BRICS Auditorium of Skills Development, Applied Technology and Innovation

2025 MIDTERM REPORT

BRICS BUSINESS COUNCIL

CONTENTS

INTRODUCTION

The The BRICS Auditorium is a discussion forum organized regularly by the BRICS STI Working Group Chair. Under the Brazilian presidency, SENAI coordinated a series of 6 (six) auditorium sessions addressing the following key topics:

i. Policy benchmarks for upskills and reskill, engaging both new and traditional BRICS members;
ii. Development of skills for employability, exploring roadmaps from education to employment; and
iii. Competencies required for applied technology and innovation.

The expected outcomes of the Auditorium are to deepen the understanding of global trends and policy benchmarks for workforce upskilling and reskilling, as well as to strengthen approaches for employability skills in the technical and vocational education and training (TVET) and higher education agendas.

A particular focused was given to high-tech sectors and green transformation areas. In this contexto, the Auditorium explored new avenues of dialogue among BRICS Working Groups addressing upskill and reskill needs. This initiative aimed to bring together businesses representatives and educational stakeholders to explore technological trends, identify skills gaps, and create opportunities to work collaboratively.

Finally, considering the recent expansion of the BRICS group, another key objective was also to actively integrate new BRICS members into ongoing activities of the STI Working Group.

All sessions were conducted via the Zoom Platform, enabling broader participation and live engagement of the STI WG members from across multiple countries. Real-time interaction fostered dynamic discussions, allowed for immediate exchange of perspectives, and encouraged the sharing of diverse experiences, ultimately enhancing the quality and relevance of the Auditorium's outcomes.

FIRST MEETING OF THE BRICS SKILLS AUDITORIUM ON UPSKILLING AND RESKILLING

April 29th, 2025

The focus of the inaugural Auditorium session was to stimulate a meaningful exchange of experiences and strategies among countries addressing the challenges posed by the twin transition – the digital transformation and the transition to a green economy. Recognizing the value of exchanging experiences and learning from global benchmarks, participants could interact and share knowledge on how to address the current skills shortage and strengthen the labor workforce.

Country Presentations

Brazil

Opening by Felipe Morgado, Superintendent for TVET and Higher Education, SENAI National Department.

In the opening speech, Brazil underscored the pressing need to advance strategies for comprehensive workforce upskilling and reskilling, as a response to the current twin transition – digital and ecological/green – and its impacts on future professions and workforce readiness. The speech referenced the recent meeting of BRICS Ministers of Labor and Employment, which brought attention to the persistent challenges presented by a rapidly evolving labor market and the critical demand for short-term professional requalification. Emphasis was placed on the importance of establishing robust partnerships with government bodies to effectively address these challenges.

Furthermore, Felipe highlighted the urgency of developing financing mechanisms that support the expansion of digital literacy programs and educational opportunities, particularly in high-technology sectors and areas related to the green transition. It was noted that digital literacy strategies must be revisited to ensure inclusivity and accessibility, especially for populations in remote or underserved regions. The speech also reinforced the value of strong partnerships between industry and universities, as well as the necessity of fostering a culture of continuous learning to enable workers to adapt successfully to ongoing technological advancements.

Indonesia

Presented by Tri Mumpuni, Executive Director, IBEKA

The first presentation provided a glimpse of Indonesia National System for vocational education and training (VET), exploring ongoing policies and initiatives for reskilling and upskilling of the workforce. Indonesia faces considerable challenges, including high unemployment rates and the fact that only about 12% of workers have received formal vocational training. The labor market scenario is further complicated by 60% of employers report difficulty finding skilled workers (ILO, 2022) and an estimated 43% of jobs in Indonesia being at high risk of automation (World Bank, 2020).

In response to the low levels of vocational training, insuficient infrastructure and lack of integration with local industry, a Presidential Regulation was enacted in 2022 to revitalize VET across the country. The presentation highlighted key strategies, such as enhancing the alignment (link and match) between VET program and industry needs, actively engaging private sector and expanding online upskilling subsidies. Other priorities include standardizing skills certification through a National Qualifications Framework and optimization of government-run training centers.

These efforts aim to address issues such as youth unemployment and the mismatch between education and labor market demands, while also advancing the development of university graduate programs that cultivates social empathy and intellectual capacity for students to tackle community needs. Ultimately, the objective is to foster the creation of local jobs and support territorial development. Below are some highlights of programs implemented in the country.

Pre-Employment Card (Kartu Prakerja) - Digital Upskilling Subsidies

The Indonesian Pre-Employment Card (Kartu Prakerja) is a government-funded initiative aimed at enhancing digital upskilling and reskilling among job seekers and existing workers. Launched in 2020, the program provides online training subsidies of up to Rp 3.5 million per participant and is delivered in partnership with various leading online learning platforms, including Tokopedia, Skill Academy, Coursera, and Ruangguru. Since its inception, the program has trained over 18.9 million individuals, covering all 514 districts and cities across Indonesia. Participation has been strongest among young adults, with 61% of trainees aged 18 to 35. However, only about 22% of participants come from rural areas, reflecting ongoing challenges related to internet access in more remote regions.

The program has demonstrated significant positive outcomes. According to recent data, 62% of Pre-Employment Card graduates report higher incomes, averaging a 27% increase, while 38% of participants have started new micro and small businesses (UMKM). Employment rates among participants increased notably, rising from 39% at registration to 55% just two months after completing training. Additionally, 95% of beneficiaries feel better prepared for employment, and 63% believe the program has improved their competitiveness in the job market.

Despite these successes, the initiative faces challenges related to limited rural participation, driven by connectivity infrastructure gaps, and concerns over long-term sustainability, as the program's continuation is contingent upon ongoing government budget support.

SMK Revitalization - Bridging the Skills Gap

Indonesia's SMK Revitalization initiative aims to bridge the country's skills gap by modernizing vocational high schools (SMK) in line with Industry 4.0 standards. This program has fostered robust partnerships with leading industry players such as Siemens and Festo in automation, and Telkom in the field of Internet of Things (IoT). These collaborations are closely aligned with national efforts to revitalize the SMK system,

ensuring that vocational education is closely matched with the latest technological advancements and the needs of the modern labor market.

The outcomes of this initiative are significant. By 2025, students from revitalized SMKs are expected to achieve a 94% graduate employment rate, a figure significantly higher than the national SMKs average of 53%. Graduates from revitalized schools also enjoy salaries approximately 2.1 times higher than those from non-revitalized SMKs. Despite these promising results, progress remains limited in scale. Currently, only about 300 out of 14,000 SMKs (2%) have reached advanced Industry 4.0 revitalization standards. The vast majority of SMKs are still at the early stages of transformation or lack the strong industry partnerships necessary to modernize their curricula and training infrastructure. completing training. Additionally, 95% of beneficiaries feel better prepared for employment, and 63% believe the program has improved their competitiveness in the job market.

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Green Jobs - Renewable Energy Provision

The Green Jobs - Renewable Energy Provision program is a collaborative initiative between Indonesia's Ministry of Energy and Mineral Resources (KESDM) and the IBEKA Foundation. It focuses on training and deploying young intellectuals to frontier, outermost, underdeveloped, and disadvantaged (4T) regions. The aim is to serve villages without reliable access to electricity by empowering local communities through renewable energy solutions. Participants are equipped with four key competencies: technical skills, perseverance, foundations for community-based development, and a spirit of sincerity.

