

# Digital Inclusion And The Future Of Nigeria University System: A Post Covid-19 Review

  
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# PRESENTATION ORDER



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# Introductory Concepts



- **Digital Systems**
  - Digital systems are designed to store, process, and communicate information in digital form.
  - Computers, Mobile phones, etc.
- **Information Technology**
  - is concerned with all technologies used in the capturing, manipulating, processing, storage, managing, and communicating information
- **Digital Transformation**
  - The integration of digital technology into all areas of life i.e. government, business, education, social, etc.
- **Digital Economy**
  - Economy that runs on digital technology
  - Economic activities running on processor, connectors, sensors and executors).
  - **knowledge productivity**
- **Digital Divide**
  - **Digital divide** is a term that refers to the gap between those that have access to modern information and communications technology and those that don't or have restricted access.
- **Digital Natives and Digital Immigrants**
  - **Digital natives** are the new generation of young people born into the era of widespread **digital** technologies, while “**digital immigrants**” are those who learnt to use computers at some stage during their adult life.



# Digital Transformation



- **Digitalization**
  - Digital systems are designed to store, process, and communicate information in digital form.
  - Computers, Mobile phones, etc.
  - The integration of digital technology into all areas of life i.e. government, business, education, social, etc.
- **Digitization**
  - Conversion of operations and processes to digital form



# Digital Systems As Data Processing System



## STAGES OF DATA PROCESSING CYCLE

### Input Stage

Data Collection

Data Capture

Encoding

Data Transmission

Data communications

### Processing Stage

Performing instructions

Transform raw data into information

### Output Stage

Decoding

Presenting data to user

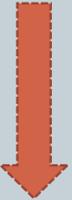
### Storage Stage

Storing data

Retrieve data

# Digital Systems As Data Processing System ...



- DATA
- 
- A thick, orange, downward-pointing arrow with a dashed outline, connecting the word 'DATA' to 'INFORMATION'.
- INFORMATION
- 
- A thick, orange, downward-pointing arrow with a dashed outline, connecting the word 'INFORMATION' to 'KNOWLEDGE'.
- KNOWLEDGE
- 
- A thick, orange, downward-pointing arrow with a dashed outline, connecting the word 'KNOWLEDGE' to 'WISDOM'.
- WISDOM

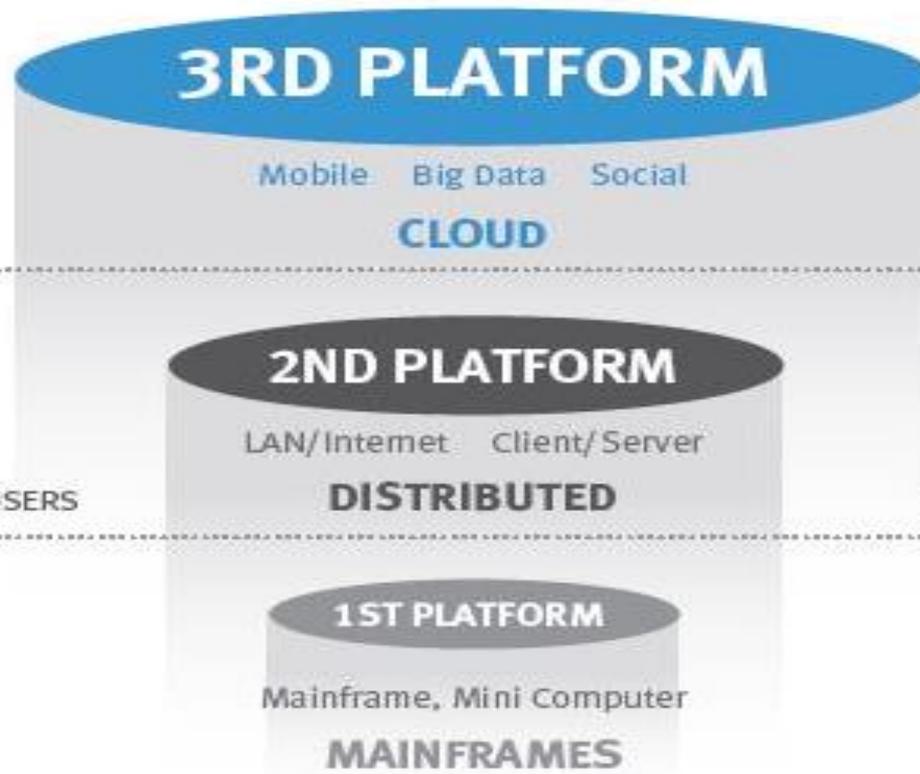
# IT Platforms

## THE THIRD PLATFORM

The Third Platform is described by IDC as the next-generation compute platform that is accessed from mobile devices, utilizes Big Data, and is cloud based.



