



United Nations
Economic Commission for Africa



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Capacity Building on the Use of Digital Technologies under the AfCFTA to Foster Intra-African Trade and Regional Value Chains

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Module 5: Emerging Technologies and Digital Innovation

Key concept: Understanding emerging technologies
and their role in Africa's digital trade transformation
under the AfCFTA Digital Trade Protocol



1. General Principle: Technology and Innovation

Part VII of the Protocol recognizes that the success of Africa's digital transformation depends on the coordinated, ethical, and inclusive adoption of technologies.

Three strategic pillars lie at the heart of this vision:

- Emerging and Advanced Technologies (Article 34);
- Financial Technologies (FinTech) (Article 35);
- Information and Communication Technologies (ICT) (Article 36).



2. Emerging and Advanced Technologies (Article 34)

2.1. Definition

Art 1(b) “**Emerging and Advanced Technologies**”: Technologies under development, new or established, including but not limited to the Internet of Things (IoT), artificial intelligence, machine learning, robotics, 5G, 3D printing, quantum computing, blockchain, virtual reality, and other existing or future technologies related to digital trade.



2. Emerging and Advanced Technologies (Article 34)

2.2. Guiding Principles

The Protocol invites States Parties to:

- Promote the deployment and access to these technologies for African enterprises;
- Ensure non-discrimination towards African innovations;
- Strengthen research and development through cooperation between States, universities, and the private sector;
- Establish regulatory sandboxes to experiment with new solutions before they are marketed;
- Harmonize technical standards to ensure interoperability and continental security.



2. Emerging and Advanced Technologies (Article 34)

2.3. Concrete Examples of Application

- **Artificial Intelligence (AI):** analysis of regional demand or sales forecasting (e.g. *DataProphet* in South Africa, which reduced production defects by 40%).
🔗 <https://dataprophet.com>
- **Blockchain:** traceability of agricultural products and origin certification (e.g. *AgriLedger* in Ghana). <https://agriledger.com>
- **Internet of Things (IoT):** real-time tracking of cross-border shipments (e.g. *Hello Tractor* in Nigeria). <https://hellotractor.com>
- **3D Printing:** local production of spare parts to reduce dependence on imports (e.g. *Kijenzi* in Kenya). <https://kijenzi.com>
- **Cloud Computing:** hosting of regional e-commerce platforms (e.g. *Raxio Data Centres* in Uganda and DRC). <https://www.raxiogroup.com>



2. Emerging and Advanced Technologies (Article 34)

2.4. Expected Impact

These technologies make it possible to:

- reduce costs;
- increase transparency;
- boost productivity; and
- create a genuine African innovation ecosystem.



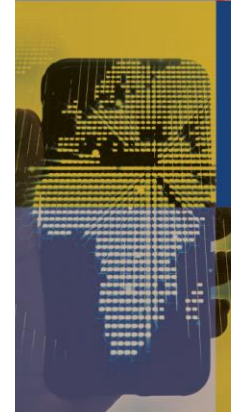
3. Financial Technologies (FinTech) (Article 35)

3.1. General Principle

FinTechs are the driving force behind digital payments and financial inclusion across the continent.

They:




- facilitate cross-border transactions,
- reduce banking costs, and
- promote access to financing for MSMEs.



3. Financial Technologies (FinTech) (Article 35)

3.2. Objectives of the Annex

State Parties commit to:

-  **Cooperate** to develop local digital payment and microfinance solutions;
- ☒ **Harmonize** financial regulations and cybersecurity standards;
-  **Establish FinTech sandboxes** to test innovations (cryptocurrencies, RegTech, open banking);
-  **Ensure consumer protection** and the transparency of transactions.



3. Financial Technologies (FinTech) (Article 35)

3.3. Application Areas and Examples of African FinTech

1. Interoperability and Cross-Border Payments

FinTech facilitates money circulation between African countries through integrated payment infrastructures. Example: PAPSS (Pan-African Payment and Settlement System), enables instant payments between AfCFTA Member States without using intermediary foreign currencies.

2. Open Finance / Open Banking

These tools rely on secure APIs that allow financial data sharing between banks and FinTech startups, boosting competition and innovation. **Example:** Okra (Nigeria), connects bank accounts to third-party applications via secure APIs.

