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A new talent model for the digital age



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EXECUTIVE SUMMARY

Gulf Cooperation Council (GCC)¹ countries have ambitions to become leaders in the digital economy, taking advantage of their young and tech-savvy populations to boost productivity and prosperity.² However, they cannot achieve that goal through incremental change. Instead, they need to overhaul their digital talent model.

A new talent model requires creating a deep pool of domestic and international experts. These experts include alternative reality/virtual reality developers, blockchain engineers, edge computing architects, software engineers, data scientists, and cloud engineers. They accelerate the economy's digital transformation by scaling up startups and dynamic smaller companies, while enabling large enterprises to grasp digital opportunities. Simultaneously, workers in all professions must learn new skills, as technological progress increasingly disrupts the labor market, including in sectors previously seen as "future-proof," such as banking and the law.

Although all countries must adjust to the new technology reality, GCC countries face greater challenges. They must catch up and overtake some of their peers among advanced economies on metrics such as software, artificial intelligence (AI) talent, research, and innovation to meet their digital economy goals. Additionally, GCC education systems must respond more effectively to changes in technology and adapt learning to emerging technology needs.

GCC countries have three priorities: readying an ecosystem that fosters human capital and a strong learning culture; improving the proficiency of the labor market to close the talent gap for digital economy roles; and enhancing the global relevance of GCC countries as a destination for talent. Governments in the region have a key enabling role to play in all three priorities.

THE NEED FOR A NEW APPROACH TO HUMAN CAPITAL IN GCC COUNTRIES

Digital transformation is a priority for all Gulf Cooperation Council (GCC) countries. Governments are responding with a variety of initiatives to accelerate digital development. Human capital is at the heart of many of these initiatives because far-reaching transformation is possible only with specific human skills and the ability to master and deploy the technologies.

Simultaneously, these disruptive technologies, and the speed at which they are advancing, are affecting the job market profoundly. Governments everywhere are being challenged to reconsider their human capital strategy. Although these technologies are likely to create new jobs and new types of work, they could also displace millions of workers globally. The growing “intelligence” of machines and algorithms is touching all jobs in some way. The World Economic Forum, for example, has estimated that 83 million jobs could be lost and 69 million created in major economies by 2027. That would constitute a structural labor market churn of 152 million jobs, or 23 percent of the 673 million employees in these countries. The expected churn in Saudi Arabia, which has the largest workforce in the region, is in line with the expectation elsewhere—23 percent. The applies in Bahrain, with expected churn of 26 percent, and the United Arab Emirates (UAE) of 22 percent, again consistent with the global average.³

The priority for governments, employers, and education systems everywhere is to improve skills and provide workers with the capabilities they need to flourish in a more technologically driven economy. According to the World Economic Forum research, six out of 10 workers globally will require training before 2027.⁴

GCC countries are working to improve their digital talent

The GCC needs a comprehensive new talent model to overcome these challenges. These countries have a particular urgency as they do not yet possess a deep pool of specialists with the full array of skills needed to advance their digital economies and technological development. GCC governments are well aware that they have areas in need of improvement. Consequently, in recent years they have embarked on significant human capital initiatives relating to digital technologies.

Saudi Vision 2030 identifies several objectives for advancing the country's digital agenda, and some related initiatives are already underway. For example, the Ministry of Education has introduced digital skills into the public-school curriculum, training over a million students and 11,000 teachers in core technology areas. The Saudi government has also launched the Tuwaiq program, which seeks to make at least one Saudi citizen out of every 100 a software programmer. Similarly, the Saudi Ministry of Communications and Information Technology has a future skills initiative that has trained more than 40,000 Saudi residents in emerging technologies.⁵

In another example, the UAE launched an initiative in 2017 to provide free online training to 1 million Arab coders, and achieved its goal by 2022.⁶ Ongoing UAE human capital initiatives to boost the digital economy include the Digital Government Strategy 2025, which focuses on ensuring 100 percent training of federal employees on basic and advanced (such as AI, blockchain, bots) digital skills.⁷ Another is the Dubai Future Foundation's courses in digital literacy aimed at supporting the reskilling, skills improvement, and career transformation of workers affected by technological change.⁸

