Innovations and Inclusive MSME Growth

Global Symposium on the role of MSMEs in achieving the SDGs

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Global context and innovation

- **GVC/GIN**: Global innovation Networks
- **Industry 4.0/4IR**

- **GVC mediated trade accounts for around 70 - 80% trade in tasks**
- **GIN**: leveraging distributed knowledge base
- **Industry 4.0 causing structural changes in GVCs and GINs, triggering new wave of DoL and reinforcing technological progress**

Digital trade platform for trade Facilitation Global impact investment: for SDGs
Industrial Revolutions

18TH CENTURY
MECHANIZATION
Steam and Water
Power

19TH CENTURY
MASS PRODUCTION
Electrical power
Conveyor belt

20TH CENTURY
ELECTRONIC
AUTOMATION
Computer; NC; PLC

TODAY
SMART AUTOMATION
CYBER PHYSICAL SYSTEMS
Internet of Things
CYBER-PHYSICAL SYSTEMS

Economies of Scale
Economies of Scope
Individual Production
Drivers of new industrial revolution

- BIG DATA & CLOUD COMPUTING
- ARTIFICIAL INTELLIGENCE
- BLOCK CHAINS
- CYBER-PHYSICAL SYSTEMS
- ADDITIVE MANUFACTURING (3D PRINTING)
- SIMULATION & VISUALIZATION MODELS
- SMART SOCIETY
  - SMART CITY
  - SMART FACTORY
  - PEOPLE
Everything gets smart
Opportunities and challenges of Industry 4.0

Opportunities:
- Lower production and transaction costs; high quality of products/mass customization
- Energy-efficient and environmentally sustainable production
- Improvements in the health and safety of workers
- Flexibility in the way we work

Challenges:
- Inequality and exclusion
- Standards, interoperability, regulations
- Data ownership and security
Increasing competitiveness

1. Increase efficiency
   - Energy and resource efficiency are decisive factors of competitiveness

2. Shorten time-to-market
   - Shorter innovation cycles
   - More complex products
   - Larger data volumes

3. Enhance flexibility
   - Individualized mass production
   - Volatile markets
   - High productivity

Manufacturing is changing faster than ever before
Industry 4.0 and structural change

- New wave of DoL and reinforcing technological progress in GVCs and GINs
- Structural adjustments needed at the national and international level to address various gaps in:
  - Infrastructure
  - Technology and knowledge
  - Skills
  - Institutions
  - Governance
  - Government capabilities
  - Digital business ecosystems
  - National and regional systems of innovation
Opportunities for SMEs:

Digital platforms

- E-commerce
- Digital free trade zones

Facilitating:

- Access global market directly avoiding middleman
- Better access to information and cross-border investment.
- Innovation and learning through GVC/GINs
Digital economy for inclusiveness and collective efficiency

Industry 4.0 for large companies vs for MSMEs

- SMEs can internationalize and become micro multinationals
- Plugging into GVC/GIN even from remote areas

MSMEs, empowered by platforms, speed up globalization and leapfrog
Challenges for SMEs

➢ Lack of I4.0 skills (STEM)

➢ Lack of access to modern ICT infrastructure (broadband internet, reliable wireless connections, 5G, and other modern ICT infrastructure)

➢ Lack of supportive business environment to support continuous innovation and learning
Bridging the Gap

Empowering SMEs to innovate in digital economy

Innovation and infrastructure to close the technology gap and digital divide.
Country response: Special industrial policy instruments

In the I4.0 setting of mass customization:
Countries compete based on their local assets, history, culture, talent pool and interactive learning processes by SMEs/clusters, in collaboration with business development service providers.

New generation of industrial parks/zones/ regional innovation system (RIS) as organizational structures with potential to mobilize local assets and SMEs for achieving innovation-driven growth

Smart specialization models for diversification
Parks, clusters and regional innovation systems

Industrial park may host one or more clusters (horizontal / vertical).
Building regional innovation systems and clusters

- Flows of resources: knowledge, finance & skills
- Building trust and confidence in institutions and their reliability

Knowledge application & exploitation and transformation subsystem

SMEs/Clusters

Customers
Competitors
Contractors
Collaborators

Governance system embedded structure

Digital business ecosystem:
- Regulations
- Standards/interoperability
- Incentive system
- Turning informal into formal economy
- Accelerator programs in new technologies
- Including social entrepreneurs

