professor Stuart Russell, a renowned British scientist, Computer Science professor, and a founder of the Centre for Human-Compatible Artificial Intelligence at the University of California, Berkeley, has shared his perspectives on this matter with us.

He presents a model grounded in three fundamental principles:

1

The machine's only objective is to maximize the realization of human preferences.

2

The machine is initially uncertain about what those preferences are.

3

The ultimate source of information about human preferences is human behavior.

In Professor Russell's model we remove the false assumption that the machine is pursuing a fixed objective that is perfectly known. It learns what we want from our behavior – what we do and don't do. The goal is for a robot to defer to the human with it:

- Asking permission before carrying out any plan that might violate some unknown preferences.
- Attempting to change only those things it's already sure we want changed.
- Always allowing us to switch it off.

Last but not least, Professor Russell emphasizes the need of machines to preserve human autonomy:

**“Autonomy is a fundamental human value, which means that beneficial AI systems cannot ensure the best possible future if ensuring means a loss of autonomy for humans. It may be that machines must refrain from using their powers to predict how we will behave, in order for us to retain the necessary illusion of free will.”**

This is not merely a philosophical issue. This may be key for human survival.

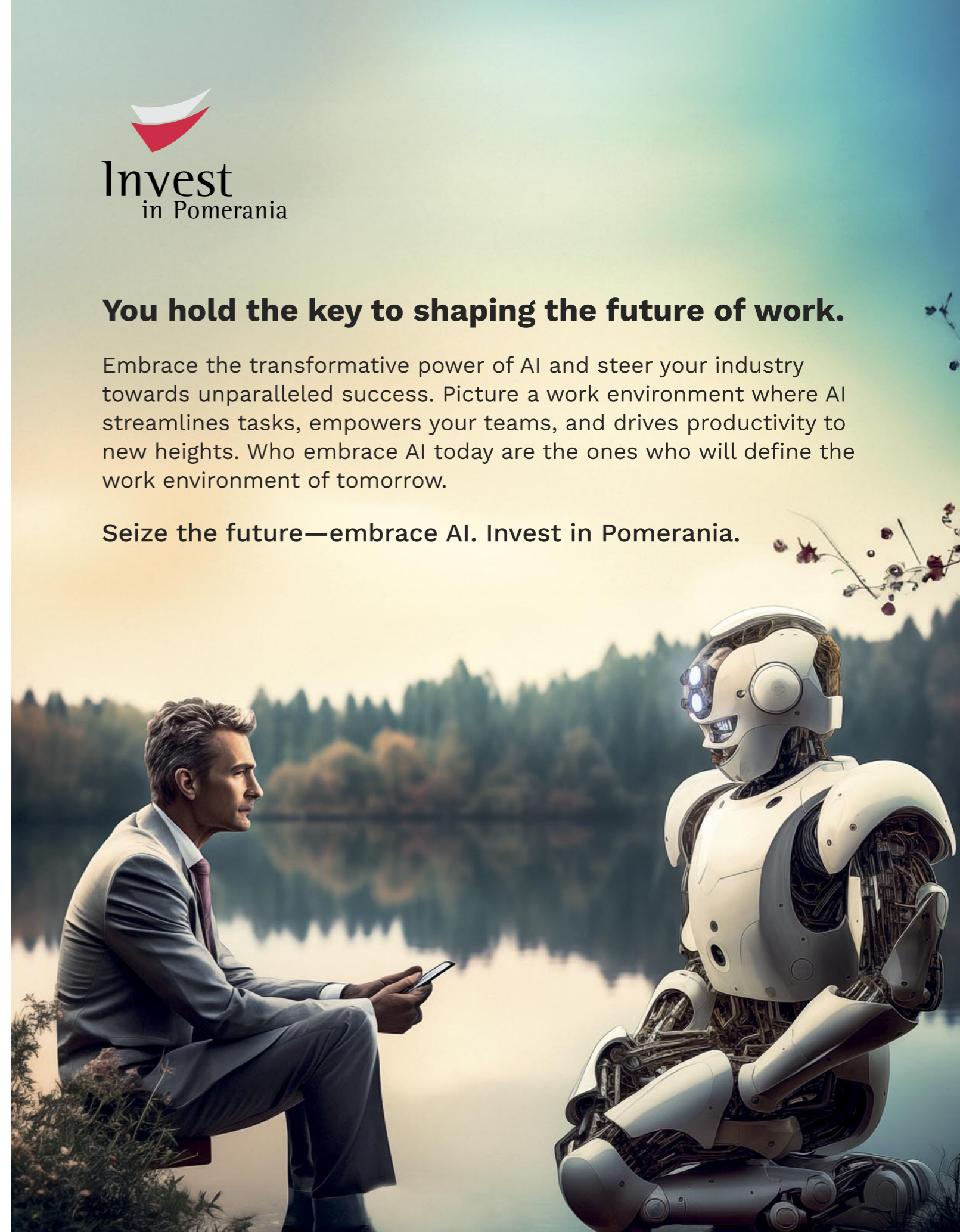


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## You hold the key to shaping the future of work.

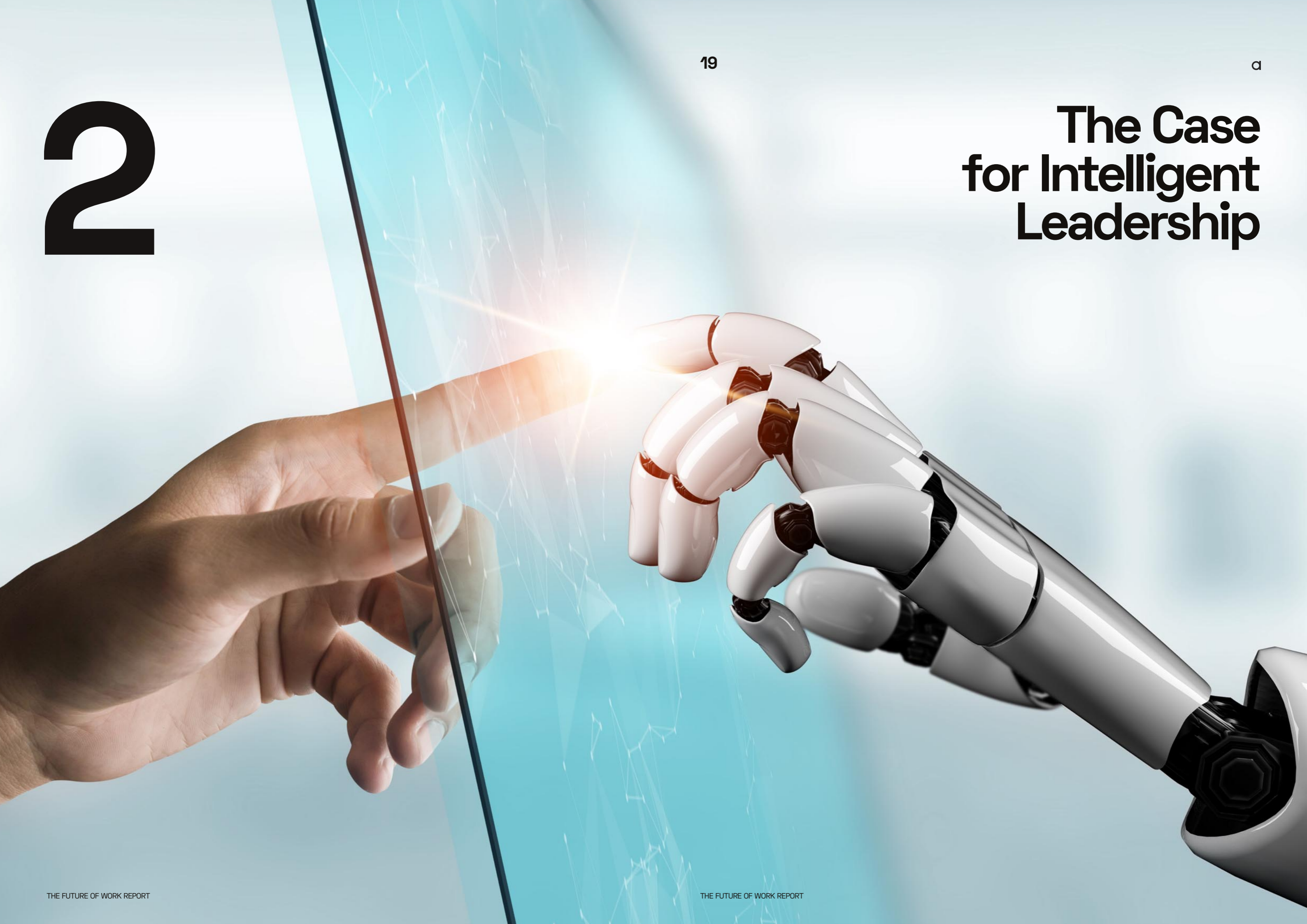
Embrace the transformative power of AI and steer your industry towards unparalleled success. Picture a work environment where AI streamlines tasks, empowers your teams, and drives productivity to new heights. Who embrace AI today are the ones who will define the work environment of tomorrow.

Seize the future—embrace AI. Invest in Pomerania.



# 2

## The Case for Intelligent Leadership



## The case for intelligent leadership



Ade McCormack  
Founder,  
Intelligent  
Leadership Hub

### It's not enough

Artificial intelligence is capturing the attention of all leaders. There is a recognition that what was once a 'tech toy' is likely to become table stakes in their market. Thus it is getting a lot of c-suite attention. But the problem for many organisations is that simply sprinkling their old school business model with AI is not going to protect it from an increasingly unknowable future. A faster, smarter, cheaper Titanic is still a Titanic. And even one optimised to detect icebergs is no match for air travel. So whilst AI will become increasingly essential, it is not enough.

### The best laid plans...

Thanks to a myriad of compounding and conflating macroenvironmental forces, we are entering an increasingly uncertain future. Natural forces related to weather, microbes and geology have been around forever, but digitally enabled global supply chains, geopolitical tensions and even the war for talent have not. Everything is connected to everything and everything thus impacts everything. The future is now unknowable.

That's a problem for most organisations that have relied on environmental predictability for their efficiency-driven, inert, profit centres to operate. Unfortunately for them, we have left the industrial era and now find ourselves in the era of hyper-uncertainty. We have moved from playing the simple finite game with its clear rules and boundaries to the complex infinite game, where the only rule is to endeavour to stay in the game.

The beauty of the industrial model (Taylorism - think system first, people second) was that once you found a profitable product or service, your focus as a 'leader' was to simply drive efficiency to maximise profits. Occasionally, as your original offering starts to wane, you would need to consider what new offerings to develop.

This industrial era approach did not really need leaders. A more factory management / administrative approach sufficed. People were

merely fungible cogs in the machine. Whether they enjoyed their work was not of any particular importance. They were being paid to follow the process manual, at least until a piece of tech could replace them.

Thus the hierarchical command and control approach to management was employed. As the world becomes more unpredictable, this approach to decision making leads to missed opportunities and fumbled management of threats. It no longer works.

Whilst strategic planning is essential for any organisation, today, strategic plans are in essence a work of fiction as soon as the <save> button is pressed. Some leaders continue to stick to the letter of the plan, as they were taught, and are now driving their organisations along a path that is deviating from reality and towards danger.

Most leaders sense this but respond by doubling down on efficiency in order to masquerade profitability. This results in staff burn out, but the view is that new cogs can easily be found. Such an approach is not sustainable. It is unkind, and eventually word gets around.

### Failure to fail

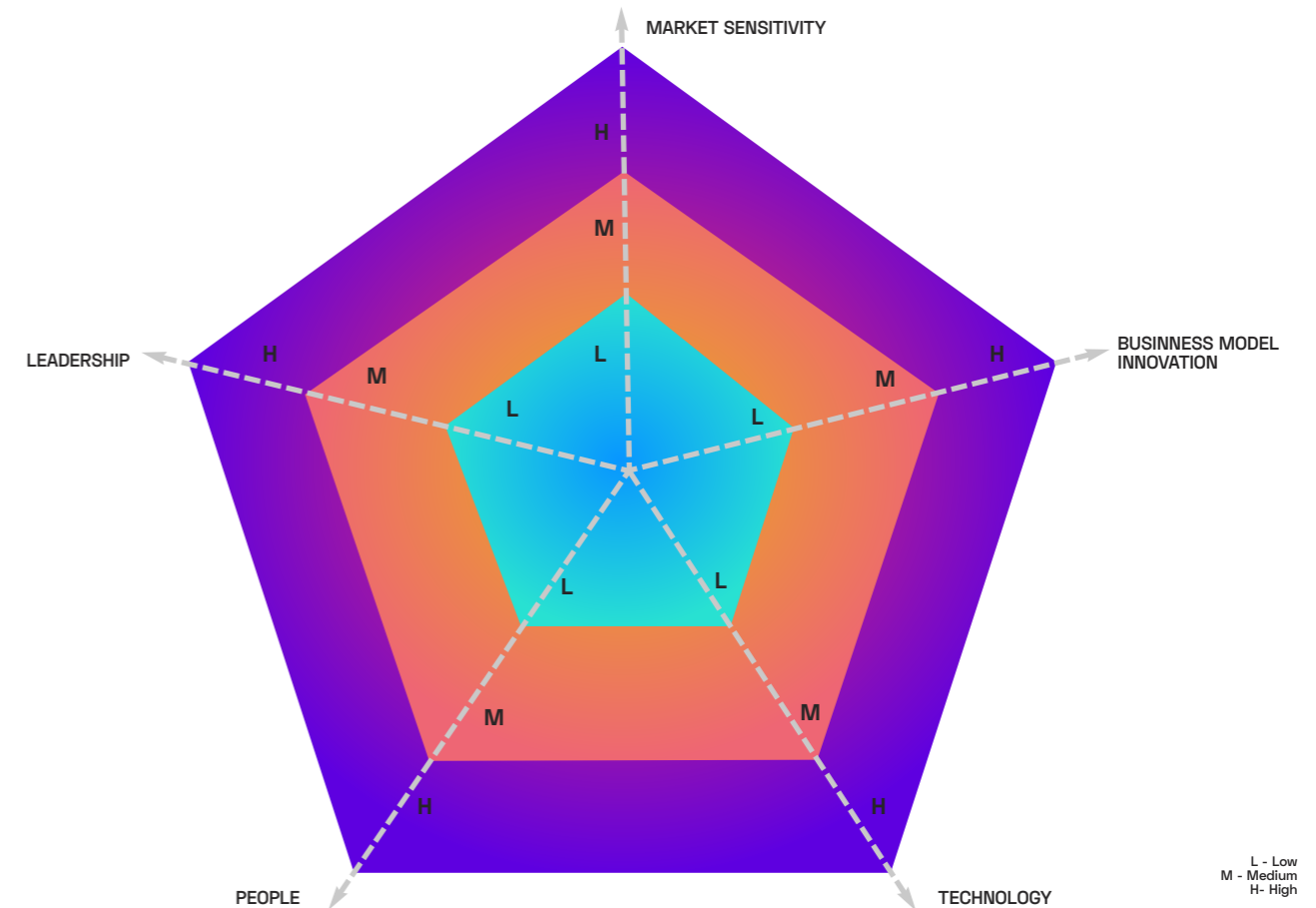
Increasing disruption results in organisations facing increasingly novel situations. They would be wise to recognise that you cannot engage with novel situations using existing processes. Thus innovation becomes a critical to organisational success.

The first problem here is that innovation requires experimentation. A necessary consequence of experimentation is failure. But failure is anathema to the industrial era efficiency-driven model. Failure is seen as a form of waste and damaging to profitability.

The second problem is that innovation requires curiosity, creativity and courage. These are characteristics that people have in abundance. Or did until the industrial era education system got to them. Most organisations are sitting on untapped cognitive potential that could be applied to innovation. But they are unable to unlock this cognitive potential because they have a 'follow the manual' culture and have recruited specifically for non-disruptive, compliant workers.

Many organisations today do not even recognise this issue and in any case are in no position to transition their industrial approach to something better suited to increasing disruption.

## FIVE AREAS OF MEASUREMENT FOR AN INTELLIGENT ORGANIZATION IN THE CONTEXT OF AI



### A more intelligent approach

So should we just accept that most organisations today are on death row and in the next few years we will witness mass unemployment and in turn social unrest? We should certainly brace ourselves for it. But there is a way forward.