Oman and Qatar also have launched digital economy programs that are focused on raising skill levels. Oman plans to train 10,000 nationals in modern technologies, with the aim of creating at least 7,500 income-generating opportunities by 2025.⁹ Qatar's scheme is for the ICT sector, by 2030, to employ 47,300 people, of whom 10 percent will have advanced skills.¹⁰

Understanding the GCC starting point

The forward momentum is palpable, and it is vital that GCC countries comprehend where they stand so they can invest in the correct areas. A benchmarking analysis of how GCC countries rank internationally in terms of 23 indices relating to human capital in the digital economy shows that governments have made strong commitments to digital transformation and education, and have made important investments in digital infrastructure (see Methodology, page 11).¹¹ However, these efforts have not yet yielded the desired results in terms of human capital.

The benchmarking covered three main areas:

- The readiness of a country's education ecosystem to provide a foundation that enables skills proficiency. This area includes metrics of digital skills, government commitment, and the responsiveness of institutions to the needs of the digital economy.
- Indicators of labor market proficiency, defined in terms of the availability of engineers, level of research intensity, intensity of software development, and level of AI development and deployment.
- Global talent relevance, or how attractive the GCC region is as a talent hub.

The exercise found that GCC countries have strong points in all three areas, along with room for improvement.

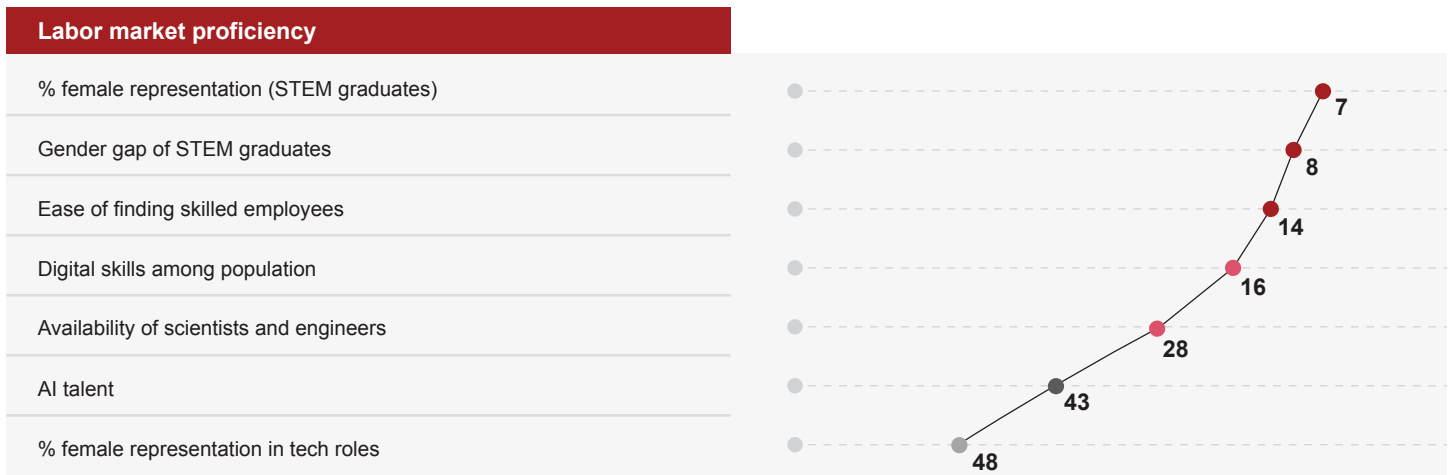
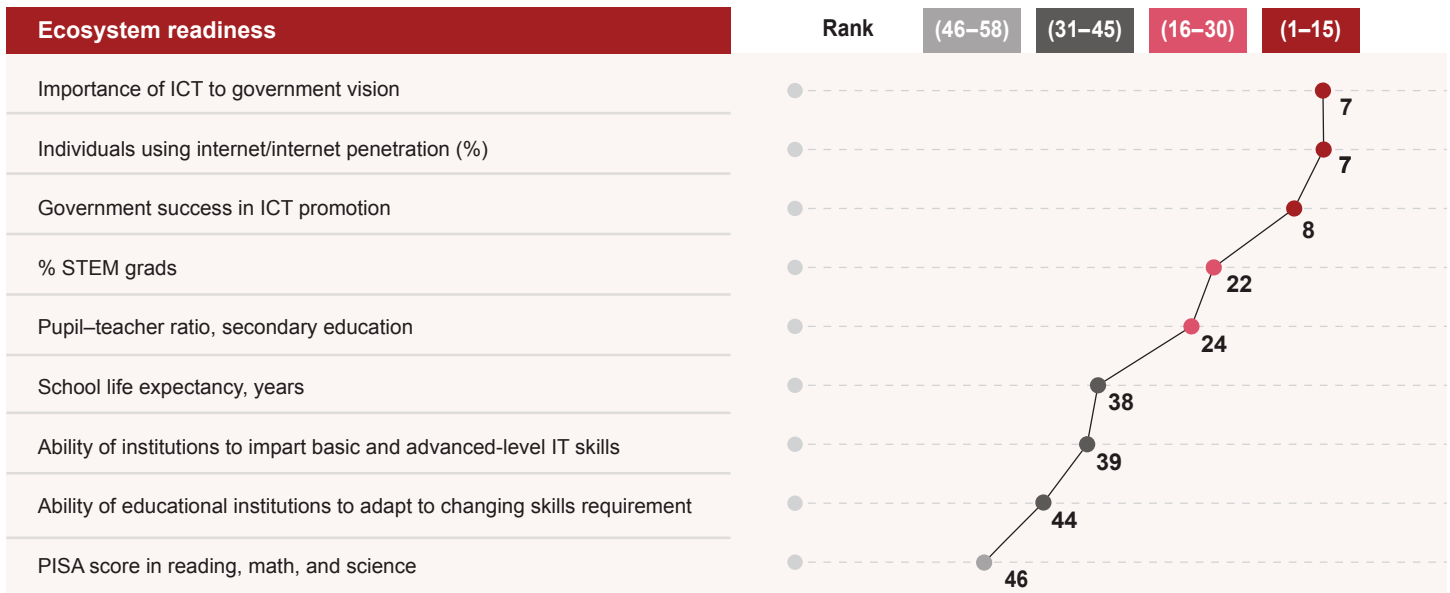
In terms of education ecosystem readiness, GCC governments show strong commitment to developing ICT and investing in education. For instance, Saudi Arabia spent 7.8 percent of GDP on education in 2020, as compared with a global average of 4.3 percent¹² and an average of 3.3 percent in the countries of the Organisation for Economic Co-operation and Development (OECD).¹³ GCC countries rank seventh globally in terms of the importance of ICT to the government's vision, have the seventh-highest internet penetration rate globally, and have top levels of internet usage and basic digital skills.¹⁴ However, there is work to be done at a foundational level to improve the math literacy of GCC students¹⁵ and "school life expectancy" (the years a child entering school can expect to spend in education).¹⁶ GCC countries can improve their scores when it comes to digital responsiveness and the ability to impart basic and advanced-level IT skills, where they rank 39th.¹⁷