**BILLIONS OF USERS**



**MILLIONS OF APPS**



**HUNDREDS OF MILLIONS OF USERS**



**TENS OF THOUSANDS OF APPS**



**MILLIONS OF USERS**



**THOUSANDS OF APPS**

# Digital Inclusion and Capability



- **Digital Inclusion**
  - Digital Inclusion is ability of citizens or individuals and groups to access and use information and communication technologies (ICTs).
- **Major components of digital inclusion**
  - Access
  - Use
  - Interest

# Digital Growth and Capability Concepts



- **Access .....**
  - Communication infrastructure: Broadband
  - Digital devices
  - Software and applications
  - Relevant content and services
  - Training
  - Digital opportunities

# Digital Growth and Capability Concepts ...



- **Use .....**

- Digital Competencies
- Levels
- Updates

- ***Digital competence is the set of skills, knowledge and attitudes that enable the confident, creative and critical use of technologies and systems.***
- ***Digital competence is the skill set that enables a person to be a confident digital citizen; interact and collaborate digitally; produce work digitally; and be confident in handling data and computational thinking (problem solving).***

# Digital Growth and Capability Concepts ...



- ***Interest .....***

- Eagerness to use digital technologies and tools to enhance our daily activities and lives
- This is a feeling of wanting to know or learn about ICT
- It has to do with the level of curiosity about capabilities and opportunities in ICT

***“Digital Natives show more interest in the use and adoption of ICT than Digital Migrants.”***

# Issues in Digital Inclusion ...



- Government support and Policy driven
- Addressing needs
- Pragmatic
- Literacy level
- Resistance to change
- General attitude

# Post-COVID19



- *New normal: Changed the way we live*
- *Total dependence on ICT*
- *One thing the past year has taught us is that technology is an integral part of our lives. The need for digital skills has never been greater as we work, socialise, and access core services through our electronic devices.*
- At the start of lockdown there was an immediate need to get the most essential services running effectively.

# Effect of COVID19 on Education



- School closures
- Educational innovations
- Learning from homes using technologies
- Availability and affordability of ICT became an issue
- Limited access to technologies
- Forceful adoption of technologies in education
- Administrators and managers of educational institutions sought for new ways and opportunities

# Developmental Indicators

- **Global connectivity index**
  - 27/120 score
  - 76 position out of 79 countries
- **Teledensity**
  - 100.65%
- **Mobile Penetration Rate**
  - 50%. Of those, 93.3% accessed the Internet via a mobile phone
- **Broadband penetration rate**
  - 45.93 %
- **Contribution of ICT to GDP**
  - 12.45. as Q4'2020
- **Software and Application Development**
  - Excellent
- **Hardware and Devices**
  - OEMs in Nigeria are not really doing
  - Government is currently taking measures to support and attract factories of some OEMs in Nigeria
- **Emerging Technologies**
  - AI, IoT,, Robotics, etc.
  - Developing
- **IT-based Learning**
  - Growing.

# Education as nonessential contact-intensive industries ...



- **High-contact intensive industries**
  - Hospitality, Healthcare, Transportation, Production,
  - Engineering, Security, etc.
  - Barbers, Hairstylists and Cosmetologists
- **Medium-contact intensive industries**
  - Education, Farming, Financial, Legal, etc.
- **Low-contact intensive industries**
  - ICT, Telecommunication, Management, etc.

# Education and ICT

- **ICT has now become the:-**

- **Enabler,**
- **Pivot**
- **Vehicle**
- **Facilitator**

- **e-Learning**

The delivery of **learning** and **training** through digital resources. **eLearning** is based on formalized **learning** and provided through **electronic** devices such as computers, tablets and even cellular phones that are connected to the internet.

- **Online Learning**

The delivery of **learning** and **training** through digital resources. **eLearning** is based on formalized **learning** and provided through **electronic** devices such as computers, tablets and even cellular phones that are connected to the internet.

- **m-Learning**

Mobile learning refers to the deployment of learning and training programmes on wireless handheld devices like cellphones and personal digital assistants.

- **Ubiquitous learning**

Ubiquitous learning environment (ULE) is a situation or setting of pervasive (or omnipresent) education (or learning). Education is happening all around the student but the student may not even be conscious of the learning process.