As of 2025, the program has engaged 261 students across 27 provinces in Indonesia, reflecting a broad geographic reach. The career pathways of graduates demonstrate the program's wide-ranging effect: 20.7% have been absorbed into public services, 33.3% into the private sector, and 18.8% have taken up roles in NGOs. Additionally, 8.4% have become entrepreneurs, leveraging their skills to create new local opportunities, while 7.3% have continued their studies. This diverse distribution showcases the program's effectiveness in preparing young professionals for impactful careers in the growing field of green jobs, supporting both rural development and the nation's renewable energy agenda.

Iran

Presented by Abdolhossein Nazerian, International Academic Affairs Director, Technical and Vocational University of Iran

The presentation provided a comprehensive overview of Iran' Skill Development Ecosystem, which is structured around three primary modalities: formal, informal, and non-formal training. Formal training is regulated, and certificates are recognized either by the Ministry of Education (for K-12 levels) or the Ministry of Science, Research and Technology (responsible for technical and vocational education and training – TVET and higher education). Informal training provides flexible upskilling for a dynamic workforce. Encompassing over 12,000 providers, it comprises TVET certified courses, TVET-Industry partnerships, as well as SME-led workshops and uncertified short courses. In contrast, non-formal training and apprenticeships take place in traditional family workrooms or are experience-based, often lacking certification and with local recognition. This presents significant challenges for skills portability beyond the community and broader labor market integration of the workforce.

The presenter placed particular emphasis on the critical role of certifications and cross-border skills recognition to address challenges related to upskilling and reskilling of the workforce. Several solutions were proposed to foster an integrated and future-oriented skills ecosystem across the BRICS+ countries:

- **BRICS Skills Accreditation Council (BSAC):** Mutual recognition of certifications in priority sectors (AI, green tech, among others);

- **Digital Skills Passport:** Blockchain-based credential sharing for labor mobility;
- **BRICS Skills Observatory:** AI-driven tracking of emerging skill demands and information sharing; and
- **Joint Apprenticeship Standards:** Pilot programs in traditional sectors with quality benchmarks.

United Arab Emirates

Presented by Latifa Mohammad, MEAE Senior Human Capital Manager, DP World

In response to the challenges posed by rapidly evolving labor market demands, the United Arab Emirates (UAE) introduced to the BRICS+ countries an innovative program centered on talent development through cross-sectoral knowledge exchange and collaboration. It targets strategic industries such as logistics, digital trade, renewable energy, port operations, marine, and shipyard management, among other sectors, and offers cross-border upskilling experiences tailored to anticipate and address skills gaps. Customized iterations of this initiative are already operational in partnership with Russia, Iran, and China, yielding positive results and demonstrating its scalability and impact.

This initiative is structured to immerse participants in diverse cultural and business contexts, equipping individuals with practical, hands-on experience. It emphasizes the development of cross-cultural leadership competencies, increased adaptability, and the establishment of robust professional networks. Designed to provide young graduates with opportunities for international mobility, rotational job placements, and global assignments, it fosters a dynamic, innovative, and internationally competitive workforce.

Driven by a shared vision for cross-border collaboration, these strategic initiatives are proposed to strengthen workforce capabilities and elevate the employee experience across BRICS nations:

Mobility Job Rotation Framework

A structured job rotation and mobility framework is proposed to build a future-ready workforce and enable employees to broaden their skill sets. The goal is to expose professionals to a variety of operational models, regulatory environments, and cultural contexts—enhancing their ability to think strategically and lead effectively in a complex and dynamic environment.

Secondment International Assignment

This proposal enables high-potential professionals from BRICS nations to temporarily engage in international assignments—typically between 6 to 12 months—in partner countries, including the UAE. Focused on priority sectors such as logistics, shipyards, ports and terminals, digital trade, renewable energy, and smart infrastructure. Participants can enhance their skills, adaptability, and global outlook—contributing to a more resilient and future-ready workforce across BRICS nations.

International Internship Opportunities

This program offers the opportunity to gain international exposure through structured internships in key industries. Participants from universities within BRICS nations can develop the skills and adaptability

needed to contribute effectively in emerging markets —strengthening talent pipelines and fostering future-ready professionals.

Final Considerations

Workforce adaptation to technology and automation

The session underscored significant concerns regarding the rapid pace of technological change and its implications for job automation and workforce preparedness for future professions. Participants emphasized that not all roles can or should be automated, particularly in service-intensive sectors such as education, healthcare, tourism, and housekeeping, where human experience and local knowledge are indispensable.

In sectors with greater potential for automation, the importance of well-crafted communication strategies was noted to help convey the benefits of technological innovation and to address resistance among workers and communities. Additionally, there was a strong call to expand TVET opportunities for reskilling and to implement supportive measures for the reassignment of workers affected by technological transitions.

TVET partnerships and orientation to future of work

The modernization of educational institutions, including the upgrade of technological infrastructure, capacity building for educational professionals and continued curriculum updates, emerged as crucial priorities. Iran's practice of conducting annual curriculum reviews in the Technical and Vocational University was highlighted as a benchmark for adaptability and quality assurance in vocational education.

The session also emphasized the importance of fostering robust partnerships among educational institutions, industry, and government to keep training relevant to evolving market needs. Such collaborations are essential for enhancing student employability, promoting entrepreneurship, and strengthening the overall competitiveness of businesses in a rapidly changing economic landscape.

Recognition of certificates and international professional mobility

Discussions emphasized the necessity for mechanisms and accreditation bodies to support mutual recognition of certificates across BRICS countries. Proposals for digital platforms to exchange and evaluate credentials were highlighted as key to fostering professional mobility and enabling workforce integration within the bloc.

Financial mechanisms and regulatory frameworks

The creation and scaling of financial incentives and supportive regulatory frameworks were identified as vital for encouraging business investment in broader workforce upskilling and reskilling. Sustainable financing models, including propositions to create national funds to support educational technological infrastructure such as future skills centers, digital learning platform, training hubs and BRICS Workshops, can play a pivotal role in motivating employers to actively engage in skills development initiatives and invest in the modernization of educational technological infrastructure.

The group also highlighted the importance of including a clause in the New Development Bank (NDB) contracts that allocates a percentage of funds to upskilling and reskilling initiatives in the contractor's

country, aligned with strategic goals for workforce development in high technologies and green transformation areas.

Concerns about inclusion and future strategies

Inclusive approaches were recognized as essential for shaping future skills agendas, especially concerning youth, elderly groups, and communities in remote areas. Plans were made for upcoming meetings to address industry-university collaboration, feedback mechanisms in education, and gender inclusion in STEM. The following Auditorium was planned to spotlight ongoing BRICS initiatives in sectors such as energy, agribusiness, infrastructure, and digitalization, reinforcing the commitment to collaborative and sustainable skills development.

SECOND MEETING OF THE BRICS SKILLS AUDITORIUM ON UPSKILL AND RESKILL SYNERGIES ACROSS BRICS WG

May 27th, 2025

The second session of the BRICS Skills Auditorium was designed to deepen the exchange of experiences and strategies among the BRICS Business Council Working Groups (BBC WG) in addressing the evolving challenges of workforce requalification. As digital transformation, the green transition, and the proliferation of high technologies reshape global labor demands, the importance of timely and effective upskilling and reskilling initiatives became increasingly evident across all sectors.

