
EY
Building a better working world
Which are you skilling faster – your people or your AI?
Reshaping careers in the 21st century
The better the question. The better the answer.
The better the world works.

Contents

Introduction

Generative artificial intelligence (GenAI) is here, and it is evolving fast. It is replacing more repetitive tasks that are easily codified, and AI is powering a growing number of our day-to-day interactions with services.

In the first paper in our series on GenAI, people and work, we discussed the nature and potential of these new technologies and the lessons we have learned from previous technology evolutions. In this second paper, we explore how jobs will change, when that might happen and the potential challenges we need to consider.

As the potential of GenAI is becoming more obvious, and the expansiveness of its reach is unfolding, so is the complexity resulting from its opportunities and risks.

Suddenly the world is swirling with predictions about the future of GenAI and its impact on humans. The discussion is focused on the socio-economic impact, and related intervention on controls, through regulation by governments and standards by industry.

The discussion on how organisations should respond, beyond ethical considerations, the productivity opportunity, and risk management is only in its early stages. While a human-centred approach is advocated by many, the research and dialogue do not reflect this ambition in enough detail for us to act.

This is not surprising as the people-related challenges are diverse, complex, and extensive, and often reach beyond organisational boundaries, blurring the line of accountability.

What jobs will change and when

It is easier to predict the nature of change to jobs, than the timing and extent of change. We have seen this most recently in the World Economic Forum 2023 Job Outlook report, which found that growth in the automation of tasks grew by only 1% between 2020 and 2023. This is significantly lower than the earlier predicted 15%.

The forecasting currently grabbing attention, is the potential of GenAI to replace tasks, and over time, people. These predictions are based on what the technology can do today and what it is predicted to be able to do very soon. Of course, the impact these technologies will have on people and jobs is heavily reliant on the extent and timing of their adoption.

Forecasts vary as to the impact of AI on jobs over the next decade – from a negative effect (WEF, 2023: 51% of jobs automated and 45% new jobs by 2025, also the Brookings Institute and the Oxford Martin School), to a positive effect (McKinsey, 2023: 42% of jobs automated by 2030 and 50% new jobs).

Predictions of the fastest declining jobs between 2023 and 2027 are concentrated in semi or unskilled occupations.

Fastest growing vs. fastest declining jobs

Top 10 fastest growing jobs

1	AI and machine learning specialists
2	Sustainability specialists
3	Business intelligence analysts
4	Information security analysts
5	Fintech engineers
6	Data analysts and scientists
7	Robotics engineers
8	Electrotechnology engineers
9	Agricultural equipment operators
10	Digital transformation specialists

Top 10 fastest declining jobs

1	Bank tellers and related clerks
2	Postal service clerks
3	Cashiers and ticket clerks
4	Data entry clerks
5	Administrative and executive secretaries
6	Material-recording and stock-keeping clerks
7	Accounting, bookkeeping and payroll clerks
8	Legislator and officials
9	Statistical, finance and insurance clerks
10	Door-to-door sales workers, news and street vendors and related workers

Source:
World Economic Forum, 2023

Note:
The jobs which survey responders expect to grow most quickly from 2023 to 2027 as a fraction of present employment figures.

While GenAI will impact jobs, there has been a stable forecast in Australia for some time in the sectors where we need the most workers.

The top four sectors in Australia by numbers of jobs forecast to be needed 2021-2026:

300,000

Health care and social assistance

207,000

Professional scientific and technical

150,000

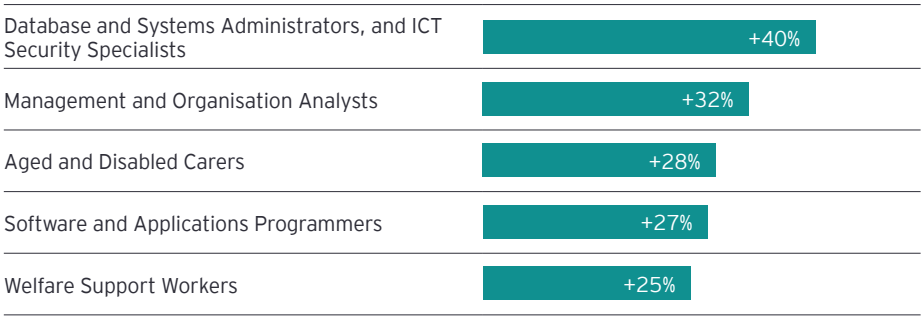
Education and training

112,000

Accommodation and food services

These are significant numbers and in particular the care and support and health sectors are under extreme pressure to staff facilities.

