



**NIEEE 16TH INTERNATIONAL CONFERENCE AND
EXHIBITION ON POWER AND TELECOMMUNICATIONS
(ICEPT 2020)**

THEME:

**PROSPECTS OF STANDARDS IN EMERGING
TECHNOLOGIES**

BY: ENGR ALEWU CHERRY ACHEMA

STANDARDS ORGANISATION OF NIGERIA (SON)

Emerging Technology



Standards & Technological Development



According to wiki:

Emerging technologies are technologies whose development, practical applications, or both are still largely unrealized, such that they are figuratively emerging into prominence from a background of nonexistence or obscurity. These technologies therefore are very new.

The Standards Organisation of Nigeria

(SON)



SON in Brief

Established in 1971, mandated by Enabling Decree No 14 of 2015

Mandates

preparation of standards relating to

products,

measurements,

materials and processes

among others, and

their promotion at the National, Regional and International levels;

Certification of products,

Assistance in the production of quality goods – Lab Testing;

improvement of measurement accuracies;

circulation of information relating to standards.

To keep close liaison with and renders effective services to professional organizations, industries, trades and consumers throughout the country,

Offices

36 states of the federation and FCT.



Standards and Emerging Technologies

Engineering as defined in;

- Design
- Construction
- Maintenance
- Improvement

Standards & Engineering

International Electrotechnical Commission (IEC) was given birth to in 1906 by delegates to the International Electrical Congress held in St. Louis, USA

Sustainability; without standards industrial revolutions from 1st, 2nd, 3rd and now 4th industrial revolutions would not have been possible

Standards & Technological Development

How do standards support Technology

Engineering practices in different fields of technology benefit from Standards;

- Telecommunications Technology
- Electrical Power Technology
- Transportation (Electric vehicles – EV)
- Geography (emerging smart cities)
- Medical
- Building
- Oil & Gas e.t.c.

WHAT ARE STANDARDS?

Published documents that establish specifications and procedures for safety, consistency and reliability of the materials, methods, products and services



- Create products and services that are safe, reliable, and of good quality
- Increase product safety and quality**
- Increase productivity while minimizing errors and waste in businesses.
- Form the basis for comparison of products from different markets, as well as competing products
- Facilitate entry of products into new markets**
- Verify credibility of new products**
- Assist in the development of global trade
- Pull all interested parties together (manufacturers, consumers, regulators, etc)
- Form the fundamental building blocks for product development
- Give assurance that interconnectivity and interoperability requirements are met
- Drive the development and implementation of technologies**

Roles of Engineers

As Engineers,
You want to access global markets and build products that are accepted worldwide;

You want to influence the nature of technology and product development;

You want to make money, reduce cost and save time;

Then,

Don't let others decide to which rules you will need to play, sit at the table where those rules for global trade are written.

So, Engineers!!! participate and get involved

How Standards support emerging technology

Standards support;

- ❑ Designs (of the technology)
- ❑ Process control
- ❑ Procedures to be followed
- ❑ Tangible products and systems

In retrospect, IEC has;

- ❑ Broadened the scope of TC61 to accommodate emerging techs
- ❑ IEC/ISO JTC 1 on making IoTs safer and more secure
 - ❑ JTC1 brings experts from all over the world to develop IS for Info. & Comm. Tech.

Examples of Emerging Technologies; *here*

standards are basis, these are being developed and constantly being reviewed as tech evolves

- a) Smart Manufacturing – Industrial IoT or 4th industrial Rev.
- b) Artificial Intelligence (AI) – m/c learnings, robotics, task automation
- c) Internet of things (IoT) - powering smart devices and smart cities
- d) Sensing/mobility – drones tech., flying or autonomous driving
- e) Digital Ecosystems – decentralized Web
- f) Elect power technology systems – fault tracing/repairs by drones
- g) Edge computing – a must for the success of 5G tech., IoT techs



Smart train, metro and tramway

&

making Internet of Things



In Nigeria

As Nigerian Engineers seeking development in technology like other nations,

- ❑ All fields of Engineering technology must engage SON
- ❑ Engineers must aggressively get involved in standards development beyond the moment
 - ❑ Be the experts
 - ❑ Call for new standard works
 - ❑ Sponsor the development of standards of interest (no biz as usual waiting on Govt to sponsor)
 - ❑ Nigerian Engineers have distinguished themselves in R/D globally, we must not wait endlessly for others to develop standards for us
- ❑ The Nigerian National Committee of IEC is hungry/thirsty for **participation** and **involvement** of Engineers, manufacturers of EE products, Individual experts, academia, consumers



conclusions

Standards support the diffusion of emerging technologies. Different types of standards are appropriate in the different phases of emerging techs. Engineers must rise up to all standardisation readiness levels to support the roadmaps developed by SON and relevant stakeholders in her latest approved and published Nigerian National Standardisation Strategies (NNS)



- ❑ Standards are keys to removing obstacles that get in the way of innovation
- ❑ Standards help an emerging technology in ecosystem rally round issues that promote successful commercialization of new products (the WEB tech)
- ❑ Standards streamline the development of new technologies and related products through processes and system which are known to work
- ❑ Standards lay down the “rules of the game” for markets looking to development and adopt emerging technologies; they define interoperability of products and systems
- ❑ Standards put down rules that pressure consumers about safety and reliability of emerging technologies

On behalf of the DG/CE Mr. Farouk Salim and the Nigerian National Committee of IEC, I call on Engineers to promote standards as you consider to promote emerging technologies through innovations. Meanwhile, the FGN is promoting innovations by making standards and quality a process of procurement.

Better Technology + Better Standards = Better Standards of Living

Engineers, Get Involved - Participate

Thank you all