Webinar: “Unlocking potential: tackling the challenges of digital industry transformation in developing countries”

7 May 2025

Organizers:

- MDIC – Ministry of Development, Industry, Trade and Services of Brazil
- UNIDO – United Nations Industrial Development Organization

Introduction:

During its BRICS presidency, Brazil has prioritized the digital transformation of industry within the BRICS countries. In May 2025, Brazil proposed that BRICS members exchange their perspectives on the digital transformation of industry, stressing the importance of this transformation for their economies. Members were encouraged to reflect on its significance, identify key challenges, and look for opportunities to work together.

The webinar confirmed that BRICS+ economies recognize digital transformation of industry as a decisive lever for productivity, resilience, and sustainable growth. Brazil’s **Nova Indústria Brasil** is scaling up to **R$ 506.7 billion** in credit lines, China's Industrial Internet innovation Achieves 100+ million industrial equipment units are connected to key platforms. India has laid the backbone of the world’s fastest 5G roll-out with **base-stations**, and South Africa is seeking to close stark digital gaps with only **24 % of informal enterprises** being online. UNIDO’s newly launched **BRICS Centre for Industrial Competencies (BCIC)** now offers a multilateral platform to knit these national efforts into a shared learning and technology-deployment network. Across all interventions, the same bottlenecks reappeared: SME access to finance, last-mile skills, interoperable data governance, and cyber-secure infrastructure. The speakers converged on a portfolio of responses – massive blended financing, public–private skills pipelines, trusted cross-border data spaces, and coordinated cybersecurity standards – creating a coherent agenda to be tabled at the BRICS Industry Ministers’ meeting in Brazil in late May 2025.

Opening remarks – Brazilian Presidency (MDIC)

- **Purpose:** Tiago de Almeida Pinto, BRICS PartNIR Coordinator, set the objectives: harvest recommendations and finalise the draft Terms of Reference for the new BRICS Working Group on Digital Transformation of Industry.
- **Continuity with past decisions.** BRICS presidency traced the mandate back to BRICS Industry Ministerial communiqués (2021-2024) that framed digitalisation as the critical path to seizing Fourth-Industrial-Revolution gains.

- **Deliverables for 2025.** Brazil will table a consolidated report plus the TORs for the Working Group at the upcoming ministerial in Brasília.

UNIDO framing presentation – Mr. Aleksei Savrasov, Industrial Development Officer, UNIDO

- **Scale of the gap.** BRICS+ generates **> 30 % of global GDP**, yet industrial SMEs use fewer Industry 4.0 tools. The chief constraints are "skills, finance, last-mile support and technology access".
- **BCIC launch.** UNIDO's **BRICS Centre for Industrial Competencies (HQ Vienna, launched on 9 April 2025)** will function as a digital marketplace plus a federated network of national competence centres, providing policy advice, matchmaking, and up-skilling services. (unido.org).
- With support from **UNIDO** and the **BCIC platform**, BRICS+ countries will have an opportunity to coordinate efforts to strengthen national programs and foster collaboration, particularly among SMEs, to identify technology partners and facilitate matchmaking for SMEs with their counterparts from the other BRICS+ countries.
- **Call to action.** Member States were invited to nominate focal points and onboard SMEs onto the BCIC platform.

BRICS+ interventions

Brazil – Ms. Christiane Rauen (MDIC)

- **Nova Indústria Brasil (NIB).** Mission sets 2 interconnected goals. The first one is dedicated to digitalizing **25 % of Brazilian industrial companies by the end of 2026 and 50 % by the end of 2033**. The second one aims at adopting at least 3 of the following technologies: cloud services, big data, service robots, IoT, and AI. Core financing has expanded from **R$ 300 billion to R$ 506.7 billion,** establishing it as a pillar of the country's sustainable industrial policy. (BNDES, ABDE)
- **Brasil Mais Produtivo.** Provides subsidized "Smart-Factory Planning" and digital consultancy vouchers to SMEs, integrated with 60 accredited innovation hubs.
- **National AI plan.** Aims at making the country an international reference in innovation and efficiency in the use of AI, especially in the public sector. One of the initiatives is creating a data space for industry as well as an AI center for industry.
- **Data-governance initiative.** Brazil will use its 2025 BRICS presidency to promote a "BRICS Understanding on Data-Economy Governance" under the CGETI Digital Economy Working Group.
- **Brazil proposed CGTI working group** to deepen discussions on data as a strategic digital asset, linked to global digital governance to collaborate to establish a modern, agileregulatory environment that promotes innovation, protects data, and enables technology adoption is critical to ensuring equitable benefits from digital development. At

the same time ethical concerns need to be addressed, data ownership clarified as well as access and usage rights.