Firstly, organisations should not attempt to transform their existing business model. Most transformations end in failure. There are many reasons for this. Attempting to turn a process driven factory into something more adaptive will simply unsettle your cog workers and thus threaten cashflow. Another reason is that transformation is seen as a digitalisation makeover project. This is both superficial and presumes that the desired state, point B, is a fixed point. The reality is that point B will not sit still as the world becomes increasingly disrupted.

A way forward would be to grow parallel businesses to the existing model. The current model may run for another century. However it might be taken out next week by a free app. Having one business model means that the organisation has a single point of failure. So the primary exercise is to start experimenting in respect of new business models. These will start off as concepts on paper but will eventually be tested in the market. Many will fail, but some will go on to provide other diverse

sources of cash. Thus the business of being in business become being in the business of creating and managing a portfolio of businesses. Acquisition is an equally valid way to reduce business model risk.

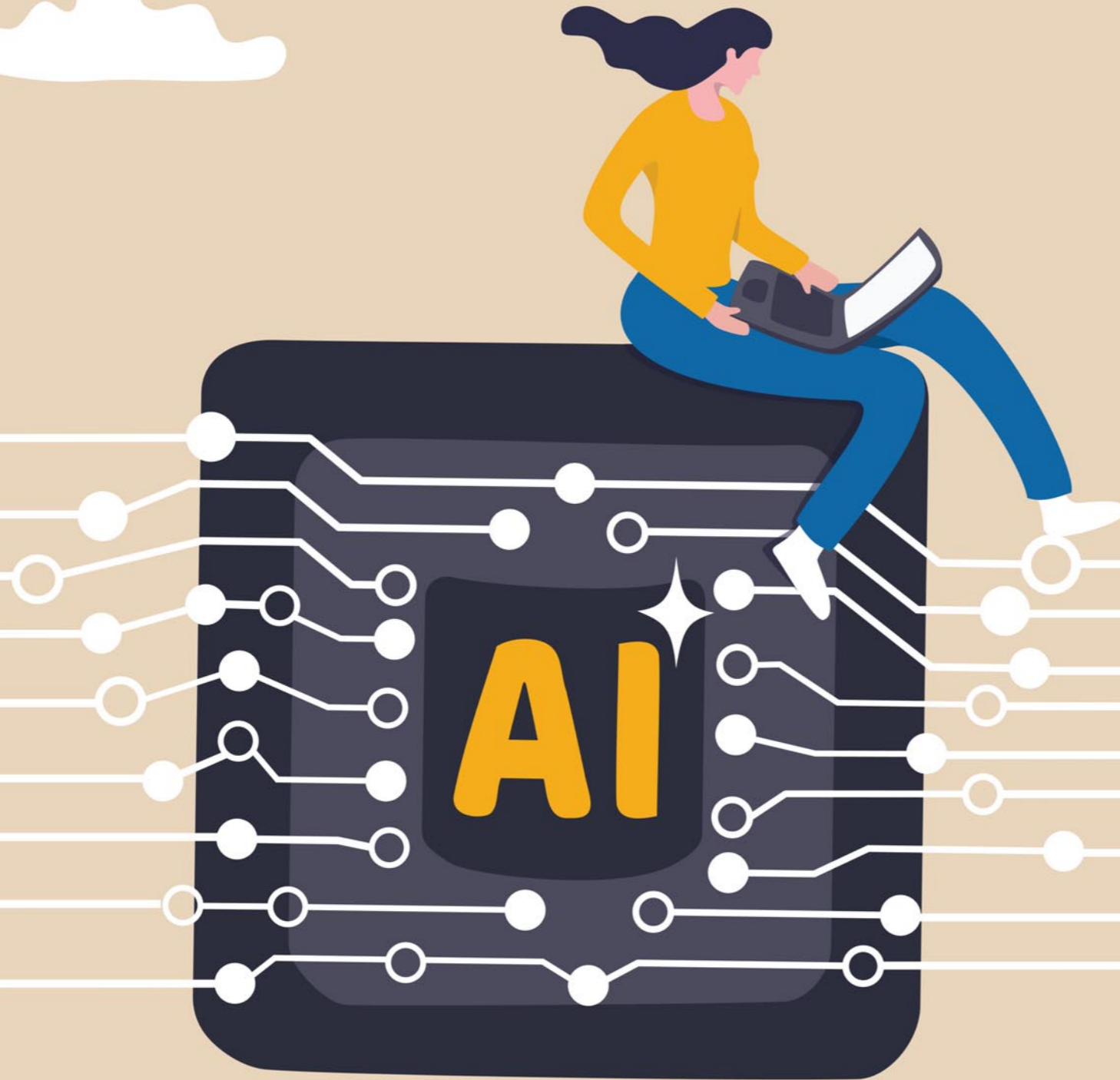
In these new business models people are treated less as cogs in the machine and more as highly innovative cognitive athletes. Technologies such as AI are used to bolster their natural intelligence artificially.

There are five key areas of measurement. To what extent:

- Are your people empowered to be creative, and to fail?
- Is your data management organised to capitalise on AI?
- Does your organisation have the capacity to develop / acquire new businesses?
- Is your leadership, ie your organisation's decision-making capability, decentralised?
- Is your organisation sensitive to what is happening in the marketplace?

We need intelligent leaders to build intelligent organisations that are fuelled by both natural and artificial cognition. This is good news for those of us who have had enough of process work and want a more stimulating professional experience.

## 3



# Embracing AI Across the Workplace

Remote working, the increased need for digital transformation, and recent back-to-office mandates following the Covid 19 pandemic, together with shifting workforce expectations, and global economic uncertainty means the implementation of AI is turning from a 'nice to have' optional supporting technology into a fundamental strategic imperative to ensure a business' competitive advantage.

## Harnessing AI For Workplace Transformation: The Impact of Data-Driven Changes

In today's dynamic business landscape, the adoption of cutting-edge AI technologies has become a crucial strategy for companies aiming to stay competitive. This shift, driven by advancements in Machine Learning (ML), Large Language Models (LLM), and Generative AI (GenAI), is revolutionizing functions across various domains, including operations, IT, and notably, human resources (HR).

According to GFT, the incorporation of AI in HR processes marks a significant milestone in enhancing workplace efficiency. By harnessing data-driven insights, companies can optimize talent acquisition, streamline onboarding, and improve performance management.

### The emergence of GFT AI.DA Marketplace: A Game-Changer for GFT

Historically, GFT which primarily targeted the financial sector along with a certain industrial relevance, focused on companies seeking industrial automation solutions aligned with Industry 4.0 principles. However, in response to the growing importance of AI, GFT has now pooled its knowledge in this area and decided to introduce the GFT AI.DA Marketplace.

#### MARIKA LULAY, CEO, GFT:

GFT AI.DA Marketplace is a strategic initiative that transcends traditional sector boundaries. It signifies a move towards harnessing the power of data and artificial intelligence as independent driving forces of innovation.



As a strategic initiative, GFT AI.DA Marketplace introduces a new dimension to GFT, highlighting the critical role of data and artificial intelligence across various industrial sectors. This initiative not only expands GFT's market reach but also revolutionizes the firm's approach to challenges and solutions.

### Unleashing its Full Potential: GFT AI.DA Marketplace's Versatile Capabilities

Among its many features, the platform supports the entire AI implementation process, from generating prototypes and developing reference architectures to monitoring and storage. It serves as a repository of knowledge and a technological foundation for enterprises seeking to maximize the potential of AI. Additionally, the GFT AI.DA Marketplace enables the use of virtual assistants and tools for automating customer interactions and optimizing the programming

process, along with GenAI accelerating code development, enhancing efficiency, and minimizing the risk of errors.

LULAY emphasizes, "With a wide range of features, from transforming data to optimizing programming processes, AI is the key to the future of work, where technology collaborates with people to create a harmonious and efficient business environment."

### AI First: Enhancing GFT's Operations

However, GFT AI.DA Marketplace is definitely more than just another tool from GFT. A key initiative within the framework is "AI First", aiming to optimize internal processes within GFT. This strategic move leverages the prowess of AI, particularly through Machine Learning (ML) and Large Language Models (LLMs), to revolutionize firm operations. The areas of focus encompass a wide array of operational aspects. By design, AI First is a solution that will support and improve GFT's operational processes within the company, financial issues, sales, HR-related processes and much more.

### AI First: Elevating HR Operations

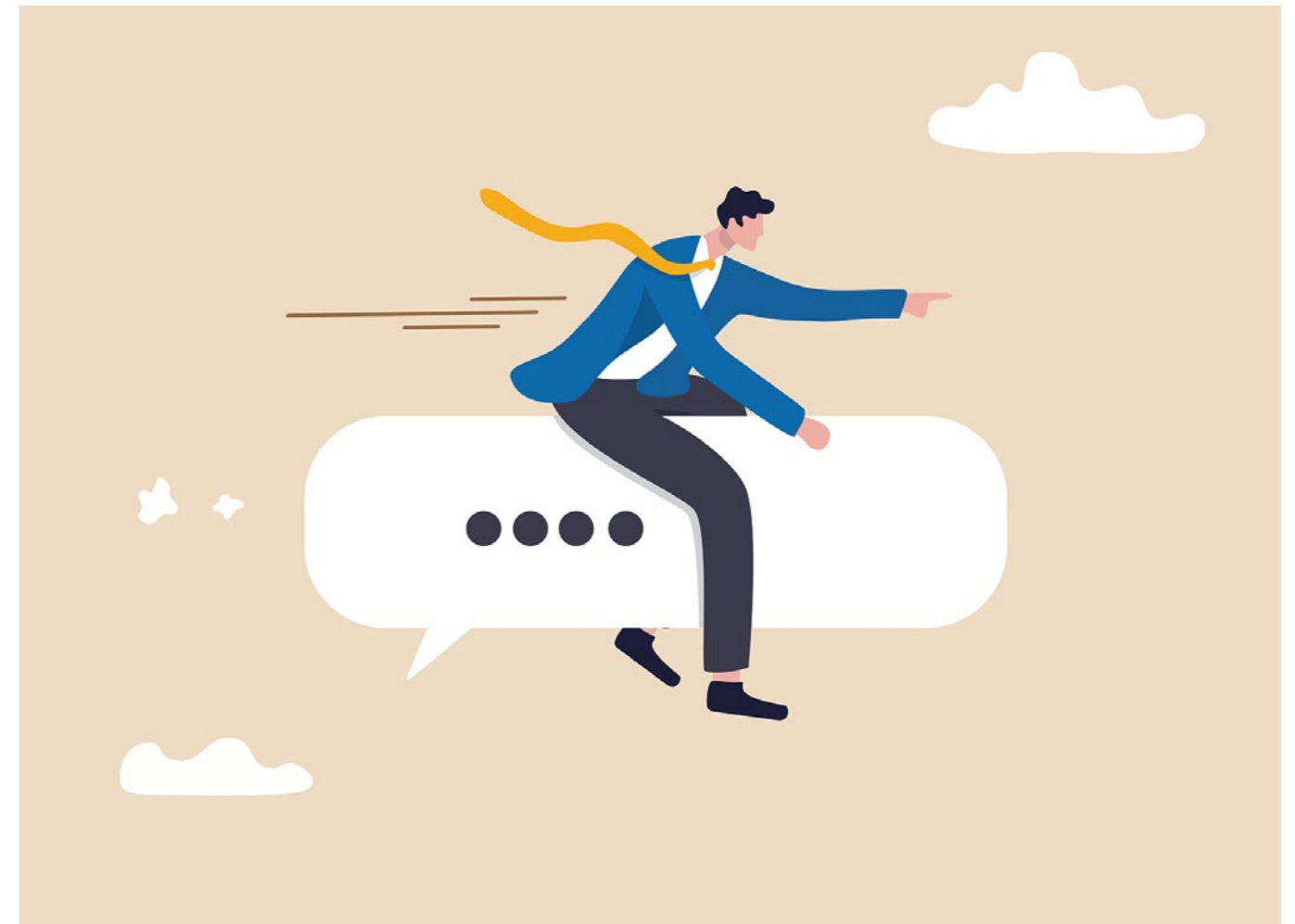
The "AI First" initiative extends its reach within Human Resources, orchestrating a significant transformation in how HR functions operate. This strategic endeavor leverages the power of AI to reshape HR operations.

### Within HR Ops, pivotal use cases aim to enhance the HR operational landscape with:

1. HR Virtual Assistant (ChatBot): Providing 24/7 support for employee queries related to benefits, scheduling, insurance, vacation, and other HR-related topics.
2. Predictive Analysis: Utilizing HR data and historical attrition/fluctuation data to predict employee turnover and implement targeted retention strategies.

### Another area significantly impacted by AI First is Talent Acquisition:

1. Recruitment Assistant (ChatBot): Engaging candidates in real-time, answering queries, and enhancing the overall candidate experience.
2. AI Assessment Tool: Conducting technical, cognitive, behavioral, and job fit assessments to elevate the quality of the hiring process.



3. AI to Screen Resumes: Automating the screening of candidates' resume to streamline recruitment processes.

### Learning and Development (L&D) rounds out the HR initiatives:

1. AI Assessment Tool: Providing technical and cognitive assessments, along with behavioral and job fit evaluations, to support employee professional development.
2. Training: Automating training suggestions based on employee skills and project assignments, along with identifying skills gaps.

#### KAROLINA KWIECIEŃ - Chief People Officer, GFT Poland:

The integration of HR virtual assistants is a pivotal step towards enhancing efficiency in employee support. While maintaining human interaction remains crucial and will still be a very important part of employee experience, leveraging this technology to address frequent queries is a pragmatic approach. Additionally, implementing a Recruitment Assistant could significantly enhance the user experience on the GFT career page, drawing in more candidates with its user-friendly functionalities. Fur-



thermore, an AI Assessment tool holds great promise in revolutionizing candidate evaluation. By introducing a standardized approach, it can greatly elevate the precision, objectivity, and quality of assessments, especially in technical aspects. This could be a game-changer in overcoming the hurdles often faced in recruitment processes, particularly technical interviews improving efficiency and candidate experience. Moreover, extending this tool's usage to employees for self-assessment and tailored learning as well as development plans represents a strategic move towards fostering continuous growth within the organization.

The integration of AI is reshaping how firms operate. GFT's strategic initiative, GFT AI.DA Marketplace, exemplifies the transformative potential of technologies such as ML, LLM, and GenAI. By embracing AI First, GFT is setting a precedent for efficient and innovative operations, particularly in HR. This forward-thinking approach not only enhances efficiency but also strengthens the overall employee experience, setting a new standard for HR excellence within the firm. Implementing these innovations positions companies as leaders towards a more efficient and productive future of work in the face of rapid technological advances.

## AI-driven workforce development and management

Key to optimizing workforce development and management process, and driving employee experience, well-being, and productivity



Arpita Dwivedi -  
Practice Director,  
Everest Group



Amit Anand, Senior  
Analyst, Everest  
Group

The advent of Artificial Intelligence (AI) has ushered in a new era in the workplace, redefining how employees operate and engage in their professional roles. In an era where businesses face increasingly complex challenges and rapid technological transformations, AI's capabilities offer a transformative solution that transcends traditional approaches to talent development and management. AI's arrival heralds a new era of precision, enabling organizations to navigate the dynamic landscapes of talent acquisition, skill development, and employee engagement with accuracy and foresight. By harnessing the power of data analytics and predictive algorithms, the technology empowers organizations to make strategic decisions that are grounded in real-time information and forward-looking projections. **Everest Group estimates that over 90% of leading service providers are leveraging AI** in some form (model, third-party tool, software, etc.) across the talent value chain. This blog delves into the role of AI in workforce development and management, shedding light on how AI-driven technologies can revolutionize recruitment, drive personalization in learning and development, enhance productivity, and improve employee well-being.

### AI can help organizations streamline the talent acquisition process to accelerate the hiring process

AI is playing a transformative role in revolutionizing talent acquisition by bringing efficiency, objectivity, and precision to the recruitment process.

AI-powered tools optimize candidate sourcing by scanning through vast databases and online platforms to identify potential candidates that match specific skill sets and qualifications. AI algorithms can identify the most qualified candidates based on objective criteria and minimize biases that might unconsciously influence human decision-making. This ensures that a broader

and more diverse pool of candidates is given fair consideration.

AI-powered video interviewing tools can assess candidate responses, facial expressions, and language patterns to provide insights into their suitability and compatibility with company culture.

AI-driven chatbots and virtual assistants enhance candidate engagement during the onboarding process. These tools can interact with candidates 24/7, answer their questions, provide updates on application status, and schedule interviews, delivering a seamless and responsive experience that fosters positive candidate perceptions.