**Online learning, Web learning, Distance learning, etc.**

# Smart Classroom

- A technology-enhanced learning classroom
- Digital enabled classroom
- Integrated with the digital displays, tabs, whiteboards, assistive listening devices, and other audio/visual components that make lectures easier, engaging, and more interactive



# Benefits of ICT-based Learning



- *Convenience: Learning Anytime, anywhere*
- *Access to remote learning resources*
- Assist students in accessing digital information efficiently and effectively
- Active, creative and collaborative learning are possible
- Support student-centered and self-directed learning
- Offer more opportunities to develop critical (higher-order) thinking skills
- Improve teaching and learning quality
- **Enhanced overall student performance**

# Barriers of ICT-based Learning in Nigeria



- Affordability of ICT facilities and resources
- Low teacher expectations and a lack of clear goals for ICT use in schools
- A lack of teacher collaboration and pedagogical support, as well as a lack of experience among cooperating teachers
- Insufficient time to master new software or integrate ICT during a class period
- Insufficient skills for managing teaching materials
- Low software competence and habitual ways of conceptualizing what and how students should learn
- Limited knowledge and experience of ICT in teaching contexts
- A lack of specific knowledge about technology and how to combine it with the existing pedagogical content knowledge to support student learning
- Excessive focus on teaching technical or operational skills rather than course content management
- A lack of recognition and encouragement of the timely and effective use of ICT
- A lack of in-service training on the use of ICT
- Technical problems in the classroom
- A lack of motivation, and technical and financial support
- Uncertainty about the possible benefits of using ICT in the classroom
- Lack of specific and definite ideas about how integrating technology into instruction will improve student learning.

# Tips for Enhancing Academic performance

## Using digital libraries

- Instant access to educational content
- Access to multiple contents
- Easier information retrieval

## Enrolling in massive open online courses (MOOCs)

- Learn from peers around the world
- Offer a variety of subjects
- Prepare you academically for college



coursera



MITOPENCOURSEWARE  
MASSACHUSETTS INSTITUTE OF TECHNOLOGY



UDACITY



# Tips for Enhancing Academic performance ...



## Using academic writing tools

- Helps students improve writing skills and avoid plagiarism
- Enhances students vocabulary

## Participating in online discussion forums

- Helps to extend classroom learning
- Encourages critical thinking
- Students have the flexibility to reflect on their thoughts and read the responses of others



Quora



StackExchange

# Tips for Enhancing Academic performance ...

## Joining Virtual study groups

- Enables students with similar learning goals to connect and share resources.
- Enables students to also collaborate on projects.

## Using digital planners and timers

- Planners help students to easily keep track of assignments, tests, and events.
- Timers help students to increase attention span, focus, and productivity by creating a balance between study time and break time.

STUDYBLUE



st Schooltraq



# Tips for Enhancing Academic performance



## Learning through multimedia contents

- Enables students to gain deeper understanding.
- Helps students to solve problems more easily.
- Access to vast variety of information.

**HippoCampus.org**  
Powered by NRCC



# Other Platforms for Academic interactions



- **Research gate**
  - Social network for researchers
  - For sharing research knowledge and interaction
  - <http://researchgate.net/>
- **LinkedIn**
  - [www.linkedin.com](http://www.linkedin.com)
  - For business and professional networking
- **Academia.edu**
- **Penprofile**
  - [www.penprofile.com](http://www.penprofile.com)
- **Google Scholar**
  - <https://scholar.google.com/>.

# Strategies for enhancing learning delivery in tertiary



- Create adequate awareness among teachers and learners
- Provide professional development activities related to technology to update teachers' skills and knowledge, and offer technical support when needed
- Support partnerships that help teachers share effective technology practices and experiences
- Support workshops and conferences on technology-based learning
- Augment curricula with technology-enhanced materials
- Provide effective, timely, and continuous training to improve ICT skills and manage a technology-rich classroom
- Encourage positive attitudes about the significance of integrating ICT into instruction
- Provide the needed enabling environment for ICT-based learning to thrive

# Future of Education



- More adoption of blended learning
- Complete smart classrooms
- Virtual Universities
  - Virtual degrees
  - Indian, Pakistan, etc
- Collaborative degree programmes
- Augmented Reality/Virtual Reality and Voice Platforms
- Artificial Intelligence in Education
  - **Duolingo**
  - **Chatbots, Adaptive learning, Responsive Learning**
- Video Learning
- Assistive Technology

# About NCS

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- **The Nigeria Computer Society (NCS)** is the umbrella organization of all Information Technology Professionals, Interest Groups and Stakeholders in Nigeria.
- Formed in 1978 as Computer Association of Nigeria (**COAN**); and Transformed into **NCS** in 2002 as a result of harmonization with other stakeholder and interest groups.
- NCS is the national platform for the advancement of Information Technology Science and Practice in Nigeria
- NCS has been championing the development of IT in Nigeria for over forty years now

# Conclusion



- Digital technology will continue to transform education system
- Students and academics must adequately prepare for this transformation
- There will be total restructuring of the Educational System using technology in the future
- Government must continue to promote and support technology-based learning
- Modern educational policies should be geared towards technology-based learning
- Educational institution administrators and managers should be planning for the future of education.

# Wrap Up



*“Do not confine your children to your own learning, for they were born in another time.” – Chinese Proverb*

*“If we teach today as we taught yesterday, we rob our children of tomorrow.” – John Dewey*

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THANK YOU

