In collaboration with
Capgemini

WORLD ECONOMIC FORUM

Realizing the Potential of Global Digital Jobs

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Foreword

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The rapid adoption of frontier technologies, the green transition and macroeconomic trends are disrupting global labour markets. In particular, broadening digital access and technologies, such as collaboration software and cloud-based knowledge management, have enabled more work and jobs to be done fully remotely. These global digital jobs pose an opportunity for both the labour markets in advanced economies that have been exceptionally tight and for developing economies that face higher unemployment rates through connecting talent and job opportunities across borders.

There is potential for more technology-driven digital collaboration across global talent value chains, where collaborators can be independent of location and time. Global digital jobs, if managed well, have the potential to drive economic growth, create new opportunities and improve the lives of people around the world. However, realizing this potential will require concerted efforts from all stakeholders to address the risks, challenges and barriers involved in this process.

This paper is a direct follow-up to the previous white paper in this series, *The Rise of Global Digital Jobs*, published in January 2024. The previous paper analysed which jobs are most conducive to fully remote work. It found a wide range of jobs across the wage spectrum, including roles in accounting, finance, customer service, marketing and communication, to be suitable for remote work. The paper found that today, these roles represent 73 million workers; by 2030, the number is expected to rise to around 92 million.

This white paper further details in which countries specifically the opportunity for global digital jobs may be pertinent by analysing labour shortages and the supply of skills between countries. It also explores the barriers (such as labour and tax policies) and risks (such as low job quality and technological breakdown) associated with developing a global digital workforce and proposes a solution framework to address these. This white paper is therefore intended as a toolkit for countries and businesses to enable stakeholders (business leaders, policy-makers and workers) to make the promise of global digital jobs a reality. Policy-makers, employers and workers should proactively address barriers and risks to develop an inclusive, safe and thriving global digital workforce.

We are deeply grateful to the partners and constituents of the Centre for New Economy and Society for their leadership of the jobs agenda and the collaboration with Capgemini on this paper. The findings of this paper will serve as a key tool for the World Economic Forum's Jobs Initiative. This includes the Jobs Consortium, a global coalition of ministers and chief executive officers that promotes a better future of work through job transitions and job augmentation. Additionally, the Jobs Accelerators, which are country-specific platforms, facilitate public-private collaboration to increase job creation and improve job quality. Lastly, the Good Work Alliance, a corporate collaboration network, which aims to enhance global job quality.

Executive summary

By managing risks and barriers, global digital jobs can improve labour market outcomes.

Global digital jobs, which can be performed from anywhere, can address both skills and labour shortages, as well as underemployment issues for countries and employers. This paper follows *The Rise of Global Digital Jobs* white paper, which highlighted how demographic shifts will move the world's workforce towards lower-income countries. It identified global digital jobs as an opportunity for employment in these countries while addressing labour shortages in higher-income countries. The paper analysed the jobs most conducive to fully remote work and identified 92 million potential global digital jobs in 2030. This white paper helps make global digital jobs a reality by identifying where skills shortages and excesses exist and providing a framework to help companies or countries overcome the barriers and risks of a global digital workforce.

This paper finds that in lower-middle-income countries especially, a surplus of skilled and educated workers exists. These workers could help fill labour shortages experienced in high- and upper-middle-income countries through global digital jobs. For example, Hungary, Germany and Belgium have relative shortages in technology, creativity and problem-solving skills. Meanwhile, Côte d'Ivoire, Ghana and Jordan have workers with these skills and labour surpluses. This paper finds that there is a match of the supply and demand of available workers with specific skills in the world, and that global digital jobs could enable these job opportunities and people to come together.

This paper presents a global digital jobs framework that identifies the key barriers and risks involved in establishing a global digital workforce for both companies and countries, alongside the solutions and mitigation actions that can alleviate them. Key barriers include:

- Technological infrastructure, including hardware and software, and access to affordable high-speed internet. Countries can reduce this barrier by investing in connectivity – drawing on public-private partnerships where needed to unlock finance and expertise. Companies can invest in cloud-based solutions and virtual desktop infrastructure.

- Policies and perceptions, including work and tax regulations and perceptions of skills availability. Companies and countries can work together to ensure simplified tax and other regulation settings, while employers of record can help facilitate successful cross-border compliance.

- Workforce skills need to incorporate relevant skills for global and digital work environments. Investments in both hard and soft skills, alongside ensuring the broad availability of high-quality education, can help ensure workforces are equipped for global digital jobs.

Key risks inherent in a global digital workforce include:

- Technology malfunctions and cybersecurity: Investment in high-quality technology and prioritizing cybersecurity awareness through broad and targeted education and training are key defences for these risks.

- Quality of work conditions: With jobs being performed at a distance and in countries with differing economic positions, isolation and wage unfairness can harm employees' well-being and effectiveness. Focused initiatives for career support, community engagement and belonging can help mitigate feelings of isolation. Standardizing wage practices, while allowing flexibility for local market conditions and targeting talent over cost savings, can help address wage concerns.

- Performance management systems: With cultural differences and limited face-to-face engagement, employers need to prioritize cultural inclusion and more targeted check-in tools alongside regional connection activities where possible.

The framework has been tested and enhanced through six public and private sector case studies that bring specific experiences incorporating global digital jobs.

By embracing the opportunity to use a worldwide talent pool through global digital jobs, companies and countries can enhance talent availability in tight labour markets while supporting economic development in areas with labour surpluses. Leaders in companies and countries alike should prioritize broad access to high-quality technology and focus on targeted skills development to ensure global digital jobs lead to global prosperity.

Introduction

Global digital jobs can enhance labour supply and demand matching across countries.

188%

rise in job vacancies in upper-middle-income and high-income countries over the last decade.

In the white paper *The Rise of Global Digital Jobs*, the World Economic Forum, in collaboration with Capgemini, explored the opportunity for global digital jobs to enhance talent use around the world.

The paper identified that growing working-age populations in lower-income countries and ageing working-age populations in higher-income countries would lead to a global shift, and in two decades, 60% of the global working-age population will live in lower-income countries. This will compound current labour market outcomes in these countries. According to data from the International Labour Organization (ILO), a labour surplus exists in lower-middle-income and low-income countries. In contrast, high-income and upper-middle-income countries face a shortage. Over the last ten years, low-income and lower-middle-income countries have seen increases in available labour of 8.5%. Over the same period, the proportion of people available for or seeking work in high-income and upper-middle-income economies has decreased by 4.0% and 3.6%, respectively. Moreover, based on data from the Organisation for Economic Co-operation and Development (OECD) and the European Union, there has been a 188% rise in job vacancies in upper-middle-income and high-income countries during the same period. This illustrates increasing labour shortages in upper-middle and high-income countries, while the amount of people available to work continues to rise in lower-middle and low-income countries.

These diverging labour market trends, alongside technological development and a growing acceptance of online work, create opportunities for global digital jobs – jobs that can be performed in their entirety from anywhere. The previous paper analysed which jobs would be conducive to remote work through analysis on a task level and identified job roles ranging from software development to customer service, spanning a wide range of skills and income levels. As technology advances further and connectivity improves, digital work opportunities continue to grow. The paper found that the number of global digital jobs is expected to rise from 73 million today to around 92 million by 2030. These jobs will tend towards higher-paying roles through expected growth in higher-wage global digital jobs, decline in lower-wage global digital jobs and technology enabling more high-income jobs to be performed from anywhere.

In order to realize this potential of global digital jobs, policy-makers and leaders must prepare by adopting strategies that enable an equitable and successful global digital workforce. This white paper, therefore, builds on this work and provides detailed insights into which countries offer opportunities for global digital jobs and which countries possess the talent necessary to seize these opportunities. It also aims to identify the barriers and risks that a global digital workforce faces and propose solutions and mitigation actions that companies and governments can use.

The first chapter of this paper uses global education and skills data to illustrate economies facing labour shortages and surpluses, including examples of countries with skill availability imbalances. The second chapter builds on literature research and case studies to present a framework to support both countries and companies in using a global digital workforce. This framework offers an overview of barriers and solutions for implementing a sustainable global digital workforce, along with potential risks and mitigation actions. The third chapter provides an overview of case studies that support and illustrate this framework.

1 Identifying where the greatest global digital job opportunities exist

The global pool of digital talent enables economies to match labour shortages with surplus talent.