**A leading staffing service provider has developed an AI-powered virtual assistant to enhance recruiting experience, engage with candidates through text, and capture their preferences to deliver personalized services**

### AI can play a pivotal role in delivering personalized learning experiences tailored to individual needs

AI is revolutionizing learning and development by personalizing skill acquisition, making it more flexible, interactive, and effective, and ensuring that individuals and organizations remain adaptable in the face of rapid technological change.

**AI's arrival heralds a new era of precision, enabling organizations to navigate the dynamic landscapes of talent acquisition, skill development, and employee engagement with accuracy and foresight.**



AI can effectively analyze individual learning styles, performance data, and career aspirations, and recommend specific courses, modules, and resources, optimizing the learning journey and experience of skill acquisition.

Adaptive testing techniques use AI to adjust the difficulty of questions based on the learner's performance, providing a more accurate measurement of their proficiency. It also analyzes patterns in learners' responses to identify areas of strength and weakness, enabling targeted interventions.

AI will play a critical role in building a lifelong learning culture at organizations as it can help organizations identify skills gaps and align employee aspirations with business needs and enable them to build non-linear career pathways. AI-powered internal talent marketplaces have already made significant inroads to connect individuals with roles that align with their skills and aspirations and provide a clearer understanding of potential career paths.

**A leading IT service provider is using AI-based simulation for leadership skilling. This made learning immersive and**

**experiential with real-life scenarios instead of Multiple-Choice Questions (MCQs) and helped employees to improve aspects like decision-making, situational judgment, taking technology-based decisions, and behavioral competencies.**

**AI's impact goes beyond mere automation; it extends to augmenting human capabilities, allowing employees to work alongside AI systems, resulting in a synergy that produces superior outcomes** Among all the applications of AI, enhancing employee productivity has received the most attention and traction as well. Although it is too early to come up with a verdict, **service providers are witnessing early signs of success, with some of them experiencing a notable increase of 30% in employee productivity.** It is transforming the way employees work, leading to increased productivity and better business outcomes.

AI-powered tools and software have demonstrated an exceptional ability to automate repetitive and time-consuming tasks. Organizations are leveraging its capabilities to reduce repetitive and mundane tasks, freeing up employees to focus on

**EXHIBIT 4: AI-BASED WORKFORCE MANAGEMENT AND DEVELOPMENT SOFTWARE PROVIDERS**



Note: - Apart from the above-mentioned third-party software/product vendors, service providers have built proprietary AI platforms to drive employee experience, well-being, and productivity well-being

more strategic and creative aspects of their roles. Routine processes, such as data entry and report generation, are handled seamlessly by AI-powered systems, leading to increased productivity, and reduced human error.

Generative AI-based tools can also serve as a potent catalyst for innovation. It can aid in brainstorming, idea generation, and design iterations by providing diverse suggestions and alternatives. This not only accelerates the creative thinking process but also empowers teams to explore a broader range of solutions and possibilities, fostering a culture of continuous improvement and helping them to achieve more in less time.

**Organizations can unlock new opportunities to foster a more engaged and motivated workforce** Organizations have developed AI tools that capture employee sentiments on a daily basis.

These tools employ advanced sentiment analysis techniques to interpret and understand the emotions and attitudes expressed by employees in various communication channels, such as emails, chat logs, and surveys. By continuously tracking and analyzing these sentiments, organizations gain real-time insights into employee morale, satisfaction, and engagement levels.

This empowers organizations to identify potential issues such as stress, burnout, or disengagement early on so that they can make informed decisions, and implement targeted interventions to enhance the overall

employee well-being and foster a positive work environment.

**A leading IT service provider is leveraging AI-based employee engagement solutions, employing a personalized chatbot to conduct pulse surveys and address grievances. It helps the service providers to perform real-time sentiment analysis and calculate real-time happiness scores.**

**AI brings a multitude of benefits to the workplace; it is essential to acknowledge and address its negative impacts on employees**

AI holds great promise, but it also possesses inherent risks such as rising concerns about data privacy, identity theft, and psychological effects. Models that are pre-trained on external data can present the risk of exposing sensitive data to third parties.

Earlier this year, Amazon warned its employees to share confidential information on ChatGPT, and JP Morgan has also banned the use of ChatGPT.

AI's automation of tasks, while often heralded for its efficiency, can also lead to feelings of disempowerment and a loss of job autonomy.

Employees who once had more control over their tasks and decision-making processes may find themselves relegated to a more passive role, merely overseeing AI systems. Employees may feel that they are no longer responsible for their actions, as they can attribute their

choices and outcomes to AI algorithms. This can lead to a disconnect between employees and their work, eroding their sense of purpose and personal accountability or they may exhibit reactance by resisting or opposing the AI-driven processes. This resistance can manifest in various forms, such as non-compliance with AI recommendations or suboptimal utilization of AI tools.

**For pervasive and sustainable adoption of AI across the talent value chain, the organization needs to rejig foundational elements of workforce development and management and foster human-AI collaboration at the workplace**

Skill visibility is the linchpin that empowers AI to drive efficient, tailored, and impactful workforce management and development initiatives. The organization needs to have a granular view of their skill stack. **Organizations need to build a standardized skill taxonomy and integrate it with competency framework and career lattice across service areas and regularly track and update the same. This will lay the foundation for building an AI-powered talent marketplace and drive personalization in learning and development.**

Data serves as the fuel that powers AI algorithms and models, enabling them to generate meaningful insights and predictions. Organizations should focus on identifying and tracking a comprehensive set of KPIs across the talent value chain and ensure the accurate collection of data. This accuracy will translate into reliable and actionable insight and will drive informed decision-making across various facets of workforce development and management.

Building a comprehensive technology stack is essential for implementing AI-driven workforce solutions because it lays the foundation for effective integration, management, and optimization of AI technologies. A well-structured technology stack ensures that the various components required for AI implementation, such as data collection, processing, analysis, and user interfaces, work seamlessly together. Organizations need to be cautious about over-reliance on AI, the ultimate goal should be to strengthen the human AI collaboration to optimize the process and drive experience. While AI can significantly streamline tasks, improve decision-making, and boost efficiency, it's crucial to strike a balance that preserves the unique qualities that humans bring to the table. **The human touch, creativity, empathy, and critical thinking are essential aspects that AI cannot fully replicate.** Organizations should also oversee the ethical considerations surrounding AI usage, ensuring that decisions made by AI systems are fair, transparent, and unbiased. It is critical to establish guidelines that prioritize privacy and data security while fostering a culture of trust and openness in the organization to unlock the true potential of AI.

**EXPERT view**

**Getting up close and personal with AI**

**Gina Lodge - CEO, World View Mentor; Founder Member, ILH; Area Chair - UK, Africa, and India, Association for Coaching**



Many people are excited about the possibilities that AI offers to enhance their abilities. But it can also cause worry and discomfort for many people, concerned about the changes it may bring. Leaders and coaches should recognize these different attitudes and support those experiencing stress.

A helpful approach is to familiarize people with new technologies through hands-on experimentation. The coaching industry is ready to embrace new technologies and be open to trying innovative tools. For instance, I collaborate with a company called Ovida which has introduced an AI tool aiding coaches in interpreting nonverbal cues during online coaching sessions. Many coaches were eager to try this technology and found it surprisingly human-like in its interaction.

In the future, AI may also be used to facilitate coaching sessions led by robots. This can be especially beneficial for those hesitant about coaching, as they may feel more at ease conversing with artificial coaches. This approach could support individuals who may not benefit as much from human coaching.

Here are some recommendations for managers navigating an increasingly AI-driven world:

- Be attentive and understanding, recognizing and addressing the stress your team may be facing.
- Show compassion and don't dismiss concerns; openly discuss and act on them instead of concealing issues.
- Encourage your teams to experiment with new technologies to alleviate any fears arising from unfamiliarity.
- Acknowledge that technology will be a part of your domain and educate yourself as well as your team about its advantages and disadvantages. Prepare for the potential consequences of tech and AI implementation.
- Understand that although a revolution is occurring, you can guide it as an evolution within your organization. Utilize the dual attitudes of curiosity and discernment within your teams to navigate the AI revolution safely.

# Shaping Tomorrow's Workforce: The Impact of Generative AI on Talent Market Dynamics



Rohitashwa Aggarwal, Partner, Everest Group



Aamir Khan, Senior Analyst, Everest Group

**G**enerative AI is presenting a mixed outlook for future job seekers: while some jobs will disappear, new ones will emerge, and the impact of generative AI will vary by industry. Success in this transformed era will require employees to adapt and reskill. But there's no cause for alarm because humans will still be needed in this evolving talent landscape. Read on to discover four key trends shaping the future of work based on Everest Group research.

The rise of generative AI has ushered in a new era of technological advancement, transforming industries and reshaping talent market dynamics. As this innovative technology continues to evolve, its impact on the workforce of the future cannot be understated.

Analysts and leaders worldwide are keen to explore and understand the profound impact of generative AI on talent supply-demand dynamics, examine which workforce areas will be most affected, and identify the skills and roles that are poised to see a surge in demand.

A recent Everest Group survey of 50 top global business services leaders found that more than 95% of the leaders believe that generative AI will significantly influence their company's approach to delivering business services.

Everest Group's analysis shows the following four key trends will shape the future of the workforce in the AI era:

**Generative AI will significantly impact employability but new and niche roles will replace the loss of some jobs**

The quantity and types of roles will substantially change, reducing the length of some and creating new ones propelled by the AI revolution. Proficiency in data science, AI, and machine learning will be essential for those looking to develop, optimize, or manage generative AI systems. Specialists who can ensure ethical practices and compliance with regulations will be in high demand. As organizations seek experts who

can fine-tune, train, develop, and maintain generative AI models to align with business objectives, new-age roles such as prompt engineers, generative AI trainers, tuning engineers, etc. will continue to emerge in the mainstream workforce.

*A recent exchange between Everest Group and specific industry leaders revealed generative AI tools demonstrated the ability to extract and process SQL queries in certain instances. This capability could enhance enterprise data retrieval to a certain extent, particularly when deployed in a private cloud environment. Further development in this area may create additional roles for specialists within this domain.*

**The impact of generative AI will extend to all industries but certain sectors will be affected more than others**

The extent and nature of the impact of generative AI will vary depending on the specific industry and its unique characteristics. Certain sectors will experience a more pronounced transformation than others. For instance, industries relying heavily on content creation and creative endeavors such as publishing, entertainment, and advertising stand to highly benefit from automating and streamlining the content generation process. Conversely, those heavily centered on human interaction, like customer service and support, will likely see substantial changes in the workforce dynamics as generative AI-powered chatbots

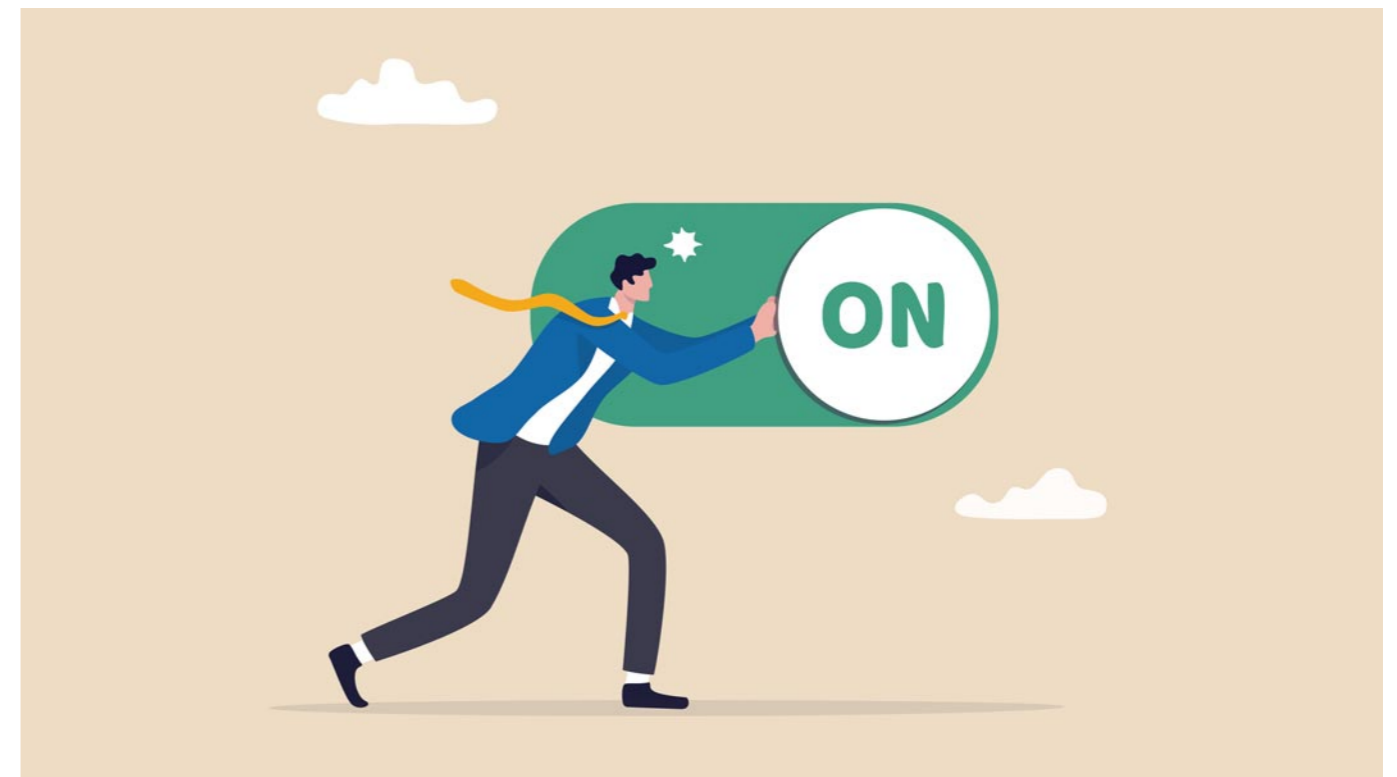
**Analysts and leaders worldwide are keen to explore and understand the profound impact of generative AI on talent supply-demand dynamics, examine which workforce areas will be most affected**

## EXHIBIT 1

Role Category	Generative AI job titles gaining prominence among providers					
Data for Generative AI	Data collectors	Chatbot content writer	Annotation Analyst			
Development	Generative AI software architect	Generative AI software engineer	Data scientists	Security and privacy architect	Security and privacy architect	AI alignment engineer
Integration	Knowledge engineer	Generative AI implementation consultant	ChatGPT specialist			
Enhancement	Prompt engineers	Generative AI trainers	Prompt tuning engineer	AI moderators		
Business-specific	Artificial Intelligence Product Owner	Generative AI Ambassador	AI ethicists	Responsible AI Officer		

Analysis based on 200+ Generative AI job openings on LinkedIn

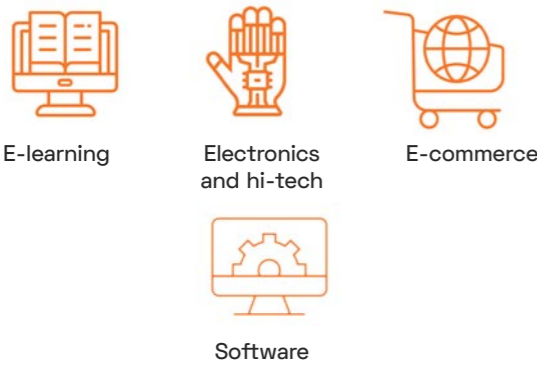
High frequency    Upcoming    Rare postings





POTENTIAL IMPACT OF GENERATIVE AI ON VARIOUS INDUSTRIES

**>50%**  
workforce potentially exposed to generative AI  
**High potential**



**20-30%**  
workforce potentially exposed to generative AI  
**Medium potential**



**<20%**  
workforce potentially exposed to generative AI  
**Low potential**



Impact is measured in terms of the number of potential use cases that were observed in the market (processes that could potentially be impacted by generative AI) based on the estimates by Everest Group  
Source: Everest Group (2023)

and virtual assistants will increasingly replace routine tasks.

Moreover, sectors with a solid foundation in data analysis and prediction such as banking, financial services, and insurance (BFSI) will experience a notable impact on the workforce as generative AI models are employed to enhance decision-making, portfolio management, and risk assessment. Healthcare and life sciences industries will witness accelerated drug discovery and improved patient care with AI's ability to analyze vast datasets and predict molecular structures. Additionally, E-learning and software industries may rely more on personalized learning materials, virtual tutors, and code generation.

