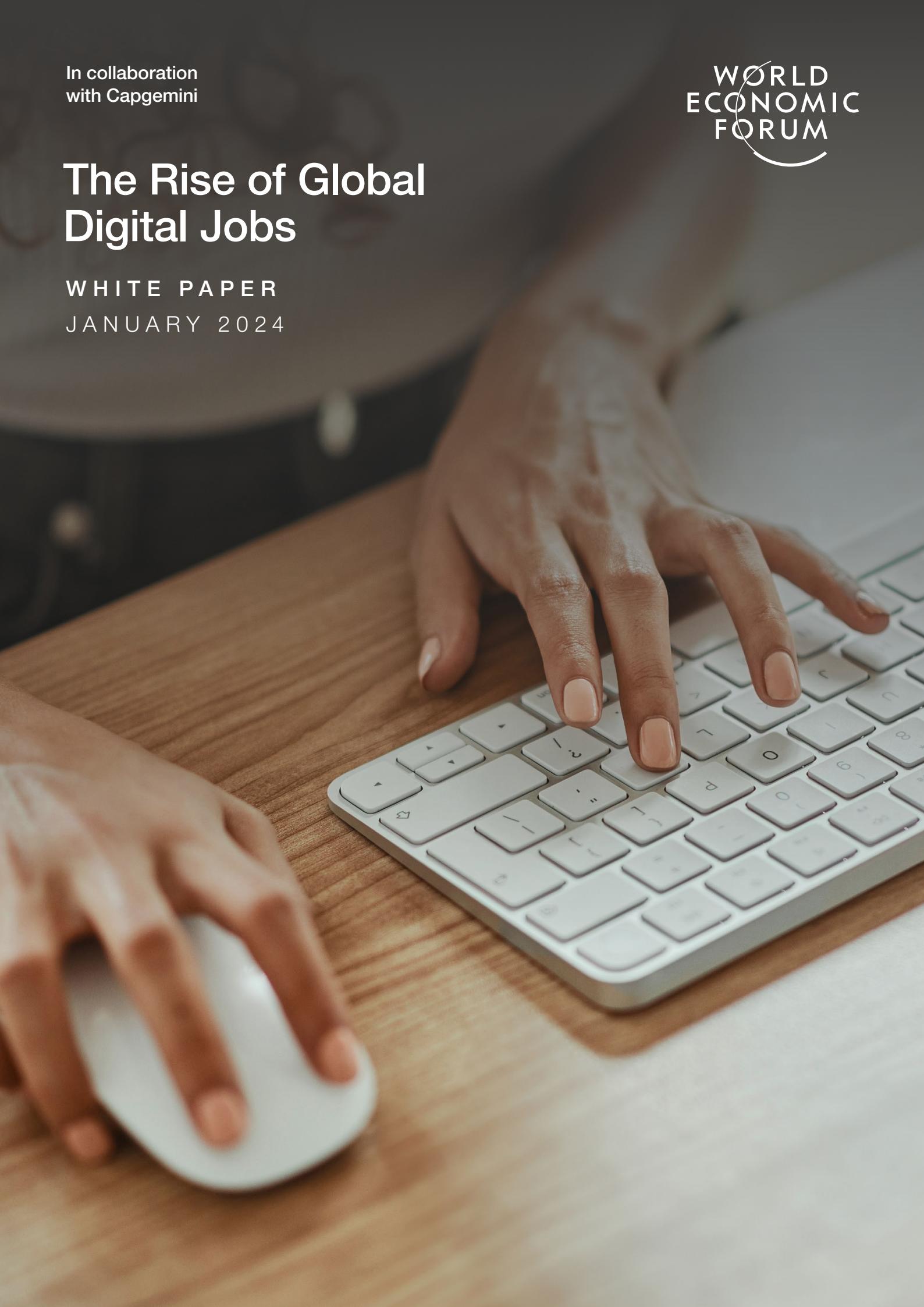


In collaboration  
with Capgemini



# The Rise of Global Digital Jobs

WHITE PAPER  
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# Foreword



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Global labour markets are transforming rapidly as technology adoption, the green transition and macroeconomic trends drive industry change. In particular, widespread digital access and the pandemic-era shift to remote work have led to some work being performed wholly remotely and, while the debates around the benefits and challenges of remote or hybrid work continue, new possibilities have opened to employers and workers alike. Communication and collaboration software, cloud-based knowledge management and employee experience solutions, as well as more early-stage technologies such as the metaverse and artificial intelligence (AI), continue to further shape workforce practices and enable more jobs to be done remotely.

Labour markets in advanced economies have been exceptionally tight while those in developing economies face higher rates of unemployment. Demographic trends are likely to exacerbate these patterns as many higher-income economies expect an ageing and declining labour force, while many lower-income economies expect a growing working-age population seeking employment opportunities.

Education, particularly tertiary education, has risen globally in advanced and developing economies alike and the rise of online education has made access to the latest knowledge for upskilling and reskilling widely accessible. In theory, talent is more widely available around the world despite differences in national patterns and challenges.

These three patterns together point to the potential for more technology-driven digital collaboration across global talent value chains, where collaborators can be independent of location and time. Online work platforms already enable global “gig work” but further globalization of professional, white collar and services work is likely to emerge. Global digital jobs, if managed well, pose opportunities for countries, companies and workers around the world through enabling

access to global talent and jobs independent of geographic location, responding to talent availability pressures and improving social and economic outcomes globally. Such digital migration where workers and jobs can cross borders freely and virtually also comes with challenges (outdated tax and labour regulations, among others) and risks (potential losses of roles in higher-paid regions and wage undercutting and low-quality jobs in others), similar to previous waves of globalization in physical work. Policy-makers, employers and workers need to get ahead of these patterns to develop an inclusive, safe and thriving global digital workforce.

This paper, the first in a series, aims to assess which jobs may be most conducive to wholly remote work and are therefore most likely to become global digital jobs. The paper looks at the wage levels of these roles in the US economy, their growth or decline outlook, and estimates their global quantities now and in 2030. We intend for the analysis in this paper to inform and enable stakeholders – business leaders, policy-makers and workers – to learn more about the “remotability” of roles and their potential for becoming global digital jobs. We will follow up on this analysis in 2024 with further work on the risks, challenges, opportunities and strategies for facilitating an effective, well-managed and equitable transition to a global digital workforce.