In terms of labor market proficiency, GCC countries also have made notable progress. They rank seventh globally in terms of female representation among STEM graduates. They rank eighth in terms of having reduced the gender gap among STEM graduates. They score well in terms of how easy it is to find skilled employees and the digital skills among the population.¹⁸ However, GCC countries rank 32nd and 43rd in terms of the availability and competence of software developers and AI engineers.¹⁹

In terms of their relevance to global digital talent, GCC countries rank sixth globally in terms of their research intensity.²⁰ They rank eighth when it comes to the inbound mobility of tertiary-level students.²¹ However, GCC countries can improve when it comes to being prepared for likely technology-led disruptions over the coming decade by making it easier to hire foreign talent, for which they rank 27th.²² The same applies to innovation, for which they rank 42nd globally (see *Exhibit 1*).²³

EXHIBIT 1

GCC countries have varied rankings on factors involving human capital for the digital economy



Note: AI = Artificial Intelligence, PISA = Programme for International Student Assessment, STEM = Science, Technology, Engineering, and Mathematics.
Source: see Appendix, page 15

AN ACTION PLAN FOR A NEW TALENT MODEL

Although GCC countries have made considerable progress, they need a new talent model to propel themselves into the global digital vanguard. In line with the findings of our benchmarking analysis, the digital priorities fall into three categories—developing an ecosystem that fosters human capital and builds a strong learning culture, improving the proficiency of the labor market to provide digital economy roles, and enhancing the global relevance of GCC countries as a destination for talent.