Across all industries the top five growth occupations by percentage include:



Source: National Skills Commission, 2022

This job outlook data was collected before the launch of consumer-facing Large Language Models (LLM) and the rapid evolution of GenAI programs. More current analysis has incorporated the impact of GenAI on skillsets and jobs. The analysis, on the following pages, illustrates the rapid acceleration in the sophistication of the technology, and its potential in the not-too-distant future to drive significant displacement as well as opportunity for work and productivity.

Case study: What's the right dose of AI to revitalise healthcare?

As the population ages and life expectancy extends, the demand for specialised care has grown three times faster than the overall job market in Australia.[1] Despite this, a high volume of jobs remain unfilled in the aged care sector due to workforce shortages or unsuitable candidates. [2] Looking forward to 2050, this gap is predicted to widen, with an estimated shortage of 211,430 positions, posing significant challenges for older Australians in need of care.[1]

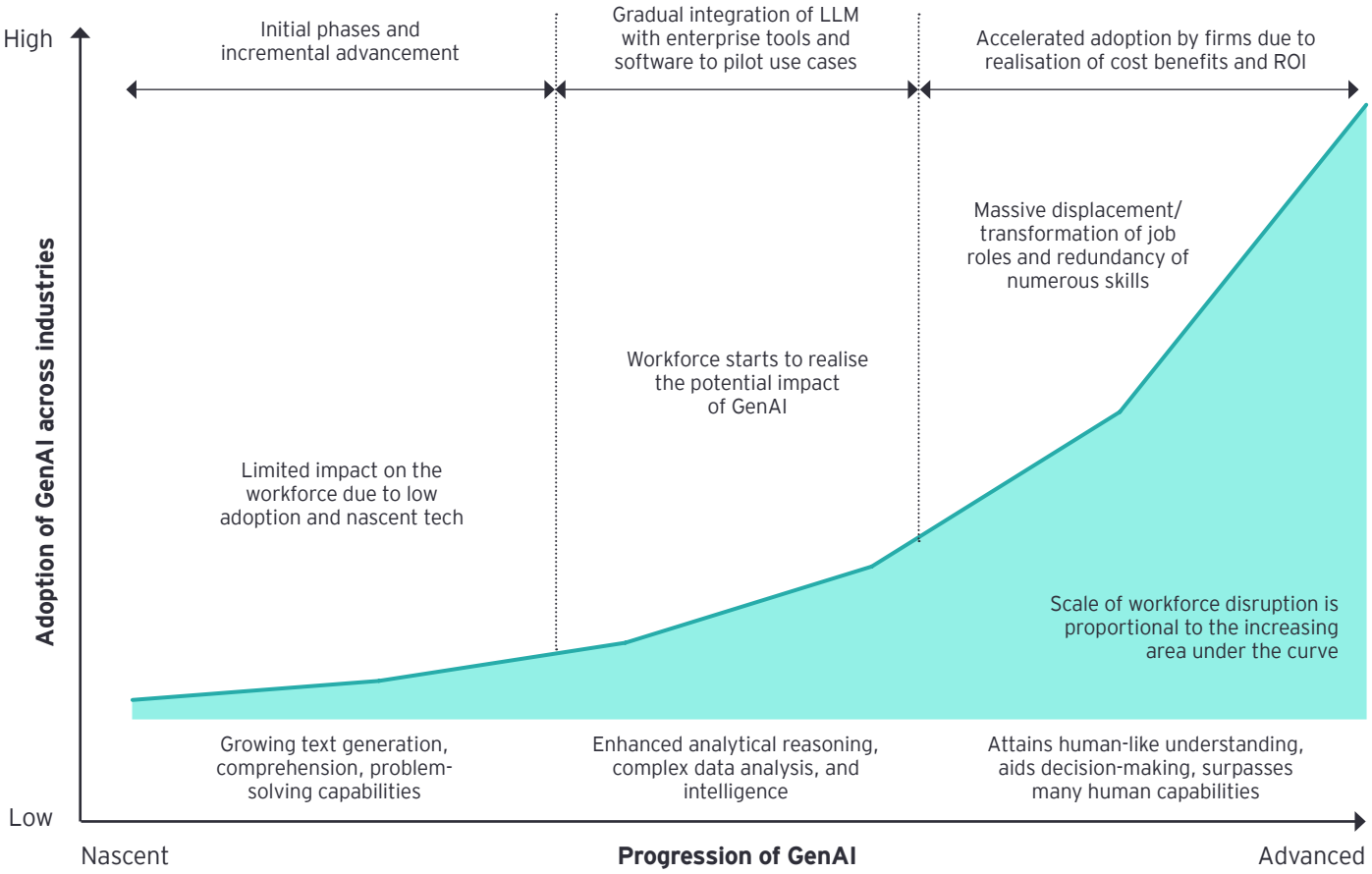
Could GenAI-driven solutions keep older Australians in their homes for longer, acting as the eyes and ears for an overstretched aged care support team? Could GenAI be the technology where in years to come we wonder how we managed without it? We think so.