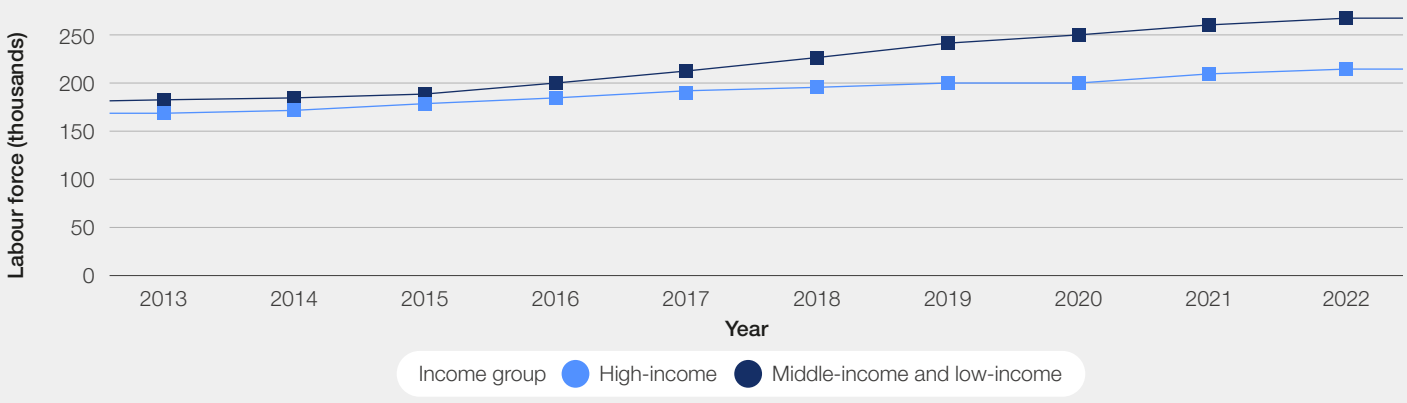
The white paper *The Rise of Global Digital Jobs* identified the potential opportunity global digital jobs provide for addressing labour shortages in some countries and labour surpluses in others. This chapter illustrates in greater detail the type of labour shortages countries face and the countries where workers with the relevant skills would be available. To do this, the paper uses skills and educational attainment levels to determine the range of jobs an individual can effectively undertake, providing insight into a population's proficiency in the skills required to perform digital jobs.

1.1 The world's highly educated people become more prevalent in lower-income economies

More than 60% of the global digital jobs identified in *The Rise of Global Digital Jobs* – such as financial managers, information security analysts, lawyers and graphic designers – require an advanced education level (Bachelor's degree and above), according to the Occupational Information Network (O*NET) classification[1] and the International Standard Classification of Education (ISCED).[2] While levels of formal education are no guarantee of skill levels, the number of people with advanced education can provide a general trajectory of how labour markets globally are developing the relevant skills for digital jobs.

Analysis of data from the ILO reveals a significant trend: there is an overall upward trajectory in the number of people with advanced education globally. This is particularly true for low-, lower-middle and upper-middle-income economies. Ten years ago, half of the world's people with advanced degrees lived in these countries. In 2022, 60% of people with advanced education live in these countries. This signals that the balance of the world's more highly educated people and those with skills relevant to global digital jobs has already moved away from high-income countries – a trend that will continue through demographic changes.

FIGURE 1 **Labour force over time for advanced degrees**



Source: ILOSTAT explorer.

1.2 Matching country-level demand and supply of skills and talent through global digital jobs

The jobs that are conducive to being performed from anywhere range from software development to customer service. The skills that are required to perform these roles, based on the World Economic Forum's Global Skills Taxonomy and O*NET's description of skills, are mostly creativity and problem-solving, management skills, self-efficacy, technology skills and working with others.

The World Economic Forum's Executive Opinion Survey aggregates the views of over 10,000 executives on the availability of people with various skills across countries – ranking from 1 (lowest skills availability) to 7 (highest skills availability). Table 1 sets out the relative skills availability scores by income group – this table is reproduced in Appendix 2 for every country represented in the survey results. The analysis reveals that lower-middle-income economies demonstrate comparable or superior relevant skill availability compared to upper-middle-income economies and are relatively close to high-income economies.

TABLE 1 **Perceived availability of skills**

Income group	Creativity and problem-solving	Management skills	Self-efficacy	Technology skills	Working with others
High-income	4.3	4.7	4.7	5.1	5.0
Upper-middle-income	4.3	4.1	4.1	4.3	4.5
Lower-middle-income	4.2	4.2	4.2	4.4	4.5
Low-income	4.1	4.1	4.0	3.9	4.5

Note: Colour-coded based on average response from 1 (not at all) to 7 (to a great extent)
Source: World Economic Forum, Executive Opinion Survey.

Combining this data at a country level with data about the number of people available or seeking work provides deeper insights into how global digital jobs could alleviate particular skill availability pressure points. Table 2 identifies a selection of countries with specific skills shortages relevant to global digital jobs and the countries where these skills are more likely to be readily available. Countries with skill shortages are defined as those with labour underutilization rates below the global median of 8.5% and an average skill availability below 4.5. Similarly, countries with skill surpluses are defined as those with scores above 4.4 in the survey and labour underutilization rates above the global median of 8.5%.

TABLE 2 | **Skill shortage and surplus**

Countries with skill shortage	Survey score	Skills	Survey score	Countries with skill surplus
Germany	4.3	Creativity and problem-solving	5.8	Jordan
Belgium	4.3		5.3	Saudi Arabia
Thailand	4.2	Management skills	5.5	Jordan
Poland	4.1		5.3	Saudi Arabia
El Salvador	3.7		5.1	Botswana
Thailand	4.2	Self-efficacy	4.9	Colombia
Romania	4.1		4.7	Côte d'Ivoire
Czechia	4.1		4.6	Zimbabwe
Hungary	4.3	Technology skills	5.5	Saudi Arabia
Mauritius	4.2		5.4	Jordan
Guatemala	4.1		4.8	Senegal
Romania	3.9	Working with others	5.1	Côte d'Ivoire
Bolivia	3.9		5	Ghana
Hungary	3.7		4.8	Rwanda

Source: World Economic Forum, Executive Opinion Survey; ILO.

Examining the data more closely shows that Belgium's executives may find it relatively challenging to find people with creativity and problem-solving skills, scoring 4.3. At the same time, Saudi Arabia is more likely to have a surplus of those skills, with a score of 5.3. Similarly, with a score of 4.2, Thailand can look to Jordan, which has a score of 5.5, to fill its management skills gap. Executives from other countries perceive an issue with finding labour with self-efficacy skills; for example, Czechia scored a 4.1 in the survey. Czechian executives could tap into Côte d'Ivoire's labour market, which has scored 4.7, to alleviate labour sourcing issues. Côte d'Ivoire's labour market can also provide Poland with labour skills that can help them work with others better, with each economy scoring 5.1 and 4.4, respectively. Economies classified as lower-middle-income, like Bangladesh, can also use surplus labour skilled in technology from other countries like Kenya to boost their industry. These examples demonstrate how global digital jobs can enable workers in countries with labour excesses to fulfil the skills needs of those with difficulties accessing the skills they need.

2 A framework for global digital jobs

The global digital jobs framework identifies key barriers, risks, solutions and mitigation actions to develop sustainable global digital workforces.

This chapter outlines a global digital jobs framework to provide a comprehensive guide for countries and companies aiming to realize the potential of a global digital workforce. The framework sets out four categories: barriers, potential solutions, risks and potential mitigation actions. By understanding and navigating these factors, countries and companies can unlock the benefits of a global digital workforce.

This framework was developed through literature research and targeted interviews with companies and countries with specific experiences incorporating global digital jobs. These interviews served as case studies to both probe and enrich the framework. Figure 2 shows the global digital jobs framework. Sections 2.1 and 2.2 discuss the elements of the framework in further detail.

FIGURE 2 **Global digital jobs framework**

2.1 Barriers and solutions to establishing a global digital workforce

Three key barriers limit countries' and companies' ability to establish global digital workforces: technology, policies and skills. This section examines these dimensions in more detail to explain why and in what regard they pose a barrier and what solutions are available to overcome them.

Technological infrastructure

Within the technological barrier, two key constraints exist: (1) lack of infrastructure for hardware and software, and (2) insufficient high-speed internet access and connectivity.

(1) Lack of infrastructure for hardware and software

Organizations and their remote workers require suitable IT infrastructure to implement digital work, including hardware and software, such as team-sharing and communication tools.[3] Insufficient hardware and software provisions impede the productivity of remote workers and limit the potential for digital work initiatives to thrive on a global scale.[4] Currently, only Germany has a smartphone penetration rate above 80%. In Brazil and Indonesia, two out of three people own a smartphone. In Nigeria, the penetration rate is 38%.[5] Household computer penetration rates further demonstrate global inequities in the availability of digital tools. Europe and Central Asia have an average household computer penetration rate of 71%, with the rest of Asia at 44%. Latin America has an average of 40% of households with computers, the Middle East and North Africa have 70%,[6] while Sub-Saharan Africa has just 16%.

To overcome this access barrier to digital infrastructure and devices, some organizations have implemented strategies such as "bring your own device" (BYOD) policies, using personal devices to bridge hardware gaps while maintaining flexibility and cost-effectiveness.[7] Simultaneously, investment in cloud-based solutions and virtual desktop infrastructure (VDI) reinforces technological infrastructure, enhancing accessibility and scalability while safeguarding digital assets.[8] For countries, several governments have created a "right to repair" to support a circular economy and expand the hardware lifespan.[9] In response to infrastructure challenges, Brazil is exploring solutions to support technological advancement and economic competitiveness. Funding opportunities are coupled with advisory services to help businesses, especially small- and medium-sized enterprises (SMEs), navigate technology investments. Collaboration between ministries, educational institutions and industry stakeholders also helps align technology strategies with education initiatives. Brazil also has a programme in place to purchase computers for public schools to enhance digitalization and provide necessary technology resources for educational purposes.