We have supplemented these priorities with a critical cross-cutting fourth element: strengthening role of government as the orchestrator of many aspects of the three categories, the foundational enabler of the digital economy.

1. Develop an ecosystem that fosters human capital and builds a strong learning culture

GCC countries need an ecosystem in which education frameworks are aligned with development needs. More broadly, that means encouraging a society that adopts a digital approach to life, including the use of digital services and payments as well as digital social interactions. Governments can strengthen their digital education ecosystem through a number of education initiatives, detailed below.

A primary objective of digital literacy and awareness programs is to create “digital citizens” by inculcating the ability to make discerning choices that can maximize the benefits of technology. Such programs achieve this aim by enhancing digital awareness and literacy among different audiences, including students, employees, government personnel, job seekers, seniors, young people, and teachers. These programs involve familiarizing people with existing digital tools and technologies, along with career prospects in the digital economy. Governments can provide these programs through such channels as events and exhibitions, in schools and universities, in the workplace, and through webinars.

Align the education framework with the needs of the digital economy

Governments need agreement and alignment on education offerings among key stakeholders. Such coordination ensures that curricula properly reflect the requirements of the national digital education framework in all parts of the education system—primary, secondary, tertiary, and vocational. Governments also need a national digital education framework that standardizes education requirements for digital jobs and skills for all priority areas of the digital economy. This national framework ensures that education programs align with labor market needs. It also sets testing guidelines and standards that are consistent with the updated curricula. Governments should make sure that the national digital education framework and its education programs meet the digital economy's needs, and are adjusted if they do not. That involves gathering feedback and evidence from students, educators, and employers, along with such metrics as the percentage of students placed in digital roles and the involuntary attrition rates of new graduates.

Encourage industry–academia collaboration

Another means of making curricula relevant is fostering partnerships between education institutions and industry leaders. Such connections can encourage apprenticeship and mentorship programs that provide practical experience.

Develop programs in partnership with private-sector academies

GCC countries can mitigate the lack of practical experience offered in higher education by partnering with private-sector academies. These partnerships can assist students in becoming more employable in digital roles by providing access to hands-on training programs, bootcamps, coding programs, and student exchanges. These private-sector academies can also enable internships in digital roles, whether in public-sector or private-sector entities.

Nurture digital special interest groups

It is important that the digital talent effort go beyond the government. Communities of experts and practitioners can host coding competitions, along with national and global events, that encourage citizen engagement, and that raise interest in digital economy topics. Groups could focus on priority areas such as AI, cloud security, and robotics. They could collaborate with international counterparts to encourage knowledge transfer and networking. Communities could produce thought leadership and promote knowledge of entrepreneurship and innovation.

2. Improve the proficiency of the labor market to provide digital economy roles

Education changes provide digital talent over the medium and long term, but GCC countries also need short-term reforms to close their existing talent gap in the digital economy. That means acquiring sufficient skilled talent for a broad range of areas beyond obvious needs such as AI, cloud computing, and software development.

Develop reskilling and skills improvement programs

Governments can design programs that use on-the-job learning to develop employee skills in priority areas of the digital economy. Such programs are particularly useful for the unemployed, those seeking to change careers, and those facing job loss. In many cases, governments can enhance the impact of these programs by incorporating behavioral interventions.²⁴ Governments can also enhance the skills of workers who already have some digital knowledge, thereby sharpening their digital aptitude.

Develop leadership training programs

Governments need to offer leadership training courses designed for the digital economy. That is because the digital economy requires leadership skills different from those used in traditional economic activities. Governments must train a new cohort of GCC digital leaders to grasp the strategies of “digital native” companies, whether that means the ability to innovate new business models, design data-based go-to-market strategies, or seek digital revenue streams. Such leadership training should start now, but must be an ongoing effort in collaboration with universities, e-learning and training providers, and industry leaders. Part of leadership training is forming alliances and cooperative relationships with leading global institutions in the digital field.



Governments must train a new cohort of GCC digital leaders to grasp the strategies of “digital native” companies, whether that means the ability to innovate new business models, design data-based go-to-market strategies, or seek digital revenue streams.