Upskill and reskill debates were mapped in the following BBC WG, beyond the STI WG: Agribusiness; Aviation; Digital Economy and Artificial Intelligence; Energy, Green Economy and Climate; and Manufacturing. In the BRICS Women Business Alliance (WBA), synergies were also identified across the debates in the Innovative Development, Inclusive Economy and Tourism Working Groups. A special invitation was also made for the participation of the Emerging Biopharmaceutical Manufacturers Network (EBPMN). Representatives of these groups were invited to present and discuss their perspectives on the three key points:

- New technological trends that need to be considered by the educational sector;
- Skills needed in the workforce not easily found in the job market; and
- Mechanisms and incentives to stimulate businesses in developing actions for workforce requalification.

The objective was to facilitate focused discussions on the development of qualifications that are responsive to the most pressing technological trends and labor market gaps identified across different economic sectors. Overall, participants highlighted the relevance of cross-country collaboration, innovative educational platforms and public-private partnerships to address the diverse and evolving needs of the global workforce, ensuring workers are prepared for both foundational digital literacy skills as well as advanced industry requirements.

By bringing together private sector education providers and industry representatives, businesses insights were explored, and innovative pathways could be identified to bridge skill gaps and build a workforce resilient to ongoing and emerging changes in the global economy.of

Sector-Specific Presentations

Aviation

Presented by Carlos Andrade, PMO, CNI BBC

Representing the Aviation Working Group, Carlos presented a proposal for creating standardized aviation training standards across BRICS countries and the BRICS Aviation Academy. It was emphasized the importance of collaboration among training academies to develop a comprehensive training package for the aviation sector, including logistics and cargo, thereby enhancing critical aviation skills, safety, and security. In this regard, several key training needs were identified:

Safety protocols and standards for pilot training

A critical aspect is to develop common safety protocols and standards for pilot training, preventing accidents and security breaches, protecting passengers and cargo, and maintaining the reputation of the BRICS countries' aviation sectors.

Training in emerging technologies

- **Remotely Piloted Aircraft Systems (RPAS)**, also known as drones. As these technologies advance, particularly in cargo transport, there is an increasing need for specialized training in its operation.
- **Urban Mobility Aviation Solutions.** Training is required for rapidly developing fields such as air taxis.
- **Cross-Pollination between Defense and Civilian Aviation**. There are significant benefits in sharing technology and practices between defense and civilian aviation operating systems. Training in these areas can capitalize on these synergies.

Digital Economy and AI

Presented by Ailtom Nascimento, Vice President, Stefanini Group

On behalf of the Digital Economy and Artificial Intelligence Working Group, Ailtom presented ongoing discussions on the workforce skills gap, particularly in areas like data engineering, data science, software development and deployment in industrial operations, cybersecurity and artificial intelligence applications. In face of the speed and scale of the technological transformation, he noted the insufficiency of isolated company training initiatives, advocating for greater coordination of public-private stakeholders and educational providers for a broader workforce preparedness for the digital era.

It was also highlighted the need to level up and expand the core competencies usually targeted in traditional digital literacy programs. These remarks focus on:

Gap between available workforce and technology needs

A major concern is the existing gap between the people available to be trained and the specific skills needed for new technologies and emerging professions. While there are many opportunities for people

to work, the challenge lies in effectively filling this skills gap. It was reported the businesses' difficulty in finding individuals with basic and advanced skills for technology careers.

Beyond foundational skills, there's an urgent need to train many people for specific roles such as data engineering, data scientists, and DevOps roles that are crucial for the digital economy and AI. These points highlight a two-fold challenge: on one hand, the struggle to find fundamental competencies for entry-level tech jobs, and on the other, the urgent demand for highly specialized skills in cutting-edge fields like AI and cybersecurity.

Level up and expand core digital competencies

Digital literacy programs traditionally incorporate basic computer usage skills, internet and web navigation, and e-mail and online communication. However, it still lacks the development of critical thinking skills, like: using search engines and AI tools to find information; productivity tools like managing basic data in spreadsheets and presentations; digital safety and security of personal data and business information, being able to recognize and avoid phishing and scams; responsible and ethical use of digital resources and behavior in digital space; problem solving of basic technical issues; self-learning skills, among other aspects.

Cybersecurity as a critical skill gap

Special attention was given to the need to expand cybersecurity and cyber hygiene concepts in the context of workforce development, integrating cyber readiness skills as a core component of digital literacy. Cybersecurity is identified as a vital area where people need to be trained, not just professionals already in the market. The goal is to educate people from an early age to defend themselves and fight against cyberattacks.

To tackle these challenges, the WG emphasizes the need to engage businesses in workforce development, supporting the idea of creating incentives for companies to actively contribute to workforce development programs.

Agribusiness

Presented by Cristiane Costa, Talent Acquisition Manager, BRF

Cristiane presented challenges in Brazil's agribusiness sector, specifically within the meat industry.

Geolocalization issues and spillover effects

Operations are frequently located in small towns in the country area, where unemployment rates are very low (sometimes below 2%). This leads to intense competition for labor, especially for operational roles. As a result, approximately 60% of the workforce needs to be sourced from outside the immediate localities, often requiring long daily commutes (around 2 hours each way).

Moving into the city not always is a possibility, due to the lack of adequate housing, school offers and the job market for family members. These burdens of travelling to work or moving to a city where the family settlement would not be easier make employees prefer jobs closer to home, contributing to the high turnover.

Support from migrant labor and related social challenges

A significant portion of the operational workforce is comprised of migrant and refugee populations (e.g., from Venezuela, Haiti, and other Brazilian states). While crucial for sustaining production, this displacement requires extensive planning, infrastructure, and alignment between the industry and local municipalities, as many of these cities may lack adequate housing, education, and health services for displaced populations.

This influx can also lead to increased housing costs and basic living expenses in operational areas, creating a social imbalance. Furthermore, many migrant workers do not speak the local language, necessitating preparation for multilingual environments.

As per the core competencies, below are the key aspects highlighted when facing sector' operations in country areas which are not sufficiently served with educational opportunities:

- **Scarcity of basic competencies**
  Finding individuals with the basic digital literacy skills and minimum schooling required for entry-level positions in country areas is difficult, even if reduced basic hiring requirements.
- **Lack of preparedness for emerging technologies**
  While the sector is investing heavily in technologies like automation, Artificial Intelligence (AI), Internet of Things (IoT), and digitalization (Industry 4.0/5.0/6.0), the existing workforce is largely unprepared for these advancements.

In general, there's a scarcity of "Operator 4.0" profiles in the country area labor market, meaning individuals capable of working with sophisticated equipment in these new industrial paradigms. This implicates significant efforts for on-the-job training programs and partnerships with educational providers to upskill the workforce.

Beyond operational roles, there's a major gap in technical labor when hiring for country areas of operations. It takes long recruitment times for roles such as refrigeration, steam generation, effluent treatment, water treatment, mechanics, electrical, and automation technicians. Additionally, engineering courses in Brazil are often undersubscribed, making it difficult to find candidates for positions requiring higher education in specific locations.

Ineffective traditional recruitment platforms

Conventional online job platforms, which are often email-based or require long processes for filling the CV information, have low adherence among operational staff. Despite being digitally active on social media and WhatsApp, these individuals find email-based applications cumbersome, leading to high dropout rates during the application process.