The Philippines is also linking training and funding with the goal of boosting SMEs' digital transformation and start-ups' growth. The government is developing technology support and assistance programmes through targeted financial support like consultancy vouchers, grants and technology extension activities.

(2) Insufficient high-speed internet access and connectivity

High-speed, affordable internet access is particularly important for creating jobs.[10] Restricted internet access and slow internet speeds hinder online platform accessibility, disrupting virtual collaboration and productivity.[11] Ensuring the affordability of high-speed internet for as much of the population as possible is critical to building an inclusive digital work ecosystem. Globally, the number of fixed broadband subscriptions has reached 1.4 billion in 2022,[12] with mobile cellular subscriptions reaching 8.4 billion in the same period.[13] However, not all countries have consistent, affordable access to high-quality internet. In Nigeria, for example, only 55% of the population uses the internet,[14] with many workers relying on their own devices for internet access.

For digital jobs to be effective, governments need to prioritize infrastructure development. Ensuring high-speed, affordable internet is available in underserved regions is especially critical. This could be achieved through technologies such as satellite internet and mobile hotspots. In situations where countries are particularly finance-constrained, public-private partnerships (PPPs) can help mobilize resources and expertise[15] and share the financial burden.[16]

Private organizations can proactively support their workforce by providing digital work allowances or subsidies for internet expenses to ensure connectivity and internet access to their employees.[17] Organizations can also invest in their own accessibility hubs in key areas.

To develop connectivity in Nigeria, the government is attracting private sector investment in digital infrastructure development by highlighting opportunities beyond major cities, showcasing the business case and emphasizing corporate social responsibility. Efforts in Brazil are focused on expanding Wi-Fi networks and fibre optics, particularly in remote areas. This includes an

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> Companies can make use of employer of record services or professional employer organizations to navigate complex legal environments specific to each country.

investment of $2 billion to address connectivity challenges and promote digital inclusion, focusing on the Amazon region.

Similarly, the Philippines is using a whole-of-government and whole-of-society approach to increase investments in connectivity and modernize and expand digital infrastructure. This involves collaboration between and among government, academics, industry experts, entrepreneurs, local government units and other stakeholders.

For Doctors Without Borders, also known as Médecins sans Frontières (MSF), connectivity in remote locations can dramatically change outcomes – and save lives. Recently they introduced a project to enhance internet access across all field locations, facilitate effective communication and collaboration, and enhance operational efficiency in delivering healthcare services.

Policies and perceptions

The second of the three groups of barriers relates to policies, including (3) work and tax regulations and (4) country attractiveness.

(3) Work and tax regulations

Complex work and tax legislation stand in the way of seamless collaboration, flexibility and compliance across dispersed teams. Employers must consider time zone differences, working conditions and contract locations alongside questions about social protection, compensations and benefits, retirement contributions, travel and accommodation expenses, visits to local offices, and mandatory office presence. Further, depending on the country, agreements with labour unions are required when working conditions are affected. Additionally, the complexity of taxation rules, such as tax compliance, reporting protocols, treaty navigation, employee compensation and cross-border transactions, hinders the management of a globally dispersed workforce.[18]

To effectively address the challenges of work and tax laws, companies need to gain a thorough understanding of these national legislations. Periods of COVID-19 restrictions showed how governments could swiftly adapt their regimes: the Indian authorities, for example, rapidly modified legislation to enable call centre employees to work remotely.[19]

In the long term, industry consortiums may be able to work alongside governments to simplify rules. In the short term, companies can make use of employer of record (EOR) services or professional employer organizations (PEOs) to navigate complex legal environments specific to each country. These organizations enable swift and compliant recruitment of top talent worldwide.[20] EOR services and PEOs both involve outsourcing employment-related tasks, but EORs typically focus on managing contingent workers directly, while PEOs often provide a broader range of human resources (HR) services to client companies, including benefits administration and compliance assistance. Additionally, to overcome the challenges of fiscal complexity, private companies operating worldwide can invest in rigorous compliance processes, proactively seek expert guidance and advocate for streamlined cross-border tax regulations.[21]

Governments can enhance clarity by offering transparent overviews of national tax regulations, improving tax neutrality and implementing policies that enhance the country's attractiveness for foreign investment to facilitate economic growth.[22]

Euroclear, a leading provider of post-trade services offering settlement, custody and asset servicing solutions for financial market participants worldwide, offers an example of a company managing these issues. The company identified significant legal and tax risks and limitations associated with remote work arrangements. They were aware that failing to adequately address these risks could result in legal and financial consequences for employees and the organization. Euroclear invested substantial time and resources in online training to ensure compliance with legal and tax regulations, particularly concerning employees working from locations where the company lacks a physical presence.

Localized has observed the journey of many individuals and employers. The organization shared the experience of a sales development representative in South Africa who applied for a remote sales development representative position at an international company. Upon the job offer receipt, the representative grew concerned about paying taxes and receiving benefits as the company was only registered in the US, and he had several children to care for. Via an EOR, he received his payments lawfully, along with full benefits. The employer could rest assured that their employee was taken care of without establishing a legal entity in a foreign country.

(4) Country attractiveness

Country attractiveness incorporates the management of economic cycles, corruption scandals and civil unrest and political stability. These serve as a catalyst for foreign direct investment (FDI) inflows.[23] Another element of country attractiveness is awareness of the existing skills and capabilities – this was frequently raised during case studies as a hindrance for companies, individuals and countries to actively seek global talent. The case study on Nigeria reveals a lack of awareness among companies regarding Nigeria's potential as a labour provider. Despite Nigeria's substantial investments in minimizing entry barriers to the labour market, insufficient job opportunities remain for its skilled workforce.

To solve these barriers, countries must focus on providing a positive environment for investment attraction. Countries should also promote talent development systems and enhance the awareness of local capability.

L'Oréal's approach to selecting operational locations exemplifies how country perceptions can enable global digital jobs. By prioritizing regions with strong educational institutions and a skilled talent pool, L'Oréal ensures access to top-tier talent, enabling an environment conducive to innovation. By aligning its operations with regions that provide ample talent availability and regulatory support for innovation, L'Oréal actively drives innovation and creates long-term growth within these regions.

To ensure that training aligns with market demand, Nigeria consults global in-demand skills reports to identify worldwide trends and uses local polling data to understand specific needs within the country. Additionally, Nigeria conducts employer roundtables to gather insights directly from businesses, enhancing its understanding of local job requirements. Collaborating with international partners to map job availability further enriches Nigeria's efforts to tailor training programmes effectively for its digital workforce development.

Workforce skills

The final section of barriers relates to skills, including (5) insufficient skills, knowledge and abilities, and (6) attitudes mismatch and lack of awareness. While chapter 1 showed how the world's skilled workforce is trending towards lower-income countries, skills requirements are constantly changing – as identified in the Forum's *Future of Jobs Report 2023*, which notes 44% of core skill requirements are expected to change within five years. Having people equipped with the right skills for digital jobs is essential for enabling the global digital workforce.

(5) Insufficient skills, knowledge and abilities

There is a significant gap in remote work skills, negatively affecting the ability of people to work remotely effectively.[24] These missing skills include understanding how technologies work, their deployment and the change process.[25] Identified lacking hard skills incorporate company-specific systems, processes, software and technical product knowledge. Limited access to quality skills training is a common barrier to skills growth, especially for underprivileged and marginalized groups or regions. Technological disparities, language and literacy issues also impede learning.[26] Cognitive skills are quickly growing in importance, reflecting the significance of complex problem-solving in the workplace.[27]

To prepare workers for future digital jobs, implementing lifelong learning systems and partnering with employers and educational institutions to provide training programmes, including upskilling, new skilling and reskilling, is crucial.[28]

MSF, for example, is addressing learning and development challenges by digitalizing activities and offering a mix of online and in-person learning opportunities. This approach ensures accessibility and flexibility for all staff members, facilitating continuous skill development and knowledge acquisition.

(6) Attitudes mismatch

Due to the increasing prevalence of remote working, attitudes have become more important in the training of new employees. Attitudes include self-efficacy, working with others and ethics.[29]

Organizations should prioritize developing attitudes to expedite the transition to global digital work. This can be achieved through forming global collaborations to create relevant and in-demand learning content focused on nurturing attitudes to enhance remote collaboration.

MSF prioritizes attitudes essential for thriving in a multicultural environment and enhancing operational efficiency. Through strategic recruitment, they seek flexible, agile candidates with strong cultural alignment, emphasizing interpersonal skills and cultural awareness alongside technical expertise. This approach ensures effective collaboration and performance within MSF's diverse workforce, creating a culture of commitment and ownership.