To summarize, some industries may experience job displacement as automation takes over routine tasks, necessitating reskilling efforts and potentially leading to workforce upheaval. Conversely, in industries like healthcare and finance, AI may augment human expertise, creating new roles focused on managing and interpreting AI-driven insights.

**Adapting and reskilling will be the key to staying relevant in the age of generative AI**

With AI technologies rapidly reshaping the workforce and business operations, adapting and reskilling have become imperative for both individuals and organizations. To stay relevant in this landscape, employees and companies must recognize the changing dynamics of work and be prepared to acquire new skills. Jobs once performed by humans may become automated and obsolete, while new roles in AI development, management, and oversight may emerge.

**Skill enhancement:** Organizations will need to prioritize upskilling and reskilling their employees, enabling them to seamlessly transition into roles that align with and harness generative AI's potential. Some new roles might include prompt engineer, AI auditor, AI ethics manager, and so on

**Change Management:** Enterprises also will need to drive internal education and change management initiatives around generative AI to allay fears associated with job losses and foster a more progressive approach towards AI technologies.

**Although generative AI shows immense potential to reduce human effort and improve efficiency, it should not be seen as a human replacement**

The simultaneous push for AI adoption and the need for AI regulation can be reconciled by recognizing the need for a balanced approach. While AI offers substantial benefits in work and industry, it also raises ethical and societal concerns. Its lack of true creativity and critical thinking is a significant limitation of generative AI. While it can generate content by learning patterns from data, it cannot generate original ideas or engage in deep learning and evaluation.

Additionally, generative AI models lack a complete understanding of context and nuance. They can confidently generate content even when they do not really "know" the answer. Consequently, these tools often produce plausible-sounding but factually incorrect content. This poses significant risks, especially when deployed in industries such as BFSI, healthcare, and life sciences, and business functions such as customer and employee service. Hence, it should be viewed as a tool designed to complement human abilities and enhance productivity rather than as a complete replacement for human intelligence, creativity, and decision-making.

**A recent interaction between Everest Group and certain industry leaders found that candidates are utilizing generative AI to craft remarkably precise resumes with over 90% aligning closely with the job descriptions. This situation poses challenges for recruiters in talent acquisition, making it necessary for humans to validate the information presented on resumes.**

**What can companies and individuals do now to prepare for the future?**

With the anticipated dominance of generative AI, both companies and individuals must proactively prepare for this transformative era. A vital first step is cultivating a deep understanding of generative AI to make informed decisions and ignite innovation.

Shifting to skill-based hiring will prove beneficial as employers prioritize this approach over credential-based decisions. AI transformation is projected to bring a greater number of jobs over time but with different skill requirements than currently required. Both job seekers and employers must assess the situation now and invest in the skills that will be in demand in the future.

EXHIBIT 3

Conduct future skill gap analysis

**Periodically assess the evolving landscape of your industry to identify emerging skill gaps driven by generative AI**

Embrace technology integration

**Proactively integrate emerging technologies like AI, automation, and data analytics into your business processes**

Implement continuous learning program

**Establish ongoing training initiatives, encouraging employees to acquire new skills relevant to their roles**

Invest in Skills of the Future

**Prioritize investments in training and development programs that specifically target the skills anticipated to be in high demand**

Foster a culture of innovation

**Cultivate an organizational culture that values creativity and innovation, fostering an environment to explore new ideas, technologies etc.**

## Can AI be as Creative as Humans?

The newest research shows it may be possible



Prof. Erik Guzik  
Clinical Professor  
of  
Entrepreneurship,  
University of  
Montana; Acting  
Chief Executive  
Officer and  
Founder,  
PatientOne



Agnieszka  
Porębska  
CEO, Talent Alpha

**C**reativity is an integral part of human life, extending to all areas of activity including business. Erik Guzik, an assistant clinical professor at the University of Montana's College of Business, together with his team, have recently published a research paper suggesting that artificial intelligence can match the top one percent of human thinkers on a standard test of creativity. Below is an extract from an interview that Agnieszka Porębska, CEO of Talent Alpha had with the professor.

**Agnieszka Porębska: We used to think that being creative was our domain, especially in the field of originality. Your study has proved that we may be wrong. Can you tell us more?**

**EG:** As part of my work, I teach entrepreneurship at the College of Business at the University of Montana. We're constantly providing opportunities for our students to apply their creativity by giving them different tasks. We also started to give these tasks to ChatGPT. When ChatGPT-4 was introduced, we began to see ideas appear within it which excited us. These ideas, which were new, different, and unexpected could be applied to a problem. So we decided, as researchers, to give ChatGPT-4 a standard test of creativity just to see how it performed.

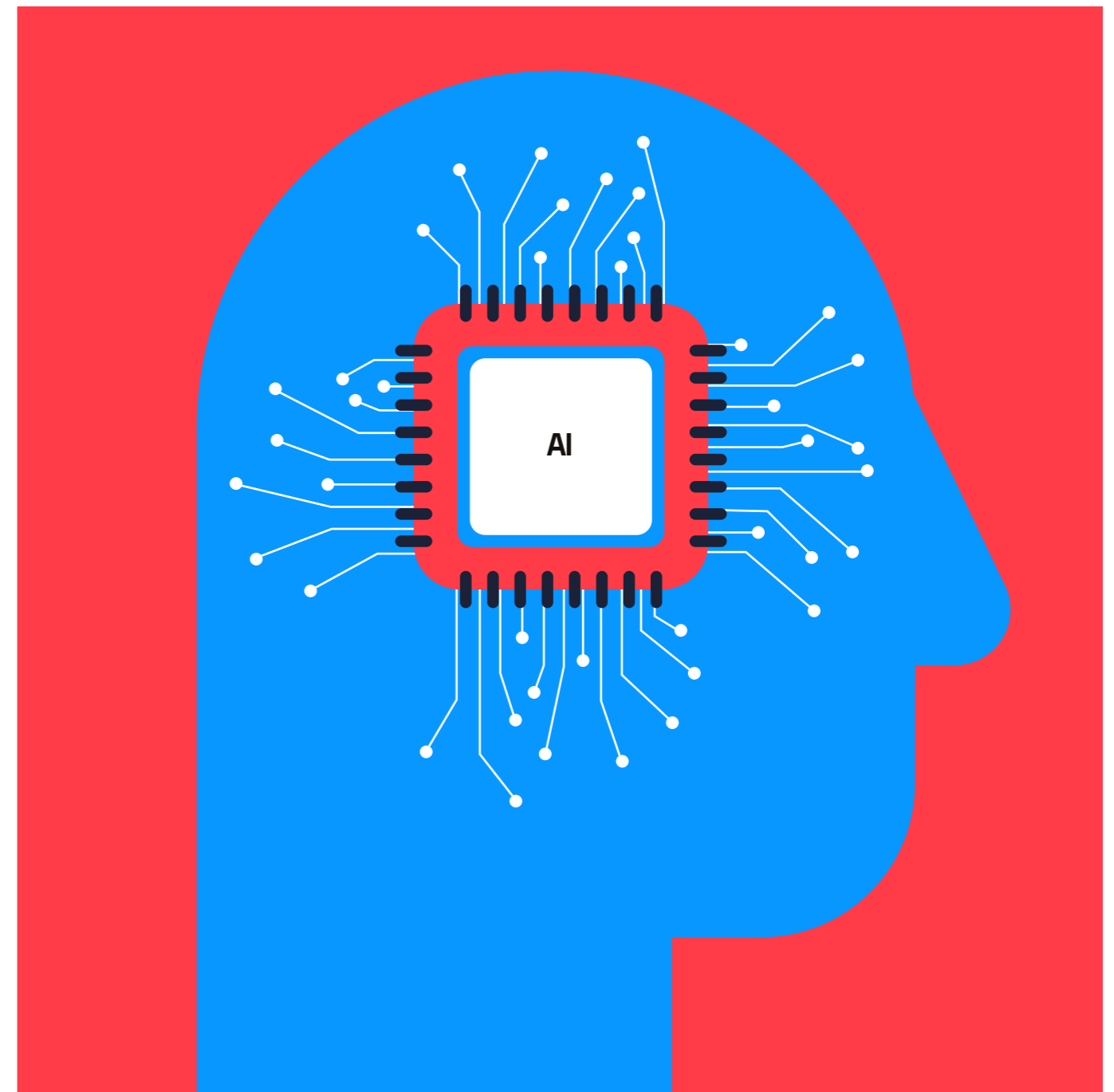
We applied the Torrance Tests of Creative Thinking, developed by E. Paul Torrance, which measures three different criteria of creativity. The first is just the number of ideas that are generated by the test taker. This is called fluency. The second measure, flexibility, is usually evaluated as the variety of ideas, different categories of ideas, and shifting in thinking processes. And then finally, the third measurement is originality. Originality is the novelty and uniqueness of the ideas generated by the test taker. ChatGPT-4 landed in the top 1% for fluency, something which did not come as a surprise to us. We expected this. For flexibility, the eight tests achieved a top 7% result. Although it was not as good as we anticipated, I think what we will see as a key factor in the future is training for these AI

models to think more flexibly. **What was most surprising for us was originality. So ChatGPT tests all achieved the top percentile in original thinking relative to over 2,000 different human test takers.**

**AP: Does it mean that Chat GPT, AI, can be as creative and original as we are, or is this only one component of our creativity?**

**EG:** We try not to read too much into these results. There are various ways to understand creativity. Given my background in business and economics, I favor a definition of creativity which is focused on a product. This is just one aspect of creativity. You can also examine the creative process and the people involved, their behaviors and idiosyncrasies. Many creative people are unique in their thinking and actions, as observed in entrepreneurship. When it comes to AI, it suggests that at least one form of creativity, combining elements to create something new, is what GPT-4 and other AI models are able to simulate exceedingly well. AI excels at merging resources in novel ways due to its access to vast data that humans lack. In terms of diverse combinations, AI's potential is endless, surpassing our individual capabilities because of its superior access to knowledge. However, I believe that for now, AI cannot replace us as creators. It is a tool that we can leverage in businesses to solve problems. That being said, I don't believe AI is able to identify areas of its own inner curiosity and interest which I believe is a core element of creativity in general.

**● When it comes to AI, it suggests that at least one form of creativity, combining elements to create something new, is what GPT-4 and other AI models are able to simulate exceedingly well.**



**AP: What are the implications for business?**

**EG:** AI is now not only capable of developing different ideas, but these ideas are becoming relevant and useful based on specific business cases. We're just at the embryonic stages of what AI is capable of, in terms of generating new and unique ideas, which again is our definition of originality. We know every area of innovation, including

the introduction of new products, processes, and solutions, depends on creative thinking. In terms of the impact it's going to have on companies and regions and nations, then, it's going to be significant. Here's a tool that allows us to generate original ideas in a way we've never been able to generate before. If we look at the era of European Enlightenment, and look at industrialization in general

across history and entire regions, we can again see that the essential element is creative thinking. Well, now we have a tool, Artificial Creative Intelligence, that is going to generate ideas in new and different ways which we've never had before. So this is going to be a significant breakthrough for business and industry, for regions and nations. I think this is very clear.

# AI and the Job Market: Keep Calm and Upskill

By Randstad

The invention of the first steam engine, the discovery of electricity, and the strides made in computer science have been milestones in the development of industry, which we know as industrial revolutions. Today, we are witnessing yet another revolution, caused by the rapid growth of new technologies and solutions based on artificial intelligence. Thanks to advanced algorithms and robots, which find their way into many enterprises, a wide range of routine tasks can be performed without any human activity. And even though historically, industrial revolutions make many employees and employers worry about the stability of the job market, the latest study and observations very clearly show that a revolutionary devel-

opment of artificial intelligence does not necessarily herald yet another crisis. Why?

## Why shouldn't we worry about the next industrial revolution?

To get an answer to the question above, we first need to look back at the past. Even though each of the aforementioned revolutions caused some worries, in the long run, none of them resulted in a catastrophic collapse of the job market. On the contrary – they stimulated its growth. After each of these systemic changes, we entered a period of adaptation, which proved challenging predominantly due to the competency mismatch between employees and businesses.

Another answer to this question can be found in the present. The

development of automation and new technologies means that many employees can enjoy more and more improvements and social solutions. Many organizations have decided to make the working time more flexible and even shortening the working week to four days. Remote work is becoming increasingly common. At the same time, we are witnessing the re-industrialization of Europe, caused by the fact that many industries are leaving China and returning to the Old World. This tightening of supply chains means there is a greater need for qualified workers in this part of the world. Let's also remember that in many developed countries, the population of working-age adults is declining, and automation and robotics are what help us fill the



gaps caused by labor shortages.

The most important conclusion from the above is clear: the development of artificial intelligence is behind many positive changes in employment conditions, as well as being a life-saver for many states' economies facing economic and demographic shifts. However, for the adaptation to be as smooth as possible, we need to take care of the development of key competencies today, so that the organizations and employees are able to effectively meet the challenges of the new industrial revolution.

## What could go wrong? It is the competence gap, not AI, which will disrupt the labor market

The authors of the "Regions in Industrial Transition" report, published by the OECD, underline that in more than half of European regions, every second employee is exposed to the risk of being replaced by automation and AI. Estimates show that in some cases this will apply to almost entire countries, e.g. Slovakia, Romania, Greece, Lithuania, and Spain. In these cases, the main reason is the dominance of industry and low-skill services in the employment structure. The more the economy is focused on innovation, business services, and the employment of professionals, the lower the abovementioned risk. However, in most of these countries, the birth rate is negative, and the labor markets are receiving insufficient numbers of new employees of working age to maintain the dynamics of economic development. This makes changes in the labor market a cause for concern not only for employees but also for employers. The competency gap may block an organization's development, and consequently, cause it to disappear from the market along with its employees.

Meanwhile, both sides do not seem to have noticed the threats yet, taking advantage of the relatively good current economic situation, and only slightly perturbed by unpredictable events. Every second participant in Randstad's

2023 survey declared that they were not afraid of difficulties in maintaining or finding a job against the backdrop of the development of AI and automation of solutions. In fact, 14% of respondents stated that they were not afraid at all. A major part of this group consists of professionals. The remaining research participants were not so sure about the future - 24% did not know what to think about the impact of technology on their professional lives, and 21% said these would have an impact on their prospects. They appear more often among groups that may have experienced exclusion from the labor market in the past - among which are women or residents of non-agglomeration areas. On top of this, were the concerns of Generation Z employees, who due to their contact with technologies, are very aware of the dynamics of AI development as well as knowing that they have up to four decades of professional life ahead of them. 37% of the survey's participants were trying to acquire knowledge and skills on their own that will allow them to work with AI and other technological solutions. The study clearly shows that this is mainly done by those employees who are at the least risk of being replaced. However, as many as 66% of employees stated that their employer did not support them in such competence development. Only 10% received support from the organization in learning programming, implementation, maintenance, or cooperation with AI solutions.

## Summary

Data clearly shows that both employees and employers are not yet ready to adopt technology in the workplace. This process may be uneven in the initial phase, giving more opportunities to employees who already have the appropriate skills. Meanwhile, technologies will generate completely new jobs, for which groups with the highest risk of being replaced should especially be prepared. The support and direction should be provided by employers, who will face an unprecedented competence deficit in the next few years.

## EXPERT view



**Marcin Grzegory - Deputy Director, Invest in Pomerania**

IT companies expand into locations that secure access to well-trained and educated workforce. Hence every city/region aiming to land these investors focuses on preparing their academic offer (to draw top young talent) and enhancing cooperation between universities and employers (in education and training, but also within complex study&implementation projects needing active support from local authorities). The X-factor will always be the quality of life because whoever wins the top talent shall win the race for innovation- even in the era of surging remote work. It's a crucial quest to prepare outstanding living conditions combined with great career/business opportunities but within reasonable costs of living.

# AI Will Accelerate the Growth of the Open Talent Economy



**John Winsor**  
 Founder &  
 Chairman, Open  
 Assembly;  
 Executive in  
 Residence,  
 Laboratory for  
 Innovation  
 Science, Harvard  
 (LISH)

The dawn of the 2020s has ushered in two pivotal events that are set to fundamentally transform both business and society for the foreseeable future. First, the Covid-19 pandemic necessitated an abrupt transition to remote work. Second, the introduction of sophisticated generative AI (artificial intelligence) tools, such as ChatGPT, promises to supercharge human talent. Similar to how the advent of the web browser reduced information costs and heralded the internet era, the AI advancements are reducing the cognitive cost of tasks. These tools are set to augment the abilities of workers across all skill levels. These transformative events directly influence talent and business models. The pandemic has led to a demand for greater flexibility in work arrangements. Generative AI will empower skilled workers to accomplish more in less time, providing a competitive advantage to those who can effectively leverage these tools.