This has prompted companies like BRF to develop user-friendly, AI-powered virtual assistant bots for WhatsApp to simplify job applications, allowing candidates to apply via audio messages, making the process more accessible and efficient. And still requires human interaction to assure suitable candidates are matched with the opportunities available

Emerging Biopharmaceuticals Manufacturers Network (EBPMN)

Presented by Tiago Rocca, Quality Assurance Expert, Butantan Foundation

Tiago provided comprehensive insights into the Emerging Biopharmaceuticals Manufacturers Network (EBPMN), which is an industry association that connects biopharmaceutical manufacturers throughout BRICS countries with various stakeholders, including entities, governments, academia, startups and professionals.

Founded in 2019 the EBPMN's educational initiatives include Webinars and collaborative research projects, seeking to build biopharmaceutical local capability and reduce dependency on imported medicines. The Network's goal is to catalyze local production and training, and to make innovative treatments more accessible through strengthened public-private health collaborations.

Biopharmaceuticals are characterized by cutting-edge technology, involving very expensive equipment and drugs that are difficult to develop and produce. The complexity and costs of the sector require the organization of an effective ecosystem around it, including businesses, regulatory agencies, educational providers, and academia.

To bridge the skills gap, a primary objective of EBPMN is to provide technical training and support to startups and new entrants in developing and manufacturing advanced therapies locally. While webinars remain the network's flagship educational offering, EBPMN is actively exploring additional models including in-person training and international exchange missions, as practiced by larger associations. It is also exploring onsite or in-person training and international missions.

Local production is crucial not only for economic and technological development but also to reduce costs, improve accessibility, and prevent shortages, particularly during public health crises like pandemics. It also allows the acceleration of local manufacturing of pharmaceuticals and biochemicals across member countries, serving as a specialized collaborative platform for advanced medicine where emerging nations can collectively build the expertise, infrastructure, and workforce necessary to advance in manufacturing critical, high-tech biopharmaceutical treatments.

Learn more at https://ebpmn.tech, the official platform showcasing EBPMN's initiatives, partnerships, and opportunities to collaborate across the BRICS biopharma ecosystem.

Inclusive Economy - Tech Equity Platform

Presented by Somyah Gupta, Consultant, FICCI G20 India

Tech Equity platform was conceived to be a global upskilling platform which aggregates free, self-paced courses in digital and financial literacy, tech skills, and personal development. Launched in 2023 with the mandate to bridge the tech divide, Tech Equity's purpose is to serve as an aggregator platform that brings together learning opportunities to address skill gaps and promote digital inclusion and upskilling of individuals, particularly for women.

Empowering women and fostering digital inclusion

Tech Equity is designed as a movement towards women development and digital inclusion. It is dedicated to empowering women with the digital skills and knowledge they need to technology, serving as their pocket tool for upskilling.

Addressing workforce skill gaps and broadening skill development

It tackles a new crisis where millions of skilled workers are knowledgeable about industry trends and technologies like AI but are not skilled enough to use them or are unsure what to learn more.

A core aspect of its purpose is to offer aggregated, high-quality courses for free, allowing users to learn at their own pace. Courses are organized across four key categories, ranging from fundamental to advanced levels:

- **Digital literacy:** For those who need basic computer and internet usage skills.
- **Financial literacy:** To help individuals understand and manage their finances, including online banking and investments.
- **Tech skills:** Covering basic and advanced topics such as Artificial Intelligence (AI), Python, and how to create apps or websites.
- **Personal development:** Including soft skills like negotiation and presentation.

Acting as a public digital academy for global upskilling, the platform reaches over 80 countries and offers courses in 13 languages. To develop innovative content, it collaborates with major partners such as IBM, Meta, and Google. Somyah invited further BRICS engagement to expand access and training offers, underscoring the vision of making upskilling as easy and universal as using social media.

Conclusion of the Debates

The session concluded with exchanges on advancing partnership among business representatives and educational providers, leveraging standardization initiatives across various sectors. Somyah, Tiago and Carlos highlighted potential opportunities and suggested a closer sectoral collaboration.

Mr. Du Hongjie (Luke), from STI WG China Chapter, outlined ongoing efforts to set cross-sector standards and curricula in BRICS. In 2022, the BRICS Standardization Working Committee of Skills and Technology was established and until now standards for approximately 50 skills were formulated, including AI, machine learning, big data, and building information modeling. On behalf of the Committee, the invitation to collaborate with other groups on developing standards for needed skills and identified deficiencies was accepted.

The discussions throughout the meeting revealed a strong consensus among diverse BRICS working groups on the critical need for a coordinated, forward-looking approach to workforce development and technological integration. This collaborative spirit underscored shared challenges in preparing the workforce for evolving economies and solidified several actionable points:

- **Strategically address foundational skill gaps.** Target foundational skills to address the workforce gap in basic digital literacy and behavioral competencies like adaptability, critical thinking, communication, and agile learning.
- **Foster sustained cross-sectoral policy dialogue and collaboration.** Establish and maintain cross-sectoral working groups dialogues to facilitate the identification of technological trends, skill gaps, and opportunities for BRICS business and educational providers' collaboration.
- **Expand efforts in developing and deploying common standards and curricula in critical skills.** Accelerate efforts in developing and implementing common standards and core curricula for critical emerging skills across BRICS nations, ensuring higher standards and better mobility of workers across sectors and countries.

- **Advocate for governmental incentives for companies to engage in professional workforce development programs**. Public-private partnerships are vital for effectively filling large skill deficits and fostering a more competitive and resilient workforce across the BRICS economies.
- **Leverage user-centric technology for talent acquisition, retention, and lifelong learning**. Implement and promote the use of user-friendly, technology-driven solutions for recruitment, talent management, and lifelong learning. This includes deploying AI-powered virtual assistant bots, particularly via widely used communication channels like WhatsApp, to simplify job application processes for operational and less digitally-savvy candidates.

THIRD MEETING OF THE BRICS SKILLS AUDITORIUM ON EMPLOYABILITY

June 24th, 2025

The third session of the BRICS Skills Auditorium focused on the critical theme of employability, exploring roadmaps from education and R&D (research and development) to employment. The session brought together representatives from all participating countries to address some of the most pressing challenges in contemporary labor markets.

Against a backdrop of global economic shifts, digital transformation and climate change, and evolving patterns of work, the meeting sought to explore sectoral vulnerabilities to labor shortages, innovative short-term solutions beyond traditional talent migration, and the promise and limitations of digital employment in mitigating brain drain. Key questions were proposed to guide the discussions:

- Which sectors are most vulnerable to labor shortages, and what short-term solutions are being designed beyond traditional migration of talents?
- Could digital employment help reduce brain drain in developing economies, or might it unintentionally benefit only highly skilled workers?
- What policies should BRICS+ countries prioritize to address the labor paradox of skills shortages and talent mismatches?
- How are new forms of employment (e.g., gig work, remote roles, platform-based jobs) reshaping labor markets in BRICS+ countries, and what talent-matching models can bridge skills gaps effectively?
- How is AI transforming labor markets - displacing, augmenting, or creating jobs - and what safeguards can ensure inclusive workforce transitions in BRICS+ economies?

The meeting provided a comprehensive overview of the ongoing efforts and challenges related to employability and workforce transformation within the BRICS framework. Discussions highlighted the persistent scarcity of qualified workers in several sectors, such as manufacturing, healthcare, IT and agriculture, ranging from high-tech areas to human-centric services.

