Implementing Online Learning Solutions for the ICT Directorates in Nigerian Universities

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Outline

- Preamble.

- Overview of eLearning.

- Disruptive Technologies & Education Delivery.

- Comparison of Top Learning Management System (LMS) Software.

- Concluding Remarks (NgREN & Education Delivery).

Preamble

Preamble

- The COVID-19 Saga

- COVID-19 brought about: a radical departure from the mode of lecture delivery within the Academic Institutions Globally.
    - Global recognition of online education.
    - Online Education as the only viable delivery platform.
    - Recognition of the grave infrastructural deficits within the developing nations:
    - In Nigeria:
        - Power/Energy defict (< 5000 Mw)
        - Broadand Conectivity
        - Cost of Data for Internet Connectivity (Students and Staff)
        - etc

Preamble

<u>TE Enrolment in Nigeria</u>

- Yearly Applicants (Tertiary) – about 1.8m
- Yearly enrolment (Tertiary) – About 500k ???

- Total Capacity (Universities) – 1.8m (Est.)

- Yearly gap (Tertiary) – About 1.2m

Examples of Open Universities

S/No.	University	Enrollment
1.	Indira Gandhi NOU (India)	3,500,000
2.	Allama Iqbal OU (Pakistan)	1,121,038
3.	Anadolu University, Eskieshr, (Turkey)	1,141,180

Preamble

Welcome to the Era of Online Learning

What to expect:
- Virtual Classroom
- Virtual Collaboration
- Virtual Laboratory
- Virtual Assessment (CA/Examination)

Overview of eLearning

Definition of Terms

- **Online learning** is a flexible instructional delivery system that takes place over the **Internet for** students using the digital devices.

- **eLearning** is learning utilizing electronic technologies to access educational curriculum outside of a traditional classroom.