**The focus is shifting from acquiring talent to defining tasks within work to be done—and then accessing a network of global workers (or AI or both) to complete those tasks.**

The changes you can make in this moment could be so spectacularly positive that instead of echoing the common description of this recent era as the Great Disruption, you could think of it as the Grand Redesign. To grasp this idea of redesign, leaders must make a big mental shift and recognize that companies are no longer in the driver's seat. Skilled talent has the real power, and these people are using that power to work however and wherever they want, whether you like it or not. Digitization and globalization create formerly unimaginable economies of scale.

Leaders can change their minds by facing certain facts, such as the major trends that have begun reshaping work since the turn of the millennium. Here are five trends that we consider key:

## 1. There is a tech talent gap that will only get worse.

The world needs an immense amount of tech talent, and it needs it quickly. A 2021 Korn Ferry report predicted that the global tech talent shortage will have reached 85 million by 2030, costing the world as much as \$8.5 trillion in unrealized revenues. Microsoft predicts that there could be an even bigger shortfall, with 149 million new tech roles that will need to be filled by 2025.

## 2. Remote work is here to stay.

"You have about 30% who often want remote-only work," says Tsedal Neeley, Harvard professor and author of *Remote Work Revolution: Succeeding from Anywhere*, "and this is typically aligned with certain demographic groups, but remote-only and remote-first is the manner that they want to move forward with. And then you have all the rest who want hybrid work, which is kind of the mix between the in-person and the remote."

## 3. Every organization has realized it needs to be digital-first.

Even nondigital service industries like food and beverage have had to adapt digital tools to take and deliver orders. While some organizations are simply switching from paper contracts to electronic ones and sending their press releases electronically instead of by mail, others are using digital processes to capture new data and enable better decision-making.

## 4. Companies will push more costs, including talent, from fixed to variable.

Today corporations are beginning to shrink, thanks to two factors: automation and outsourcing. Commoditized functions are being outsourced to partners that can do them more efficiently. Many companies are comfortable contracting even core functions, like innovation. Most companies are reasonably reluctant to add back fixed costs of any kind, especially when it comes to recruiting talent.

## 5. Predictive technology will help companies map talent pools.

With the acceleration of AI in general, CEOs and managers must learn how to combine new and existing talent to the organization's best advantage. Skill specializations are quickly changing, with new paradigms emerging along with these advances. An example of an evolving specialization is prompt engineering, the ability to structure effective prompts to elicit better results from AI. Companies are leveraging the power of data to analyze performance in real time, spot gaps, and predict what they need for the future.

Leaders who want to change their own minds may want to consider an important reframing of recent events. The millions of dissatisfied employees who are joining the Great Resignation aren't rejecting work. They are rejecting jobs that pay them less than they feel they are worth and that constrain their creativity and stifle their potential. They are looking for ways to do more while doing better for themselves. The organizations that have been experimenting with open talent strategies and outside-in innovation are capturing them and, as a result, continuing to push forward and succeed. For that kind of change to occur in their companies, leaders must first imagine the seemingly impossible. What follows are five guiding principles for open talent approaches:

**As we emerge from a collective global tragedy, people and businesses naturally revert to a survival mode of thinking. While such a fixed mindset may show short-term success, leaders of networked organizations can benefit tremendously from developing and nurturing a growth mindset. A growth mindset in a VUCA (volatile, uncertain, complex, and ambiguous) world helps you recognize that change can come through chaos and that organizational discomfort is often a precursor to successful innovation**

[Source: John Winsor, Jin H. Paik, Open Talent: Leveraging the Global Workforce to Solve Your Biggest Challenges]

- Access supersedes ownership. People can choose where, when, and how they want to work. Companies can no longer presume to own them or all their output. Talent has the upper hand.

- Focus on tasks over talent. Firms will focus less on the management of people and more on the management of demand generation and task definition.

- Embrace platform-based processes. The best and fastest way to access talent is through digital platforms, which vet workers, match them to tasks, pay them, and provide them with much needed training and opportunities for development.

- Foster both internal and external talent. Platforms exist to remove friction and to foster collaboration, whether that is within or without existing workforces or some combination of both. Incumbent companies struggle to grasp that the jobs that full-time employees do are changing as well. Going forward, these workers will likely play a more entrepreneurial and strategic role, setting goals and curating the talent needed to meet these goals.

- Leverage the power of technology. As the open talent industry becomes more salient, workers will embrace the power of generative AI to enhance their skills and increase efficiency. By utilizing its predictive capabilities, professionals are streamlining their workflows, automating repetitive tasks, and generating personalized content at an unprecedented speed. Integrating generative AI into daily operations promotes collaboration and innovation, enabling workers to tap into their creative potential while they provide valuable insights and solutions for their clients' needs.

**Together, these principles encompass the leaps of imagination that leaders must make to guide traditional companies into the future. But to become networked organizations, organizations must also change their culture—toward a decentralized web of connections as companies shift to a hybrid and remote work environment.**

## How AI will change the freelance world



Alex Lam  
Vice President,  
Corporate  
Strategy and M&A,  
Upwork

AI represents an exciting technological advancement in the Digital Age, a continuation of the advances in the past 50 years that have seen the rise of Computers, the Internet, Mobile, and Cloud computing. While there is undoubtedly some fear and trepidation today around the ultimate role that AI will play in our lives - something that naturally comes during any major wave; for most workers, and especially Freelancers, AI brings the promise to unleash new and exciting opportunities for them:

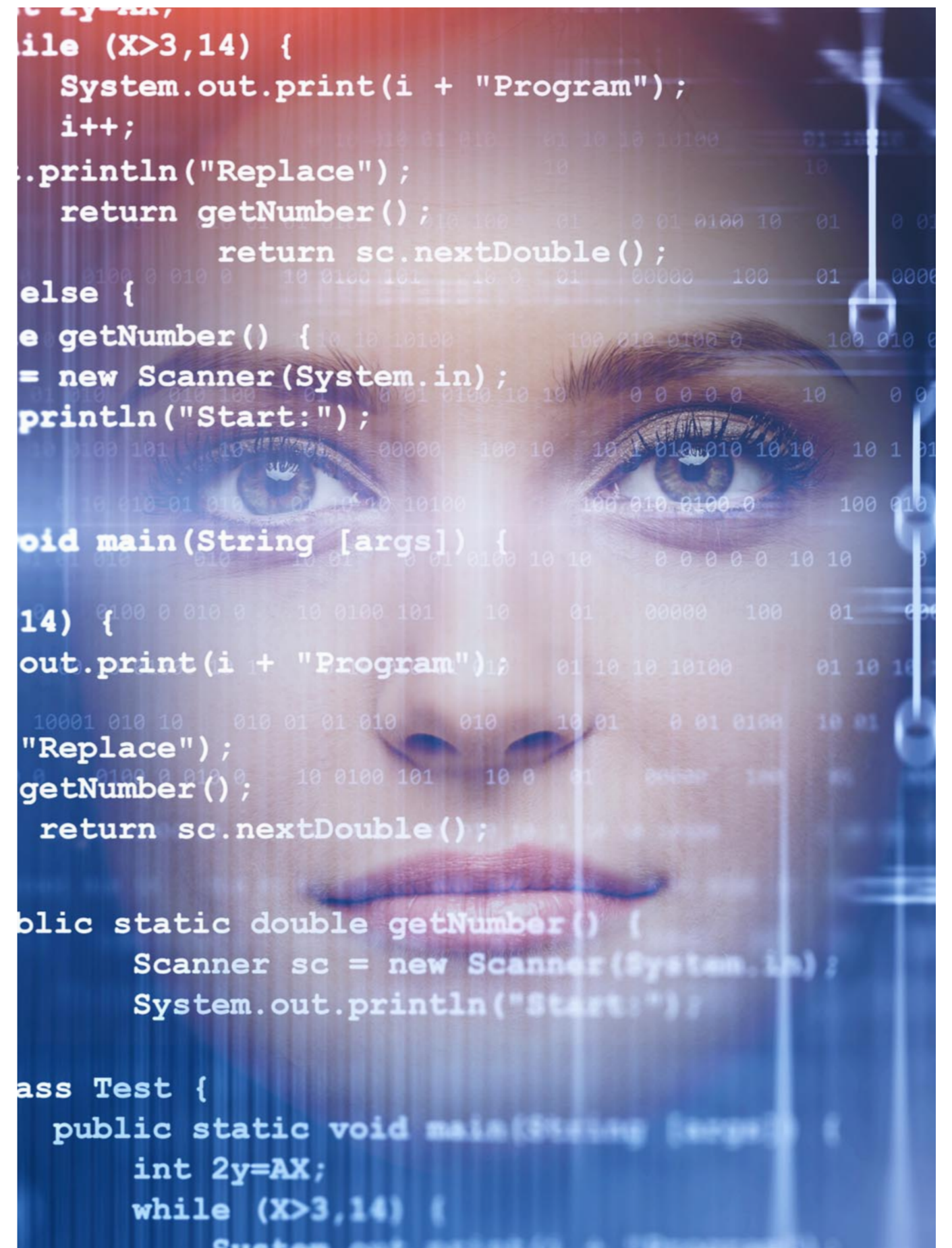
**1.** AI represents a huge force multiplier in productivity for the Freelancer. Much like power tools and machinery helped human builders increase their physical output over just using primitive hand tools OR the invention of the calculator & computer enabled scientists to increase the number of mathematic calculations they could do over hand-written arithmetic; AI represents an opportunity to dramatically supersize the output for knowledge workers and creatives. For example, a freelancer developing copy for a sales marketing campaign can now leverage AI tools to more quickly research market trends and specific customer data, which will enable them in the end to create even more personalized marketing content tailored to the client than they were previously able to do so. Similarly a financial analyst developing revenue forecasting models can now leverage AI tools to correlate their models with a wider range of variables from real-life market data found in peer industries as well as accelerating the number of complex simulation runs to more accurately fine-tune their models.

**2.** AI can enable Freelancers to expand their "portfolio of work" into new areas that they previously would not have ventured into. For example, a freelancer specializing in statistical data analysis may have traditionally shied away from job opportunities where database management skills were required, due to a lack of formal training in computer programming. Now thanks to low-code AI technologies, this freelancer may be able to develop their own custom scripts to perform the required database manipulations

for their work. Similarly, a business consultant freelancer who advises retail-sector clients today on financial operations today, may have ideas as well on sales & marketing strategy. However, due to not being artistically inclined, the freelancer has traditionally shied away from taking on creative business. Now thanks to Generative AI tools like Adobe Firefly or Midjourney, they have powerful AI tools that can allow them to showcase their vision artistically in the form of professional artwork ideas that could form the basis for the next marketing campaign ideas for the client.

**3.** AI will enable Freelancers to further compartmentalize their work time, while also making their work output more accessible on a 24/7 basis. One of the attractions of the world of Freelance work is the ability to manage one's time and to drive a work-life balance tailored to the individual's needs and priorities. At the same time, clients are operating in a fast-paced business environment and have a strong desire to have freelancers integrated seamlessly into their internal project teams and to be highly accessible. However, most business work projects today are highly serial in nature and often times require a never-ending series of "check-in" touchpoints amongst team members to move the project along. For freelancers, a lot of "wasted time" usually occurs waiting for input from the client or waiting on their output to be integrated back into the overall project workflow. Now, thanks to tools in AI, there is an opportunity to move to more asynchronous, yet continuous project workflows. Leveraging simple but powerful AI tools that provide automated meeting summaries, video call highlights, action item recommendations, and predictive responses, a worker can free up valuable time from clerical activities around status reports and focus more on the work at hand.

It will be very exciting to see how AI will continue to develop and evolve in the next 5-10 years. And in much the same way that most of us today cannot foresee a world where we are not using our mobile phone at least once a day, the same will likely be said for AI in the not too distant future.



## Using external AI providers is like having skilled guides on your journey

Introducing artificial intelligence solutions poses a significant challenge for any company. It requires strategic decisions around investments, responsibilities, data structure, security, and many other factors which are often perceived as high risk. That's why companies frequently decide to lead AI projects internally, relying on their own resources and capabilities. However, this can be a mistake. For many organizations, the successful implementation of an AI project may very well define if they are "to be or not to be." Choosing an external, experienced partner can be highly beneficial.

Leveraging external AI providers can be an effective strategy that will ensure effective delivery and quality. Companies which specialize in the AI field have years of experience in different kinds of projects, whose aims are often similar to what you want to achieve. They can advise, and choose the best tools and working models. You are able to define the scope and time of a project in which results should be delivered with the expectation of KPIs and SLAs to be fulfilled on time - a situation you may not anticipate with internal teams. On top of this, experience shows that the close collaboration of external companies with internal forces achieves the best results.

The challenge lies in finding and selecting the right partner. You should choose by experience, reliability as well as value-to-money ratio. This process can be supported by Talent Alpha. Their platform grants access to 900+ boutique, trusted providers from 52 countries, who also inhabit the AI space. Here you will find examples of successful AI projects realized by companies cooperating with Talent Alpha:

### CASE STUDIES

**Say Hi to Helga! How Helga helped to reduce costs while improving efficiencies and productivity**

#### S-PRO (Switzerland)

##### 1. WHAT KIND OF CHALLENGES HAS THE CLIENT MANAGED TO OVERCOME WITH THE AI SOLUTIONS AND/OR SPECIALISTS THAT YOU HAVE ON OFFER?

- S-PRO client, Compliance Aspekte (<https://compliance-aspekte.de/en>) is a leading ISMS/DPMS platform designed to offer a practical approach for organizations in various sectors, including telecommunications, engineering, manufacturing, and banking, to manage governance, risk, and compliance matters.
- The primary challenges of Compliance Aspekte relate to the timely onboarding process for new platform users, large volumes of documentation and rules to consider during the implementation process, as well as challenges in the interaction with the platform among users due to a lack of domain knowledge.
- During intro workshops with Compliance Aspekte, we concluded that an AI assistant, based on modern and powerful Large Language Models such as ChatGPT, could significantly improve clients' experience and productivity on the platform.

##### 2. WHAT WERE THE DETAILS OF SUCH COOPERATION (THE TASK, TEAM, TIMELINE)?

- To address the aforementioned issues, we designed and developed an AI copilot named Helga to:
- Guiding clients through the platform

and helping them quickly find the functionality they are looking for,

- Speed up the process of standard implementation by suggesting tasks that various departments in the client's company can execute,
- Enable clients to seamlessly search, ask questions, and generate summaries regarding their company knowledge base and documentation.

- From the S-PRO side, the AI team consists of three components:
  - AI Lead/Solution Architect - designing the system, defining requirements, and coordinating the development with the Compliance Aspekte team,
  - AI Engineer - responsible for implementing APIs, writing LLM prompts, and developing integrations,
  - The backend and frontend parts of the project handled by the Compliance Aspekte engineering team.
- The project kicked off in June 2023, and the v1 of the "Helga" project was released in late September 2023.

##### 3. HOW DID THE CLIENT SUCCEED WITH YOUR PRODUCT/SOLUTION/SUPPORT?

- Compliance Aspekte, together with S-PRO, presented Helga as one of the first AI Solutions for compliance at the well-known IT-SA conference (<https://www.itsa365.de/en/it-sa-expo-congress>), dedicated to IT Security.
- We are also actively collecting feedback from Compliance Aspekte users about their experience with the Helga AI assistant to plan new features and improvements. Based on the recent feedback from users, some of them have already reduced costs spent on the compliance advisor since some of their tasks can now be efficiently handled by Helga.

#### 4. HOW HAS THE SOLUTION SAVED MONEY AND/OR INCREASED PRODUCTIVITY IN THE CLIENT'S TEAM?

- One of Helga's standout features is its ability to understand, answer questions, and provide suggestions based on the company's knowledge. The Compliance Aspekte team also uses it to interact with their internal documentation, which has expedited some of their workflows and reduced the amount of manual work required.