Overcoming barriers to a global digital workforce necessitates concerted efforts from both prospective employers and countries seeking to attract international corporations to harness local talent. Increasing awareness of global digital job opportunities should be supported by education initiatives, public awareness campaigns and collaboration between industry and governments.

“Attitudes have become more important in the training of new employees. Attitudes include self-efficacy, working with others and ethics.

2.2 Risks and mitigation actions for a successful and sustainable global digital workforce

There are three dimensions of risks to a successful and sustainable global digital workforce: technological safety, job quality and unprepared management. The following section analyses these three dimensions, explaining why and in what regard they are risks. Following the same structure as above, mitigation actions are listed for both companies and countries.

Technology malfunctions and cybersecurity

Risks relating to technology arise from (7) technological malfunctions and cybersecurity.

(7) Technological malfunctions and cybersecurity

Malfunctioning of technological infrastructure, including software, hardware and improper internet connections, can disrupt operations, hamper collaboration and potentially expose the organization to security vulnerabilities.[30] Meanwhile, data leakages and cybersecurity attacks are major concerns for organizations adopting new digital technologies.[31] Cybersecurity-related problems can be organized into three major groups: lack of awareness and knowledge on the subject, existence of complex scenarios where old technologies cohabit with emerging technologies, and lack of time and resources to invest in cybersecurity.[32]

To mitigate the risk of technology malfunction, companies should implement proactive technology maintenance and monitoring protocols, including regular system checks, updates and troubleshooting procedures. Additionally, countries should invest in stable internet connections to help ensure uninterrupted operations.

Companies should also prioritize cybersecurity awareness and education programmes alongside allocating resources for robust security measures.[33] At the national level, countries can launch national cybersecurity campaigns to safeguard their online environment. This can help raise awareness and promote safe online practices among citizens.

To address the power supply issue in Nigeria, the government, led by the Minister of Industry, Trade and Investment, is exploring alternative energy sources such as solar panels. Solar panels offer a viable option to mitigate the effects of unreliable power supply. By installing solar panels in workplaces, companies can keep their operations running even during power disruptions. This approach increases productivity and resilience and ensures the continuity of economic activities.

In Brazil, the Brazilian National Service for Industrial Training (SENAI), a private not-for-profit institution, provides technical and vocational education services, technological support and industrial technology innovation. In 2022, it launched its Digital National University programme, offering comprehensive professional training in critical areas like software engineering and data management, ensuring that professionals across Brazil are equipped to succeed in digital roles.

Quality of work conditions

The second of the three groups of risks is job quality. Therein, the two risks are (8) lower wages and (9) work-life balance issues.

(8) Lower wages

There is a risk of wages being driven down by global digital jobs through differing wage levels between countries. While cost-of-living differences may drive some wage differentials, exploiting low-cost labour can undermine fair compensation for workers, leading to dissatisfaction and potential labour unrest. Seeking cost savings, rather than the ability to tap into broader talent pools, can also tarnish companies' reputations.

There are two key mitigations to this risk. The first involves targeting opportunities based on talent. Employers identify skills gaps as the single biggest barrier to transformation.[34] By targeting talent rather than cost savings, the potential benefits for business transformation are much greater.

The second key mitigation is incorporating systems to manage wage fairness. Companies can do this by enforcing fair labour standards, promoting worker skill development, facilitating collaboration among stakeholders, supporting worker advocacy and promoting equal opportunities.

L'Oréal's experience shows that seeking global workforces based on talent availability and not cost savings is an effective workforce strategy. L'Oréal has established regional hubs to coordinate their operations. Instead of focusing on cost, the company's premier focus when deciding the location of these hubs is talent availability. As a result, L'Oréal now has thriving hubs with greater accessibility to both locally developed and external talent.

For MSF, eliminating disparities in compensation and benefits is critical to promoting fairness and equity across the organization. They are developing a global grading framework to standardize practices

> "Cybersecurity-related problems fall into three major groups: lack of awareness and knowledge, old technologies cohabiting with emerging technologies, and lack of time and resources.

❝ Promoting an inclusive work environment through career support and encouraging community engagement is decisive for nurturing employee well-being.

and ensure consistency, aiming to establish minimum standards while allowing flexibility based on local market conditions. By implementing standardized compensation and benefits, MSF enhances transparency and fairness, creating a more cohesive and motivated workforce.

(9) Work-life balance issues

While employees were finding more freedom in designing their working day, remote work has, on average, led to increased working hours, according to Microsoft research, impacting overall well-being.[35] Detecting early signs of psychological distress in remote settings is also more difficult.[36] Global digital work also risks employees' sense of equity due to proximity bias, which underlies several fears, including missing out, being disadvantaged compared to those present at work[37] and losing one's job. Ensuring equity between employees is crucial for maintaining engagement and morale, as perceived inequity can lead to disengagement. Risks such as strikes can arise when workers feel marginalized or unfairly treated.[38]

Work-life balance challenges, social isolation and mental health should be addressed to ensure a sustainable work environment. Fears of declining opportunities can be reduced by educating employees about biases and implementing best practices to ensure equitable treatment of remote and on-site workers. Additionally, promoting an inclusive work environment through initiatives such as career support and encouraging community engagement is decisive for nurturing employee well-being and satisfaction.

Euroclear noticed that the feeling of isolation and disconnectedness stemming from remote work arrangements poses a significant risk to their employees' well-being. The sudden shift to remote work during the COVID-19 pandemic exacerbated feelings of isolation among employees due to a lack of in-person interactions and the inability to connect with colleagues on a personal level, impacting employee morale and overall well-being. Euroclear addresses employee well-being by implementing initiatives, including creating meaningful connections among remote employees, providing mental health resources and support services, and promoting work-life balance.

To promote a sense of equity among employees, MSF addresses diverse performance management challenges and develops standardized guidelines. These guidelines aim to establish consistent practices across the organization, ensuring fairness and effectiveness in managing workforce issues. MSF seeks to streamline HR processes and enhance operational efficiency by implementing standardized guidelines.

Performance management systems for a global digital workforce

The third of the three groups of risks is the unpreparedness to manage geographically scattered teams.[39] In some cases, this leads to ineffective micromanagement or a lack of support for employees working from home.[40] Managing a global digital team requires different management techniques than managing people face-to-face. Two key issues are (10) cultural differences and (11) employee engagement.

(10) Cultural differences

Cultural differences, including varying norms and values and disparities in hierarchical structures, can pose risks by impeding communication, creating misunderstandings and hindering the alignment of strategies and goals. Acknowledging local nuances and providing customized incentives promotes a supportive and flexible work atmosphere.

Another difference to consider is time zones. Managing different time zones makes collaboration among team members, as well as client-facing activities with synchronous communication, more difficult.

Recognizing the crucial role of quality management, organizations should prioritize efforts to bolster managerial support through tailored learning modules and adapted rituals designed for remote conditions. Additionally, revamping HR processes to align with the varying needs of a digital and culturally diverse workforce and remote work environment is essential. This may involve extending onboarding touchpoints over the initial six months and enhancing performance management with increased feedback opportunities. Moreover, organizations should emphasize delivering a personalized employee experience by simplifying system access and promoting self-service functionalities. Acknowledging the different working cultures, along with ensuring standardized work processes and clear instructions, allows effective navigation of time zone differences and transforms asynchronous work into a benefit.[41]

MSF prioritizes cultural awareness and adaptability to thrive in multicultural environments, which is essential for operational efficiency and strong team dynamics. Through strategic recruitment, they select candidates demonstrating flexibility and agility, aligning with the organization's multicultural values. This cultural compatibility enables effective collaboration, enhancing MSF's ability to deliver medical aid across diverse contexts.

❝ Appointing community managers who are accessible to all employees can encourage collaboration and address mental health concerns in fully digital environments.

Euroclear emphasizes the importance of ensuring its underlying processes and culture align with the shift to digital work. To address the challenge of performance management, they are prioritizing the adaptation of its processes to digital work realities. Initiatives include revising performance metrics to focus on outcomes, implementing feedback mechanisms that are tailored to remote work dynamics and providing training for managers to effectively support and evaluate remote teams.

(11) Employee engagement

Maintaining engagement in remote teams is vital for productivity and morale. Engagement reflects employees' emotional investment in their work and connection to the team and company goals. However, remote settings pose risks for decreased engagement due to limited face-to-face interaction and potential feelings of isolation.[42] This can lead to a loss of connection with the company, and increased turnover. The lack of in-person interactions further limits opportunities for relationship-building, such as casual break chats.[43]

Enhancing engagement levels among remote teams can be achieved by implementing adapted listening tools for regular check-ins. Additionally, organizations can enhance team bonding through regional get-togethers where possible, allowing teams to meet in person and create connections and organization culture – even where those meetings involve people working in different teams. Appointing community managers who are accessible to all employees can encourage collaboration and address mental health concerns in fully digital environments.[44]

L'Oréal prioritizes localization in its operations by establishing a hub system in its operational countries, facilitating cross-fertilization of ideas and expertise across diverse regions and functions. By locating shared service centres across regions, L'Oréal ensures proximity to key markets while encouraging collaboration and knowledge exchange among its workforce. This interconnectedness promotes a sense of belonging and involvement, as employees can engage with colleagues from diverse backgrounds and expertise. Moreover, emphasizing internal mobility and talent development within this hub system enhances engagement by providing avenues for career growth and skill enhancement.