3. Digital Payments and Mobile Money

The most widespread tools, allowing money transfers, bill payments, and online purchases without needing a bank account. **Examples:** M-Pesa (Kenya), a pioneer in Africa, and Orange Money (West and Central Africa).



3. Financial Technologies (FinTech) (Article 35)

3.3. Application Areas and Examples of African FinTech (continued)

4. Crowdfunding and Participatory Financing

Allow entrepreneurs to raise funds outside traditional banking systems.

Example: Thundafund (South Africa), the first African crowdfunding platform.

5. Crypto-Assets and Financial Blockchain

Some FinTech startups use blockchain to secure payments, certify transactions, or reduce transfer costs.

Examples:

- BitPesa / AZA Finance: cross-border crypto-currency payments.
- Yellow Card: crypto trading platform in Africa.
- Kotani Pay: integrates blockchain with mobile-money services.



3. Financial Technologies (FinTech) (Article 35)

3.3. Application Areas and Examples of African FinTech (continued)

6. RegTech and Automated Compliance (Regulatory Technologies)

These technological solutions help financial institutions comply with regulations (anti-money laundering, Know Your Customer/KYC, etc.) automatically.

Examples:

Smile Identity: biometric identity verification for KYC compliance.

Dojah: API for user identification and verification.

IdentityPass: automation of compliance and security checks.

7. AssurTech and Digital Micro-InsuranceFin

Tech companies offer low-cost insurance products accessible via mobile or online platforms.

Examples: **aYo:** mobile micro-insurance (health, life). **Turaco:** inclusive insurance for SMEs and individuals. **Bima:** mobile insurance active in more than 10 African countries.



3. Financial Technologies (FinTech) (Article 35)

3.3. Application Areas and Examples of African FinTech (continued)

8. LendingTech (Digital Credit and Scoring)

These tools analyze mobile or social data to assess creditworthiness and provide instant micro-loans.

Examples:

- **Carbon:** digital lending based on mobile scoring.
- **Branch** and **Tala:** instant micro-loans via smartphone.
- **Baobab+:** combines digital lending with energy inclusion.

9. WealthTech and Digital Savings

These solutions enable savings management and investment through mobile applications.

Examples:

- Cowrywise: automated savings and investment platform.
- PiggyVest: flexible savings application in Nigeria.
- Chaka: digital trading platform for African retail investors.



3. Financial Technologies (FinTech) (Article 35)

3.4. Key Resources

Open Finance: platforms for secure financial data sharing via APIs, promoting transparency and competition. **Example:** Open Finance African Group — think tank for Open Finance in Africa <https://www.open-finance.africa>

Security and Trust: adoption of regional frameworks against fraud, money laundering, and FinTech regulation. Article on regulatory compliance challenges in Africa: <https://cabanglobalreach.com/fintech-regulation-and-compliance-challenges-in-africa>

Consumer Protection: automated refunds, transaction traceability, and transparent information <https://www.arfiwise.com/blog/how-africas-big-4-are-leading-the-way-in-fintech-regulations>

Regional Cooperation: integration of regulators and creation of common accreditation frameworks for FinTech actors. <https://www.jbs.cam.ac.uk/wp-content/uploads/2021/11/2021-11-fintech-in-sub-saharan-africa.pdf3>.






3. Financial Technologies (FinTech) (Article 35)

3.4. Key Resources

5. Expected Impact

FinTechs:

-  facilitate the rapid circulation of capital,
-  reduce entry barriers for SMEs, and
-  accelerate Africa's financial integration.



4. Information and Communication Technologies (ICT) (Article 36)

4.1. Strategic Role

ICT represents the central pillar of digital trade. They encompass the networks, equipment, software, services, and digital skills necessary for economic transformation.

4.2. Commitments of the States Parties

States Parties commit to:

- Eliminate customs duties on ICT products;
- Liberalize digital services (hosting, transmission, telecommunications);
- Encourage investment and technology transfer;
- Develop fair competition and intellectual property frameworks;
- Promote innovation in the ICT sector.



4. Information and Communication Technologies (ICT) (Article 36)

4.3. Examples of Application¹

1. Mobile Telephony and SMS

SMS becomes an *offline* e-commerce tool: a customer can order a product, receive a payment code, and confirm delivery, all without Internet access.