We are deeply grateful to the partners and constituents of the Centre for the New Economy and Society for their leadership of the jobs agenda, and for the collaboration with Capgemini on this report. The findings of this paper will serve as a key tool for the World Economic Forum’s jobs initiative, including the Jobs Consortium, a global coalition of ministers and chief executive officers that promotes a better future of work via job creation and job transitions, and the Jobs Accelerators, which are country-specific platforms that facilitate public-private collaboration on job creation and job quality.

# Executive summary

## Global digital jobs could help balance higher-income country skill shortages, while enabling a demographic dividend in lower-income countries.

Technology development and adoption, the green transition and macroeconomic conditions are transforming global labour markets, with job churn likely to affect a quarter of all jobs in the next five years through both emerging jobs and declining ones. Simultaneously, the nature of how that work occurs is changing, with “digital work” that can be performed remotely, alongside globally expanding technology access, creating the possibility for people to work from anywhere.

Many advanced economies already face tight labour markets and talent shortages. Demographic changes are further shifting the presence of working-age people towards lower-income countries. These countries will have almost 50% more working-age people than higher-income countries in just 20 years, compared to an even distribution today. These trends, alongside wider education access, could enable more globalized talent value chains. This could enhance accessibility to jobs for people regardless of their local economic structure, personal mobility or local networks, while presenting potential challenges in higher-income locations, including reduced wages and tax and labour law challenges.

This paper, the first in a series, explores the outlook for global digital jobs. Upcoming work in 2024, in collaboration with Capgemini, will delve deeper into risks and opportunities, enablers and barriers, and case studies, proposing business and policy actions for a safe, inclusive and thriving global digital workforce.

This paper first assesses the jobs most conducive to being done from anywhere today by identifying jobs where all component tasks can be performed from anywhere in the world. The paper then projects this to 2030 by removing tasks that are expected to be automated by technology development and incorporating the job growth and decline expectations from the *Future of Jobs Report 2023*. Key findings include:

- In total, 218 job types out of 5,400 are conducive to becoming global digital jobs – these represent 73 million workers, out of the 820 million total global workers represented by the International Labour Organization (ILO)’s occupation employment statistics. Just under 40% of these are in accounting, legal and finance roles, while customer service representatives, marketing, advertising and communication professionals and IT professionals each make up around 10% of total jobs.
- These potentially global digital jobs vary across the wage spectrum (using US data), including: high-income jobs (over \$75,000), such as software developers, financial risk specialists and financial managers; middle-income jobs (\$42,500-75,000), such as graphic designers, paralegals and insurance investigators; and relatively low-income (under \$42,500) jobs such as customer service representatives, bill and account collectors, and telemarketers.
- By 2030, the number of these jobs is expected to rise to around 92 million. These jobs are skewed more towards higher-paying roles due to growth in higher-wage global digital jobs, decline in lower-wage global digital jobs, and the new global digital jobs being exclusively high- and middle-income roles.

If managed well, global digital jobs present an opportunity to utilize talent around the world, widening the talent pool available to employers and providing economic growth pathways to countries across the income spectrum. This requires broad access to digital infrastructure, educational and vocational training programmes, and competition on skills and talent rather than lower wages. Global employers, meanwhile, need to complement traditional approaches to workforce management with new tools, proactively expanding recruitment pools and creating a culture that embraces hybrid operating models for all workers. Future papers in this series will explore risks and opportunities and their implications.

# Introduction

The global working-age population is shifting towards lower-income countries, while emerging technologies enable more fully remote ways of working.

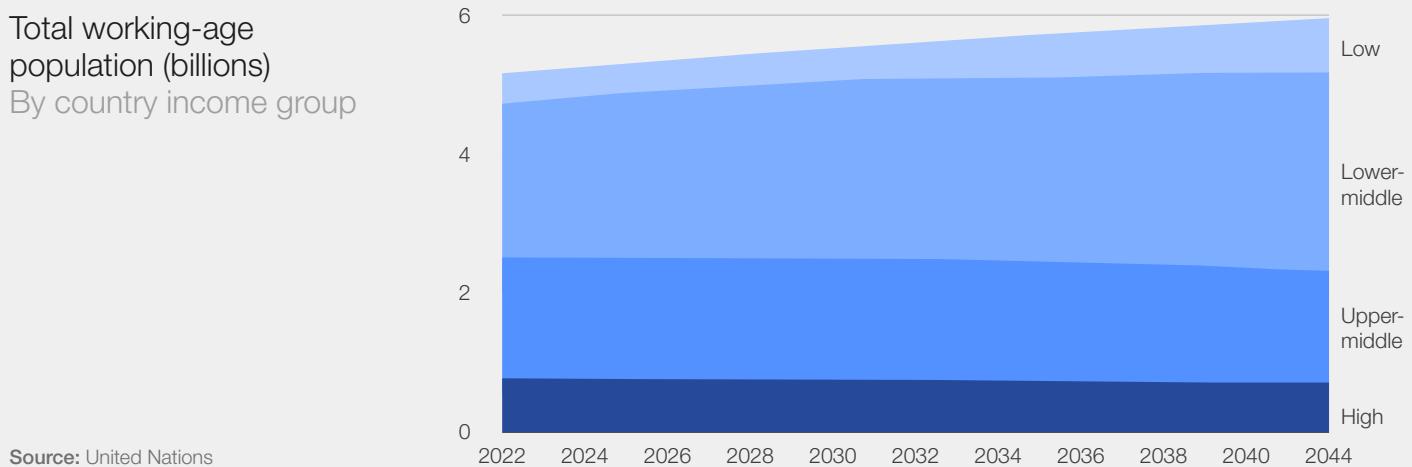
## Jobs and workforce in transformation

According to findings from the [Future of Jobs Report 2023](#), the three factors most likely to transform businesses in the next five years are technology development and adoption, the green transition and macroeconomic conditions.<sup>1</sup> The report estimates that the equivalent of a quarter of today's jobs will change as jobs are either created or displaced. As a result, the outlook is for growth in many technology-enabled roles and green jobs. Meanwhile, roles that may face automation are expected to decline. These shifts mean that many workers will need to transition between their current expertise and future demands. Already, it is apparent that the rapid

development of generative AI is changing the face of many jobs. [Jobs of Tomorrow: Large Language Models and Jobs](#)<sup>2</sup> assesses the potential impact of large language models on jobs, finding over 60% of work time could be impacted by this technology.