Educational Testing Service (ETS), an educational assessment organization that develops tools and resources to support learning and professional development, created an assessment tool focused on evaluating an organization's preparedness for remote and distributed work. The assessment delves into various competencies essential for success, such as effective collaboration in distributed settings and adaptability in virtual meetings. Beyond being a test, it equips individuals with the practical skills necessary to navigate the challenges of remote and distributed work across industries. Managers can use such tools to acquire the skills and attitudes favouring engagement and a positive remote work environment. Reinforcing self- and people-management skills promotes autonomy, accountability and performance. For instance, investing in developing attitudes such as communication, collaboration and adaptability enhances teamwork and effectiveness in remote settings.[45]

When all risks are effectively mitigated through comprehensive preparation and strategic consideration, establishing a sustainable and successful global digital workforce becomes a reality.

3 Case study analysis

Six company and country case studies outline their experience incorporating global digital jobs.

Case studies with companies and countries that bring specific experiences incorporating global digital jobs helped to test and develop the framework for global digital jobs. These case studies include Brazil, Nigeria, the Philippines, Doctors Without Borders, Euroclear and L'Oréal. This chapter outlines the opportunities, barriers/risks and solution pathways identified in each case study.

CASE STUDY 1

Brazil

The opportunity

With an employment rate of 58% in 2022,[46] below the OECD countries' average of 69%, Brazil faces a shortage of jobs. However, Brazil's gross domestic product (GDP) per capita is significantly above the global average, positioning it as one of the world's most promising economies.[47] Classified as an upper-middle-income economy, Brazil attracts business expansion.[48] To capitalize on this potential, Brazil must overcome key challenges to ensure that digital jobs contribute to its economic growth.

Barriers and risks

Technological infrastructure

Despite a high internet use level of 81%,[49] significant parts of the population have limited access to digital devices, leading to digital exclusion. This limitation hinders widespread technological integration and exacerbates social inequalities, resulting in a technological gap characterized by disparities in technology adoption. SMEs, constrained by limited revenues, struggle to modernize operations to utilize technological infrastructure due to financial constraints and unequal access to funding opportunities.

Additionally, the cost of purchasing and maintaining digital devices and connectivity services can be a barrier for some sectors. Added to this are exchange rate fluctuations that can affect the value of digital technologies.

There are some factors that can boost the digital transition process in Brazil, such as increased demand for online shopping and digital services, generating job opportunities in e-commerce, digital marketing and customer support services, and the growth of the gig economy and collaborative platforms.

Brazil also encounters significant resistance to adopting new technologies due to social and cultural factors, hindering the transition from analogue to digital practices for both employers and employees.

Transitioning from analogue to digital technologies requires significant efforts in training, upskilling and reskilling of the Brazilian workforce, especially among older and informal workers. Informal employment exacerbates barriers to accessing digital technologies and training opportunities. Consequently, a notable gap exists between worker's digital skills and those required by companies for effective technology use.

Workforce skills

Limited English language proficiency in Brazil hampers widespread adoption and effective use of digital technologies. SMEs are especially lacking English-speaking technical staff. Since digital solutions are more likely to provide support in English, it is particularly challenging for enterprises to integrate these solutions fully.

Brazil

Solution pathways

Technological infrastructure

To address its technological challenges, Brazil has made significant efforts to expand its digital infrastructure, especially in remote areas, by installing Wi-Fi networks and fibre optics. This includes an investment of $2 billion to address connectivity challenges and promote digital inclusion in the Amazon. This targeted investment aims to bridge the technological gap and create economic growth and social development across Brazil. In addition, the Brazilian government has launched several programmes as part of its Strategy for Digital Transformation, including supporting educators to integrate educational technologies into teaching practices.

In response to infrastructure challenges, Brazil is exploring solutions to support technological advancement and economic competitiveness. These include initiatives to improve internet accessibility and affordability. Additionally, funding opportunities are coupled with advisory services to help businesses, especially SMEs, navigate technology investments. Additionally, collaboration between ministries, educational institutions and industry stakeholders helps align technology strategies with education initiatives. By encouraging systemic collaboration and prioritizing skills development, Brazil aims to navigate towards a future where digital and automation technologies drive sustainable economic growth and competitiveness.

Workforce skills

In 2022, SENAI launched the Digital National University programme, which aims to provide professional training in critical areas such as software engineering and data management to meet the growing demand for digital expertise nationwide. By integrating digital technologies into its training courses and updating its curriculum focusing on digital information and automation, SENAI ensures professionals are prepared for the digital era.

CASE STUDY 2

Nigeria

The opportunity

Nigeria has a strong and growing working-age population, with 23 million new workers expected to join the labour force by 2030.[50] Ensuring this labour force has the capabilities and opportunities to deliver on economic needs can ensure Nigeria enjoys the benefits of a demographic dividend. To ensure global digital jobs are part of the opportunity, Nigeria faces several key challenges.

Barriers and risks

Workforce skills

Ensuring that training and development programmes are aligned with market needs, with an increased focus on soft skills and building depth in specific skills, could enhance the value and employability of learners. Meanwhile, elevating skills proficiency levels from entry-level to advanced level is constrained by cost limitations and a lack of job-experience opportunities, which hampers workers' ability to develop intermediate and advanced skills.

Policies and perceptions

With growing digital capabilities alongside strong English language skills,[51] Nigeria's workforce needs a connection to global employers to convert capability into prosperity.

Technological infrastructure

Nigeria has a medium level of digital connectivity, with 55% of the population using the internet.[52] With many workers relying on mobile phones for internet access, digital infrastructure development is necessary to provide reliable high-quality internet access at affordable prices.

Solution pathways

Workforce skills

The National Talent Export Programme aims to connect skilled individuals with job opportunities by outsourcing business processes or relocating jobs to Nigeria. Local companies, development partners and the government are all helping to position Nigeria as a hub for outsourcing on the African continent, drawing inspiration from countries like India and the Philippines. Investment partners include the MasterCard Foundation, Visa and the World Bank. Meanwhile, the Decagon Institute is a key training partner, having created a six-month course to ensure its participants are immersed in practical experience, including real-life projects and internships in organizations. The programme provides individuals with industry-ready, entry- to mid-level software engineering skills to launch successful careers.

Policies and perceptions

To ensure that training aligns with market demand, Nigerian agencies are consulting global in-demand skills reports from providers including Upwork, Microsoft and LinkedIn, to understand roles being hired for, outsourcing trends and freelancing opportunities. Additionally, local polling generates reports on the skills needed in Nigeria, while employer roundtables provide insights into specific roles sought by employers. By integrating these demand-driven insights into training and upskilling initiatives, Nigeria ensures the relevance and effectiveness of its digital workforce development efforts.

Technological infrastructure

Nigeria has taken steps to address infrastructure challenges, particularly in expanding fibre optic at affordable rates nationwide. To attract investment in fibre optics, the government is highlighting opportunities beyond major cities like Lagos and Abuja, emphasizing the potential for high returns and capacity development for Nigerians. By showcasing the business case and the value of corporate social responsibility, the government aims to encourage private-sector investment.

To address the power supply issue in Nigeria, the government, led by the Minister of Industry, Trade and Investment is exploring alternative energy sources such as solar panels. Solar panels offer a viable option to mitigate the effects of unreliable power supply. By installing solar panels in workplaces, companies can keep their operations running even during power disruptions. This approach increases productivity and resilience and ensures the continuity of economic activities.

CASE STUDY 3

The Philippines

The opportunity

Almost 30% of the Philippines' population (around 30 million people) are between 10 and 24 years old. While this wave of talent presents opportunities for economic growth and development in the Philippines, seizing those opportunities requires developing digital skills, easing transitions into emerging jobs and creating high-quality opportunities for job-seekers. Furthermore, the Philippines has a large pool of English-speaking people, foreign-investor-friendly stances, the opening of previously restricted industries, access to special economic zones and fiscal incentives.

The Philippines has a medium level of digital connectivity, with 53% of the population having internet access, but it still offers further potential for expansion.

Barriers and risks

Technological infrastructure

The Philippines faces a pressing digital infrastructure challenge characterized by low internet adoption rates and sluggish connection speeds. With over 80% of households still reliant on outdated 3G technology, the country struggles to keep pace with global digital advancements. This deficiency impedes economic growth and widens the digital divide, hindering the country's ability to harness the digital economy's full potential.

Workforce skills

As the global digital job market expands, there is urgent demand for enhanced digital literacy and specialized skills. However, prevailing skills gaps impede workforce competitiveness, particularly in emerging technologies. The education system needs to align with these requirements through updates to curricula and teaching methods.