This discussion emphasized the necessity of continuous investment in the qualification and requalification of professionals across economic sectors. Presentations also explored the potential and limitations of digital employment and remote work, examining their impact on talent retention, the risk of brain drain, and the complexities of social security coordination across borders.

Further, participants discussed the transformative role of artificial intelligence in the labor market, weighing both the risks and opportunities it presents, particularly in relation to the balance between automation and the enduring importance of human labor. The group reached a consensus on the

need for effective social protection mechanisms to support workforce transitions in an era of rapid technological change.

The meeting also emphasized the potential of digital platforms, remote work, and international cooperation to address these issues, with a focus on overcoming barriers like legal frameworks, qualification recognition, and data security, ultimately working towards a unified white paper to guide future collaborative efforts.

Country-Specific Presentations

Brazil

Presented by Marcello Caio, Labour Relations Specialist, CNI

Brazil, mas many of the BRICS+ economies, faces acute labor shortages in sectors most affected by digital transformation, the green transition, and demographic changes, with an estimated need to upskill or reskill over 14 million workers in the next three years. Most affected sectors are information and communication technology (ICT), healthcare, logistics, supply chain management, segments of green energy, advanced manufacturing, construction, and mining. A major constraint in these sectors is the scarcity of professionals equipped with emerging skills in artificial intelligence, data analytics, and sustainability. Adding to this scenario, the 2023 IBGE Report also indicated that the agricultural sector faced a shortage of 30% of technical workers and around 18% of energy technicians in the Amazon region.

To tackle these challenges beyond traditional talent migration, businesses in Brazil are prioritizing customized on-the-job upskilling and reskilling programs, skills-based hiring models, accelerated public-private training initiatives, and expanding remote, cross-border work arrangements. Recent data revealed that:

- 85% of companies prioritize reskilling programs
- 91% of enterprises invest in short-term reskilling programs
- 48% of businesses in the telecommunications and technology sectors embraced cross-border remote work opportunities

Skills-based hiring practices are also gaining traction, with some companies removing formal degree requirements to widen their talent pool. In this scenario, accelerated training models developed through public-private partnerships further complement these approaches, aiming to rapidly equip workers with the skills most needed in the evolving economy.

The expansion of digital employment presents both opportunities and risks for BRICS+ countries. On one hand, remote and platform-based jobs can mitigate brain drain by allowing skilled professionals to work for global employers while remaining in their home countries. On the other hand, the benefits of digital employment tend to be concentrated among highly educated workers with advanced digital skills, risking deepening social and economic inequalities. Addressing these disparities requires not only investments in digital infrastructure and digital literacy, but also targeted upskilling to expand the inclusion of disadvantaged groups in the digital labor market.

New forms of employment, such as platform-based work, the gig economy, and remote roles, are profoundly reshaping labor markets worldwide by offering greater flexibility and new income

opportunities. However, these arrangements also introduce significant challenges related to social security, contract stability, tax obligations, and long-term career development.

In Brazil, these changes are being addressed as distinct phenomena, rather than merely extensions of traditional employment relationships. The 2017 labor reform, for example, established legal frameworks for autonomous work, intermittent contracts, and telework, and ongoing debates aim to extend social protection to app-based workers, even when such roles are not classified as formal employment. As advances in technology are supporting better talent-matching tools and work becomes increasingly borderless and digital, it is necessary to embrace flexible work arrangements and address regulatory complexities to harnessing their potential for productivity and inclusive growth. and

China

Presented by Mr. Du Hongjie (Luke), International Relations Coordinator, STIWG BBC China

Based on the guiding topics, Luke presented a detailed overview of key labor shortage areas. The White Paper on Manufacturing Talent 2023 revealed that the shortage of highly skilled talents exceeded 19 million, with talent gap in areas such as AI reaching 5 million workers. In face of this scenario, it was also explored the Chinese multi-faceted strategies to address these challenges, leveraging both traditional and innovative approaches.

According to 2021-2023 investigations, labor shortages and skills gaps were identified across several critical sectors. These domestic challenges resonate with global trends observed in developed countries and other BRICS nations, where areas like medical and healthcare, science and technology, IT, manufacturing, agriculture, and construction also experience significant labor gaps. To combat these shortages, government strategies covered a range of short-term solutions.

- **Manufacturing:** The sector faces shortages due to a lack of skilled workers, rising labor costs, and a shift in employment preferences among the new generation, with approximately 19.5 million workers needed in 2022. There is an increasing demand for workers due to the automation of industrial processes and supply chain disruptions.

For the manufacturing industry, governmental strategies include technology substitution through promoting industrial robots, with an aim to install 200,000 new industrial robots, alongside school-enterprise cooperation and a modern apprenticeship system covering over 15,000 enterprises. A significant skills upgrade program involves an investment of 11.3 billion yuan in 2023 to train 15 million workers, expanding subsidy coverage and encouraging targeted training. Additionally, policy incentives like tax breaks aim to attract skilled workers back to their hometowns, reducing manufacturing labor costs.

- **Housekeeping services:** The sector suffers from an aging population, insufficient industry standardization, and an unbalanced age structure of workers. In housekeeping services, solutions focus on policy incentives to expand VET subsidized offers, as well as the deployment of vocational training for more than 2 million people under the program “Home Economics Service Enhancement and Expansion Action”. A pilot platform was also launched to consolidate the demand for fragmented services, named “shared domestic helpers”.
- **Agriculture:** The sector experienced a shortage of around 20 million workers by 2023, attributed to the outflow of young and middle-aged labor to cities, low degree of mechanization, and seasonal demands. For the agriculture sector, the government provides mechanization subsidies, adding 20 billion yuan for agricultural machinery purchase in 2023 – a raise to 85% of subsidies. It has also established a seasonal labor information platform (the “agriculture matters app”) to match supply and demand and promote mutual aid cooperatives to redeploy labor across villages. The application of agricultural drones has also increased to 35%, leading to a 20% reduction in farmer labor needs.
- **Medical and health care:** The sector needed about 3 million workers in 2023 due to an accelerating aging population, long training periods for professional nursing talents, and low salaries for

grassroots positions. Surging demand accelerated after the pandemic, the retirement wave of medical staff, and increased turnover rate led by high work intensity. In medical care, solutions include pay incentives and digital management, such as AI-assisted nursing systems to reduce a single-person workload. A 30%-50% increase in allowances for primary care positions was piloted in key areas in 2023.

- **Information technology (IT):** The sector faced a deficit of 1 million workers in 2023, driven by digital transformation, growing demand for high-tech talents, and intense competition for industry salaries. Accelerated by the digital transformation, there is a growing demand for talents with expertise in IA and cybersecurity. For IT areas, remote collaboration and digital nomad visas were introduced to attract overseas talents, alongside skills micro-certification through short-term technical training courses in collaboration with high-tech enterprises like Tencent and Alibaba.
- **Building and infrastructure:** The sector had a shortage of approximately 8 million workers, largely due to structural shortages in undeveloped zones. It also faces additional challenges with a slowdown in urbanization and fluctuating demand of workers in major economic centers.

Overall, China emphasizes multi-stakeholder cooperation involving government, innovative groups, social institutes, enterprises, and schools to enhance talent training and overcome labor shortages. Broader initiatives that include BRICS standardization on technology and skills, skills certification (issuing skills passport), developing BRICS future skills training bases and BRICS workshops, promoting skills development through BRICS auditorium sessions, organizing BRICS skills and technology competitions, and fostering international cooperation and exchange through human resources platforms, aim to build a roadmap for the construction and sustainable development of talents for all BRICS countries.