Meet Suzie, an 81-year-old woman living in an aged care facility near Sydney, which has recently sought innovative AI solutions to enhance residents' wellbeing. Suzie, an introvert at heart, prefers the comfort of her room where she listens to the radio. Suzie also has mild dementia and can be unsteady on her feet. To ensure Suzie is always safe, her room is equipped with a GenAI assistant named Nora, in memory of her late friend and neighbour.

Nora, tailored for personalised care, continuously monitors Suzie's health, proactively alerting potential anomalies or safety concerns to care staff. Nora schedules Suzie's daily activities and helps staff manage her preferences and dietary restrictions. Acting as a constant companion, Nora engages Suzie in conversation, assists with calls to family members, reminds her to stay hydrated, tunes in to her favourite radio stations and TV shows, and adjusts the room's temperature and lighting as needed. Suzie finds comfort in knowing Nora is just a voice command away.

With real-time information from Nora, the aged care staff can focus on building meaningful resident connections. In an aging world, AI technology like Nora is transforming the aged care landscape, allowing older Australians to age with dignity and ensuring their voice is heard.

GenAI is evolving at an unprecedented speed. With increasing adoption, the global workforce is poised to undergo a drastic transformation



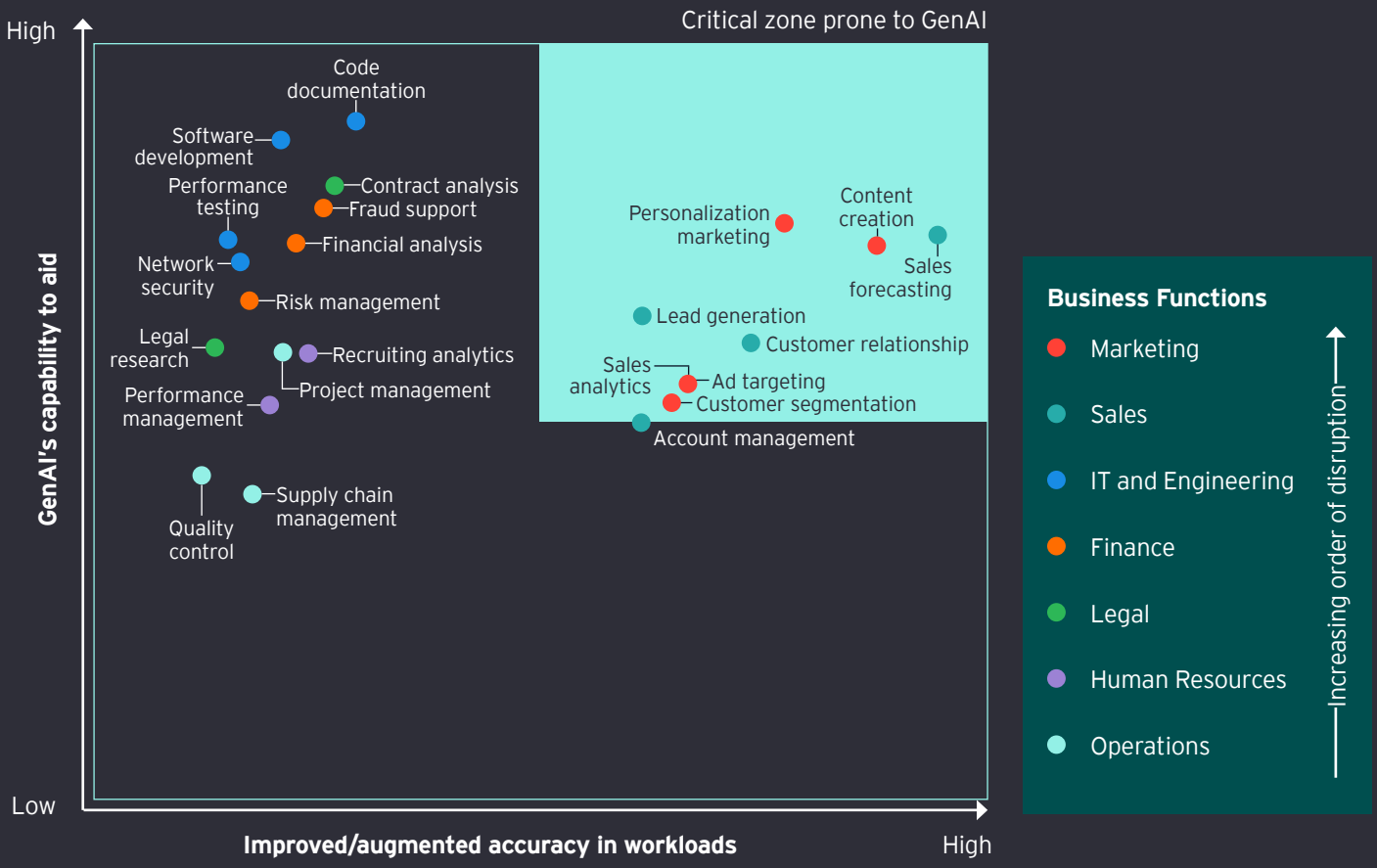
Current analysis predicts that all industries and jobs will be impacted to a greater or lesser degree, and this time, even the lesser degree will be significant.

Banking, financial services, media and entertainment, software, and legal are the sectors likely to experience the highest penetration of GenAI in the short term, followed by aerospace and defence, insurance, and retail. Physically demanding industries such as oil, gas and construction, and maintenance and repair are forecast to have the lowest levels of penetration.[3]

As shown below, every business function will be impacted differentlyby the advancement of GenAI in the workplace.

This presents the opportunity for us to test and learn across functions, and in turn realise the greatest impacts.

The impact of GenAI across sub-segments of business functions



Sample job roles that are most impacted by GenAI

Highly impacted job roles	Global talent size
Social Media Marketing Manager	5 million
Public Relation Specialist	4 million
Business Development Executive	2 million
Marketing Associate	1 million