Technological malfunctions and cybersecurity

The increase in digital jobs in the Philippines poses significant regulatory and policy challenges intertwined with cybersecurity risks. Inadequate legal frameworks and policies regarding digital work hinder worker rights, data privacy and cybersecurity. With an expanding digital workforce, safeguarding data, intellectual property and personal information becomes increasingly challenging, requiring urgent regulatory reforms and comprehensive cybersecurity measures.

Quality of work conditions

Achieving a healthy work-life balance is a challenge for some in the Philippines. The shift to remote and digital work, while offering flexibility, has also introduced new complexities. Workers often struggle to delineate boundaries between work and personal life, leading to challenges in maintaining balance.

The Philippines

Solution pathways

Technological infrastructure

The Philippines uses a whole-of-government and whole-of-society approach to increase investments in connectivity and modernize and expand digital infrastructure. This involves collaboration between and among government, academics, industry experts, entrepreneurs, local government units and other stakeholders. The country is focusing on harnessing market opportunities offered by digital payments and online platforms, especially for SMEs and start-ups, improving the efficiency of the country's logistics system and creating an enabling business environment. Additionally, the Philippines is linking training and funding to boost SMEs' digital transformation and start-ups' growth.

Workforce skills

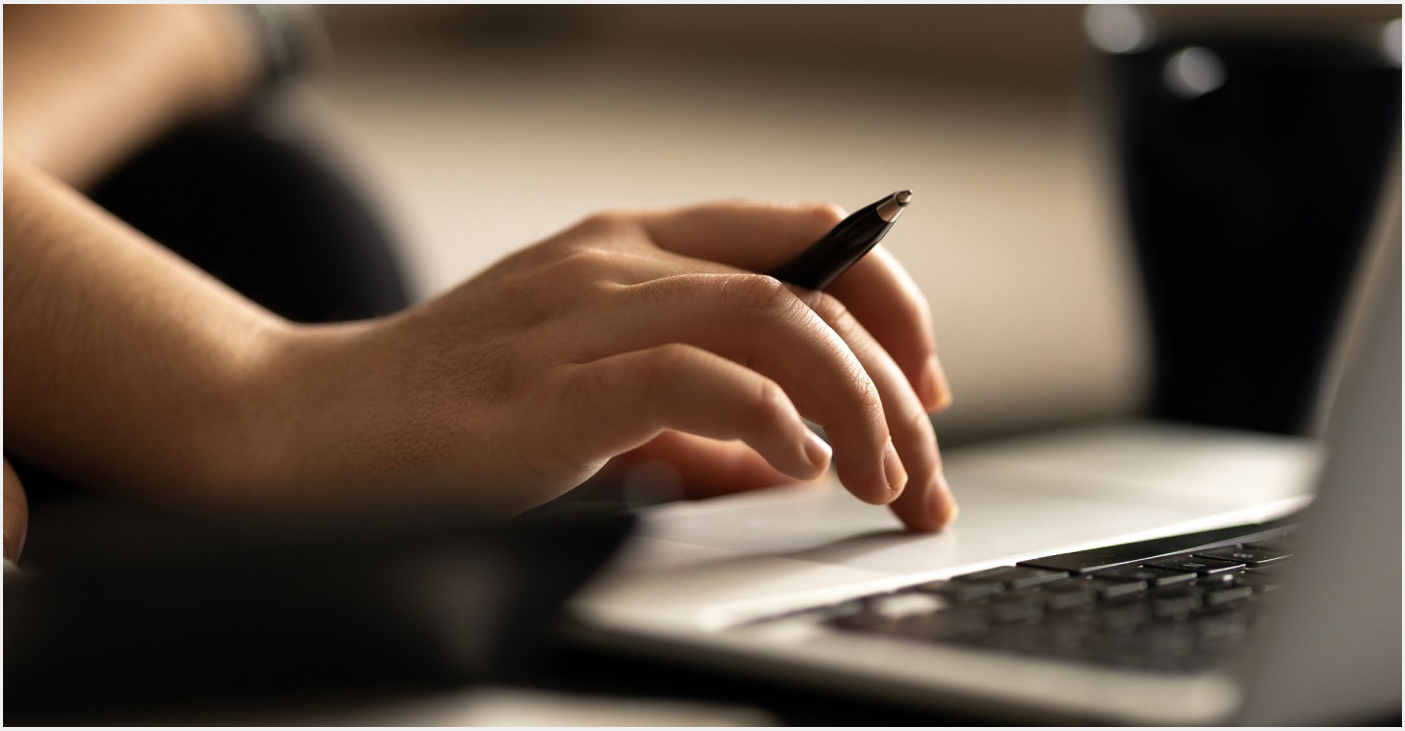
The Philippines is increasing investments in skills development and encouraging companies to upskill their workforce. The country is transitioning to a skills-based approach to address the limitations of current job-fit systems. As part of these efforts, the Philippines is implementing the Philippine Skills Framework, which standardizes the skills, knowledge and competencies required for various jobs, helping employers identify necessary skills, enabling job seekers to plan their career paths and assisting educational institutions in designing relevant courses.

Policy and perceptions

The government is creating an enabling environment through policy and regulatory reforms that bridge the digital divide, increase the use of digital payments and national identification cards, and create a more conducive business environment. An example is implementing the national digital ID system, which is crucial in expanding digital finance. The Philippines recognizes the importance of easing regulations to promote the entry of innovation of fintech and non-fintech banks in providing digital financial services.

Quality of work conditions

The Philippines Digital Workforce Competitiveness Act focuses on providing digital skills and competencies to all working-age citizens, encouraging digital innovations and entrepreneurship while ensuring protection and support for the digital workforce. Additionally, the Philippines implemented the World Bank's CHIP framework. This includes compiling government policies and programmes focusing on improving connectivity while providing a safe and secure environment. These policies aim to mitigate risks in the digital economy and protect people from harm due to cybersecurity, digital monopoly and particularly inequality of opportunities.



Sources: Accelerators Network; *WeHireGlobally*. (2020). *Phillipines*. https://wehireglobally.com/philippines/; *World Bank*. (2023). *Individuals using the Internet (% of population)*. https://data.worldbank.org/indicator/IT.NET.USER.ZS; *World Bank*. (2020). *Philippines Digital Economy Report 2020*.

CASE STUDY 4

Doctors Without Borders/ Médecins Sans Frontières (MSF)

The opportunity

MSF is a renowned humanitarian organization providing medical aid in over 80 countries. With a workforce spanning 160 nationalities, MSF operates in diverse and often challenging environments, necessitating innovative approaches to connectivity and collaboration. To effectively harness the potential of global digital jobs, MSF faces several key challenges.

Barriers and risks

Policies and perceptions

MSF confronts significant hurdles in managing its global workforce due to diverse legal frameworks and cultural considerations across countries, complicating HR functions such as performance management, disciplinary measures and employee relations. Navigating varied legal landscapes hampers swift and uniform action, highlighting the intricate nature of legal challenges in global workforce management.

Technological infrastructure

MSF faces challenges in fully harnessing technology for its global operations. While tools like Microsoft Teams enhance communication, the organization is still adapting to exploit technology's full potential. Enhancing technological infrastructure is crucial for rapid personnel deployment during crises.

Ensuring reliable and robust internet connectivity, especially in remote areas, remains a significant challenge for communication and collaboration, hindering digital operations in remote areas.

Not all staff members have the same level of digital literacy, particularly in remote or less developed regions. Despite technological advancements, some employees lack essential computer skills, hindering their ability to use digital tools effectively. Addressing digital literacy gaps is essential for empowering all staff members to fully engage with digital platforms and enhance their productivity.

Performance management systems for a global digital workforce

The transition to increased digital connectivity alters traditional interaction, potentially reducing face-to-face engagement. This shift raises concerns about maintaining community and cohesion within teams requiring efforts to create informal connections.

Managing compensation and benefits across a global workforce is a major challenge. Discrepancies persist between headquarters and field offices, highlighting the complexity of ensuring fairness. Balancing standardization with localization is crucial for HR teams. Addressing disparities requires considering global standards and local market conditions. Without effective management, organizations risk undermining workforce morale and cohesion.

Doctors Without Borders/ Médecins Sans Frontières (MSF)

Solution pathways

Performance management systems for a global digital workforce

To address diverse performance management challenges, MSF develops standardized guidelines. These guidelines aim to establish consistent practices across the organization, ensuring fairness and effectiveness in managing workforce issues. By implementing standardized guidelines, MSF seeks to streamline HR processes and enhance operational efficiency.

Despite global dispersion and remote work arrangements, MSF prioritizes personal connections to preserve its organizational culture. This creates interpersonal interactions to strengthen bonds among its diverse workforce. The approach enables MSF to maintain a cohesive and unified culture across its operations worldwide, promoting its core values and collective identity amidst geographical and cultural diversity.

MSF has a recruitment approach focused on identifying agile candidates with a strong cultural fit, prioritizing interpersonal skills and cultural awareness alongside technical expertise to ensure effective collaboration and performance within its diverse workforce.