In parallel, growth and ageing across different geographies are transforming the distribution of the global working-age population. Currently, the global working-age population is distributed almost equally (51:49) between lower-income and higher-income countries. In two decades, this distribution will become 60:40<sup>3</sup> towards lower-income economies, meaning there will be 50% more working-age people in lower-income than higher-income countries. Figure 1 illustrates this working-age population redistribution.

FIGURE 1 Working-age population projections by income group



For lower-income countries, the increase in working-age people presents a potential demographic dividend and could set off a virtuous cycle for economic output, tax revenues and material living standards, but is dependent on significantly large levels of high-quality job creation. Under-employment, especially for young people, is already a challenge in many such economies, according to ILO data.<sup>4</sup>

For many higher-income countries, unemployment and under-employment are at historical lows with labour shortages in Europe, where almost 3 in 10 manufacturing and service firms reported labour constraints, and the United States, where close to 70% of job openings in wholesale and consumer goods remain unfilled.<sup>5</sup> The inability to attract talent is already considered the leading barrier to business transformation, with employers from high-income countries most concerned. For these countries, the structural reduction of working-age people is expected to exacerbate labour shortages.

**Generative AI will continue to change the makeup of jobs, resulting in high augmentation for some occupations and functions, while others could see most of their tasks automated.**

## The rise of remote work technologies

Technological advancement and the digital revolution have increased the ability to perform tasks, connect, and communicate globally and remotely. Fourth Industrial Revolution technologies have been shaping the world of work for the last two decades; but it was the COVID-19 pandemic that accelerated the adoption of day-to-day digital technologies in the workplace and the acceptance of remote, hybrid and other new work practices.

There is broad uptake of technologies such as communication and collaboration software, cloud-based knowledge management and programming. Other more early-stage technologies could further shape workforce practices and enable more jobs to be done from anywhere in the world. These are analysed in more detail in Capgemini's *Technovision 2023*,<sup>6</sup> the World Economic Forum's *Future of Jobs Report 2023* and *Jobs of Tomorrow: Large Language Models and Jobs*. For example:

- **Integrated workforce and collaboration technologies** can identify opportunities by matching project skill requirements with the capabilities and development goals of employees anywhere in the world. This enables organizations to boost diversity of thought by bringing together diverse cultures and backgrounds.
- **Metaverse technologies** are creating new platforms and tools that enable virtual conferences and can make scarce, highly specialized knowledge available globally without the need to physically travel.

- **Decentralized autonomous organization (DAO) solutions** are identified as a technology that can shape governance, skills, recruitment and compensation management, establishing blockchain-governed, collectively owned, transparent organizations with shared missions from investments and grants to art, media and social impact.

- **Generative AI** will continue to change the makeup of jobs, resulting in high augmentation for some occupations and functions, while others could see most of their tasks automated.

Historically, people have moved within and across borders to seek out labour market opportunities matched to their skills and needs. Remote work technologies can now enable a large global digital workforce to work from anywhere. There is much debate about the benefits of remote and hybrid work compared to in-person work, but the wider trend is expected to stay. With higher education and lifelong learning flourishing globally,<sup>7</sup> combined with the pressures and opportunities of demographic shifts, talent will generally be more widely available and more easily accessible across the globe.

These developments present an opportunity to create remote jobs that meet people where they are, enabling employers to access and deploy talent from a global marketplace while increasing the accessibility of work through global digital jobs.<sup>8</sup> Such "digital migration" presents opportunities for advanced economies facing talent shortages and emerging economies facing youth bulges, bringing people and business from differing backgrounds closer together and expanding economic opportunity globally. Organizations also identify the opportunity of digital



migration, with 70% perceiving that productivity gains result from remote work, while most executives expect it to expand recruitment pools and reduce their carbon footprint.<sup>9</sup> It does, however, also pose challenges and risks that need to be managed, such as:

- Digital technology outpacing human ingenuity (meaning jobs are displaced faster than they can be created<sup>10</sup>)
- Depressed productivity gains in late-developing economies as the technologies driving gains have been developed for the labour capabilities of advanced economies<sup>11</sup>
- Recalibrating operational models to enable successful distributed teams.<sup>12</sup>

## The globalization of talent and digital jobs

This paper, the first in a series, explores the outlook for global digital jobs and a global digital workforce – defined as “jobs and workforces distributed across borders in different geographies, empowered by digital tools to perform their tasks, connect, and communicate globally”. The purpose of this white paper is to explore the outlook for these jobs today and in 2030. Upcoming work in 2024, in collaboration with Capgemini, will delve deeper into specific promising geographies, enablers, barriers and case studies, and propose business and policy actions towards building a safe, inclusive and thriving global digital workforce.

The paper deconstructs jobs into tasks and assesses whether these tasks could be performed from anywhere. The jobs for which all tasks can be performed from anywhere are defined as

the global digital jobs. The paper subsequently assesses which additional jobs are most suitable for being performed remotely by 2030. To do this, the paper analyses which job tasks are expected to be automated by technological developments by 2030, removes these tasks from each job, and reassesses which jobs can be entirely performed from anywhere. These technology developments encompass those that are expected to have a predictable impact on workforce practices, such as generative AI, and integrated workforce and collaboration technologies. In addition to identifying these jobs, this paper also assesses the quality of these jobs, by looking at both relative wage levels from the US Bureau of Labor Statistics data and the employment outlook from the *Future of Jobs Report 2023*.

Lastly, the paper estimates the potential global number of such jobs, based on the proportion of occupational sub-groups that are assessed as able to be performed from anywhere, using the ILO’s global dataset. It then finally estimates the potential number of these jobs in 2030, by adding the number of people employed in the additional jobs that can be performed remotely, incorporating projected labour force growth and applying the estimated job growth and decline from the *Future of Jobs Report 2023*.