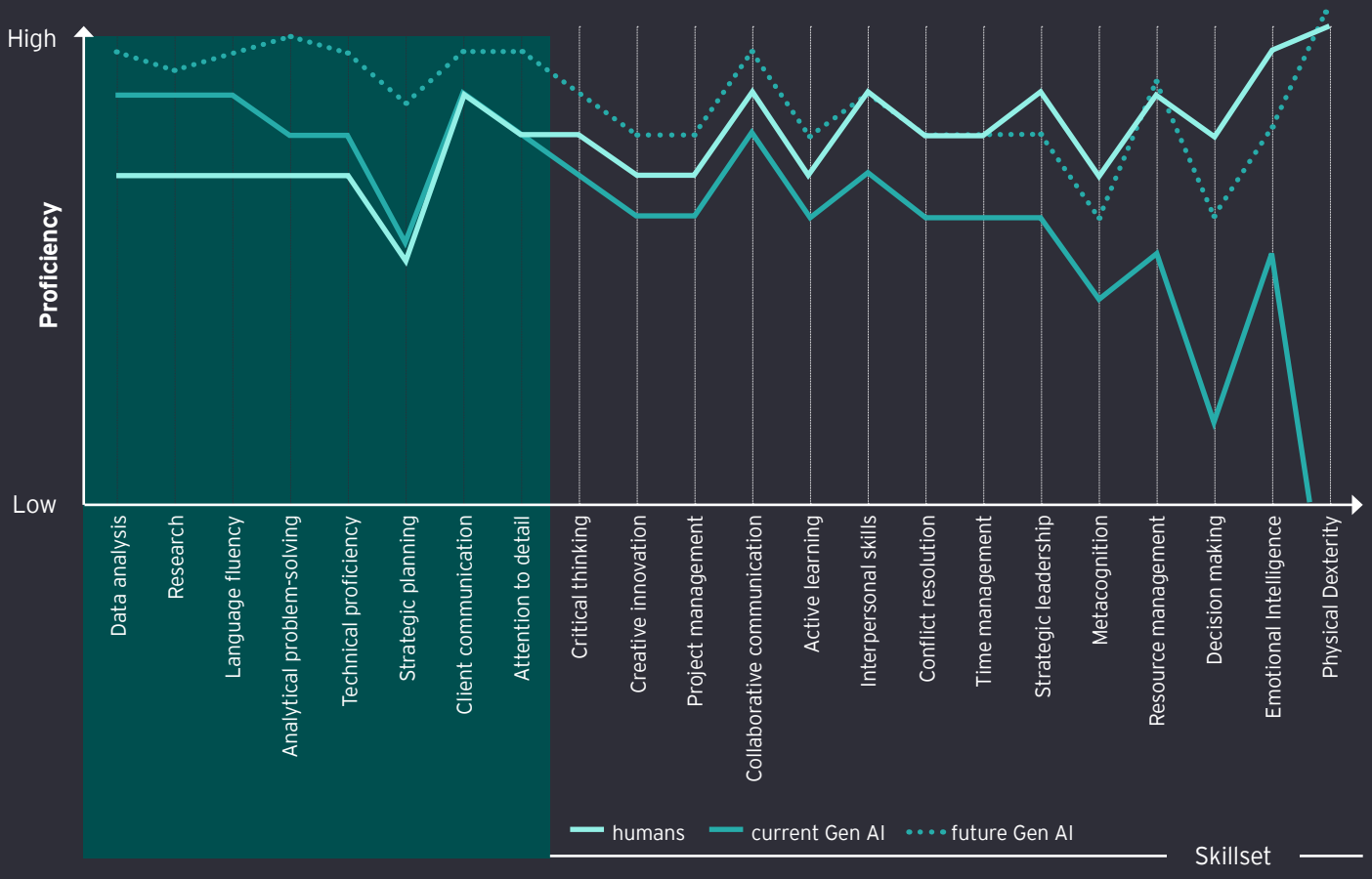
Marketing and Sales functions experience the highest degree of job role disruption due to GenAI

Note: The above areas are not exhaustive and are based on industry research, insights from job descriptions, customer engagement, industry blogs, and whitepapers.

While views range as to the ability of GenAI to replace human capability, there is a general sense that it has limited ability to replace tasks or interactions that require emotional intelligence, and nuanced communication. Current experience also indicates that content accuracy and quality need to be checked for reliability. While this hopeful view provides a level of comfort, the most current research challenges it, as for example the current conversational AI products already surpass people's performance in many skill sets.

Skills disruption: Across the job traits, GenAI is demonstrating positive capabilities to surpass many in-demand skills. The capabilities are likely to expand further with future LLM versions

GenAI is disrupting various skill sets and is poised to surpass most human skill sets in the future



Note: Broader categorisation of skills has been taken for ease of understanding

When is all this change going to happen?

Two important items are missing from these analyses.

The first is a consistent timeline of the evolution and impact of GenAI. Creating this is an impossible task. A consistent timeline is highly dependent on the speed of adoption by organisations, the rate at which the technologies evolve, and future innovations that cannot be easily predicted. However, everything points to an early, and progressively deepening impact given the extraordinary level of investment and the highly competitive environment.