- **Digital education** is the innovative use of **digital** tools and technologies during teaching and learning, and is often referred to as Technology Enhanced Learning (TEL) or e-Learning.
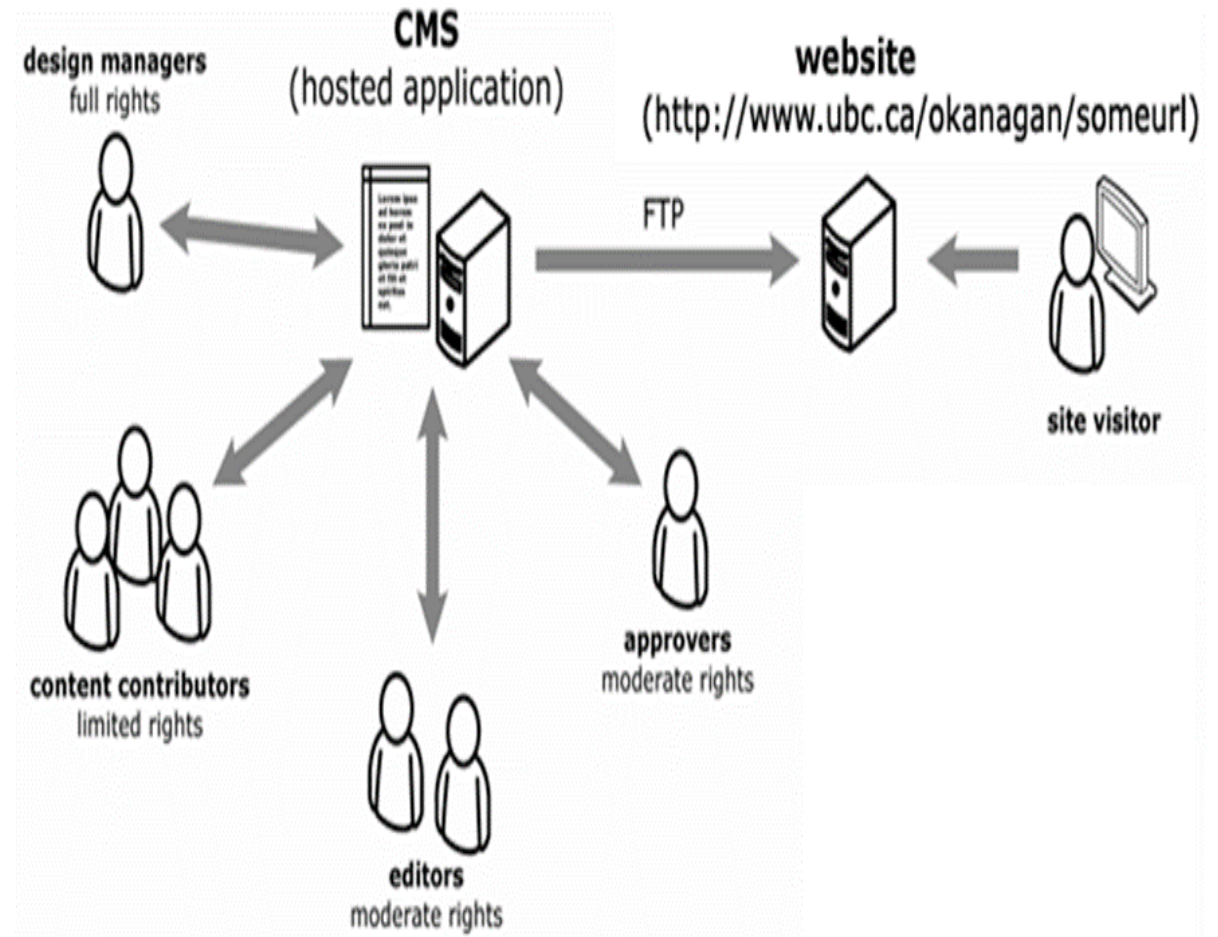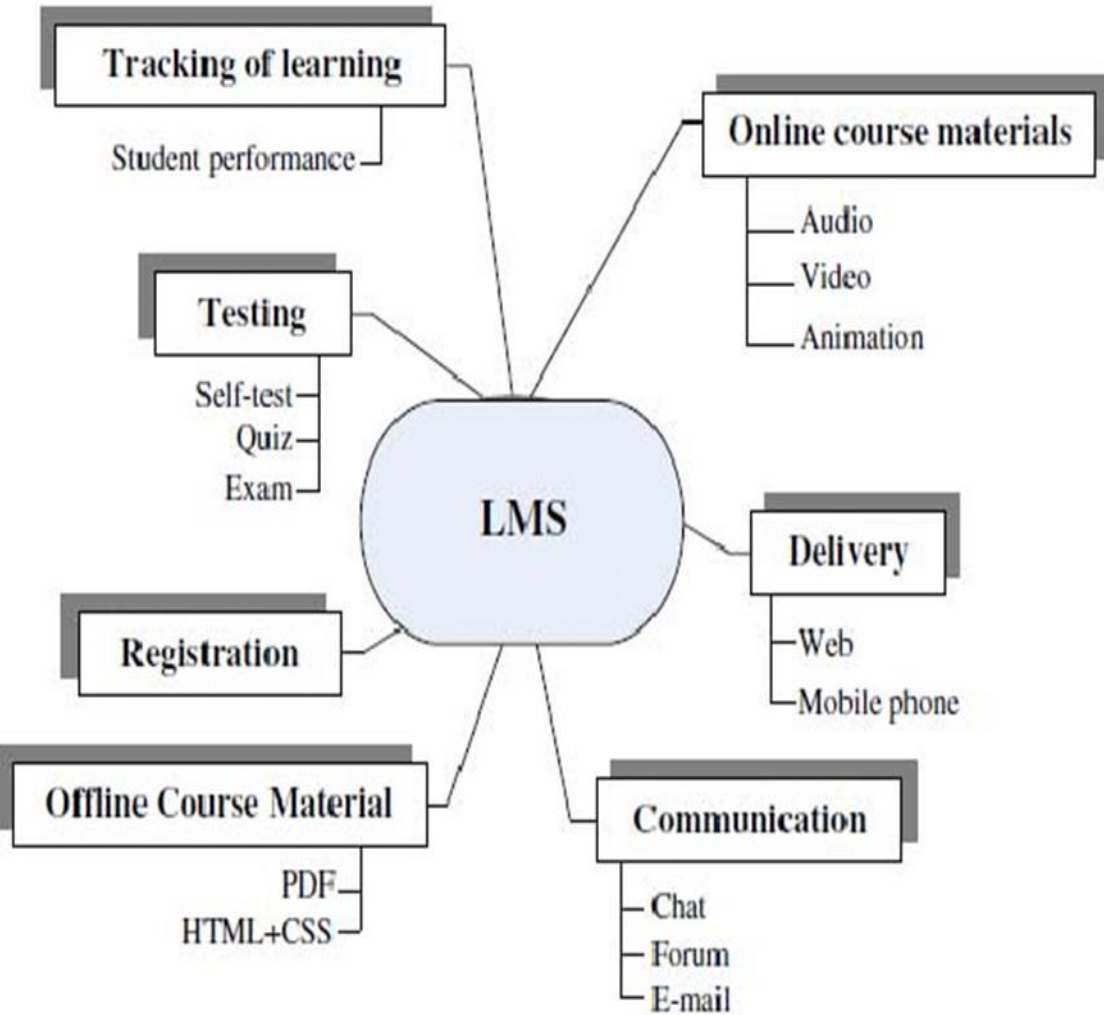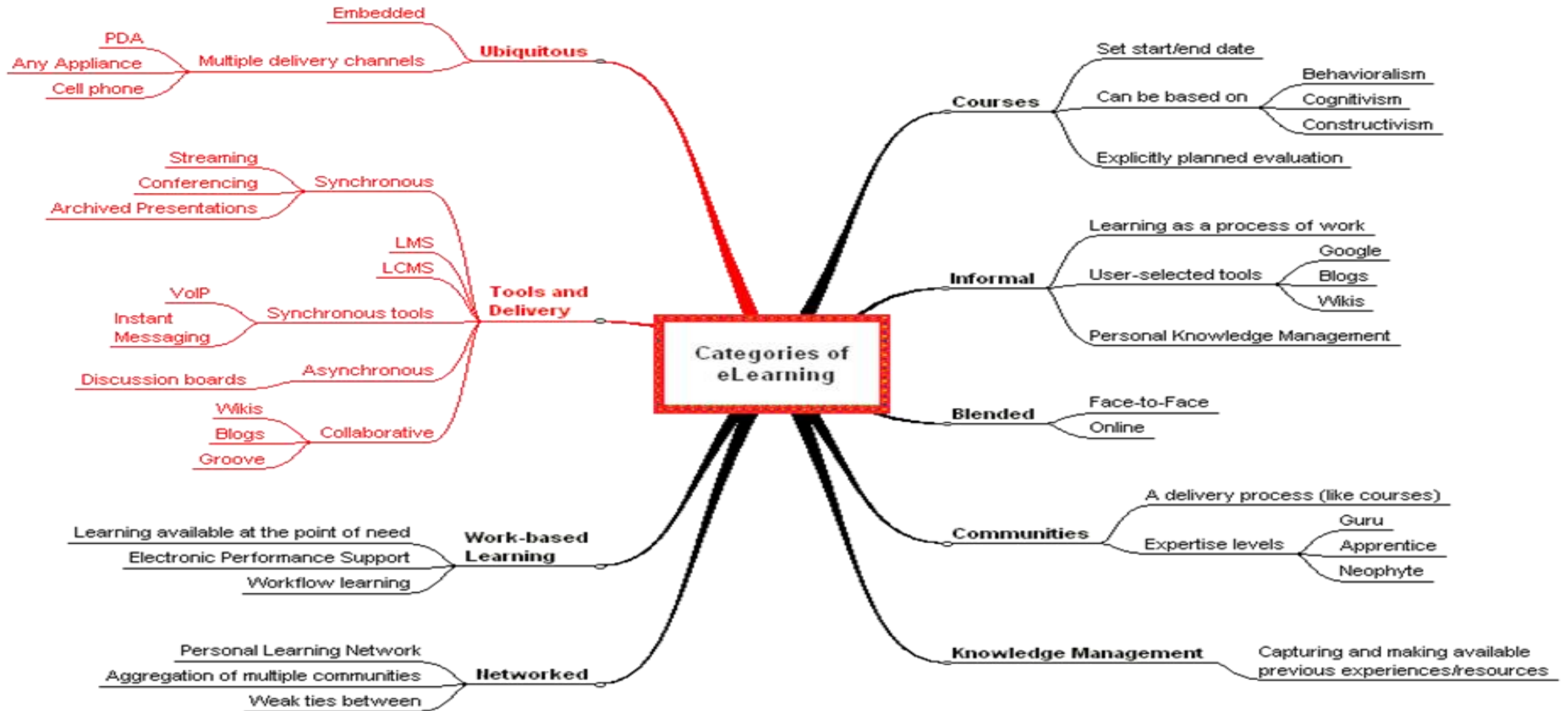
Overview of eLearning