Russia

Presented by Irina Suleymanova, HR Leader, Gazprom Neft

Russia faces a unique employment landscape characterized by a historically low unemployment of nearly 2.3% and significant labor shortages, estimating 2-4 million labor force shortage by 2030. This challenge reflects a structural imbalance rooted in the country's demographic situation of a constant decline in population. Contributing to the shortage is a significantly low percentage of migrant workers, especially in high-tech sectors, constrained by existing legal and geopolitical factors.

Furthermore, like many of the BRICS+ countries, Russia observes that its younger generation is increasingly opting for independent contracts and flexible working hours, moving away from traditional office-based employment. This shift necessitates new approaches and a coordinated long-term response, as conventional methods are proving less effective.

Irina highlighted a multi-layered response to address the shortage of skilled workers and the gap between the skills demanded by companies and those possessed by the available workforce. With emphasis on digital solutions and international cooperation across BRICS+ nations, it combines a mix of traditional and innovative strategies. Government strategies include:

- **Fostering internal mobility and implementing fast-track reskilling programs**, particularly within the manufacturing sector, aiming at regional workforce redistribution and rapid upskilling for priority sectors;
- **Launching of impatriation program**, with special visa and relocation programs to attract highly skilled professionals to live and work in Russia;
- **Promoting a robust university-employer partnerships** program across various sectors, including industrial tech fields, IT, medical, and engineering; and
- **Pioneering new digital solutions for remote work in emerging technologies** like AI, including a freelance platform named "Professionals 4.0" that has been operational for over five years, connecting freelancers in smaller cities with major employers in large urban centers for project-based jobs.

This platform, which has gained presidential recognition, is envisioned as a potential BRICS-wide solution. It intends to integrate learning solutions to encourage both highly and low-skilled professionals to enhance their capabilities, promoting well-paid jobs and enabling resource sharing and competency transfer among BRICS countries. However, **the expansion of such a BRICS-wide platform faces significant barriers, in special:**

- **Legal and regulatory barriers** deriving from complex labor legislations and civil-law relations, including various tax systems and requirements;
- **Lack of mutual recognition of qualifications** and professional skills across different educational systems, which difficult employers to assess and validate foreign credentials reliability;
- **Cybersecurity and data protection** concerns regarding protection of confidential information, as well as compliance with data protection laws; and
- **Lack of zrust by both parties**, employers and candidates, regarding reliability, honesty and competence of the other party.

Overcoming a general lack of trust also requires strong governmental support to build shared solutions and active encouragement for both employers and employees. Russia is also a key contributor to a white paper on tackling skills and tech shortages for BRICS, which was completed in July. This paper aims to consolidate a "joint vision" and solutions, fostering multi-stakeholder engagement and potentially leading to the development of a collaborative platform to address employability challenges.

India

Presented by Deepti Singh, Joint Director, FICCI

India's employment and skills landscape is characterized by its large and diverse population, with a significant focus on strengthening the TVET system to develop a skilled workforce that meets evolving demands. India currently holds the largest population globally, with its demographic dividend at its peak. This means approximately 60% to 65% of its people are of working age, positioning India as a reservoir of talent and skills. However, the country faces the challenge of adapting its skilling programs in the scale and speed required to adapt for the rapidly transitioning global workplaces.

Key growth sectors targeted by governmental programs are AI and digital skills, with significant workforce demand projected in sectors such as healthcare, technology, manufacturing, construction, logistics, and supply chain. Still the skills mismatch challenge refers to achieving a flow between the time curriculum for certain skills is ready and candidates are trained, and the technological advancements updates, creating a "vicious circle of producing or creating capabilities amongst learners as per the industry demand".

India has initiated a comprehensive approach involving various national and state-level programs focused on youth, aiming for a smooth transition from education to employability. Among key strategies, Deepti highlighted national programs and schemes to scale up upskilling and reskilling offers, ensuring the required quality and inclusion approaches:

- **Flagship skills scheme**: A prominent national scheme is the Prime Minister's scheme on skills, which has skilled 14 million individuals across the country in the last 10 years. It also includes schemes to develop robust infrastructure for further education institutions.
- **Multiple National Schemes and Policies to support Youth**: Prime Minister's Internship Scheme, The National Scheme for Industrial Training Institute (ITI) Upgradation and the establishment of five National Centres of Excellence for Skilling, PM E2E Lounges, AICTE Fellowship Program and others to bring together industry and academia together.
- **Apprenticeship and internship schemes**: National-level programs offer funds to incentivize candidates to participate in apprenticeships and internships within industries.

- **Quality assurance and trainer development:** There is a strong and rigorous process for assessments, trainer development, and creating industry-validated curriculum within India's Technical and Vocational Education and Training (TVET) ecosystem.
- **Knowledge partnerships:** India has signed government-to-government Memorandums of Understanding (MOUs) with five countries to establish Centers of Excellence in emerging areas like green skills, energy, AI, and digital technologies. This highlights a strong interest in promoting skills in the digital and AI space due to young learners' inclination.
- **Tailored programs:** Recognizing its vast diversity, India adopts a varied approach rather than a "one shoe fits all" strategy. This includes national programs for cluster-based development, developing craftsmen, specially focusing on disabled people, and promoting women and gender inclusion in all skilling and employment initiatives.

The government's employability initiatives span **school to skilling, higher education to entrepreneurship, and domestic to global workforce mobility**. The emerging trend is **integration with DPI (ONEST, DigiLocker, ONDC, OCEN)** to make employability portable, transparent, and globally competitive.

India is currently in a transition phase, striving to create futuristic, industry-led, and industry demand-driven programs. This ensures that real-time industry requirements directly influence academic institutions' curriculum delivery, particularly in AI, green technology, and digital platforms. The goal is for the country to be a "global supplier of talent" for various skills, especially in IT and manufacturing. It also actively learns from BRICS+ countries and other nations to address its scale and diversity challenges in providing skilling solutions.

South Africa

Presented by Mapule Ncanywa, Board Member, FoodBev Sector Education and Training Authority

South Africa's employment and skills landscape is characterized by high unemployment rates coexisting with a skills mismatch for specific job positions, rather than widespread labor shortages. The official unemployment rate is rising to 32.9%, with high concerns regarding youth unemployment which achieves 62.4% for the age group of 15 to 24. A significant proportion of unemployed individuals (76%) have been jobless for more than a year, indicating long-term unemployment.

Despite high unemployment, South Africa experiences a skills mismatch, where the education system is not producing enough graduates in the fields that industries or sectors require. Technological disruptions in areas of cybersecurity, green energy, and digital finance are growing faster than workforce adaptation, contributing to the skills gap. This landscape is also influenced by uncertainty in economic markets, inflationary pressures, and moderate growth projections.

Like other countries, Mapule highlighted that South Africa is impacted by shifting demographic patterns.
Key affected sectors and areas of skills shortage are:

- **Private households:** A sharp rise in demand for domestic work has been observed.
- **Trade:** This sector is sensitive to economic cycles, with job losses occurring due to reduced consumer spending and inflationary pressures. Digital disruption and wage pressures are also factors.
- **Agriculture, manufacturing, and transport:** These sectors have seen a sharp decline in traditional employment. There is a need for digitized printing and skilled professionals beyond manual machine operators and press technicians.
- **Mining:** While generally stable at the entry level, there is a need for technological skill sets for modernized mining, including the use of drones and software tools.
- **Financial and business services:** This sector specifically requires roles such as fintech analysts, compliance specialists, and risk managers.