The second is insight into the volume and nature of new jobs resulting from GenAI, as well as other drivers. Across history, technological advancement has always resulted in both the redundancy of existing jobs and the creation of new areas of work. Whether this tranche of technology is different is open to debate, but as GenAI builds capacity to undertake increasingly sophisticated and complex tasks it may be able to replace humans in new areas of work as well.

'AI can create once unimaginable and entirely new career paths. Professions such as AI ethicists, data scientists, and AI trainers are emerging, offering individuals exciting opportunities to work at the forefront of AI development. About 97 million new roles will emerge in AI ethics, human AI interface, and more such areas.' (Vijay Swaminathan. Chief Executive Officer, Draup, 2023)

If people are needed to fill the new jobs, it is certain that this will require higher level skills, challenging policymakers, educators, and employers to actively monitor and match skills to emerging demand.

The challenge

What is clear is that all organisations must act now to investigate how GenAI will impact jobs over time. This is fundamental to supporting the change that people will experience, as it allows leaders to plan and clearly communicate the impending changes.

Dynamic capability planning that spans technology and people is essential to support decisions about what technologies and when, and to assess and plan for how these will impact tasks and jobs. While job redundancy is easily identified, this is less the case with task redundancy. Managers and the systems that support them must be able to identify task redundancy and be equipped to redesign jobs so that new tasks deliver the greatest productivity return.

A segmented view of the areas of work by the level of GenAI disruption will assist leaders in developing a differentiated plan that matches interventions to the degree and nature of disruption. The model presented on the following page is based on analysis of industry insights, 100+ job descriptions and workflows. Similar analysis can be performed for any role to assess the level of disruption and impact on workload and roles.

Case study: How can AI increase workforce productivity in construction?

Australia is on the cusp of an unprecedented wave of investment in public infrastructure over the next five years in excess of $218 billion.[4]

However, the construction and infrastructure industries are one of many struggling with an ageing workforce and dwindling talent pool. The latest Australian Skills Shortage report shows that the percentage of advertised vacancies which were filled in the technicians and trade workers group was just 28% in March 2023, down from 51% in September 2021.[5] Perhaps an even stronger case for an AI augmented workforce is that despite record levels of construction activity,[6] the industry's productivity has regressed over the past three decades with building firms entering administration at more than twice the rate of other industries.[7]

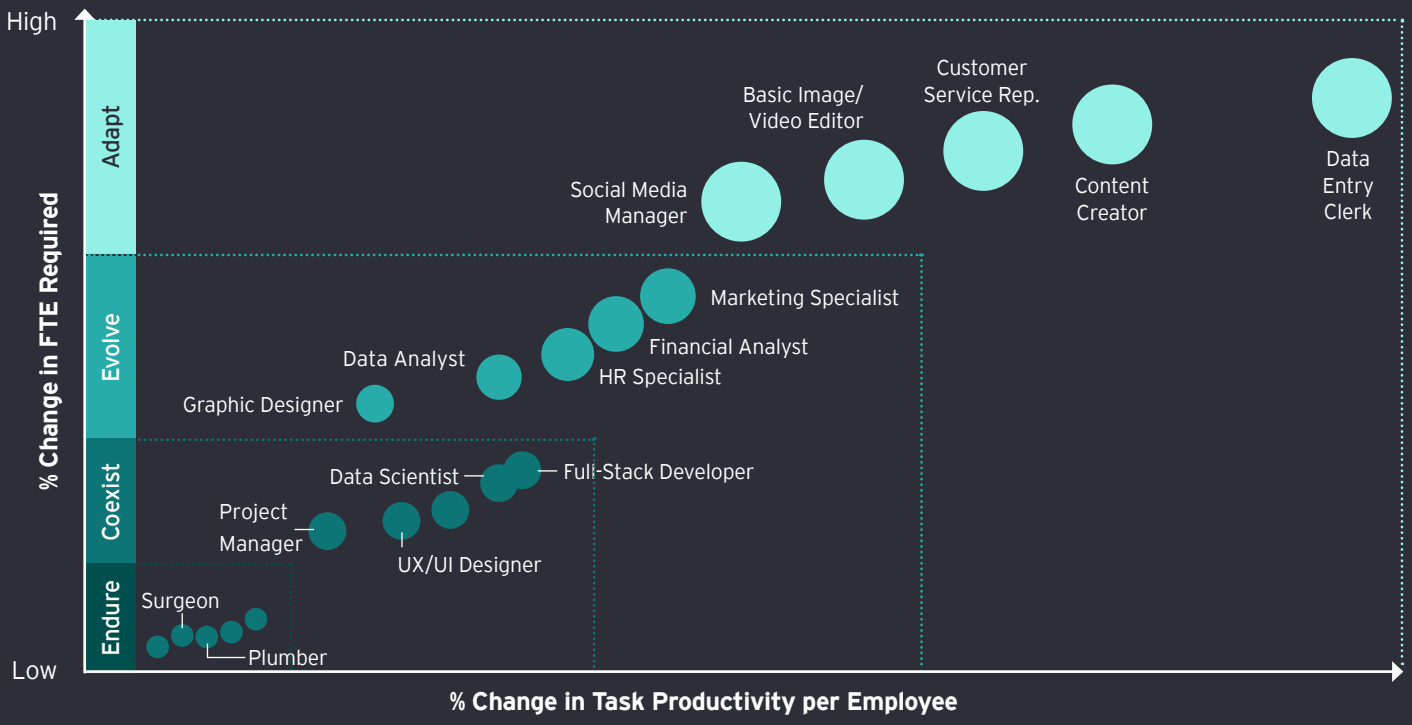
AI-driven technologies are showing promising signs of working towards solving this complex problem, evidenced by a predicted Global AI in Construction market size valued at $8.5bn (USD) by 2031.[8]