The first section of this paper presents these results for tasks and jobs in detail, analysing the groups of jobs that could be performed globally and digitally and considering their quality in terms of wages and outlook for growth. The second section estimates the current number of these jobs today and the potential growth in such jobs by 2030. The paper concludes by setting out the need for using these results to plan for inclusive, safe and thriving global digital jobs.

# Digital jobs conducive to global work – now and in 2030

Global digital jobs today and in 2030 exist across the wage spectrum and have differing growth outlooks.

## A task-based analysis

Determining the potential jobs conducive to remote and global work involved working with Pearson, using data from the Faethm by Pearson skills intelligence solution<sup>13</sup> to identify jobs where all the component tasks can be performed from anywhere with appropriate technological capability and connectivity. To consider whether a task can be performed from anywhere, the authors examined how existing supporting technologies with broad uptake influence the task's requirements. For example:

- Communication tools like video conferencing and messaging platforms foster effective collaboration and connectivity among team members regardless of physical distances.
- Cloud-based solutions contribute to remote work by providing easy access to shared documents and resources. This ensures that employees can collaborate on projects and access up-to-date information from any location with internet connectivity.
- Technologies such as data collection tools and data analysis facilitate efficient and seamless collaboration across geographical distances.

These tools enable remote teams to gather, organize and analyse data without the need for physical proximity.

- Programming languages and tools empower individuals to code, develop and troubleshoot from any location.
- Technologies supporting virtualization and cloud computing enable the deployment and testing of software in remote environments.

These technological advancements help to break down geographical barriers, creating a flexible and interconnected work environment that enhances productivity in remote settings. Emerging technologies may continue to further disrupt the ability to perform tasks from anywhere; however, this paper does not model this specific impact.

Table 1 below provides examples of tasks with an explanation of whether they can be performed from anywhere, and the technologies that enable this to happen. It shows how technologies such as cloud-hosted databases and collaboration tools enable many tasks to be performed from anywhere in the world, while other tasks such as advising clients on products in-store or preparing meals still require a physical presence.



TABLE 1 | Example tasks and their ability to be performed from anywhere

Task	Affiliated jobs	Can be performed anywhere?	Task performance and supporting technologies
Advise clients in areas such as compensation, employee healthcare benefits, the design of accounting or data processing systems, or long-range tax or estate plans.	Financial managers, accountants and auditors	Yes	This task can be performed from anywhere with access to virtual meeting solutions. This is enabled by communication and collaboration tools (e.g. video conferencing, collaborative whiteboards).
Collect and analyse data on customer demographics, preferences, needs and buying habits to identify potential markets and factors affecting product demand.	Market research analysts and marketing specialists, marketing managers	Yes	This task requires analytical and business writing skills that can be performed anywhere using data collection tools (surveys and questionnaires, web and social media analytics), data storage and management (cloud-based storage) and data analysis (data visualization tools).
Confer with clients to discuss and determine layout design.	Graphic designers	Yes	This task can be performed anywhere with access to virtual meeting solutions using communication and collaboration tools (e.g. video conferencing, collaborative whiteboards), collaborative design software, file sharing and cloud storage.
Provide clear, detailed descriptions of website specifications, such as product features, activities, software, communication protocols, programming languages, and operating systems software and hardware.	Software developers	Yes	This task can be performed from anywhere with access to electronic messaging solutions using communication and collaboration tools (e.g. messaging platforms, video conferencing, collaborative whiteboards) and programming languages (tools for software development).
Review legal publications and perform database searches to identify laws and court decisions relevant to pending cases.	Paralegals and legal assistants	Yes	This task can be performed from anywhere with an access to online legal research databases.
Seek and provide information to help companies determine their position in the marketplace.	Marketing managers	Yes	This task can be performed from anywhere with access to online research databases using market research tools (e.g. survey and questionnaire tools, data analytics platforms, competitor analysis tools).
Decrease value of policy when risk is substandard and specify applicable endorsements or apply rating to ensure safe, profitable distribution of risks, using reference materials.	Insurance adjusters, examiners and investigators	Yes	This task can be performed from anywhere with access to relevant financial and insurance tools using risk assessment software, reference materials and knowledge databases.
Design, revise and/or implement accounting systems and procedures in accordance with accounting principles and theories.	Financial managers	Yes	This task can be performed from anywhere with access to accounting systems, using spreadsheet software, enterprise resource planning (ERP) software and cloud-based solutions.
Apply fluorides or other cavity preventing agents to arrest dental decay.	Dental nurses	No	This task requires direct human interaction in a defined location.
Clean building floors by sweeping, mopping, scrubbing or vacuuming.	Caretakers	No	This task requires manual activities in a defined location.
Heat and serve prepared foods.	Air travel assistants, waiters and waitresses, caretakers	No	This task requires manual activities in a defined location.
Answer customers' questions about merchandise and advise customers on merchandise selection.	Shelf fillers, stock control, clerks and assistants	No	This task requires on-site responsiveness in a defined location.
Answer alarms and investigate disturbances.	Elementary security occupations N.E.C.* , security guards and related occupations	No	This task requires visual and on-site monitoring of a defined location.
Arrange buying parties and solicit sponsorship of such parties to sell merchandise.	Market and street traders and assistants	No	This task requires manual activities in a defined location.

\*Not elsewhere classified

Such task-based analysis can be aggregated into an assessment of whether the entire job can be performed from anywhere: its “remotability”. Below are some examples from three types of jobs. All tasks from the first example, accountants, can be performed from anywhere, making this a potentially global digital job. The second example meanwhile, dental nurses, shows a job in which no task can be performed remotely at present, and which is unlikely

to be adapted for remote working in the near term. Finally, the third example, patient representatives, shows a role in which most tasks can be performed from anywhere, but which involves several that still require a specific location. Subsequently, while patient representatives are not currently considered global digital jobs, the way these jobs are performed could change, thereby increasing their likelihood of becoming global digital jobs in the future.