Addressing disparities in compensation and benefits within MSF is critical for promoting fairness and equity across the organization. MSF is developing a global grading framework to standardize practices and ensure consistency, aiming to establish minimum standards while allowing flexibility based on local market conditions. By implementing standardized compensation and benefits, MSF enhances transparency and fairness, creating a more cohesive and motivated workforce.

Technological infrastructure

Improving connectivity is pivotal for addressing the challenges MSF faces in remote locations. A recent initiative invested in enhanced, secure connectivity and enabling access across all field locations, ensuring effective communication and collaboration. By investing in connectivity, MSF facilitates the implementation of digital tools, enhancing operational efficiency in delivering healthcare services.

Workforce skills

MSF is addressing learning and development challenges by digitalizing activities and offering a mix of online and in-person learning opportunities. This approach ensures accessibility and flexibility for all staff members, facilitating continuous skill development and knowledge acquisition. Through these initiatives, MSF strengthens its workforce capabilities, ultimately improving healthcare service delivery in diverse settings.

CASE STUDY 5

Euroclear

The opportunity

Euroclear, a global provider of settlement and custody of securities for bonds, equities and derivatives, and investment funds, committed to delivering risk-mitigation, automation and efficiency at scale. The company swiftly shifted to digital work during the COVID-19 pandemic. This enabled Euroclear to expand its global talent pool, enhance diversity and innovation, reduce its environmental footprint, and improve overall employee engagement. Flexibility of work location has now become an attractive element of Euroclear's brand. The company shared some of the key challenges along the way in enabling a global digital workforce.

Barriers and risks

Performance management systems for a global digital workforce

Performance management challenges revolve around the lack of alignment between the shift to digital work and traditional performance management processes. Despite being technologically prepared for remote work, Euroclear has faced challenges in adapting its performance management from activity-based to outcome-based. As a result, Euroclear emphasizes the importance of ensuring that its underlying processes and culture are aligned with the shift to digital work.

Quality of work conditions

The feeling of isolation and disconnectedness, stemming from remote work arrangements, poses a risk to employee well-being. Despite Euroclear's successful transition to a fully digital workforce during the COVID-19 pandemic, concerns about mental health emerged due to the lack of in-person interactions and personal connections. Addressing these challenges is crucial for promoting employee morale and organizational resilience in remote work environments.

Policies and perceptions

Significant legal and tax risks and limitations are associated with remote work arrangements. Euroclear's experience underscores the complexity of navigating legal and tax implications when employees work remotely from locations outside the organization's established jurisdictions. Euroclear invested substantial time and resources in online training to ensure compliance with legal and tax regulations, particularly concerning employees working from locations where the company lacks a physical presence. Failure to adequately address these risks can result in serious legal and financial consequences for employees and the organization.

Euroclear

Solution pathways

Performance management systems for a global digital workforce

Euroclear addresses the performance management challenge by prioritizing the adaptation of its processes to digital work realities. Initiatives include revising performance metrics to focus on outcomes, implementing feedback mechanisms tailored to remote work dynamics, and training managers to effectively support and evaluate remote teams. Aligning performance management enhances productivity and encourages accountability. This approach optimizes performance in the digital work environment, ensuring effective management of remote teams.

Quality of work conditions

Euroclear addresses the employee well-being challenge by implementing initiatives to mitigate feelings of isolation and enhance overall well-being in a remote work environment. These initiatives include encouraging meaningful connections among remote employees, providing mental health resources and support services, and promoting work-life balance. Prioritizing employee well-being mitigates the negative impact of remote work on mental health and morale, creating a supportive and resilient workforce. This approach underscores Euroclear's commitment to employee well-being in remote work settings.

Policies and perceptions

Euroclear has implemented measures to tackle legal and tax complexities for remote work. They have invested significantly in online training to assess remote work regulations in different locations. Additionally, Euroclear carefully evaluates the legal and tax implications of employees working outside the EU, where the company lacks offices. Prioritizing compliance mitigates risks associated with remote work, safeguarding both employees and the organization. This approach underscores Euroclear's commitment to upholding legal and tax standards in remote work environments.

Euroclear demonstrates its commitment to sustainability through measures to reduce the environmental impact associated with remote work. The shift to remote work has led to a significant decrease in travel-related emissions and costs. By using remote working, Euroclear minimizes its environmental footprint associated with commuting and business travel.

Workforce skills

Euroclear employed a bottom-up approach to embracing new ways of working that looked beyond the COVID-19 pandemic. This used people from across the organization to consider new ways of working, and invested in training and peer-to-peer support, accelerating learning of new digital tools (e.g. Microsoft Teams, AI tooling etc.).

Euroclear now strategically expands its talent pool through remote work opportunities, tapping into broader talent pools beyond traditional geographic boundaries. Initiatives include expanding recruitment efforts in regions with strong IT talent pools like Eastern Europe and India. This approach overcomes geographical limitations, facilitating talent acquisition where the company lacks a physical presence. Embracing remote work creates diversity and innovation within Euroclear's workforce, enhancing access to specialized expertise.

CASE STUDY 6

L'Oréal

The opportunity

L'Oréal, the global leader in beauty sales, upholds a philosophy deeply rooted in local presence and social responsibility. L'Oréal emphasizes the importance of localized teams in maintaining market relevance while embracing digital transformation. L'Oréal can use a global workforce through local hub systems to balance global expertise and local engagement while prioritizing talent development and internal mobility to drive success.

Barriers and risks

Workforce skills

L'Oréal faces the challenge of managing its localized model. With certain digital skills requiring critical mass and expertise, the company should identify ways to build its necessary skill portfolios across regions.

Policies and perceptions

L'Oréal faces the challenge of determining the most appropriate locations to develop its regional digital hubs. The company's DNA emphasizes a localized approach to maintain social and cultural relevance. To identify the most appropriate location, L'Oréal considers local policies, expertise and skills.

Solution pathways

Workforce skills

L'Oréal's workforce strategy depends on talent acquisition and mobility. By investing in locations with strong talent pools and collaborating with universities, the company ensures a skilled workforce tailored to local market needs while encouraging skill development and enhancing employee satisfaction. Internal mobility allows seamless transitions across expertise areas, promoting retention and long-term growth. L'Oréal measures workforce effectiveness by prioritizing internal mobility and talent upskilling. Both focus on facilitating job moves across expertise, minimizing the need for external hiring while ensuring skill development aligns with business needs. By emphasizing internal mobility and talent development, L'Oréal maintains a skilled workforce capable of adapting to evolving market demands, ensuring sustainable growth and competitiveness. With a focus on attracting and mentoring talent, L'Oréal maintains a competitive edge in today's dynamic business landscape.

Policies and perceptions

To identify the best location for regional hubs, L'Oréal considers the policies and perceptions of various potential locations. The key driver for L'Oréal is how they perceive a location's talent availability. To assess this, the company reviews the local talent market and university landscape. With a focus on qualitative and quantitative assessments, the company identifies areas with strong university programmes and skilled graduates. By considering factors such as market attractiveness and local talent projections, L'Oréal has established shared service centres in key locations, including Madrid and Kuala Lumpur. This approach ensures access to skilled talent while aligning with the company's commitment to local relevance and global success.

Source: *Women's Wear Daily*. (2024). *The 2023 Top 100 Beauty Companies*. https://wwd.com/lists/100-top-cosmetic-companies-1236299225/loreal/. (Based on 2022 sales).

Conclusion

Global digital jobs offer opportunities for global prosperity by allowing countries, companies and individuals to access the global digital workforce. The first paper of this series, *The Rise of Global Digital Jobs*, identified the potential for these jobs, including the number and type of jobs conducive to digital work.

In this second paper, a framework is presented that highlights the challenges that need to be overcome for global digital jobs to become a reality. By providing illustrations of countries, companies and individuals engaging with global digital work, the research demonstrates how this is already a reality for many. The framework emphasizes the barriers and the risks in terms of technology, regulations, job quality and management-related topics and proposes solution areas and mitigation pathways.

However, the framework is not a one-size-fits-all solution. Its application will depend on the level of maturity of organizations and individuals regarding technology infrastructures and equipment, digital skills literacy and matching. The interconnection between the challenges to overcome also calls for a collaborative approach between countries, businesses, and individuals to overcome the identified challenges.

The World Economic Forum's Jobs Initiative has implemented collaboration networks for countries (Accelerators Network), for companies (Chief Human Resources Officers Community) and for both countries and companies (The Jobs Consortium and The Good Work Alliance) to support the implementation of these new ways of work leading to global prosperity. Should readers be interested in taking action to create, implement or accelerate their policies towards a global digital workforce, they are welcome to join the conversations.

As labour markets continue to be disrupted and technology continues to advance, global leaders have an opportunity to harness global digital jobs to address pressing issues of skills shortages and labour excesses worldwide. Through this paper's framework for global digital jobs, leaders can ensure global digital jobs enable prosperity for all.

Appendices

A1: Methodology

The paper uses data from the World Bank to categorize countries into economic strata, such as high-income, upper-middle-income, lower-middle-income and lower-income, combining groups if there is incomplete data.[53]

The study analysed labour shortages and skill availability within each category using datasets from the International Labour Organization (ILO). These data were used to identify trends in the combined unemployment rate and potential labour force (LU3) from 2013 to 2022 for the different economic strata.