3. Enhance the global relevance of GCC countries as a destination for talent

GCC countries need to become more attractive destinations for digital talent. This effort is a short- and long-term endeavor that should reverse the brain drain of regional talent while attracting international talent. The attraction of talent demands careful identification of which skills are needed and what are the correct methods to bring in such specialized workers. Governments should avoid broad-brush approaches that attract people who have easily replicable skills and whose presence creates a disincentive to cultivate domestic talent.

Adopt attractive visa schemes

Governments can alter their visa schemes to make it easier for tech companies and startups in the GCC to bring in talent from outside the region. They first should assess current visa regulations and requirements as they relate to key digital job profiles. It is important for governments to understand the supply gap of digital jobs, including seniority levels, and then identify which specific roles can be more easily filled with changed visa procedures.

Create targeted incentive programs for foreign digital talent

Governments can use various incentives to attract senior digital professionals. These can include financial incentives, relocation benefits, and lifestyle benefits. As with visas, governments should identify precisely the specialists the GCC digital economy needs and then craft the incentives to attract them.

Targeting foreign talent also involves marketing. Countries could launch dedicated portals or apps that consolidate their digital human capital initiatives. Such a digital presence could provide a marketplace for digital jobs and facilitate international talent mobility by providing information on such issues as visas and relocation benefits.

Encourage the gig economy

The digital economy is by its nature disruptive, encouraging new business models and different approaches to employment. Governments therefore need to ensure that domestic employment policies and regulations enable digital growth. The gig economy, which involves flexible contracts and methods of employment, has a role to play here. However, it is important that governments keep the gig economy within the remit of the digital economy. Governments also should regulate the gig economy so that it can grow while ensuring that it provides workers with adequate protections, benefits, and medical insurance.

Improve the region's reputation for research

Governments can attract talent to the GCC by improving the region's research profile. The digital economy is continually changing and advancing, making it a focus of research. Digital specialists want to be where the latest advances are occurring, in the places that generate the latest research. Governments should therefore encourage the publication of scientific articles, aim to increase the number of citations of work by GCC-based researchers in academic journals, and boost the number of technology patents. As part of that effort, GCC countries should participate in career fairs and placement efforts at the world's leading universities.

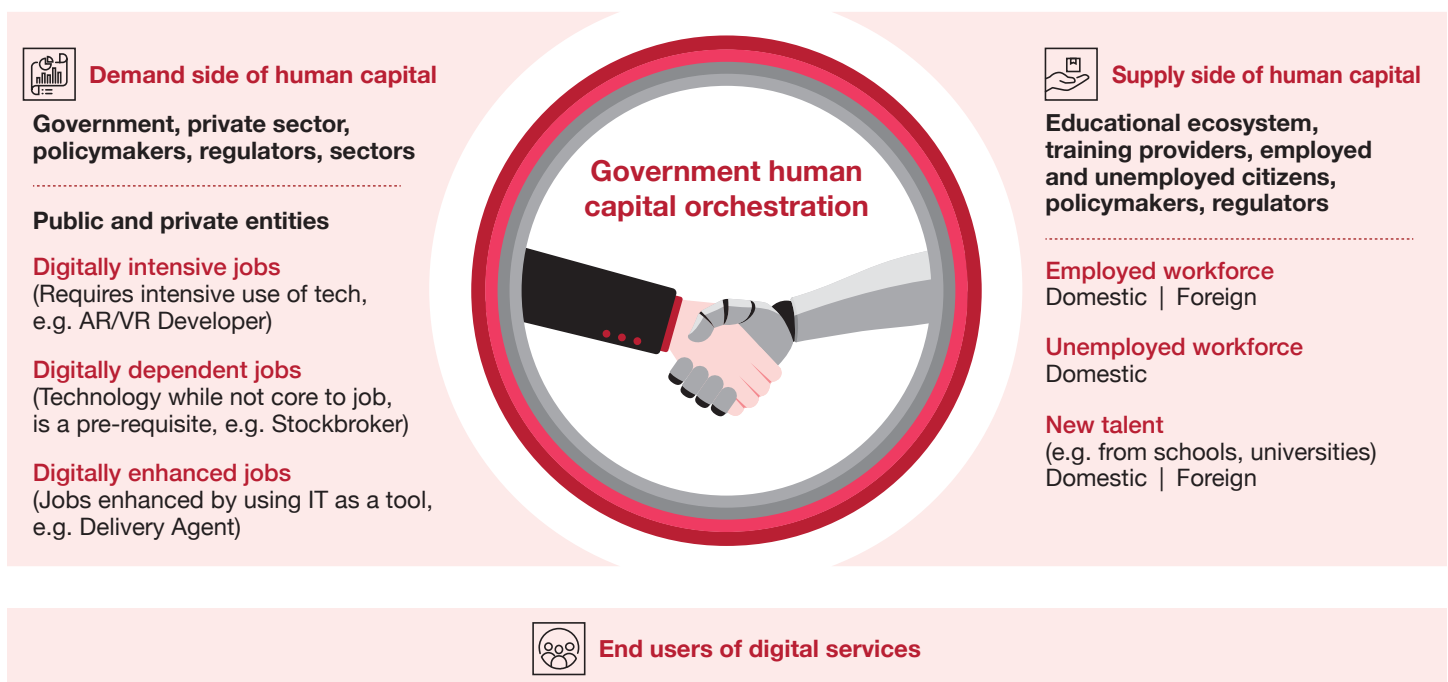
By becoming a research hotbed of the technology revolution, GCC countries can attract attention and talent. As part of that effort, they can use coding competitions and hackathons in the GCC to bring Middle East expatriates and global talent to the region.