TABLE 2

**Accountants and auditors**

Task	Potential for remotability
Advise clients in areas such as compensation, employee healthcare benefits, the design of accounting or data processing systems, or long-range tax or estate plans.	High
Advise management about issues such as resource utilization, tax strategies and the assumptions underlying budget forecasts.	High
Analyse business operations, trends, costs, revenues, financial commitments and obligations to project future revenues and expenses or to provide advice.	High
Appraise, evaluate and inventory real property and equipment, recording information such as the description, value and location of property.	High
Compute taxes owed and prepare tax returns, ensuring compliance with payment, reporting or other tax requirements.	High
Develop, implement, modify and document record-keeping and accounting systems, making use of current computer technology.	High
Develop, maintain and analyse budgets, preparing periodic reports that compare budgeted costs to actual costs.	High
Establish tables of accounts and assign entries to proper accounts.	High
Maintain or examine the records of government agencies.	High
Prepare adjusting journal entries.	High
Prepare forms and manuals for accounting and bookkeeping personnel and direct their work activities.	High
Prepare, examine or analyse accounting records, financial statements or other financial reports to assess accuracy, completeness and conformance to reporting and procedural standards.	High
Provide internal and external auditing services for businesses or individuals.	High
Report to management regarding the finances of establishment.	High
Review accounts for discrepancies and reconcile differences.	High
Survey operations to ascertain accounting needs and to recommend, develop or maintain solutions to business and financial problems.	High

TABLE 3 | **Dental nurses**

Task	Potential for remotability
Administer local anaesthetic agents.	Low
Apply fluorides or other cavity-preventing agents to arrest dental decay.	Low
Chart conditions of decay and disease for diagnosis and treatment by dentist.	Low
Clean calcareous deposits, accretions and stains from teeth and beneath margins of gums, using dental instruments.	Low
Conduct dental health clinics for community groups to augment services of dentist.	Low
Examine gums, using probes, to locate periodontal recessed gums and signs of gum disease.	Low
Expose and develop x-ray film.	Low
Feel and visually examine gums for sores and signs of disease.	Low
Feel lymph nodes under patient's chin to detect swelling or tenderness that could indicate presence of oral cancer.	Low
Maintain dental equipment and sharpen and sterilize dental instruments.	Low
Make impressions for study casts.	Low
Place and remove rubber dams, matrices and temporary restorations.	Low
Provide clinical services or health education to improve and maintain the oral health of patients or the general public.	Low
Record and review patient medical histories.	Low
Remove excess cement from coronal surfaces of teeth.	Low
Remove sutures and dressings.	Low

TABLE 4 | **Patient representatives**

Task	Potential for remotability
Analyse patients' abilities to pay to determine charges on a sliding scale.	High
Collect and report data on topics such as patient encounters or inter-institutional problems, making recommendations for change when appropriate.	High
Coordinate communication between patients, family members, medical staff, administrative staff or regulatory agencies.	High
Develop and distribute newsletters, brochures or other printed materials to share information with patients or medical staff.	High
Explain policies, procedures or services to patients using medical or administrative knowledge.	High
Identify and share research, recommendations or other information regarding legal liabilities, risk management or quality of care.	High
Interview patients or their representatives to identify problems relating to care.	High
Investigate and direct patient inquiries or complaints to appropriate medical staff members and follow up to ensure satisfactory resolution.	Low
Maintain knowledge of community services and resources available to patients.	High
Provide consultation or training to volunteers or staff on topics such as guest relations, patients' rights or medical issues.	High
Read current literature, talk with colleagues, continue education or participate in professional organizations or conferences to keep abreast of developments in the field.	High
Refer patients to appropriate healthcare services or resources.	Low

## Jobs with the potential to be digital and global today

Following the methodology set out above leads to a full analysis of which jobs have the potential to be performed remotely and are therefore open to becoming global digital jobs. From among the 5,400 jobs analysed, 218 fall into this category.

This section identifies the 30 most common of these jobs and evaluates each according to the outlook for future demand and wage levels.

Tables 5, 6 and 7 present these jobs in 2024, categorized by relative wage levels and showcasing their likelihood for growth over the next five years. Each table is followed by an analysis of groups of related global digital jobs.

TABLE 5 2024 higher-wage global digital jobs and outlook

Higher-wage jobs	Outlook
Software developers	Growth
Information security analysts	Growth
Financial risk specialists	Growth
Network and computer systems administrators	Growth
Financial managers	Stable
Lawyers	Stable
Marketing managers	Stable
Accountants and auditors	Stable
Business operations specialists, all other	Stable
Personal financial advisors	Stable
Insurance underwriters	Decline
Operations research analysts	Decline

**IT professionals** are among the fastest-growing roles,<sup>14</sup> as employers seek to capitalize on technological developments. With the World Economic Forum's *Pushing Through Undercurrents* paper<sup>15</sup> identifying technology talent gaps as one of the greatest threats to the financial system, enhancing the accessibility of computer network specialist and cybersecurity jobs could have both job creation and resilience benefits. As frequently well-paid, growing roles, these represent an opportunity for global talent. Similarly, with high demand for workers with the relevant skills, companies could benefit by opening their recruitment to global talent pools.

**Risk management jobs** also feature as relatively high-wage, growing roles. Other risk-related professions, such as claims adjusters, feature in Table 6 as mid-wage, declining roles. With the World Economic Forum's *Global Risks Report 2023* highlighting risks such as climate change impacts, geo-economic confrontation, involuntary migration and cybersecurity threats, the demand for risk professionals is expected to remain high. It is possible, however, that the outlook for specific types of roles and ways of working may be significantly influenced by localized needs and technology developments.

TABLE 6 | 2024 mid-wage global digital jobs and outlook

Mid-level wage jobs	Outlook
Securities, commodities and financial services sales agents	Growth
Financial specialists, all other	Growth
Public relations specialists	Growth
Cost estimators	Growth
Graphic designers	Growth
Human resources specialists	Stable
Market research analysts and marketing specialists	Stable
Paralegals and legal assistants	Stable
Eligibility interviewers, government programmes	Stable
Compensation, benefits and job analysis specialists	Stable
Claims adjusters, examiners and investigators	Decline
Bookkeeping, accounting and auditing clerks	Decline
Loan interviewers and clerks	Decline
Legal secretaries and administrative assistants	Decline
Payroll and timekeeping clerks	Decline

**Marketing, advertising and communication** roles feature most commonly in the mid-wage section of the potential jobs of the global digital workforce, including market research analysts and marketing specialists, public relations specialists and graphic designers. Marketing managers, however, feature in the high-wage section, while telemarketers generally have lower wages. With mixed growth outlooks for these roles, greater flexibility in location could allow companies to access a broader range of talent.