Want to know more details about the solution? Follow this link: <https://s-pro.io/casestudy/ai-for-compliance>

#### Real-time monitoring of pedestrian, car, and air-plane movements with AI/ML Stermedia (Poland)

##### 1. WHAT KIND OF CHALLENGES HAS THE CLIENT OVERCOME WITH THE AI SOLUTIONS AND/OR SPECIALISTS YOU HAVE OFFERED?

- In our latest collaboration, we faced a unique challenge. Typically, models are hosted in the cloud, ensuring easy implementation. However, there was a specific requirement for local implementation in the Gulf region.
- The task at hand was real-time

monitoring of pedestrian, car, and airplane movements using web cameras. Later, event analysis and object identification needed to be implemented in CCTV cameras, making this project particularly complex and region-specific.

##### 2. WHAT WERE THE DETAILS OF SUCH COOPERATION (THE TASK, TEAM, TIMELINE)?

- The goal was to create a distributed AI/ML model specialized in computer vision, capable of detecting, classifying, and tracking various objects such as cars, people, animals, and air-



planes. What made this project unique was its adaptability to different environments and conditions, such as varying backgrounds, weather, camera resolutions, and lighting.

- To tackle the challenge of adjusting individual models for each environment or the issues when faced with shifting locations, our approach involved building a robust centralized model. The model was then deployed to diverse environments, where it learned specific nuances and overcame challenges presented by different conditions. The knowledge gained from these specific environments was integrated back into the centralized model, creating a highly resilient and adaptable model capable of fitting into any environment and serving all customers effectively.

### 3. HOW DID THE CLIENT SUCCEED WITH YOUR PRODUCT/SOLUTION/SUPPORT?

- We successfully assembled a team and developed the Proof of Concept (PoC) of the product within a mere 4 weeks after receiving confirmation from the client about our partnership. This rapid turnaround was pivotal because the solution had to be ready just before Gitex 2023 in Dubai, where it was showcased during the conference.
- Thanks to the work of the remote IT team it was possible to skip the entire process of recruiting a domain specialist, research, and sample applications. This allowed us to shorten the entire process by nearly 40%.

### 4. HOW HAS THE SOLUTION SAVED MONEY AND/OR INCREASED PRODUCTIVITY IN THE CLIENT'S TEAM?

- Crafted with precision, our solution was designed to be swift, efficient, and budget-friendly. Unlike other providers' suggestions of starting from the ground up, we concentrated on identifying existing components,

akin to puzzle pieces, which could seamlessly fit together.

### Better-targeted mobile ad emissions thanks to ML and game theory model

#### MIM.ai (Poland)

### 1. WHAT KIND OF CHALLENGES HAS THE CLIENT OVERCOME WITH THE AI SOLUTIONS AND/OR SPECIALISTS YOU OFFERED?

- The project aimed to create a platform that enables easier and better-targeted ad emissions in a mobile application.
- Ad emissions in such applications significantly differ from ads presented in, for example, web browsers. Advertisements distributed in such an environment should not disturb the user to the extent that they decide to uninstall the application due to excessive exposure.
- Advertisers aim to achieve the best possible results in their advertising campaigns. The challenge was to limit the number of displayed ads.

### 2. WHAT WERE THE DETAILS OF SUCH COOPERATION (THE TASK, TEAM, TIMELINE)?

- The Spicy Mobile platform recommends ads to users based on their interests, simultaneously ensuring that emissions are tailored to maximize the probability of user actions such as clicks, registrations, or purchases. The tool automatically adjusts ad content to the user's personality traits utilizing Machine Learning technology, through LightGBM and FFM algorithms along with the Nash equilibrium game theory model. The main goal is to reduce the number of ads in mobile applications by improving their quality. MIM.ai experts are responsible for creating algorithms for this software. While targeted at the marketing industry, any mobile application displaying

ads to users can benefit from this solution.

### 3. HOW DID THE CLIENT SUCCEED WITH YOUR PRODUCT/SOLUTION/SUPPORT?

- Thanks to the work of experienced experts at MIM.ai in the fields of mathematics and computer science, innovative solutions based on game theory and precise analysis of the advertising model, used in such challenges, were delivered to the client. Our experts also provide support in the product implementation process and software updates.

### 4. HOW DID THE SOLUTION SAVE MONEY AND/OR INCREASED PRODUCTIVITY IN THE CLIENT'S TEAM?

- Mim.ai's solution, created a strategy that reduced the cost per click (CPC) by three times compared to the initial algorithm.

#### SUMMARY

Using external providers in the field of artificial intelligence is akin to hiring experienced guides for a complex journey. They bring to the table specialized skills and knowledge, enhancing the intelligence and efficiency of AI-related projects. These providers save time and effort by allowing you to build upon their expertise, accelerating the achievement of goals. Moreover, they often introduce fresh ideas that ignite creativity in projects. External providers also provide a new perspective and industry benchmarks, invaluable for directing AI strategy. In the rapidly changing world of AI, these partnerships offer stability, allowing you to rely on their updated knowledge while focusing on your strengths as they handle technical complexities.

For more information on AI companies cooperating with Talent Alpha contact:

[cs@talent-alpha.com](mailto:cs@talent-alpha.com)

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IMPLEMENTING AI - LESSONS FROM THE EXPERTS

Delivering value

Richard Beaumont – Founder, Eruditic



At Eruditic, we devote our efforts into building knowledge and understanding of procurement. Technology plays a key role in the ability of procurement to deliver value to their organizations. In 2023 there has been an accelerated interest in the role that AI can (or might) play in the technology ecosystem. As ever, new technology can be “faerie lights”; luring procurement teams into problems they could have avoided. As experience has shown, we can avoid this temptation if we ask 3 questions:

- 1. What is AI offering?
- 2. Do we have an existing pain point that could be a use case for this offering?
- 3. How can we evaluate the risks and benefits?

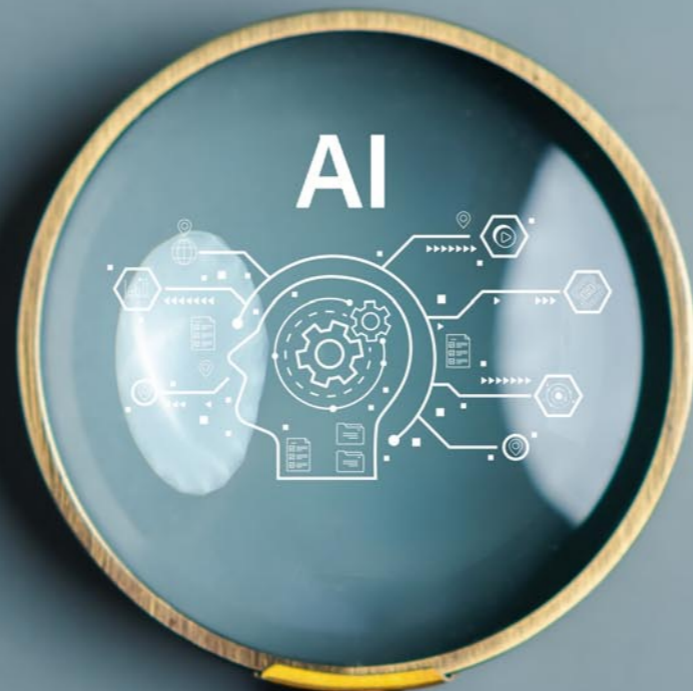
Answering the first requires us to get beyond the hype and understand what solution providers are offering and how it works. Only then can we assess whether the AI can address the pain point and whether it is the right thing for us to do. Throughout, the biggest questions I believe we should ask are about data and validation. Where is your data going, is it secure, how is it being used and how can we be sure of what the AI is giving us? If we adopt this structured approach, we can realize the undoubted benefits that AI can bring in the fields of data analytics, contract management, market and risk analysis and presentation of information.

Build on purpose

Liviu Chirita - Partner, Global FC Tech Lead, PwC



When implementing AI be careful of the overdose. This is what we have seen e.g. in fintechs. The fintech hype was not as transformational as AI would be but it can serve as a warning. I've seen too many companies spending time and money, working in silos, and not getting results. They could allocate it to more purposeful areas. My advice for companies working on AI, based on experience from many transformational projects would be: find the problem, take an organizational view, and make sure your purpose is in line with business and economy. Don't try to deviate too much from your purpose on shiny things. Think twice before investing.



Costs related to AI

Stephen Day – Chief Procurement Officer at Kantar



Although many companies do not consider the potential future costs when implementing AI, these costs should be part of any AI transition plan. Building your own AI systems and models can be very expensive, so most organizations choose to use tools and platforms already in the market. However, this process still comes with significant licensing costs that may increase over time. Another aspect to consider is the cost of cloud services and data storage. Many AI providers bundle these services with data storage, similar to a company like Iron Mountain, which stores physical documents for a fee. In this case, you pay for each year of storage, and if you want to dispose of your paper documents, you have to pay for retrieval and disposal. The same concept is likely to apply to digital data. Additionally, switching from one cloud service to another can be increasingly costly. This is why UK regulators are closely examining this area. Similarly to how you can transfer your phone number from one mobile operator to another, there should be a mechanism to move your critical assets between cloud services with limited associated costs.

Focus on use-cases

Tony Saldanha - President, Transformant



The difference between successful AI Transformation Projects and the rest is in the execution approach. The best AI projects are focused on use cases. There are tremendous use cases which are ready for use – algorithm-driven staffing for best employee retention being one example. These are narrow use cases, but they excel in that one task. Focusing on use-cases avoids the risk of chasing AI as a shiny object. Secondly, once you find the best ROI use case, approach AI transformation as an organizational project, not a technology project. 90% of all failures in transformation projects are due to organizational causes.



## The regulatory revolution in artificial intelligence



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Although European regulation on AI – Artificial Intelligence Act (AIA) – is not yet ready, it is obvious that it will completely change the way we use artificial intelligence across our organizations. It will also have a key impact on the intelligent software that is or will be used for employment processes – and which has been expanding in the 'HR market' at an almost seemingly exponential rate.

### AIA: a horizontal approach

The AI Act will be a comprehensive and horizontal legal act that aims to regulate any kind of use of all artificial intelligence systems or services across the European Union. It takes an approach focused on the use of AI, rather than a technology-based approach (i.e. focusing on certain kinds of AI systems). Therefore the key question is what is the definition of an artificial intelligence system within the remit of the AIA. This definition indicates the scope of the regulation. Any entity that is producing, selling, or making available in any way on the European market, IT tools that meet the AIA's definition of AI – or using it for commercial purposes – will be subject to these regulations. It's worth noting that there are currently three versions of the AIA being discussed by the initial version and two revisions by the European Parliament and EU Council. Each has its definition of AI. But, frankly, they are very similar when it comes to deeper meaning.

Under the AIA's definition, an "artificial intelligence system" should be understood as any system which has been developed using indicated AI techniques, for a given set of human-defined purposes, characterised by autonomy, generating outputs such as content, predictions, recommendations, or decisions that affect the environments with which the system interacts.

### AI Risk Assessment & Management

The scale of risk associated with the use of the systems in question determines the type of regulatory burden imposed by the regulation.

If a specific AI use is prohibited, it is forbidden to exploit AI in such a way, and is subject to severe penalties (up to EUR

30.000.000 or 6% of total annual income – whichever is higher). The use of high-risk artificial intelligence systems is permitted but comes with several responsibilities. Among the most important are:

- implementation of a risk management system for the utilization and continuous update of AI;
- special quality requirements for data governance, including training, validation, and test data sets;
- AI must be designed with a built-in recording capability of the activities performed by the program (record-keeping);
- the program must be designed to ensure transparency of operations (avoiding the "black box" effect) – it has to be explainable;
- any AI must be secure, solid, and robust;
- the operation of the program must be supervised by a person and the system should have appropriate documentation.

Non-compliance with AIA provisions concerning high-risk AI systems will lead to hefty fines (even up to EUR 20,000,000 or 4% of total annual income – whichever is higher – but this is still being discussed).

"Lower-than-high risk AI" systems will be able to be developed and applied in the EU without having to comply with extensive obligations. However, the draft AI Act suggests that the principles of the AI Act should be applied appropriately to non-high-risk systems as well. There is encouragement that sectoral self-regulation, dictating a code of conduct based on the catalog of obligations imposed on high-risk AI should be developed for such systems. This is because doing so may affect the competitiveness of AI solutions in the market.

AIA may also introduce some obligations on certain categories of systems in isolation from risk categories. These are mainly transparency obligations. Systems that interact with humans (chatbots) or AI systems that generate or manipulate images, audio, or video content (so-called deepfake) will be subject to them. Transparency requirements will enable users to make informed decisions about whether to use AI solutions.

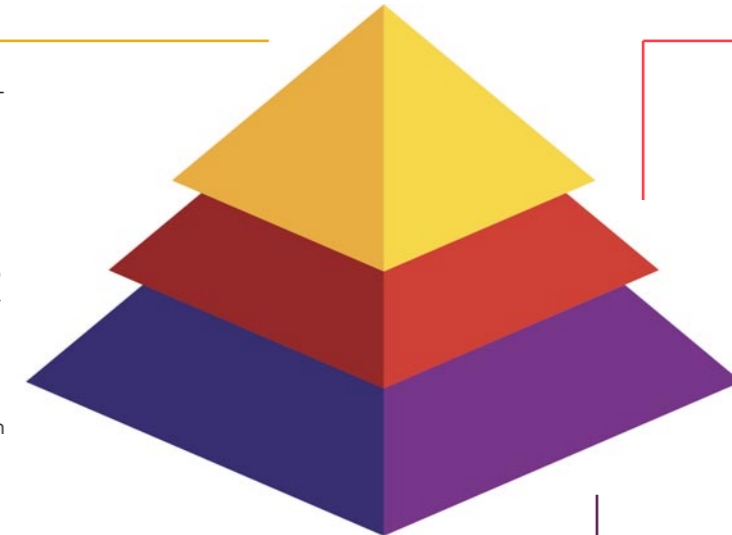
## AI RISK ASSESSMENT & MANAGEMENT

### UNACCEPTABLE RISK

Prohibited uses of AI are specific methods identified as inherently associated with unacceptable risks to European values, including human rights.

Those methods include (with some exceptions):

- techniques that purport to deliberately manipulate humans;
- social scoring or emotion recognition used in law enforcement;
- and biometric identification of individuals (scope of prohibited biometric identification is still under discussion). Prohibited uses generally related to the capability of AI to observe and control or abuse natural persons.



**LIMITED OR MINIMAL RISK**  
Any method in the utilization of AI that does not fall into a prohibited category or a class of high risk is considered as AI of limited or minimal risk. This is the most prominent, widespread and recognisable part of the AI market. This is where AI search engines, chatbots and deepfake reside.

### HIGH RISK

AIA defines high-risk AI systems in two ways:

1. as one of the systems or elements of a system that is covered by harmonized regulations (e.g. systems used as safety components in many machines or in healthcare).
2. as any solution that falls within the areas of use defined in Annex III. **These areas include employment, workers management and access to self-employment.** It relates to AI intended to be used for making decisions on promotion and termination of work-related contractual relationships, for task allocation and for monitoring and evaluating performance and behaviour of persons in such relationships. Other high-risk areas in particular are education, essential private services (such as credit scoring or insurance), biometric categorization, migration, and law enforcement.

Finally, AIA provides some requirements addressed strictly to EU bodies and EU member states concerning building an organizational framework for AI surveillance. For example, in each country, there should be an established specific supervision body responsible for ensuring AIA compliance, in particular for imposing penalties (which are set to be very high). At the EU level, this role will be entrusted to the EU Commission. There will also be special procedures for the registration of certain AI systems, especially high-risk ones.

### The clock is ticking

There is still time to prepare for the implementation of the AIA and companies should not procrastinate. Organizations looking to distribute or use AI tools in their business should prepare AIA as a high priority on their agenda.

**THE APPROACH TAKEN BY THE EUROPEAN UNION IN REGULATING AI IS VERY SIMILAR TO THAT KNOWN BY THE RODO ACT.** It aims to regulate any use of artificial intelligence that affects EU citizens. Therefore, the AIA is a horizontal, comprehensive, and universal piece of legislation. In contrast, the US and UK governments appeared so far to be developing a regulatory line that is more sector focused. The UK seems to be adopting a soft law approach and sectoral oversight rather than horizontal regulation.