Imagine a community infrastructure development optimising AI technologies. To ensure public funding is spent effectively on this high-profile project, safety optimised, and all stakeholders aligned, they have adopted AI technologies.

Meet George, a 45-year-old project manager. By combining drone footage of the site with AI technology, George can compare the physical building to the digital twin present in the Building Information Modelling (BIM) cloud. He receives an alert that a pipe has been installed in the wrong location, giving him the opportunity to rectify immediately to avoid a more costly correction at a later stage. With one click of a button, George can notify all his government stakeholders of the issue and his plan to resolve it promptly. This allows the subcontractors and suppliers to update their planning to the new timelines George has proposed. The construction team on site also use AI on their smartphone to find tools they need, increasing efficiency.[9] George is also reassured that his team are kept safe on site as heavy machinery operators are supported by AI which checks for potential collisions and warns the operator before accidents happen or stop the machine itself if necessary. Since adopting AI technologies to support their workforce, the government agency has been named as a great place to work, and retention of their specialised workforce has increased.

Impact on overall jobs

In order to assess the impact of FTE displacement and productivity changes, the existing workforce can be broadly categorised into four categories: Endure, Coexist, Evolve and Adapt



Adapt: High Disruption

- Up to 70% reduction of workload, significant productivity increase
- Automated and **Replaced** by GenAI, workforce will have to be highly creative and innovative to meet company's requirement

Evolve: Moderate Disruption

- 20% to 50% reduction in workload, substantial productivity improvement
- **Aided** by GenAI, Basic and time taking tasks will be streamlined, Talent will be expected to double their productivity

Coexist: Low Disruption

- 5% to 30% reduction in workload, moderate productivity and efficiency enhancement
- **Leveraging** GenAI, workforce will become efficient. Talent will be expected to innovate and deliver high quality tasks

Endure: Almost No Disruption

- 0% to 5% reduction in workload, minimal productivity gain
- Largely **unaffected** by GenAI, workforce heavily relies on physical dexterity

So, we know there will be significant disruption, that jobs and industries will be differentially impacted, and that leaders will need new skills to respond effectively.

But we don't know how fast it will happen or to what jobs, and in what sequence. We also don't know if the new jobs created will outnumber those made redundant, or if GenAI will also be capable of performing those jobs.

Where does this leave leaders, human resource teams and workers? Our **next paper** in this series proposes some solutions through the lens of now, next and beyond.

Note: The above calculations are based on industry insights, analysis of job descriptions, workflows and whitepapers. Similar analysis can be performed for any role.

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Contact us

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