CLOSING THE DIGITAL INCLUSION GAP

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BRIDGING THE DIGITAL DIVIDE **OR** CLOSING THE DIGITAL GAP

- **Bridging the Digital Divide – Late 1990's early 2000's** the world acknowledged the significant, growing gap between those who had access to the internet and digital technologies and those who did not which exacerbated existing social and economic inequalities.

- **Closing the Digital Gap –** while technology is more prevalent today, significant disparities still exist between those who have access to the internet and digital technologies and those who do not due to:
  - Limited Infrastructure,
  - Low Affordability,
  - Low Digital Literacy, and
  - Poor Access to Equitable use of emerging technologies like AI and Machine learning.

THE FOURTH INDUSTRIAL REVOLUTION (4IR)

THE FOURTH INDUSTRIAL REVOLUTION (4IR) DEFINITION

- **Fusion of Technologies** that blur the lines between the physical, digital, and biological spheres
- **Digital, Physical, and Biological Integration** it integrates:
  - Advanced digital technologies like artificial intelligence (AI),
  - Machine learning,
  - Big data, and the Internet of Things (IoT)
- **With**
  - Physical systems (robots, autonomous vehicles, 3D printing) and
  - Biological systems (genomics, biotechnology)
- **Leading to**
  - Precision Industry, Agriculture, Mining and Natural Resource Management and Personalized Healthcare, and
  - Smart cities, Smart Energy
  - Space Science

THE FOURTH INDUSTRIAL REVOLUTION (4IR) (CONT.) EXPONENTIAL EVOLUTION, ACCELERATED DISRUPTION

- **Significant Global Impact** affecting disruptions across multiple sectors simultaneously in both developed and developing countries
  - Opportunities for developing countries to leapfrog traditional stages of development
- **Socio-Economic Implications** - 4IR can improve quality of life and income levels globally but raises significant challenges such as:
  - **Job displacement** and disruption due to automation (e.g. Open AI and ChatGpt),
  - **Privacy concerns**, and
  - Further expanding and exacerbating the digital divide, particularly in developing countries

THE FOURTH INDUSTRIAL REVOLUTION (4IR) (CONT.) POTENTIAL APPLICATIONS

- **Healthcare – with AI and big data**,
  - Develop Personalized health treatment plans
  - Predict Diseases before they manifest
  - Biotechnology – Advanced Drug Development and Gene Editing
- **Agriculture – Precision farming, Mining, Natural Resource and Disaster Management using Space data, IoT and AI**
  - Optimize Resource Use and Increase Crop Yields.
  - Drones and sensors can monitor crop health and automate tasks.
- **Manufacturing – Smart factories, Automation, Robots and AI systems** can
  - Increase Efficiency,
  - Reduce Waste, and
  - Customise consumer demands.
- **Energy – Smart grids, IoT and AI facilitating** Energy-efficient Buildings, Sustainable and Resilient Renewable Energy sources.

THE FOURTH INDUSTRIAL REVOLUTION (4IR) (CONT.)
NEED FOR GOVERNANCE

Blurs boundaries between Human Capabilities and Machine Functions, so **MUST** have:

Ethical and Governance Frameworks – crucial to guide the development and application of these technologies

Policies and Legislation to protect Human Capital and Intellect

Offers

Immense Potential for Transformative Change <u>but</u>

MUST

Address The Digital Divide: - Ensure Equitable Access to the **benefits of 4IR Technologies**

Preserve Cultural and Social Values that Define Human Communities

Ensure development of Sustainable and Inclusive growth

STATE OF ICT IN MALAWI

THE NATIONAL ICT SURVEY 2023

STATE OF ICT IN MALAWI AND THE NEED FOR INCLUSION

- Malawi National ICT Survey 2023 indicates that despite progress made in national digitalisation, we still have challenges with ICT access, :
  - Affordability,
  - Digital literacy,
  - Infrastructure and
  - Technical expertise
  - Costly, inconsistent internet
  - The imperative of closing the gender, rural and peri urban digital inclusion gap
- The nation should build strategic partnerships with academia, industry, youth, communities and ICT service providers to improve capacity, services, lower costs and expand connectivity to less serviced areas