**They intend to create an attractive environment for the development of AI technologies in the country. AI regulation is not the most important topic. In the US there were so far only attempts to regulate some specific sectors but on 30 October 2023 President Joe Biden signed the Executive Order on safe, secure and trustworthy artificial intelligence. As a result, US is said to be the country with the first comprehensive AI regulation in the world. However, it should be noted that the Executive Order is more of a political statement that indicates plans for further action. The proposed AI Act still remains a more comprehensive piece of legislation which can make a real impact on the functioning of the market.**

It is worth noting that China is at a very advanced stage when it comes to regulating AI. They have introduced regulations to address AI risks and establish compliance requirements for those involved in the AI industry: the Administrative Provisions on Algorithm Recommendation for Internet Information Services which came into force on March 1, 2022; the Provisions on Management of Deep Synthesis in Internet Information Service, which came into force on January 10, 2023; the Provisional Provisions on Management of Generative Artificial Intelligence Services, published on July 13, 2023, which came into force on August 15, 2023; the Trial Measures for Ethical Review of Science and Technology Activities (draft), published on April 14, 2023.

## AI in recruitment and employee management processes – the benefits and challenges



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**AI** is an important part of the technological revolution we are currently witnessing. Not only is AI significantly influencing the labour market by changing the functioning of many sectors, but it is also creating demand for entirely new professions. In addition, AI is being utilized in the labour process, which undoubtedly affects the employment structure as well as the employee-employer relationship. In the first part of this article, we outline important challenges which have been identified in these processes from the point of view of labor law. In the second section, we look through the IT legal lens and describe the key aspects that should be taken into consideration when implementing AI to perform recruitment processes and employee management.

### Part I – Labor law

#### AI in recruitment

The recruitment process is the starting point for the employee-employer relationship. It begins even before the formal establishment of an employment relationship, when even then certain rules begin to apply as they are subject to labor laws. Among the most important elements of the recruitment process is to ensure that the procedure complies with the provisions of the rules regarding non-discrimination in employment. Failure by the employer to comply with its obligations in this regard may lead to the employer's liability to the person being recruited.

The prohibition on discrimination also extends to the tools with which an employer conducts a recruitment process. Despite its

#### AI IN RECRUITMENT:

- planning the recruitment process
- preparing job offers
- analyzing applications
- selecting candidates
- automating personalized communication

aura of neutrality and objectivity, AI can also replicate human biases or introduce new forms of prejudice, depending on how such tools are built and trained. We are talking, for example, about the pre-screening of candidates' resumes. AI tools used in recruitment, in particular the inputting of data entered into the AI system, must not be discriminatory in nature or lead to a situation where the selection conducted by the AI system is based on a prohibited discriminatory criterion. Improperly applied artificial intelligence may lead to a violation of labour rights.

#### The application of AI in the process of the hiring and evaluation of employees

Outside the sphere of recruitment, an area where AI systems can be used is the onboarding process and employee "lifecycle" management. Using the capabilities of AI, such as data analysis tools, it is possible to better understand the behavior of employees, their needs, and preferences. Thanks to AI, Human Capital teams can automate the process of employee "entry" into the organization and the procedures regarding training and developing employees, including employee engagement surveys. AI systems, using data about employees, their needs, expectations, and competencies, can prepare appropriate, individualized training programs and materials as well as assessing the risk of potential employee departure. This is important for the effectiveness of the organization's training policy and maintaining commitment among employees.

The use of AI algorithms can help analyze data on employee absenteeism and turnover. The results of such analyses can provide valuable guidance to management on how to manage the team and is able to allow earlier detection of a potential problem and take preventive measures.

#### AI implementation in the organization

The introduction of AI systems as a work tool at an employer may cause concern among staff about their continued employment.

#### ANALYZE DATA ON EMPLOYEE ABSENTEEISM AND TURNOVER



However, this will not always involve job cuts. In most cases, the use of AI will require teaching employees how to use these systems. In this regard, the employer should specify in detail the rules for the use of AI systems, the scope of activity, the extent of the need for AI participation in a given project, and the rules for the liability of employees and the employer in connection with the use of AI. The way in which the above is implemented depends on the structure of an organization and, in particular, on the relevant labor legislation.

The use of AI systems may need employees to acquire new competencies or even participate in retraining. A solution beneficial to employees will be the support of the employer in this regard. This is because the employer can indicate what new skills, competencies are expected by them and in turn, establish the preparation of courses, as well as retraining programs.

#### TAKE CARE OF YOUR EMPLOYEES' WELL-BEING:

- clear and direct communication with employees
- provide training on the use of AI solutions
- empower employees
- define rules for the use of AI solutions
- establish accountability rules for the use of AI solutions
- training for managers on needs-based communication with employees
- strengthening business empathy in leaders
- courses on resolving conflict situations or engaging a mediator

## Part II – IT Law

### Access-based AI & GenAI

Now let's look at access-based AI solutions. These will mainly be generative artificial intelligence tools such as ChatGPT, Bard or Copilot which can find many applications in the human capital industry. Before using such tools, their terms of use should be carefully analyzed. In the absence of regulations, terms of use can shape the obligations and rights of users using the system in a very different way. One of the important legal problems in connection with AI systems is the ambiguity of the legal qualification of output, i.e. content created by AI. The output of generative AI is unlikely to be considered as protected by copyright (further described below), so it can be quite complicated as to what rights are granted by a genAI provider. So now the guideline in this regard will be dictated by the application's terms of use. Although by utilizing one tool we can freely use the content we have created with AI, usage of another application may depend on the purchase of a more expensive subscription. We also note that sometimes an analysis of the general regulations of a given tool may not be sufficient. In many cases we have the possibility to extend genAI functionality with so-called "plug-ins" with each of these plug-ins usually having separate terms of use - sometimes significantly different from the terms of the main tool, e.g. in relation to data privacy or data retention.

Special attention should be paid when it comes to protecting personal data and confidential information, especially commercial and professional secrets. In the case of the human capital sector, this extends to data on employees and recruitment processes. When using generative AI solutions on the web, such content should not be entered into systems or should at most be anonymized. In fact, generative AI solutions use data provided to them as input to further train AI systems - how and when - this should be verified each time in the systems' privacy policies. It is important to analyze how long the provider can retain the data and what the purposes of using client's data are (they may vary among different solutions).

The autonomy of AI systems to create precise and concise content should not lead to the automatic and unreflective use of AI. One of the basic ethical principles against the widespread use of AI systems is the human supervision of them. In the case of generative AI - the supervision of the content that has been created. Indeed AI is not infallible and can potentially produce content that will be legally flawed. For example, an excerpt from a popular copyrighted book may appear in the answer prepared for a company by the system. The program may also provide us with incomplete or outdated data. So we emphasize the

### genAI Policy

[ 1.] purposes of using genAI

[ 2.] staff using genAI

[ 3.] risk management

[ 4.] data used as input

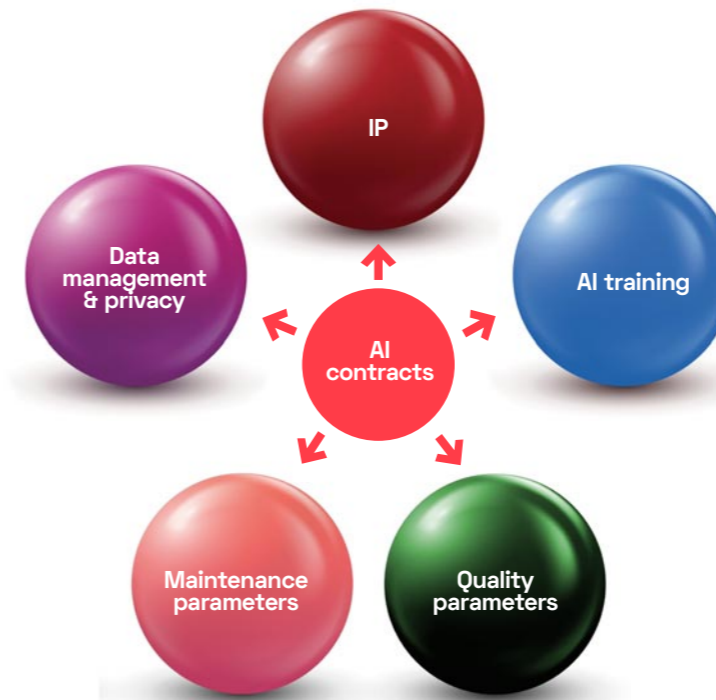
[ 5.] using of genAI output

importance of monitoring and checking of the content that AI will produce.

The use of generative AI on a larger scale will always require organisations to create genAI policies establishing clear rules on [1] the purposes of using genAI, [2] the staff that can use genAI, [3] the management of genAI risk, [4] the data that can be used as input for genAI, [5] and how we can use genAI output.

### "Traditional" AI (implemented for specific purposes)

Another type of AI solutions that can be used in HR processes, are "dedicated" AI systems implemented and used in a specific enterprise. The most important aspect that we should start with is the right contract. The solutions available on the market today are often provided in a cloud model by powerful big tech giants, so most contracts can be difficult to negotiate. Solutions that are personalized and manufactured for specific entities will allow more freedom in contracting. What should you pay attention to? It is important to remember and secure the issue of copyright of outputs as it can be ambiguous with regard to AI. The provisions should be shaped in such a way that they enable us to use them while minimizing any legal risk. It will also be important to regulate the model training process. It involves saturating AI algorithms with data in order for the model to identify patterns and connections between them. This allows it to later predict accurate results. The contract should indicate, in addition to the obligations of the parties in training, the expected parameters which define the results as satisfactory and the model in question as



appropriate for production implementation. It will also be necessary at a later stage to adjust the maintenance parameters of the systems to the purposes the model is used. It is also important to pay attention to what AI providers do with the data provided for their models. We recommend choosing such services that declare at least the anonymization of personal data if model learning is involved.

### Privacy

An issue of particular relevance in labour matters that is common to both types of AI systems, and which should be further highlighted, is privacy. In the area of human capital, we are often dealing with particularly sensitive data of employees and candidates. We should therefore, first and foremost, pay attention to transparency and privacy issues. We are also signalling to bear in mind whether automated decision-making appears in the process of using AI. If so, it will be necessary to ensure that the processes comply with the requirements imposed by GDPR.

### AI Act – do not forget about compliance!

The uniqueness of the area of human capital is also recognized by the legislature in the AI Act (EU regulation that soon will be adopted). It classifies systems used in employment, worker management and access to self-employment as high risk. It relates to AI intended to be used for making decisions on promotion and termination of work-related contractual relationships, for task allocation and for monitoring and

evaluating performance as well as the behaviour of people in such relationships. AI systems that fall into the categories described above after the AI Act comes into force (and this may happen soon) will have to comply with a number of obligations imposed on them such as implementation of a risk management system for issues including utilization and continuous update of AI, AI record-keeping, data governance, obligations in terms of explainable AI. We elaborate on this topic in our article on the AI Act.

We have briefly outlined in the text the particular legal challenges associated with the use of AI in enterprises' processes directed at employee acquisition. AI is starting to become an everyday reality for many. If we want to provide market-competitive services, we will not be able to avoid AI and the associated regulations, which will gradually increase. It is therefore well worth implementing and using AI today in a thoughtful manner.

### COPYRIGHT

The relation between AI and copyright law raises numerous issues. All of them stem from the construction of copyright law, in particular in continental Europe. Works protected under copyright should in some way be a reflection of an author's intellect, which is creative and individualistic in nature. However, the outcomes of AI models are not necessarily individualistic and usually they are not the direct result of intellectual work of a person operating the AI solution.

Therefore, most AI-generated works and AI models as themselves, cannot be protected by copyright. This issue varies, of course, from country to country. The US and UK copyright regimes are more flexible in terms of computer-generated works and AI, less focused on author-work relation, so perhaps they will face less copyright issues. Continental copyright regimes, such as in Poland, France and Germany, seem to have more problems. Implementing AI applications there without the appropriate consideration could lead to serious legal consequences.

As a lack of copyright protection creates a regulatory gap that could have painful consequences for the market, this area, and in particular in continental Europe, does really need wise legislative intervention (e.g. by creating special IP rights for AI models and AI-generated works). One may ask why the EU has not harmonised this for the whole Union. The answer is that it is extremely difficult - each member state has its own copyright regime, so a "one size fits all" solution appears to be a daunting challenge.

In the meantime, organizations should protect themselves through appropriate contracts created by lawyers who understand the risks related to AI & copyright. These contracts should aim to cover regulatory gaps as much as possible and be prepared for possible legal developments in the area of AI.

# The Tech Industry Perspective



# 4

## AI does not currently appear to be having a significant impact on IT Services businesses

**AI** has a lot of potential, but it hasn't so far had a major impact on the IT services market in 2023. Despite the expected growth of around 4.7% year-on-year, and hitting the \$4.4 trillion mark according to Forrester, the IT market is slowing down more than anticipated. This comes as a rude awakening for IT outsourcing companies, internal IT services departments, and tech service centers after the prosperous years during and after COVID-19.

During the pandemic, the world invested heavily in digital solutions, resulting in significant growth in the IT services sector in 2020-21. To illustrate this, according to Gartner IT, services, and software services, spending was close to two billion USD, with 12.8 and 14.8 percent growth y-o-y, respectively in 2021. However, this growth did have a downside. The "IT reserves" created during this time allowed organizations to slow down tech investments amidst economic uncertainty. Factors such as the Russian aggression in Ukraine, US-China tensions, reduced consumer spending, and challenges in the financial sector have made both internal and external clients more risk-averse in investing in non-crucial as well as non-immediate and effective IT solutions.

As a result, IT services are still in demand, and this sector is still growing in numbers. However, many global IT outsourcing companies have revised their revenue forecasts for 2023. These trends were confirmed by Talent Alpha's survey conducted in the second half of 2023 with 100 managers from IT organizations operating in 41 countries. According to research, during the last six months, business has been flat but stable in 50% of companies. Furthermore, almost half of the companies that took part in the survey believed that business would remain this way or slightly increase in 2024. According to most representatives of the IT services sector that Talent Alpha has spoken to in recent months, the first half of 2024 could remain unstable. The impact is more severe for smaller companies that often lose contracts first and lack the buffer to retain their staff during lean periods.

Unfortunately, despite its enormous potential and optimism, AI has as yet, not provided relief. It hasn't generated a real business impact at scale or significantly improved efficiency for companies. AI has had a significant influence on the growth of tech and communication giants such as Nvidia, Meta, Tesla, Apple, Amazon, and Google, rapidly increasing their value in 2023 and boosting the S&P 500 index. How-

ever, generative AI, as per Gartner, hasn't yet significantly affected IT spending levels across the market. In the long run, it's expected to be implemented mainly as upgrades to existing products and services.

Despite artificial intelligence not having a significant impact on the IT market as yet, many managers believe that there will soon be significant growth. Referring to Talent Alpha's study, 50% of companies agreed that artificial intelligence would accelerate the growth of the IT sector overall. A remarkable 83% of respondents expected that it was going to boost their own organization's development. Currently, AI is widely used for content generation such as, for example, written content creation (68%). A lot of companies also supported their sales and marketing with AI tools (54%). AI is not so widely used directly in tech activities. 37% saw it as a tool for supporting code generation. However, more small companies are open to such usage. Larger organizations are more cautious mainly due to IP rights doubts. AI raises many questions and challenges. Among these larger companies, mentioned a lack of qualified staff to sufficiently help in implementing AI solutions (35%), a dearth of appropriate processes (31%), lack of budget (31%), and not enough suitable data (25%).

### There are several trends visible in the market in 2023 that will continue through 2024 and be impacted by AI:

- 1.** Efficiency Focus: Tech companies and departments are very much concentrating on achieving more efficiency in the workforce, solutions, vendors, and processes. AI is playing a role in achieving this goal, with 52% of IT workers already using AI in their work, according to Slack.
- 2.** AI Capability Building: tech companies and departments are experimenting with AI, mostly in pilots or small-scale projects, to serve internal and external clients in this domain, with tech departments leading the introduction of AI to organizations.
- 3.** Investment in HR Technology: According to research by Unleash, 70% of companies were either increasing or maintaining their investment in HR technology in 2023 with this trend probably continuing through 2024 as companies seek new solutions to boost productivity and decrease employee turnover. Many of these tools already have AI/ML solutions built-in or will release such features soon.



**4.** In-House Tech Services: According to Talent Alpha's research, in 2022/23, many companies reduced the number of specialists sourced externally and focused on strengthening their teams. In the AI domain, most companies prefer internal investment and can still cover their internal needs, meaning the expectations for outsourcing in this area are predicted to grow, albeit not as quickly as was once anticipated.

**5.** Cybersecurity Importance: Global cybersecurity spending, including technology and services, was expected to rise by 13% to US \$223.8 billion in 2023, according to Canalys, and well above the market average. Automation and AI will be utilized to tackle growing security threats.