Roles related to the **accounting, legal and finance professions** are common in Tables 5 and 6. These jobs present a mixed opportunity with roles such as bookkeeping and other clerical positions, which are often lower-paying roles, in decline.<sup>16</sup> Meanwhile, many accounting, legal and finance professionals are well paid and finance roles in particular are expected to grow in the coming years. The key requirements of these roles may change significantly, however, especially for roles such as insurance underwriters, which are expected to be significantly augmented by generative AI.<sup>17</sup>

TABLE 7 | Lower-wage global digital jobs and outlook

Lower-wage jobs	Outlook
Customer service representatives	Decline
Bill and account collectors	Decline
Telemarketers	Decline
<b>Customer service representatives</b> are the most common current roles in the global digital workforce. This occupation is transforming towards being more digitally delivered and service-oriented, enabling a global distribution of workers that can intervene anytime and anywhere to assist customers. These roles are, however, expected to decline. <sup>18</sup> For the remaining, more specialized roles, especially those augmented and enhanced by AI,	there is an opportunity to progress towards higher wages. This aligns with findings from Brynjolfsson, Li and Raymond in their paper entitled <i>Generative AI at Work</i> , <sup>19</sup> who note that the integration of AI assistance is associated with enhancements in customer sentiment, elevated levels of employee retention, and enhanced learning experiences among workers.

## Jobs with the potential to be digital and global in 2030

To estimate what additional roles may be conducive to becoming digital and global by 2030, this

analysis examines roles at the task level and removes tasks that are expected to be automated by emerging technologies with a predictable impact on workforce practices. In addition to the global digital jobs of today, Table 8 sets out the jobs expected to join the list in the near future.

TABLE 8

### Global digital jobs in 2030

Additional global digital jobs in 2030	Outlook
<b>Higher-wage jobs</b>	
Medical and health services managers	Growth
Computer science teachers, post-secondary	Growth
Emergency management directors	Growth
Various specialization consultants	Stable
Telecommunications managers	Stable
<b>Mid-level wage jobs</b>	
Music directors and composers	Growth
Self-enrichment teachers	Growth
Editors	Stable
Writers and authors	Stable
Executive secretaries and executive administrative assistants	Decline
Production, planning and expediting clerks	Decline

Several new job groupings emerge in Table 8, with increasing opportunities for training and development professionals, media professionals and various consultancy roles. With teaching shortages in many parts of the world, increasing the accessibility of these roles could have broad social benefits. Various specialization consultants is a bespoke category that represents several professional services roles such as change consulting managers, strategy consulting managers and learning and development consultants.

Unsurprisingly, jobs conducive to becoming global and fully digital now and in 2030 are heavily skewed towards knowledge work rather than roles that require physical engagement. It is possible that future technology developments and resulting shifts in occupational structure and demand could further

broaden these roles. Findings from Capgemini's *The Future of Learning is Immersive*<sup>20</sup> suggest that immersive technologies such as digital twins will create new opportunities to bridge physical and digital worlds. These technologies are not likely to be sufficiently adopted to make roles wholly remote in 2030; however, this research suggests that, combined with metaverse development, additional roles such as operational training, technical training and even soft skills training, could become partially remote. In contrast, many social jobs, such as those in care and healthcare, are expected to remain location-dependent. With shortages of these professionals in many parts of the world, the longer-term trends point to more equalization of wages for these traditionally lower-paid roles as knowledge work becomes more global and remote.

# Current and potential future size of global digital jobs

In 2024 there are 73 million global digital jobs, they are expected to grow to 92 million by 2030.

The previous section identifies the jobs that are conducive to becoming fully remote and potentially global. This section estimates the potential number of such jobs today and in 2030.

The potential global and digital jobs identified above are identified according to the O\*NET SOC taxonomy. To estimate the number of these jobs globally, they were converted into the 43 ISCO sub-major groups, as the ILO provides global data at this level. United States Bureau of Labor Statistics (US BLS) data, cross-walked to ISCO sub-major groups, is used to understand the proportion of each sub-major group that works in a potential digital global job (in the US).

These proportions were then applied to the ILO global data to estimate the total number of these jobs in 2024. Currently, it is estimated that there are about 73 million people working in these potentially digital and global jobs out of the total formal global workforce of 820 million represented in the ILO's occupation employment statistics. Figure 2 shows how these are distributed among the groups of jobs identified in the previous section. Accounting, legal and finance professionals make up just under 43% of these jobs currently, while customer service representatives, marketing, advertising and communication professionals, and IT professionals each make up around 10% of total jobs.