- **Health and social services:** There is a severe shortage of social workers, child and youth care service workers, and community development professionals.
- **Energy and water:** These are critical areas for sustainability. The shift towards sustainable energy requires environmental engineers and renewable energy technicians, while water scarcity demands technicians in water management.

The Department of Home Affairs publishes regularly a critical skills list that includes professions like space engineering, actuarial skills, and social skills, indicating areas of high demand where external talent might be needed. This list guides government's investment and private sector entities in their training efforts. However, the speed at which the education system and upskilling programs can adapt to rapidly evolving industry needs, particularly in areas like digital transformation, remains a significant challenge.

Regarding the digital brain drain, Mapule stated that Africa, including South Africa, faces a "digital brain drain," where qualified professionals in STEM (Science, Technology, Education, Innovation, and Mathematics/Artisans) are compelled to migrate to other countries (e.g., Europe, Asia, US) for more lucrative opportunities. This makes retaining core skills difficult and requires strategies to tackle the skills mismatches.

The country employs a range of solutions, extending beyond traditional talent migration, focusing on national programs, partnerships, and digital initiatives, such as:

- **Youth Employment Services (YES):** A government-led employment service called YES fosters partnerships between government and private sector companies to provide internships and work-integrated learning for young people. Government agencies also offer similar programs with career coaching.
- **New Venture Creations:** Programs push for new business creations (3-12 months) for unemployed youth, to incubate and establish their own businesses.
- **Free Upskilling Platforms:** Numerous free platforms for upskilling have been created to address the digital gaps and have opened access to education (vendor accreditations).
- **Private Sector Initiatives:** A great deal of initiatives in both private and public sectors are in place to drive reskilling initiatives to match the growing demands of the changing economic world. Private training companies partner with and provide industry aligned digital skills, training for demand led workforce needs. We have digital learning platforms aimed at removing cost barriers for connectivity, with some entities focusing on generative AI, entrepreneurship, and cybersecurity. There is also public education and training authorities (SETA's) and private sector funded (various councils and industry specific bodies that are established to drive focused penetration of skills to industries their represent.
- **Broad Partnerships with Vendors:** To focus skills outcomes for industry uptake, large scale partnerships with multinational companies like Huawei, Microsoft and IBM roll out funded vendor-led skills capacity initiatives. By example these vendors are driving initiatives offering free programs in AI, machine learning, cybersecurity, and cloud, rolled out with India's Council for Technical Education partnering alongside them. The local Telecoms providers provide network support to facilitate AI literacy broadly.
- **TVET Improvement:** The strategy to modernize this manpower machinery incorporating digitalization and partnership with industries seeks to create centers of specialization and hereby create strong opportunities of industry partnership in supporting the institutions and artisans from Technical and Vocational Education and Training (TVET) institutions to adopt and thrive as entrepreneurs. The BRICS training bases as an introduction to the colleges are a step towards achieving this turnaround.

Regarding gig economy integration, South Africa has a well-established gig economy, which provides autonomy and flexibility for individuals. It can be a lucrative area to focus on providing employment services, including health insurance and retrenchment plans, potentially easing legislative pressures. For the digital employment platforms, there is a free, public sector employment service platform managed by

the Department of Labor that connects job seekers to employers; and then there are numerous private sector portals that offers job listings, skills requirements and salary insights. Partnering to broaden opportunities with the proposed employability is our priority to look at providing the skills South African youth have to the BRICS+ nations that requires them.

Finally, South Africa is planning to more fully engage the work that has been done on standardizing skills in a variety of areas where emphasis has been on training youth in valuable skills, but where the bridge between upskilling and employment has not always been effectively covered.

The South African BRICS Business Council's Skills Development, Applied Technology and Innovation Working Group maintains links in the following areas:

- Involvement of expert community in the creation of the BRICS Skills Standards from the inception of the project, partnering closely specifically with China and having had many international visits and competitions participated in.
- Active participation in the Hi-Tech Skills Challenges hosted by Russia, participating in training and competing in a variety of the skills challenges.
- Maintenance of a strong chapter in the WorldSkills championships with which there are ties to.
- Establishment of the South African Computing Accreditation Board which is working towards Seoul Accord Accreditation. It counts with the representation from the working group and the accreditation of training bases are actively being explored in this context.
- Maintenance of the Quality Council for Trades and Occupations with an active list of vocational standards. The leadership of this body is represented in the working group's expert consultation community.
- Maintenance of strong ties with many of the SETA authorities, which provides unique insight into the post education programs that are being run country wide.
- Through industry partners and links with the other working groups, the working group maintains strong links with what is happening in industry.
- Representation at the South African Bureau of Standards, specifically in the areas of national artificial intelligence standards adoption and development.
- Partnerships with other key strategic bodies like the CSIR, NiTheCS, CPAM, SACLA etc. positioning the working group uniquely to link undergraduate and vocational training with national hubs of research and design.

What has been identified however in the "South African Skills Paradox" is that there are students being trained, companies requiring skills, and yet there exist unfilled positions at companies and unemployed graduates. To try and address this problem directly, the working group, in collaboration with the UXI Group, is designing a **Skills Delta Hub**. In this facility, the qualifications offered by different institutions represented by the different standards and standards bodies that the working group collaborates with will be demonstrated through working exhibitions of skills. The goal of the Skills Delta Hub is fourfold:

- **Training Base Launch Platform**

  The Skills Delta Hub will serve as a training hub for teachers and lecturers of institutions that aim to be accredited for BRICS Training Base status in any of the BRICS Skills Standards. By allowing these teachers to actively interact with the real industry-relevant hardware and software that is expected to be used in a Training Base, teachers can return to their institutions with the right knowledge and skills to roll out the relevant skills training at scale.

  In addition to demonstrating the tools needed for the different skills, sourced from BRICS+ companies to strengthen ties between South Africa and other Countries, the economic case will also be explored here by having the Skills Delta Hub act as a networking and solutions development agency that offers the training institutions a full solution as to what they should purchase from

BRICS+ partner companies to get their institutions up to specifications. This offer will be open to any institutions that would want to take on the role of becoming a BRICS Training Base

- **Economic Use Case Demonstrator Hub**

  An enduring problem that exists in skills training is that educational institutions purchase hardware that is effective in teaching skills, but that hardware is often expensive or difficult to come by from the perspective of businesses because educational institutions are concerned with pedagogy, where businesses are concerned with the economic use case. By leveraging the large partner network that the working group maintains, demonstrations of the capabilities of different technologies and tools will be presented to be evaluated by companies to see if they would be able to invest in such technologies in an economically viable way.

  The technologies focused on will be mapped directly to the existing and continuously developed standards so that companies can understand the technical capabilities of both the machines, and the graduates that could operate them. This will be an economically focused initiative that will demonstrate to business owners exactly what capabilities they will gain if they were to invest in a technology that can be both sourced sustainably from companies in the BRICS+ network, but can also be staffed effectively by graduates either directly, or through custom training developed in the Industry Delta function of the hub.