Venture capitalist, Lawyers for patents and IPR; Business incubators

Market mediating organizations

Technology mediating organizations

Public research organizations

Education provision organizations

ICT/I4.0

ICT

Incentive system

Turning informal into formal economy

Governance system embedded structure

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UNIDO holistic approach

Enhancing economic competitiveness: UNIDO holistic approach

- Improving Business Environment
- Industrial Modernization & SME Clustering
- Mobilizing Responsible Investment & frontier technologies
- Boosting Innovation
- Promoting Quality & Standards
- Facilitating Trade
UNIDO’s flagship programmes

Improving Business Environment

Business registration and single point of registration

- Capacity building of governments on business environment reforms (legal, institutional, and regulatory conditions; institutional arrangements)
- Advisory services on quality and investment policies; quality infrastructure development; technology uptake
Strategies to formalize MSMEs - business registration

The importance of business registration for inclusive and sustainable growth

- Simplification of procedures /regulations
- Incentives pragmas
- BE refor

Benefits:
- Provides certainty of who is lawfully representing a business, and is essential for the legal validity of contracts, thus reducing the risks and costs of business partnerships
- Provides proof of formal establishment as precondition for accessing business support incentives, for participating in calls for offers and participating in cross-border trade
- Facilitates the protection of the rights of workers; provides the basis for tax collecting and broadening the tax base; is important for statistical purposes and source of information for other fields, such as social security, land registries
Empower SMEs/MSMEs to innovate

UNIDO guide for innovation management systems in MSMEs

- Based on the **standard ISO 50501: Innovation Management System (IMS)**, which is to be published during the second half of 2018
Business environment for the 4th Sector

Primary driver is to achieve **SOCIAL VALUE**
Achieve measurable social impact alongside financial return

Primary driver is to achieve **FINANCIAL VALUE**

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**TRADITIONAL CHARITY**
Purely charitable funding from grants, donations or endowment

**ADDITIONAL MARKET-BASED REVENUE STREAM**
Additional market-based revenue stream

**SOCIAL ENTERPRISES**
Potential self-sustaining >75% market revenues
Social business: profits are reinvested
Mission-driven for-profit enterprise ("B-Corp")
CSR & corporate philanthropy (target for socially responsible investment)

**TRADITIONAL BUSINESS**
Pure profit orientation; mainstream investors

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Not-for-profit  For-profit
Business environment for social enterprises – UNIDO support

- Mapping SE
- BE reforms for SE
- Strengthen business membership organizations (BMOs) to effectively communicate the concerns of social businesses to policymakers
- Enable public-private dialogue
- Linkages with impact investment
- Provision of entrepreneurship training and mentoring programmes
Strengthening Quality Infrastructure Systems

Systemic approach

in line with private sector needs

UNIDO 2016

Governance

Regulatory Framework
Quality Policy

Quality Infrastructure Institutions

Metrology
Standardization
Accreditation

Quality Infrastructure Services

Conformity Assessment
Testing
Certification
Inspection

Calibration & Verification

Quality Promotion

Enterprises

Value Chain Upgrading

Capacity Building

Consumers

Enterprise Upgrading

Awareness Rising

UNIDO 2016
UNIDO ITPO Network: Promotion of investment and technology transfer
Networking: UNIDO SPX Centres

- Subcontracting and Partnership Exchanges (SPXs)
- Linking large investors to local suppliers
- > 20 SPX Centres worldwide are currently operational
- SPX toolkit comprises a profiling methodology, a benchmarking methodology and an SPX Management Information System (MIS)
- The SPX database currently comprises around 7,000 firm profiles and around 500 firm benchmarks
SPX Network

There are 25 active SPX Centres

- SPX under discussion
- “Old generation SPX” to be upgraded
- “New” generation SPX
Development of smart industrial parks/zones/cities/areas of innovation

- Diagnostics
- Implementing and Financing
- Promotion and Marketing
- Policy Design and Planning
- Operating and Financing
- Monitoring and Evaluation

- Ecosystem
- Stakeholder Engagement

References: UNIDO, World Bank, US Aid, OECD, FEMOZA material
Industry 4.0 Programme

- Digital knowledge platform on technology solutions for industrial sectors; smart cities; new innovative business models; best practices
- Policy advice on mainstreaming national and regional systems of innovation
- Support for STI strategies and policies
- Standards and interoperability in Industry 4.0
- Training and skills building
- Convening for awareness building
Industry 4.0

Knowledge platforms

Technical cooperation projects on I4.0 technology uptake

Digital business ecosystem building

Partnership building for start up programs
THANK YOU.