4. Strengthen the government’s role as the orchestrator and enabler of the digital economy

Governments have an essential role to play in developing digital skills and creating a new talent model. That is because the government orchestrates the digital talent model and is the enabler of the digital economy (see *Exhibit 2*).

EXHIBIT 2

The government is the orchestrator and enabler of the digital economy



Source: Strategy&

Create a dedicated body for digital human capital

Governments need a dedicated body for digital talent to orchestrate their digital human capital efforts. The management of the digital talent model is a complex undertaking requiring coordination within government and with multiple domestic and international stakeholders. It also involves governments undertaking policy interventions, defining the ecosystem, and delivering training programs. The U.K.’s Department for Digital, Culture, Media and Sport plays such a role in developing the digital workforce, as does the Economic Development Administration as part of the U.S. Department of Commerce’s strategic plan.²⁵

The dedicated body plays important roles in understanding the state of the current talent pool, discerning future digital labor requirements in terms of competencies and specializations, and outlining the possibilities for international talent mobility. The result is a talent fulfillment strategy that synergizes the entire supply ecosystem (from such sources as educational institutions, the workforce, the unemployed, and recent graduates) to meet the demand requirements of the digital economy. Additionally, given the rapid development of technology, governments should revisit this strategy frequently to ensure that it meets the latest labor market requirements.

Develop a digital jobs taxonomy and skills framework

Governments need to define the boundaries of the digital economy so that they can have a focused and effective digital talent strategy. It is critical that governments know where the digital economy begins and ends so that they can create accurate baselines that guide their ambitions.

In particular, governments require a national digital jobs taxonomy, with such jobs currently falling into three main categories (see *Exhibit 3*).

EXHIBIT 3

There are three categories of digital jobs



Digitally intensive jobs

Focused on ICT domain and require expertise in digital tools and products

Examples:

3D Animator, Software Developer

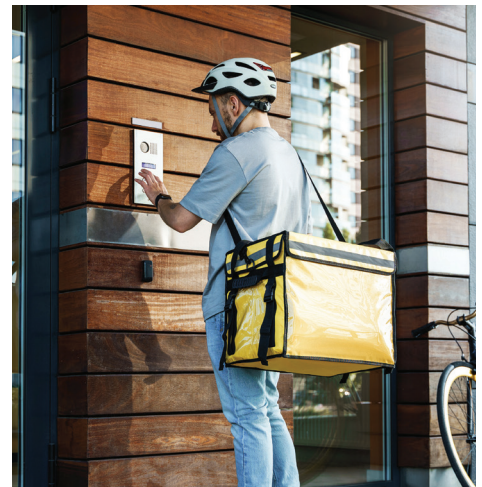


Digitally dependent jobs

Requires core skills from other disciplines along with technology skills

Examples:

Stockbroker, Business Analyst



Digitally enhanced jobs

Can be accomplished without the use of digital tools, but is optimized using technology