NATIONAL ICT SURVEY 2023

	Malawi	Sub-Saharan Africa (SSA)
Internet Penetration	18.0% (36%)	80%
Mobile Phone	56.6%	46%
Gender Gap with Mobile Phones	13.1%	11.8%
Digital Financial Services	45.1%	47.1%

CLOSING THE DIGITAL INCLUSION GAP

- **Enhancing Skills Development for Digital Inclusion**
- **R&D, Creativity, and Innovation for Economic Growth**
- **Regulatory Frameworks and Economic Empowerment**
- **Enhancing Digital Literacy and Youth Engagement**
- **Cybersecurity and Online Safety**
- **E-waste Management and Environmental Sustainability**
- **Expanding Internet Access with Innovative Technologies**
- **E-commerce, Digital Economy, and Financial Inclusion**
- **Digital Solutions in Public Services, E-Government and Enhanced Postal Services**

ENHANCING SKILLS DEVELOPMENT FOR DIGITAL INCLUSION

- Build a resilient and capable workforce equipped with the necessary digital skills to thrive in the Fourth Industrial Revolution (4IR)
- Target Areas for Skills Development:
- Digital Literacy: Basic digital skills training for all age groups, with a focus on underserved communities.
- Technical Proficiency: Advanced training in AI, machine learning, data analytics, and cybersecurity.
- Entrepreneurship and Innovation: Programs to foster digital entrepreneurship, including workshops on digital marketing, e-commerce, and business analytics.

ENHANCING SKILLS DEVELOPMENT FOR DIGITAL INCLUSION (CONT.)

- Strategic Initiatives:
- National Digital Literacy Mission: Partner with educational institutions, NGOs, and private sector to provide comprehensive digital education across Malawi.
- Tech Hubs and Innovation Centers: Establish centers across major cities to provide training, resources, and support for budding technologists and entrepreneurs.
- Online Learning Platforms: Leverage MOOCs (Massive Open Online Courses) and other online resources to make learning accessible anywhere, anytime.
- Public-Private Partnerships:
- Collaborate with tech companies to create internship and job placement programs.
- Develop incentive programs for companies providing training and certification in emerging tech fields.
- Monitoring and Evaluation:
- Implement a robust framework to track progress in skill development and adjust strategies as needed.
- Regularly update curricula to keep pace with technological advancements and industry needs.

R&D, CREATIVITY, AND INNOVATION FOR ECONOMIC GROWTH

- R&D is critical for Malawi's digital sector development
- Solutions must speak to Malawi's socio-economic development needs
- **Muuni Fund, an ICT Research and Innovation** established by the Malawi Communications Regulatory Authority **(MACRA)**
  - Provides Seed funding for R&D and Innovation available through partnerships with 35 local councils
  - To Promote the development of research facilities in academic institutions and the industry to stimulate basic and applied research
  - Contributes to the economy and society through product development, increased employment, and improved service delivery
  - Facilitates and encourages coordination and knowledge sharing between research entities, industry and academia

REGULATORY FRAMEWORKS AND ECONOMIC EMPOWERMENT

- **Develop Clear and Supportive Regulatory Policies** for startups and digital businesses, with clear tax incentives and simplified, efficient, streamlined business registration processes
- **Regulatory Frameworks** that foster innovation, protect users and provide Regulatory Sandboxes for Innovators
- **Data Protection and IP Legislation** to protect innovators and investors
- **Tax Incentives, State, Development Partner or Seed Funding** and Supportive Policies for tech startups and entrepreneurs
- **Regulatory frameworks with Gender-sensitive** approaches

ENHANCING DIGITAL LITERACY AND YOUTH ENGAGEMENT

- Launch comprehensive digital literacy programs throughout the education system from primary, secondary through tertiary schools and in local communities, including coding camps and ICT training for teachers.
- Follow India's Digital India campaign, which includes setting up digital literacy centres in rural areas to ensure widespread access to ICT education

CYBERSECURITY AND ONLINE SAFETY

- Develop a national cybersecurity strategy with awareness campaigns, training for law enforcement, and robust legal frameworks to protect users
- Minimise and monitor fake news and misinformation
- Legislation to prosecute cybercrimes
- Run national awareness campaigns and provides resources for businesses and individuals to improve cybersecurity practices