☞ It acts as a bridge between non-connected areas and the continental digital market.

2. 4G/5G Networks and Fiber Optics

These networks enable regional marketplace connectivity, business videoconferencing, instant payments, and automated inventory management. **Example:** Liquid Intelligent Technologies (Kenya, Rwanda, South Africa) — deploys a continental fiber network connecting over 20 countries. <https://liquid.tech>



4. Information and Communication Technologies (ICT) (Article 36)

4.3. Examples of Application¹

3. African E-commerce and Delivery Applications

These applications promote digital job creation, supply-chain digitization, and quick access to essential services.

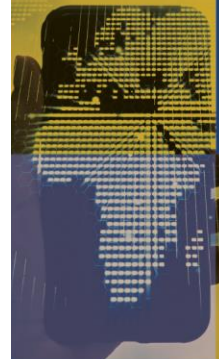
Examples:

- *Jumia* — pan-African e-commerce platform.
- *SafeBoda* (Uganda, Nigeria) — delivery and transport app supporting local trade and small entrepreneurs. <https://www.safeboda.com>

4. Cloud and Data Centers

SMEs can host their online stores locally, reduce costs, and comply with AfCFTA requirements on data localization and protection.

Example: *Google Cloud Africa* — regional hosting for African enterprises.
<https://cloud.google.com>



4. Information and Communication Technologies (ICT) (Article 36)

4.3. Examples of Application¹

5. Open Source Software

Open-source software offers free or customizable solutions for African SMEs in commercial, accounting, or logistics management.

Examples:

- **Odoo (Open-source ERP):** widely used in Francophone Africa for sales, stock, and accounting management. <https://www.odoo.com>
- **ERPNext Africa:** open-source alternative for integrated enterprise management. <https://erpnext.com>
- **OpenLMIS (Open Logistics Management Information System):** open-source tool for managing public health supply chains. <https://openlmis.org>



5. SMEs and Startups: Drivers of Africa's digital transformation

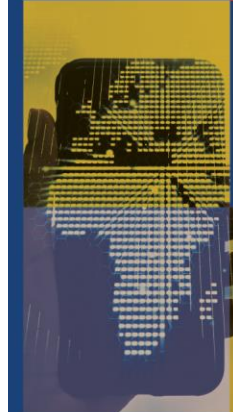


To accelerate Africa's digital transformation within the framework of the Protocol, SMEs and startups must:



SMEs should:

- Diagnose their value chain to identify where digital tools create the most gains (production, logistics, sales, services).
- Choose the most suitable technology for their priorities (AI, blockchain, FinTech, ICT).
- Collaborate with startups and technical partners to foster innovation. ☒ Protect their innovations through intellectual property to ensure long-term sustainability.



Startups should:

- Analyze regional value chains to identify needs and technological “gaps.”
- Position themselves on relevant digital solutions — payments, logistics, e-commerce, data, cloud, and e-health.
- Ensure the security, ownership, and sustainability of their innovations.



5. PME et Startups : moteurs de la transformation numérique africaine

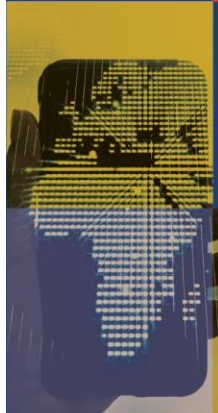
Les PME doivent :

- ☐ Diagnostiquer leur chaîne de valeur pour repérer où le numérique crée le plus de gains (**production, logistique, vente, service**).
- ☐ Choisir la technologie adaptée à leurs priorités (IA, blockchain, FinTech, TIC).
- ☐ Collaborer avec des startups et partenaires techniques pour innover ensemble.
- ☐ Protéger leurs innovations par la propriété intellectuelle pour garantir leur durabilité.

Les Startups, elles, doivent :

- ☐ Observer les chaînes de valeur régionales pour identifier les besoins et les “vides technologiques”.
- ☐ Se positionner sur les solutions numériques utiles : paiements, logistique, e-commerce, data, cloud, e-santé.
- ☐ Assurer la sécurité, la propriété et la pérennité de leurs innovations.

💡 Une meilleure intégration des PME et startups dans les chaînes de valeur régionales est essentielle pour transformer les ambitions du Protocole en résultats économiques concrets.



THANK YOU!



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