FIGURE 2

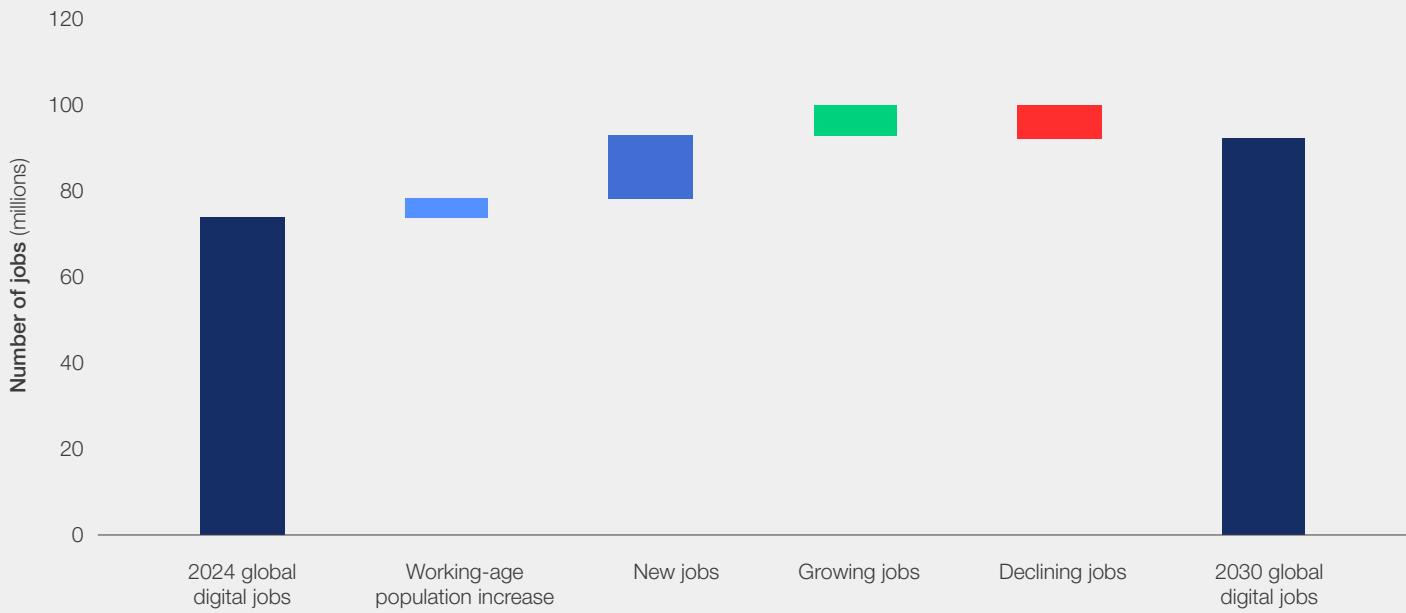
2024 job groupings



By 2030, three key factors will change the size and make-up of these jobs: the expected working-age population will grow (the baseline assumption is that these jobs will increase in line with the working-age population); new jobs will become part of the potentially digital and global jobs; and some roles

will grow and decline due to other technological, sustainability and economic trends. Figure 3 illustrates how these three factors are expected to change the number of these jobs, resulting in a total size of around 92 million in 2030 – an increase of around 25%.

FIGURE 3 Evolution of the global digital workforce



The distribution of potentially digital global jobs in 2030 is set out in Figure 4. New global digital jobs represent over half of the total growth in the global digital workforce, increasing it by 15 million. Most of this

growth comes from relatively high-wage jobs (eight million) such as telecommunications managers and financial managers, while medium-wage jobs such as editors, writers and authors contribute seven million.

FIGURE 4 2030 job groupings



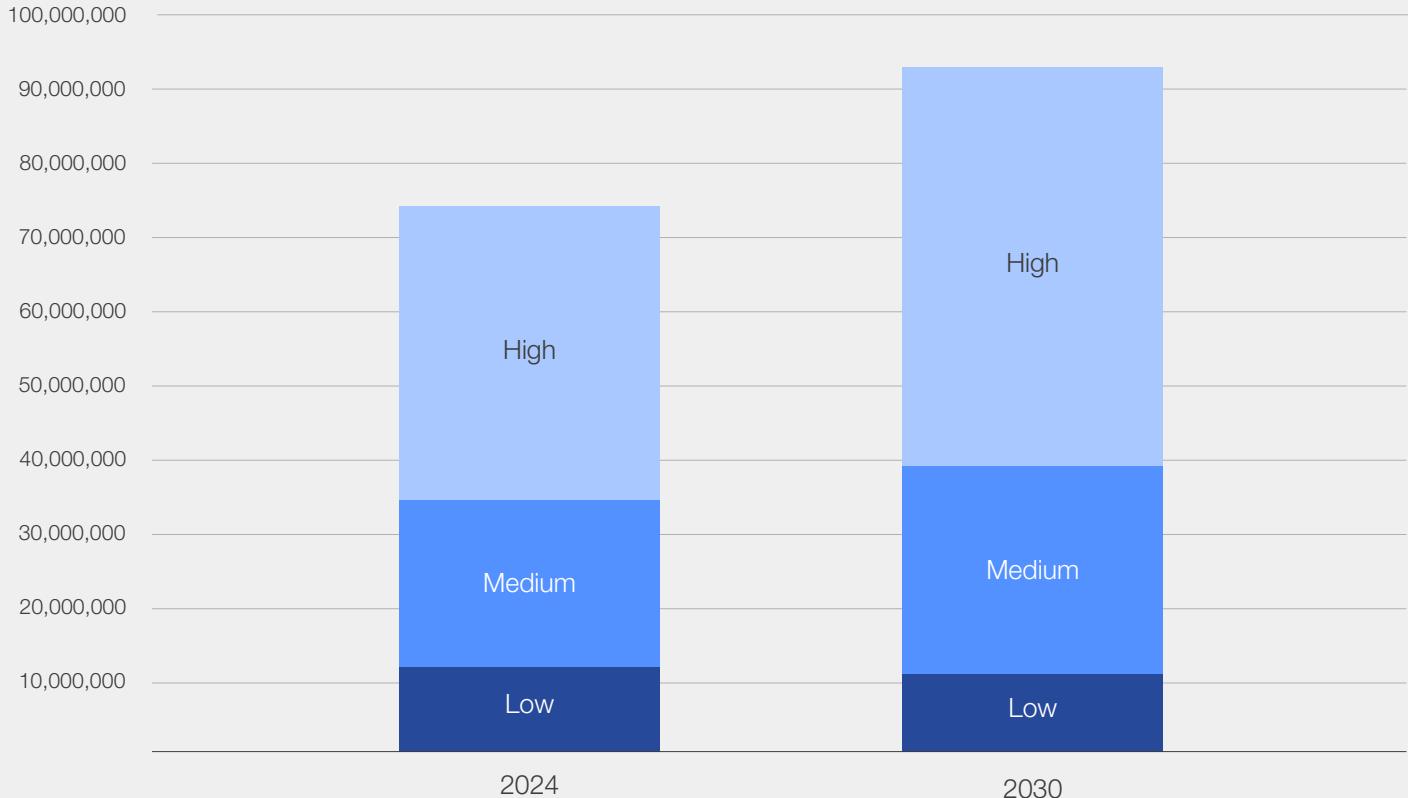
Given the overall jobs outlook,<sup>21</sup> there is expected to be job churn in potentially digital global jobs too, causing a slight net decrease of under 1%. This is due to growing jobs increasing by just under 7 million and declining jobs decreasing by just over 7 million.