E-WASTE MANAGEMENT AND ENVIRONMENTAL SUSTAINABILITY

- Currently no formal E-Waste disposal facilities
- Batteries constitute the bulk of E-Waste (usually disposed of in bins (40.9%) and landfills (38.7%)) Most other E-Waste is hoarded rather than disposed (68%)
- Establish E-waste recycling facilities and promote responsible disposal practices through public education and incentives to avoid:
  - Soil contamination
  - Air pollution
  - Water Pollution
  - Other dangers

EXPANDING INTERNET ACCESS WITH INNOVATIVE TECHNOLOGIES

- Malawi licensed its first low-earth orbit (LEO) satellite provider, Starlink to broaden access to unserviced and rural areas and reduce the cost of connectivity in urban areas
- In collaboration with the **Malawi Space Agency, Malawi** will launch its own satellites in the near future
- Malawi should introduce other 4IR solutions like solar-powered Wi-Fi to reach rural areas
- The **Universal Service Fund (USF),** managed by the MACRA, aims to ensure
  - All Malawians have access to basic and affordable communications services
  - It focuses on promoting service availability in marginalized, underserved, and unserved areas, enhancing universal access to telecommunications, broadcasting, and postal services

E-COMMERCE, DIGITAL ECONOMY, AND FINANCIAL INCLUSION

- Develop local **E-Commerce Platforms**
- Enhance integration between mobile money with traditional banking to broaden financial inclusion
- Strengthen mobile money to provide greater transparency, record-keeping and accountability
- Enhance **Mobile Money Inter-connectivity** (as has been done between Airtel Money and TNM Mpamba)
- **Strengthen Card Payments** and add mobile money to ease e-commerce transactions
- **Regulate Additional Fees** on Mobile Payments
- Reduce the excessive bank charges
- Re-introduce interest-earning Savings Accounts in the Banks

DIGITAL SOLUTIONS IN PUBLIC SERVICES AND ENHANCED POSTAL SERVICES

- Setup comprehensive, complete, integrated, e-Government systems to ease the delivery of Government services nationwide
- Finalise the setup of the GWAN – Government Wide Area Network
- Digitize public services, including healthcare and education, and use the National Addressing System to improve postal service efficiency
- Implement a digital public service portal similar to Estonia's e-Estonia initiative, which allows citizens to access nearly all government services online.

DIGITAL SOLUTIONS IN PUBLIC SERVICES (CONT.) ENHANCING E-GOVERNMENT

- The Directorate of Road Traffic Vehicle Licensing system and the National Registration Bureau ID system are classic examples of digital integration in public services for efficiency and accessibility
- Leverage the National Addressing System to enhance postal services in the digital economy
- The National Addressing System (NAS) by MACRA enhances the efficiency and accessibility of postal services in Malawi. It:
  - Establishes structured addressing and postcodes to significantly improve accurate location and delivery of mail and parcels
  - NAS supports the e-commerce ecosystem by ensuring swift, reliable delivery of goods and services to consumers across Malawi

CONCLUSION

CLOSING THE DIGITAL INCLUSION GAP IN MALAWI: A STRATEGIC IMPERATIVE

- **Embrace 4IR Innovations:** Continue to educate stakeholders on the transformative potential of 4IR technologies, using successful international examples to inspire local adaptation.
- **Expand Access and Infrastructure:** Work with the Malawi Space Agency and other partners to deploy low-earth orbit satellites and solar-powered Wi-Fi to extend connectivity to unserviced areas.
- **Foster R&D and Creativity:** Utilize the Muuni Fund to support local innovations in sectors crucial for socio-economic development.
- **Enhance Digital Literacy:** Launch comprehensive programs to boost digital literacy across all demographics, ensuring equal access for women and rural communities.
- **Strengthen Cybersecurity**: Develop a robust national cybersecurity strategy, taking cues from global best practices like Singapore's approach.
- **Support E-commerce and Financial Inclusion:** Regulate and integrate mobile money with traditional banking and develop local e-commerce platforms to enhance economic participation.
- **Address E-Waste:** Establish formal e-waste recycling facilities and educate the public on responsible disposal practices to mitigate environmental risks.
- **Leverage Digital Solutions in Public Services:** Use the National Addressing System to improve postal services and support e-commerce, ensuring efficient service delivery across Malawi.
- **Provide Digital Literacy** at all education levels and for local Communities

THANK YOU FOR YOUR ATTENTION

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