Examples:

Accountant, Delivery Agent

Source: Luis Fernandez Sanz, "Digital Jobs: a deep-dive," Digital Skills and Jobs Platform, European Union, July 5, 2023 (<https://digital-skills-jobs.europa.eu/en/latest/briefs/digital-jobs-deep-dive>)

Such a taxonomy contains and codifies the current and future skills requirement for the digital economy. Armed with this mapping, governments can engage with their ministries of education and labor, leaders of corporate HR, and digital economy executives to ensure that all stakeholders play their role. Stakeholders can include public-and private-sector employers, education bodies, and organizations that evaluate education.

The dedicated body for digital talent should collaborate with policymakers to integrate the taxonomy into national employment strategies, job creation programs, and education curricula. Additionally, the dedicated body for digital talent should periodically review and refresh the taxonomy to reflect emerging skills and job roles.

CONCLUSION

Creating a new digital talent model involves considerable effort. It is a painstaking multiyear process. What matters most, however, is recognition of its centrality to the development of the digital economy and the need for a structured approach. GCC countries already have recognized the importance of building digital capabilities and the significance of strengthening digital talent. Now is the time for them to take the vital next step and create a digital talent model for the future and the prosperity to come.

METHODOLOGY

We used the following methodology to calculate the performance and rank of the GCC countries.

We collated data to provide the raw performance scores for GCC states and 57 comparator countries for 23 defined human capital skill indices and parameters. The comparator countries were chosen from those ranking highest in the Wiley Digital Skills Gap Index, OECD countries, and the G7.

We normalized the raw scores for GCC countries using population totals to create an overall GCC composite score. Using this GCC composite score, we then were able to establish how the GCC performed compared with the 57 other leading digital economies.

Appendix

Performance indicator	Source
Importance of ICT to government vision	Wiley Digital Skills Gap Index, 2021 https://dsgi.wiley.com/
Individuals using internet/internet penetration (%)	Statista, World Bank
Government success in ICT promotion	Wiley Digital Skills Gap Index, 2021 https://dsgi.wiley.com/
% STEM grads	Global Innovation Index https://www.wipo.int/global_innovation_index/en/2022/
Pupil–teacher ratio, secondary education	Global Innovation Index https://www.wipo.int/global_innovation_index/en/2022/
School life expectancy, years	Global Innovation Index https://www.wipo.int/global_innovation_index/en/2022/
Ability of institutions to impart basic and advanced-level IT skills	Wiley Digital Skills Gap Index, 2021 https://dsgi.wiley.com/
Ability of educational institutions to adapt to changing skills requirements	Wiley Digital Skills Gap Index, 2021 https://dsgi.wiley.com/
PISA scores in reading, math, and science	Global Innovation Index https://www.wipo.int/global_innovation_index/en/2022/
% female representation (STEM graduates)	Wiley Digital Skills Gap Index, 2021 https://dsgi.wiley.com/
Gender gap of STEM graduates	Wiley Digital Skills Gap Index, 2021 https://dsgi.wiley.com/
Ease of finding skilled employees	Wiley Digital Skills Gap Index, 2021 https://dsgi.wiley.com/
Digital skills among population	Wiley Digital Skills Gap Index, 2021 https://dsgi.wiley.com/
Availability of scientists and engineers	Wiley Digital Skills Gap Index, 2021 https://dsgi.wiley.com/
AI talent	The Global AI Index 2023 from Tortoise Media https://www.tortoisemedia.com/intelligence/global-ai/
% female representation in tech roles	International Labour Organization
Research intensity	Wiley Digital Skills Gap Index, 2021 https://dsgi.wiley.com/
Inbound mobility of tertiary-level students	Global Innovation Index https://www.wipo.int/global_innovation_index/en/2022/
Digital Skills Gap Index, overall score	Wiley Digital Skills Gap Index, 2021 https://dsgi.wiley.com/
Ease of hiring foreign talent	WEF Global Competitiveness Report
Global Innovation Index score	Global Innovation Index https://www.wipo.int/global_innovation_index/en/2022/

Note: AI = Artificial Intelligence, ICT = Information and Communications Technology, PISA = Programme for International Student Assessment, STEM = Science, Technology, Engineering, and Mathematics.

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