- The combined rate of unemployment and potential labour force (LU3) by sex and education[54]
- Infra-annual registered unemployment and job vacancies[55]
- Job vacancy statistics by NACE Rev. 2 activity[56]

To understand the skill shortage and surplus in countries, the World Economic Forum's Executive Opinion Survey data were used with a filter on relevant skills to global digital jobs.

To identify the change in educational levels in the workforce, ILO's dataset "Labour force by sex, age and education" was used.[57] This shows the change in educational levels across countries and the trends in economic strata (high-income, upper-middle-income, lower-middle-income and lower-income).

Definitions for the framework categories:

- **Barriers**: Barriers pose initial obstacles to establishing a global digital workforce, requiring proactive measures (or solutions) for resolution. These barriers, restricting the implementation of a global digital workforce, must be overcome for a successful adoption.
- **Solutions**: Finding solutions is essential to overcome the initial barriers that hinder the successful implementation of a global digital workforce.
- **Risks**: Risks refer to the potential occurrence of an event or condition that could negatively impact an equitable and sustainable global digital workforce once it has been implemented.
- **Mitigation actions**: Mitigation actions can be taken to minimize or eliminate potential risks that could negatively impact an equitable and sustainable global digital workforce once implemented.

A2: Skill availability

TABLE 5 **Perceived level of skill in a country**

Economy	Creativity and problem-solving	Management skills	Self-efficacy	Technology skills	Working with others
Algeria	4.4	4.5	4.7	4.7	5.0
Angola	3.2	2.8	2.8	3.0	3.6
Argentina	4.9	4.3	4.1	4.7	4.7
Armenia	4.0	3.7	3.8	4.5	3.8
Australia	5.1	5.3	5.2	5.5	5.5
Austria	4.6	4.4	4.4	5.0	4.9
Bahrain	5.0	5.2	5.0	5.2	5.6
Bangladesh	4.0	4.1	4.1	4.3	4.4

Economy	Creativity and problem-solving	Management skills	Self-efficacy	Technology skills	Working with others
Belgium	4.3	4.6	4.6	4.8	4.8
Benin	4.3	4.3	4.4	4.4	4.3
Bolivia	3.8	3.6	3.5	3.7	3.9
Bosnia and Herzegovina	3.7	3.7	3.6	3.9	4.0
Botswana	4.9	5.1	5.1	5.1	5.1
Brazil	4.3	3.7	3.5	3.8	4.4
Bulgaria	4.3	4.1	4.3	4.6	4.6
Cameroon	4.4	4.5	4.4	4.5	4.4
Canada	5.2	5.1	5.0	5.4	5.4
Chad	2.7	4.3	4.4	4.0	5.0
Chile	4.2	4.2	4.0	4.4	4.4
Colombia	5.0	4.8	4.9	4.8	4.9
Congo, Democratic Republic of	3.9	3.8	3.7	3.5	4.0
Costa Rica	4.6	4.5	4.4	5.0	5.0
Côte d'Ivoire	4.6	4.9	4.7	5.1	5.1
Cyprus	4.2	4.6	4.4	4.7	4.7
Czechia	4.5	4.2	4.1	5.1	4.4
Denmark	5.6	5.0	5.5	5.3	5.7
Dominican Republic	3.9	3.7	3.8	3.9	4.6
Ecuador	3.9	4.0	3.9	3.8	4.1
Egypt, Arab Republic of	3.8	4.0	4.2	4.7	4.4
El Salvador	3.8	3.7	3.8	3.9	4.2
Estonia	4.8	4.5	4.4	5.1	4.8
Finland	5.4	5.0	5.5	6.0	5.4
France	5.0	4.4	4.8	5.1	4.9
Georgia	4.7	4.7	4.5	4.5	4.8
Germany	4.3	4.3	4.4	4.8	4.7
Ghana	4.3	4.6	4.4	4.3	5.0
Greece	4.1	4.0	4.1	4.6	4.1
Guatemala	4.5	4.1	4.3	4.1	4.7
Honduras	3.7	3.7	3.7	3.8	4.0
Hong Kong SAR, China	4.6	4.9	5.0	5.3	5.4
Hungary	3.1	3.4	3.8	4.3	3.7
Iceland	5.7	5.1	5.3	5.5	5.7

Economy	Creativity and problem-solving	Management skills	Self-efficacy	Technology skills	Working with others
India	3.7	3.6	3.5	3.6	3.5
Indonesia	5.3	5.5	5.1	5.7	5.4
Iran, Islamic Republic of	3.7	3.3	4.0	4.2	3.3
Ireland	5.1	4.8	5.0	5.5	5.4
Italy	4.6	4.5	4.6	4.7	4.9
Jamaica	3.9	4.0	3.9	4.1	4.3
Japan	3.7	4.0	3.9	5.3	5.9
Jordan	5.8	5.5	5.9	5.4	6.1
Kazakhstan	3.5	3.3	3.2	3.4	3.7
Kenya	4.5	4.5	4.4	4.8	4.8
Korea, Republic of	4.4	4.9	4.6	5.5	4.7
Kuwait	3.7	4.0	3.9	3.9	4.1
Kyrgyz Republic	3.7	3.8	3.9	3.8	4.4
Lao PDR	4.6	4.7	4.8	4.7	5.1
Latvia	4.2	3.7	3.7	4.4	4.2
Lesotho	3.1	3.4	2.7	3.3	2.7
Lithuania	4.8	4.5	4.6	5.2	4.9
Luxembourg	4.8	4.7	4.8	4.8	5.1
Malawi	4.3	4.9	4.5	4.4	5.4
Malaysia	4.3	4.6	4.6	4.6	5.0
Mali	4.4	4.7	4.5	4.5	4.8
Malta	4.0	4.3	4.2	4.7	4.6
Mauritius	4.1	4.5	4.0	4.2	4.5
Mexico	4.4	4.1	4.1	4.1	4.6
Mongolia	3.5	3.4	3.5	3.7	3.4
Morocco	4.0	4.3	4.0	4.7	4.1
Nepal	3.9	4.1	3.8	4.1	4.2
Netherlands	5.5	5.3	5.3	5.2	5.7
New Zealand	5.4	5.4	5.4	5.5	5.5
Nigeria	3.9	4.0	4.0	3.9	4.5
North Macedonia	3.5	3.3	3.4	3.6	4.1
Oman	5.1	5.3	5.1	5.2	5.4
Pakistan	4.6	4.6	4.5	4.7	4.8
Panama	3.4	3.5	3.4	3.7	4.0

	Economy	Creativity and problem-solving	Management skills	Self-efficacy	Technology skills	Working with others
Paraguay	3.6	3.6	3.5	3.4	4.3
Peru	4.4	4.0	4.1	4.3	4.3
Philippines	4.7	4.9	4.9	4.9	5.5
Poland	4.6	4.1	4.3	4.7	4.5
Portugal	5.0	4.5	4.5	5.3	4.9
Qatar	5.5	5.6	5.5	5.7	5.7
Romania	4.2	4.2	4.1	4.7	3.9
Rwanda	4.3	4.5	4.4	4.6	4.8
Saudi Arabia	5.3	5.3	5.3	5.5	5.9
Senegal	4.2	4.6	4.2	4.8	4.7
Serbia	4.1	4.1	4.1	4.4	4.4
Sierra Leone	2.7	3.0	3.0	2.8	3.3
Singapore	4.8	5.2	5.2	5.7	5.5
Slovenia	4.5	4.1	4.2	5.1	4.5
South Africa	4.1	4.2	4.0	4.1	4.6
Spain	4.7	4.6	4.4	4.7	5.0
Sri Lanka	4.0	4.3	4.0	4.4	4.5
Sweden	4.8	4.8	4.8	5.3	5.3
Switzerland	5.5	5.5	5.6	5.9	5.6
Taiwan, China	4.8	4.9	5.0	5.6	5.2
Tanzania	4.2	4.4	4.3	4.2	4.7
Thailand	3.1	4.2	4.2	4.7	4.9
Tunisia	4.1	4.4	4.0	5.1	4.2
Türkiye	3.9	3.7	3.6	3.9	4.0
Ukraine	5.4	5.0	5.2	5.3	5.1
United Arab Emirates	5.5	5.6	5.3	5.6	5.6
United Kingdom	4.7	4.9	4.5	5.0	5.2
United States	4.9	5.0	4.9	5.5	5.0
Uruguay	4.4	4.4	4.3	4.7	4.7
Venezuela	5.0	4.6	4.4	4.4	4.9
Viet Nam	4.6	4.7	4.9	5.1	5.0
Yemen, Republic of	3.4	3.6	3.5	3.4	4.1
Zimbabwe	4.6	4.9	4.6	4.6	5.0

Source: World Economic Forum, Executive Opinion Survey.
Note: Colour-coded based on average response from 1 (not at all) to 7 (to a great extent).

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