The changing make-up of these jobs, driven by expected job growth and decline, will tilt the balance towards higher-wage jobs. Specifically, a net increase of 14 million relatively high-wage

jobs is expected – such as software developers, information security analysts and financial risk specialists. Most of the net reduction in jobs, meanwhile, comes from relatively lower-wage jobs, which contribute a net decrease of one million. These include jobs such as bill and account collectors, customer service representatives and telemarketers. The changing distribution of workers across wage levels is set out below in Figure 5.

FIGURE 5

**Jobs of the global digital workforce by wage levels**



# Conclusion

Global digital work presents an opportunity to utilize talent around the world, enabling employers to broaden their recruitment pools and countries to enhance their output, whether through capitalizing on demographic dividends or widening accessibility of good jobs. This paper has discussed the types of jobs that could be global and digital, estimated their numbers and analysed how they could change over time.

These shifts can also carry risks. Previous waves of globalization impacted manufacturing workers in advanced economies by moving such jobs to areas with cheaper labour and production costs. The potential for globally distributed service work creates opportunities for workers around the world, but also brings risks for those that stand to lose from the delocalization of such work. Tax and labour laws would also need adjustments to enable such work.

Creating a global digital workforce that is thriving, safe and inclusive requires action from employers, countries and individuals. For example, for countries to enable their people to be part of the global digital workforce, they must ensure the necessary infrastructure exists to perform these roles. Furthermore, educational and vocational training programmes will be crucial to ensuring that workers have the right skills for the job opportunities that will be created.

For global employers, meanwhile, workforce management practices need to be up to date, including proactive talent management and expanding the boundaries of recruitment pools. Cultural shifts to embrace hybrid operating models for all types of workers, modernizing management and trust systems, and technological literacy and acceptance, will be crucial for business model success. Promoting fair wages and responsible technology use, providing flexibility and protection for all workers, ensuring health and well-being, driving diversity, equity and inclusion, and fostering a culture of continuous learning and employability would all need to be conducted in new ways for a global digital workforce. The lessons from the shift to remote work during the pandemic and its lasting impacts, as summarized by Barrero et al,<sup>22</sup> provide insights into how a rearrangement of workers' work location impacts areas such as working arrangements in general, labour costs and bargaining models or innovation. Factors such as population density, sex and age are inherently linked with the makeup of the remote workforce – will they also impact the makeup of a digital workforce?

The World Economic Forum and Capgemini will collaborate throughout 2024 to continue this series and will follow up with further analysis on the risks, opportunities and strategies surrounding the facilitation of an effective, well-managed and equitable transition to a global digital workforce.

# Appendix: Methodology

## Defining the scope of global digital jobs

People interpret global and digital work in broad ways, from offshoring to working from home. This paper is interested in the growing ability for people to work from anywhere as technology and digital accessibility continues to advance. This ability to work from anywhere is defined as “jobs that can be distributed across borders in different geographies, empowered by digital tools to perform their tasks, connect, and communicate globally”. The paper was produced in collaboration with Capgemini and supported by data from Pearson’s Faethm skills intelligence solution on jobs where all component tasks can be executed at a distance with the appropriate technological capability and connectivity.

## Defining global digital jobs today

To identify these jobs in 2024, Faethm by Pearson used its database of jobs across 20 countries (including Germany, India, Mexico, South Africa and the UK) and applied a natural-language-processing neural network that reads the text in a task and predicts whether a task can be completed remotely (away from the office or work site). The model was trained on over 2,200 manually annotated tasks. Manual annotation was completed through desktop research by the Faethm by Pearson research team. Once trained, the model predicted whether each of Faethm’s database of 26,000 tasks across 5,400 jobs could be completed remotely or not (binary classification). This provided a long list of jobs that can be performed from anywhere. The report displays the 30 most common jobs, based on current employment, using US Bureau of Labor Statistics data.

## Defining global digital jobs in 2030

To identify these jobs in 2030, Faethm’s assessment of which tasks will be automated by emerging technologies in the next seven years is used. Since these tasks will be automated, they will no longer form a part of these jobs, so they were removed from the analysis. The analysis then identifies jobs where more than 95% of work time is spent on tasks that are expected to be possible to perform from anywhere. The reason for the reduction to 95% is that emerging technologies may be partially adopted by 2030; subsequently, the relevant tasks will only be automated in a portion of the jobs. This analysis identified 11 additional potential job types that could be global and digital.

## Classifying global digital jobs by relative wage levels

We classified these jobs as relatively high-, medium- or low-wage based on each job’s median wage relative to other jobs, using data from the US Census Bureau. Each job classification represents approximately one third of the US population.

The three wage categories are:

- Lower-wage jobs (less than \$42,500)
- Mid-level wage jobs (\$42,500-75,000)
- Higher-wage jobs (more than \$75,000)

**Source:** US Census Bureau, *American Community Survey 1-Year Estimates, Earnings in the Past 12 Months (in 2022 Inflation-Adjusted Dollars), Table ID: S2001*, 2022.

## Estimating the size of global digital jobs today

To estimate the size of these jobs globally today, the paper calculates the proportion of ISCO sub-groups that are represented by such jobs using US Bureau of Labor Statistics data and applying a crosswalk to ISCO sub-groups. The paper then estimates the global number of such jobs by applying these proportions to the ILO’s employment data. This is a high-level estimate and does not account for geographical differences in the adoption of technologies that enable remote work and therefore does not customize their “remotability”.

## Estimating the size of global digital jobs in 2030

To estimate the size of the workforce in 2030, three assumptions and adaptations were applied:

- Working-age population growth: The working-age population is expected to increase by approximately 6.4% from 2024 to 2030, based on UN projections.
- Changing patterns of growth and decline: the net growth expectation from the World Economic Forum’s *Future of Jobs Report 2023* was applied – extrapolated to 2030.
- New jobs become “remotable”: as explained above in “Defining global digital jobs in 2030”.

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# Endnotes

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