- **The Industry Delta Hub**

  In this context, the "Delta" that is being referred to is the skills gap that exists between a graduate of any of the skills that have been identified above through the network that the working group maintains, and the economically viable work that a company requires to offer their goods, services and technologies to the market. This delta will be overcome by partnering with the company and mapping their manufacturing and business processes to the tools and technologies that they would like to purchase to expand their offerings, to the skills of the graduates or existing staff that they can take into their companies to staff these processes, documenting the gap, and creating a full training solution that turns the technologies and human capital into economically viable and sustainable components of companies and entrepreneurial ventures.

  By way of example: Should a company wish to import a large laser cutting system from a BRICS+ company in the network, the Skills Delta Hub can help them to establish a pilot plant in the hub which can be fed by the different technology demonstrators that will be present in the hub as well as samples from the company's other processes that would feed the system, each representing the skills that graduates or staff would have.

  By mapping the skills that graduates have in suitable base qualifications, the technical staff in the hub will study the technical documentation of the laser cutting system, and document the operation, maintenance, and upkeep of the system and how it should be set up to fulfill the needs of the business process in a way that can be consumed by a graduate or existing staff member. This way, instead of companies having to ad-hoc train staff to operate expensive machinery, creating key man dependencies when the trained staff leave, the company now has a repeatable delta training course that is tailor made to them that becomes part of the intellectual property of that company.

- **Skills Research and Mapping Hub**

  By maintaining the strong ties to both industry and academia that the Skills Delta Hub currently maintains, the hub will continuously engage with partners and jobs advertising and matching platforms to explore which skills should be presented to the international working committee to create as BRICS Skills Standards, or in the case of local needs, as QCTO standards in collaboration with the SETA network. This research will be published as a national resource that can be used by educational institutions to decide on which areas they would like to focus and invest in to ensure that the gap between industry needs and educational offerings is continuously minimized.

South Africa aims to partner within BRICS+ countries, for targeted training in specific demand-led skills requirements and employability initiative to intervene in our unemployment challenge.

United Arab Emirates

Presented by Latifa Mohammad, MEAE Senior Human Capital Manager, DP World

Latifa provided a comprehensive summary of the UAE's employment landscape and upskill challenges, like the previous analyses for India and South Africa. The UAE faces market challenges and a talent mismatch paradox, which are also observed in other economies where DP World operates across the Middle East, Africa, Americas, and Australia. While some challenges are similar to other BRICS countries (like manufacturing, hospitality, tourism, finance, construction, and infrastructure), Latifa highlighted specific UAE skills and employment landscapes.

Specific areas of shortage discussed

- **Transport logistics and supply chain**
  Significant challenges refer to the capacity to expand port operations and logistics, from customs to final delivery at companies, as the UAE aims to become an end-to-end trade provider.

- **Ports and terminals**
  Shortages in positions like pilots, tug masters, and technical roles.

- **Shipyard**
  Labor shortages, particularly in middle management and supervisory levels related to fabrication and technical engineering.

- **Digital technology and AI**
  A big challenge, with the UAE currently relying on offshore services from India and other countries to cover shortages. UAE aims to position itself as a global leader across sectors like healthcare, transport, energy, and finance. Abu Dhabi has committed toward digital infrastructure to become the first AI-native government by 2027, automating all government services and deploying over 200 AI solutions. They have launched Dubai Universal Blueprint for AI, integrating AI across all strategic sectors and aiming to boost productivity and governance efficiency.

- **Management skills**
  A general shortage of talents for critical skills, ranging from leadership and executive levels to senior management, supervisory, and specific blue-collar technical and engineering areas. As a fast-growing and increasingly diversified economy, the UAE is experiencing a rising demand for skilled leadership across management and technical supervisory roles. In response, the country is investing in national talent development programs and leadership pipelines to ensure a steady supply of qualified professionals equipped to lead in a competitive global environment.

Specific challenges identified

- **Low participation of locals (Emiratis) in the workforce**
  Most Emiratis work in government sectors, with a limited percentage in the private sector. Emirati employment in the private sector has seen notable growth, nationals still represent a relatively small portion of the overall private-sector workforce. Government-led initiatives, such as the

Nafis programme, are actively working to enhance Emirati participation and competitiveness in the private sector.

- **Gender imbalance**

  Many areas like shipyards and port operations are male dominated, with less than 20% female workforce.

- **Experience gap**

  A low share of talents with more than 10 years of experience.

- **Talent retention**

  Challenges in retaining critical talent groups, including expats, who may have a low sense of long-term stability despite strong employee value propositions and no income tax in the UAE with initiatives like the 10-year Golden Visa offer greater residency security for skilled professionals.

- **Historical reliance on blue-collar labor**

  Historically depended on a large blue-collar workforce, with limited adoption of automation in the past. However, efforts are now underway to modernize operations and upskill the workforce, in line with the country's broader push toward innovation and digital transformation.

  In face of these challenges, the UAE employs a range of strategies to tackle employment and skills challenges, focusing on policy, partnerships, and leveraging technology to address its employment and skills challenges. When it comes to possible solutions, UAE looked at similar areas and cross sectoral training - reskilling and upskilling – oriented towards the reallocation of workers and reducing underutilization of talents. Another venue is the adoption of automation and robotics. Still, a challenge highlighted is the need to increase wages to attract and retain highly skilled talents in a global job market.

  UAE also considers flexible working options as part of the solutions package. It could cover underutilized groups as well as targeted groups such as youth, women and retirees, by creating and maintaining a talent pool for identified critical roles. Reviewing regularly the list of critical skills gaps and roles in demand, in face of a growing digitalization and automation, is also part of the strategy discussed.

Key strategies discussed

- **Reskilling and upskilling initiatives for automation of processes and use of robotics**

  Cross-training and adoption of automation and robotics are growing solutions and there is a need to increase initiatives to prepare professionals across sectors to operate with machines. A key point is to regularly review roles for digitization and automation to improve services and data accuracy, rather than just eliminating jobs.

  It is important to address declining industries and displacement of workers. A foremost priority is reskilling to prevent AI from displacing workers without alternatives. For that purpose, UAE considers investments in training for roles resistant to automation and programs to retrain workers from declining industries (e.g., coal miners into coders). Social wage protection and expanded unemployment insurance are equally important during workforce transitions.

- **Addressing digital employment and brain drain**

  Flexible working options along with retention incentives can be strategic for avoiding brain drain due to digital employment. It includes remote visas, flexible employment hubs, hackathons, and

talent exchange programs supporting new job models like the gig economy. Digital employment can imply brain gain, allowing global knowledge acquisition without leaving home.

The UAE has global hubs for offshore outsourcing and remote workers, with learning solution hubs in Germany, India, and plans for South Africa and the Americas. Forging formal agreements and partnerships with key BRICS countries is aimed at creating talent pipelines, including exploring outsourcing/ offshoring services.

Digital employment solutions can also be used for underutilized groups like youth, women, stay-at-home parents, and retirees, by expanding the currently limited gig market and implementing policies for part-time, work-from-home, and flexible hours.

- **Preparation of future leaders**
  DP World has "20 XEL" national talent development program to prepare future leaders and offers intensive development programs (induction, certified, on-job training) open for Emirati graduates from all disciplines. This is crucial to prevent domestic talent erosion.

- **Public and private partnerships for policymaking**

  The Dubai government has created councils (e.g., Logistics Innovation Council) to bring together industry players, leaders, and government entities to discuss solutions and policy changes. These partnerships are crucial to reviewing skills and the development of educational guidelines for employability.

BRICS
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