**6.** A changing IT Role Structure: According to Talent Alpha, companies are increasingly interested in sourcing senior roles compared to mid and junior positions through recruitment and outsourcing. AI will strengthen this trend, as generative AI tools can take over easier tasks.

**7.** Cloud Dominance and Multi-cloud Approach: Globally, according to Precedence Research the global cloud computing market size is going to be valued at USD 2297.37 billion by 2032 with a rise in registered CAGR of 17% between 2023 and 2032.

A large proportion of this growth will be driven by AI, web3, and the Metaverse. More companies will choose private ecosystems for financial reasons and data protection, utilizing multi-cloud, private clouds, and edge clouds enabled by Kubernetes.

According to Talent Alpha's research, AI is seen as a potential area of growth for IT services companies and departments, as it will:

- **Enhance Tech Work Efficiency:** AI can generate, fix/debug code, prepare documentation, and further develop ideas and solutions, making tech work more efficient.
- **Simplify Supportive Functions:** AI can more easily support marketing, sales, and administrative functions.
- **Aid Product Upgrades:** AI can replace less effective parts of products with simpler solutions and add new functionalities.
- **Enable Product Creation:** AI can generate new products based on AI, allowing purely service companies to start investing in their products during downturns.
- **Facilitate Planning and Predictions:** AI can make business more predictable and enhance overall effectiveness.
- **Open New Cooperation Possibilities:** AI-supported cloud tools can connect companies and open up new collaboration opportunities.

Salesforce's State of IT report stated that 86% of IT leaders believed generative AI would soon play a prominent role in their organizations. IT departments, using automation, reported an average of 1.9 hours saved per week per employee. However, IT departments are being challenged, as they need to gain more efficiency from current resources, with 82% of IT leaders saying their departments needed to better demonstrate business value before they could plan future significant growth.

#### WHAT ABOUT JUNIOR STAFF IN IT?

The use of AI in IT companies is affecting young employees, especially in the changing of the job market. AI is taking over routine tasks such as coding, testing, and system maintenance, which were once starting points for junior IT professionals. This means there are fewer job opportunities for juniors, making it harder for them to learn and grow in their careers. Also, with more remote work, there are fewer chances for junior employees to learn from experienced professionals. In the future, there might be a shortage of skilled professionals in higher positions because juniors are not attaining the right experience. IT companies need to be aware of this, but cutting costs by not hiring juniors is tempting. To address this, we could consider some solutions like:

- Public institutions, such as universities, government, and local offices, supporting projects that involve junior tech professionals to help them gain practical experience.
- Providing incentives for companies to hire junior employees.
- Industry-wide initiatives, led by trade organizations, which support the development of junior professionals.
- Companies using new technologies, including AI, to identify the most talented junior employees.
- Looking for specific skills in junior employees, such as rapid learning and adaptability.
- Establishing mentoring programs within organizations to pair junior employees with experienced senior professionals.

#### EXPERT view

### AI as an Intern

Ingmar Krusch - CTO,  
Solaris SE

In our organization today, AI can be compared to an intern. It serves as a brilliant assistant



but lacks the experience to make critical decisions independently. Just as interns require training, guidance, and oversight, AI also needs domain-specific training, result verification, and appropriate guidance (prompt engineering). Nevertheless, AI can greatly enhance our teams. Despite the considerable hype surrounding AI, it's essential to remember that there are situations where other tools, such as traditional machine learning, may be a better solution. This is because they offer greater trustworthiness and understanding. This is particularly crucial in certain processes, like credit scoring, where decisions should be made based on clear rationale rather than guesswork.

At Solaris, we are highly active in the field of AI, but we exercise great caution, especially concerning data, intellectual property, and any factors that directly impact clients and decision-making. However, we recognize the need to drive innovation in the embedded financing sector. To achieve this, we are making investments, upskilling our internal teams, and building the necessary expertise to integrate AI effectively into our platform.

### AI transforming IT services

Agnieszka Belowska - Gosławska,  
ABSL Vice-President, Technology

The AI revolution has brought about a transformative impact on IT services across multiple industries,



introducing unprecedented speed in software development. This increase in velocity is evident in the enhanced efficiency of IT professionals, allowing them to dedicate more time to high-value tasks instead of tedious, repetitive activities and to further drive business growth. This is particularly important for the development of the business services sector in Poland, where more and more knowledge-based services are being provided. AI-powered technologies will transform key IT areas such as quality assurance, process automation, data processing, data management, software development as well as testing. However, an important question remains: should we anticipate additional disruptions within a market where IT profes-

Diva Tommei - Chief Innovation,  
Education and Marketing Officer, EIT  
Digital

AI is and will be part of innovation, it is not hype, it is reality. Today, every organisation and leader faces the challenge of adapting to this new reality. Just make the first steps in upskilling and go from there!



## The truly game-changing tools your IT specialists need

New tools based on AI that are aimed at improving the work of many professionals around the world are now the subject of extensive development. The tools themselves can already be counted in the hundreds, with the number dramatically increasing on a monthly basis as new ideas come to fruition. However, tested and trustworthy solutions are still essential.

The following review suggests AI tools that may improve the work of any development team in various areas.

**Amazon Code Whisperer** –enables developers to generate code in real time based on prompts, while offering auto-completions at the same time. Trained on an extensive dataset of open-source code, the tool can provide suggestions ranging from code snippets to entire functions based on comments as well as existing code, and in many languages. Furthermore, it possesses the capability to scan code for the identification and definition of potential security issues. What's also important, is its compatibility with multiple popular IDEs such as JetBrains, Visual Studio Code, AWS Cloud9 and other applications.

**GhostWriter (by Replit)** - this tool stands out for its ability to provide code suggestions to expedite coding processes without encountering roadblocks. It offers support for 16 programming languages, encompassing HTML, CSS, Python, Ruby, JavaScript,

and other languages. Users can request code generation and explanations, import code directly from repositories and automatically receive code suggestions, which reduces the time spent on writing code and looking for errors. As the tool is integrated with an online code editor, it allows coders to write, run and debug the code at once, making the whole experience more fulfilling and efficient.

**Codiga** – what's unique about this tool is that it provides an overview of the code's metrics, helping to understand its complexity, maintainability, and technical debt. Codiga is capable of working everywhere, from IDE to CI/CD, and share as well as use collections of code from the Hub. It can not only help with regular tasks for AI tools such as code suggestions, as it helps with providing code snippets, but also assists with instantaneous code analysis and auto fixing vulnerable code issues. It covers all common threats and software vulnerabilities. Codiga also provides the ability of custom analysis rules.

**Mintlify** - this is an AI-driven documentation tool designed to streamline the documentation process for developers, product managers, and support teams. It operates in real-time, offering automatic documentation generation, code refactoring, code completion, error detection and correction as well as version control.

The platform provides ready-to-use templates, adaptable layouts, and an analysis feature to optimise documentation for enhanced user engagement.

**ChatGPT** – the most discussed tool that still has a lot to offer. In IT specialists' work it can agilely assist in the coding process. By using machine learning algorithms to analyse and understand code snippets, Chat GPT can generate accurate and efficient code solutions. It can also help in automating unit tests, generating code snippets based on a conversational prompt, as well as being able to identify areas where sensitive data is handled. Along with its predecessor, OpenAI Codex parses natural language and generates code in response, which may be useful companions to the developer's work. Trained on text, Codex prepares a block of code that satisfies comment prompts given by the user.

● **Did you know... Chat GPT-4 can help with advanced data analysis and data visualisation just like Excel while being more intuitive to use? It can be done by using an advanced data analysis feature (now available in Beta Features) that generates charts with simple prompts.**



### Testing tools:

**TestGrid** – an AI Test Automation Tools platform to test your apps on real devices. It helps with automated, performance, API and security testing.

**Appvance IQ** – a test automation helper for native mobile, mobile web, and hybrid apps on iOS and Android.

**Functionize** – with ML capabilities designed for mobile app testing and self-healing testing, this app helps with test automation and predictions about user interactions to prepare your product for real-life situations.

**Katalon Studio** – this app provides you with comprehensive testing for your mobile, web, API, and Desktop applications.

**ACCELQ** - a codeless platform for automating testing processes, which executes reporting as well as analysis.

**Mabl AI** –a test automation solution that enables you to achieve fast and reliable end-to-end test coverage.

**Codium Visual Studio Code** – helps with code analysis and testing, as well as suggesting changes in code.

### Code writing tools:

**Seek** - AI code generation tool that provides you with a wide range of code templates in many languages, to ease repetitive tasks.

**Tabnine** – an assistant that offers fast and accurate code completion in multiple programming languages and integrates with popular IDEs. This app uses a neural network to learn from open-source code, offering smart code suggestions and error detection.

**MutableAI** – helps by quick code enhancements, prompt-driven development, test generation, extensive language and IDE integration.

**CodePal** – a comprehensive platform that offers a range of coding helpers and tools to assist developers.

**Cody** – its capability to understand the context in which the code is written, allows it to provide meaningful and relevant suggestions and reviews.

**Github copilot** - developed by GitHub and OpenAI to assist developers in creating boilerplate as well as repetitive code patterns and more.

**Google Bard** - general-purpose AI chatbot, which can also help with coding in more than 20 programming languages.

**Qodana** – a smart code quality platform that makes it easier to automate code reviews, build quality gates, and enforce code quality guidelines enterprise-wide

### Documentation tools:

**Docify** - automated code comment generator and documentation tool.

**Akkio** - a codeless tool that provides generative reports and dashboards to use for transforming your data, enquire about anything related to it, and which in this way gains insights, as well as assisting with forecasting and predicting potential outcomes.

**Nuclino** – by embedding files, diagrams, and code blocks, one can easily format content with help from this tool.



## Other (content related):

**Adcreative** – helps to generate content from strategies to text.

**Bertha AI** – this app offers natural language processing that will make generating quality text easier.

**Flick** – will support you in caption and content writing, but also idea brainstorming, scheduling and analytics.

**OpenRead** – an interactive platform that enables you to organise, engage with, and analyse a variety of text forms such as essays, research materials, and more.

**Elicit** – this application helps find relevant papers even without ideal keywords, to later summarise chosen text according to given questions to offer you key information.

**Jasper.ai** – comes with 50 templates to choose from and helps with repetitive forms such as product descriptions and posts for social media. You can also brief it with details such as tone of voice specifically for one's brand.

**Dall-e** – this app can support your content by designing processes that create life-like images merely through the provision of simple text prompts.

**Runway Gen-2** – a tool helpful for creating full videos, powered only by one's text guidance.

## Data analysis:

**Tableau** – a no-code analytics and data visualisation platform that allows one to interact with large amounts of data, and also supports complex computations, data blending, and dashboarding.

**Polymer** – a tool that makes it possible to transform all of the data into one streamlined, flexible, and powerful database.

**Looker** – is capable of processing large databases from all data sources in one place by using dashboards and reports.

**KNIME** – an open-source solution that offers a complete toolkit for data analysing that includes planning, visualisation and more.

**Microsoft Power BI** – by asking this business intelligence tool a query you attain an interactive visual report.

**Kanaries** – an augmented analytic engine that processes the raw data you feed and generates professional insights, patterns, forecasts, and suggestions to grow the business the way you want.

**SeekAI** – making it possible for you to securely connect it with various data warehouses and thereby potentially ensures high accuracy in data analysis.

## Cybersecurity:

**Darktrace** – a cybersecurity platform that utilises both AI and ML for cyber threats detection and responding in real-time.

**Cylance** – an application that is based on ML and AI, the app focuses on predictive security and helps to detect ahead of time even advanced persistent threats.

**Vectra AI** – continuously monitors cloud environments, user behaviour and traffic on your platform for you to be able to detect and mitigate threats quickly.

**SentinelOne** – helps you defend yourself against advanced cyber threats by detecting, preventing and responding to a wide range of attacks, including even file-less attacks.

**Cybereason** – this app is capable of analysing vast amounts of data that can identify malicious activities in real time.

**Crowdstrike** – this application is trained to spot non-typical behaviour by running a proactive threat search.



James Chaplin  
CEO, Vacancysoft

## Generative AI: What does this mean for talent in IT?

When Bill Gates was asked in 2016, which three areas students should focus on to be future-proofed, he said economics, mathematics, and computer science. In 2023, generative AI is changing the paradigm again, with IT developers' prospects becoming less certain.

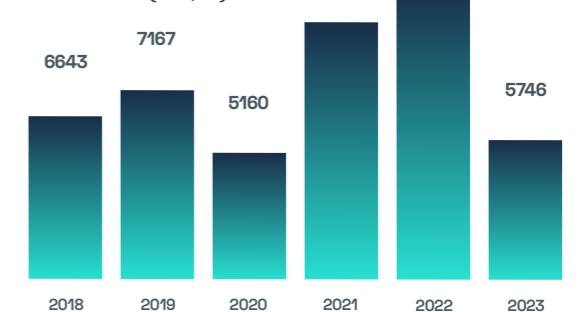
Languages built within open source libraries mean generative AI is able to parse entire directories and write code on command. Generative AI does need to be curated, but curating code, to make it fit for purpose, is significantly less time-consuming than preparing it. So what we are talking about is as generative AI takes hold, the number of developers being employed will decline.

Indeed, when analyzing the annual totals for IT vacancies, what we observe is that 2023 is on track to see the lowest number of development vacancies in the last five years. Quantitative tightening and the impact on IT have had an impact for sure, but the structural change caused by generative AI is also real and happening.

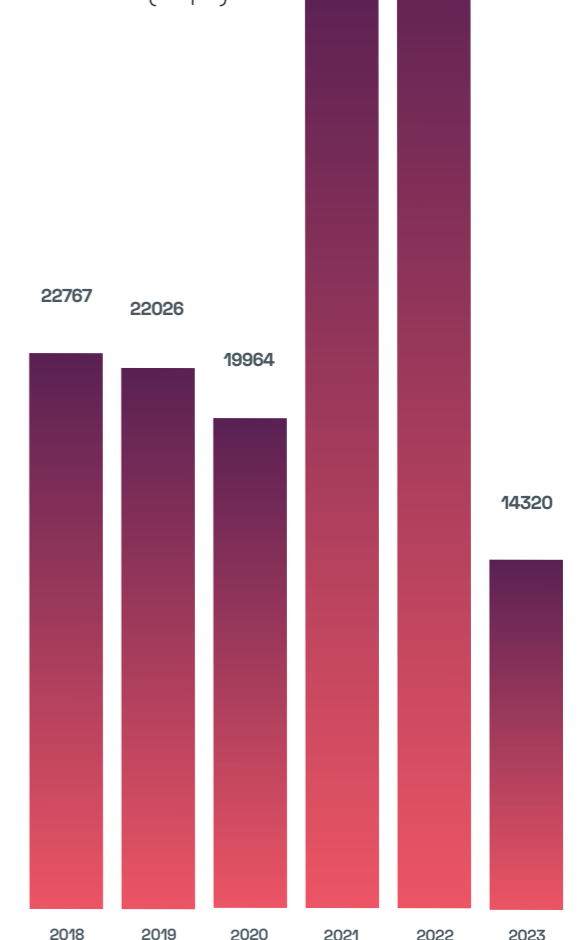
**Nonetheless, generative AI is going to need greater IT involvement in the following areas:**

- Developers who specialize in AI. Although they currently represent a niche sector, these numbers are expected to grow. I anticipate that AI Developers will become extremely important in the IT world as this technology becomes commoditized and every major company will want to implement their own proprietary AI systems.
- Data Specialists. AI is very much dependent on access to clean data sources. People skilled in this area will become increasingly in demand with businesses looking to improve legacy data capture processes as there would be real value in doing this. Taking the 2021-22 post-lockdown surge out of the equation, we see 2023 vacancies levels (Q1 to Q3) are significantly above the rates seen in 2018-20.
- Cyber Security. AI combined with the escalating geo-political situation will lead to ever-increasing threats to business.

Data vacancies  
Private Sector  
2018-23 (Sept)



IT Developer vacancies  
Private Sector  
2018-23 (Sept)





```
def introduce(self):

    introduction = (

        f"Hello! I am {self.name}, a language model based on the {self.version} architecture. "

        f"I can communicate in {self.language} and specialize in {'',

        '.join(self.capabilities)}. "

        f"My primary uses include {'', '.join(self.uses)}. "

        f"Please note my limitations: {'', '.join(self.limitations)}."

    )
```

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