China – Mr. Li Yao (MIIT) & enterprise cases

- **National policy drive.** Policy frameworks such as Action Plans for Digital Transformation (digital explanation and implementation guidelines for digital transformation of manufacturing enterprises) have been introduced, putting a focus on sector-specific implementation strategies.
- **Industrial Internet innovation.** Industrial Internet applications reached **49 national economic fields. 340+** industrial internet platforms have been established, providing services to **4 million** companies, and **100+ million** industrial equipment units (sets) are connected to key platforms.
- **Zongshen Industrial Group.** Its **Humi H-IIP Industrial-Internet platform**, the heart of digital transformation, now serves 19 industries and nine key sectors, providing comprehensive digital services for leading enterprises and SMEs via platforms, application enablement models.
- **Midea Cloud Technology.** Backed by **400+ digital professionals** and **500+ patents**, including **45 invention patents**. Deployed across **200+ locations, 25 factories**, and **180 million inspection points**. It has facilitated over **800,000 compressor shipments** and has been utilized **200 million times**.
- **Future focus.** China proposes BRICS cooperation on reference architectures for data spaces, Industrial Internet, Mutual recognition of standards, and open-source.

India – Mr. Sandeep Gupta (Department of Telecommunications)

- **Digital backbone.** As of **28 February 2025, India has 4.69 lakh 5G base-transceiver stations covering 773 of 776 districts**. (ETTelecom.com)
- **BharatNet.** As of December 2024, around **625,853 villages** are covered with mobile connectivity, with **618,968 villages** having **4G mobile coverage**. (pib.gov.in)
- **Digital-payment density.** On a daily average, the UPI network processed more than 590 million transactions worth around Rs 79,910 crore, reflecting both the system's capacity and users' growing trust. (Indian Startup News)
- **Telecom Technology Development Fund (TTDF).** 20-million-dollar fund for R&D in the sector of 5G/IoT; dovetails with the PLI scheme for domestic 5G radios.
- **SAMARTH-Udyog Bharat 4.0.** An Industry 4.0 initiative, a network of centres that provides testbeds, cyber-physical labs, and workforce skilling.

South Africa – Ms. Nitika Ramswamy (Department of Small Business Development)

- **Digital divide.** While there is an extensive broadband coverage of over 95% of the population, only 24% of informal sector businesses have access to the Internet. (researchictafrica.net)
- **4IR-SA strategy.** Priorities: youth & women digital work, MSME digital empowerment, industrial cyber-security, and frontier-tech clusters (AI, additive manufacturing, green hydrogen).

Collaboration proposals:

- Regional digital value chains (especially electric vehicle batteries and green steel).
- BRICS digital skills exchange, leveraging India's DPI and China's 5G labs.
- Joint innovation fund for smart-agri, digital health, and inclusive fintech.

Observations

1. **Finance is finally starting to match ambition.** Brazil's credit facilities of > R$ 500 billion, China's stimulus for digital-equipment upgrades, and India's production-linked incentives represent a strong liquidity wave targeting industrial digitalisation. (ABDE)
2. **Infrastructure roll-out is accelerating but uneven.** India's 5G coverage stands in contrast to lingering rural broadband deficits in South Africa and Brazil's North–East.
3. **Data governance as the pivotal trust layer.** Speakers converged on the need for interoperable data spaces, harmonised AI safety rules and shared cyber-threat intelligence, with special regard to the BRICS Data-Economy Governance Understanding.
4. **Platforms as policy instruments.** BCIC, Makeni, Humi H-IIP and UPI show how platforms can become regional public goods when APIs are opened, taxonomies shared and mechanisms for cross-border compliance are integrated.

RECOMMENDATIONS

To BRICS+ governments

→ Finalise and adopt the **BRICS Data-Economy Governance Understanding** with baseline principles on data ownership, cross-border flow, and industrial data sharing.

→ Launch a **BRICS SME Digital Productivity Facility** blending concessional finance (BNDES, EXIM, NDB) with performance-based grants for cloud migration, robotics and AI-retrofits.

→ Establish a **Cyber Security Mutual Assistance Protocol** among relevant CERTs, feeding threat intelligence into BCIC's platform.

→ Endorse a **mutual recognition framework for digital skills certifications**, enabling labor mobility across BRICS.

To UNIDO / BCIC

- → Prioritise "lighthouse" demonstration projects that pair a leading firm with 10+ SMEs across borders to show measurable OEE and carbon-footprint impacts within 12 months.
- → Integrate BCIC's marketplace APIs with India's ONDC and Brazil's Gov.br procurement portals to open new demand channels for SME solutions.
- → Track training demand, certification and vacancy rates, disaggregated by gender and region, using harmonised indicators.

To industry and academia

- → Co-create modular, open-source MES and digital-twin reference implementations suitable for low-capex SME environments.
- → Expand dual-training models to fast-track technicians on cyber-physical systems and industrial AI (e.g., Brazil's SENAI and company labs).

Conclusion

The event on 7 May 2025 showed that the political will, financing volumes and technical blueprints for the digital transformation of industry within BRICS are now largely in place; the remaining challenge is coordinated execution at the SME scale. If the proposed BRICS Working Group, guided by UNIDO's BCIC, can operationalise a shared data-governance regime and a blended-finance SME window within the next 12 months, the bloc is positioned to translate its demographic and market heft into tangible productivity and sustainability dividends by the end of the decade.