- A **digital learning platform** include: Learning Management Systems (LMS), Learning/Content management Systems (L/CMS), as well as Virtual Classroom (VC) tools and Virtual Learning Environments (VLE).

✓ CMS - all the contents required for learning/teaching like word documents, PDFs, presentations, audio and video files that are stored and retrieved.

✓ LMS - manages, analyzes, and runs educational courses and training programs such as student (employee) registration, curriculum management, skills and competency management, and reporting features.

Overview of eLearning

Overview of eLearning

Categories of eLearning

- **Ubiquitous**
  - Multiple delivery channels
    - Embedded
    - PDA
    - Any Appliance
    - Cell phone
- **Tools and Delivery**
  - Synchronous
    - Streaming
    - Conferencing
    - Archived Presentations
  - Synchronous tools
    - LMS
    - LCMS
    - VoIP
    - Instant Messaging
  - Asynchronous
    - Discussion boards
  - Collaborative
    - Wikis
    - Blogs
    - Groove
- **Work-based Learning**
  - Learning available at the point of need
  - Electronic Performance Support
  - Workflow learning
- **Networked**
  - Personal Learning Network
  - Aggregation of multiple communities
  - Weak ties between
- **Courses**
  - Set start/end date
  - Can be based on
    - Behavioralism
    - Cognitivism
    - Constructivism
  - Explicitly planned evaluation
- **Informal**
  - Learning as a process of work
  - User-selected tools
    - Google
    - Blogs
    - Wikis
  - Personal Knowledge Management
- **Blended**
  - Face-to-Face
  - Online
- **Communities**
  - A delivery process (like courses)
  - Expertise levels
    - Guru
    - Apprentice
    - Neophyte
- **Knowledge Management**
  - Capturing and making available previous experiences/resources

Overview of eLearning

	1st	2nd	3rd	4th
Period	1850 – 1960	1960 - 1985	1985 - 1995	1995 - 2005
Prim. Features	One Technology	Multiple Tech. without Computer	Multiple Tech. with Computer Networking	Multiple Tech with High Bandwidth Computer Tech
Media	Print, Radio & Television	Cassettes, Telev. Video, Fax, Print	eMail, Chat, BB, Internet, Webinar, Video & Teleconferencing, Fax & Print	eMail, Chat, BB, Internet, Webinar, (Lengthy) Video & Teleconferencing, Fax & Print

5th Generation

ELearning Evolution

2012

MicroLearning

Social Learning

Adaptive Learning

Virtual & Augmented Reality

Saas LMS

2017

Disruptive Technologies & eLearning

Disruptive Technologies & eLearning

DT refers to technologies that have the capabilities to alter our lifestyle, work, business and global economy.

They include:

- Cloud Computing
- Internet of Things
- Big Data
- 3-D Printing

- Blockchain
- Unmanned Aerial Vehicles (UAVs)
- etc

Disruptive Technologies & eLearning

- Cloud computing models:
  - Software as a Service (SaaS) - Google Apps, Dropbox, Salesforce, Cisco WebEx, Concur, GoToMeeting, Zoom, Moodle, Skype/Teams, Google Meet, Google Classroom, etc
  - Platform as a Service (PaaS)
  - Infrastructure as a Service (IaaS)
  - Network as a Service (NaaS)
  - Anything as a Service (Xaas)
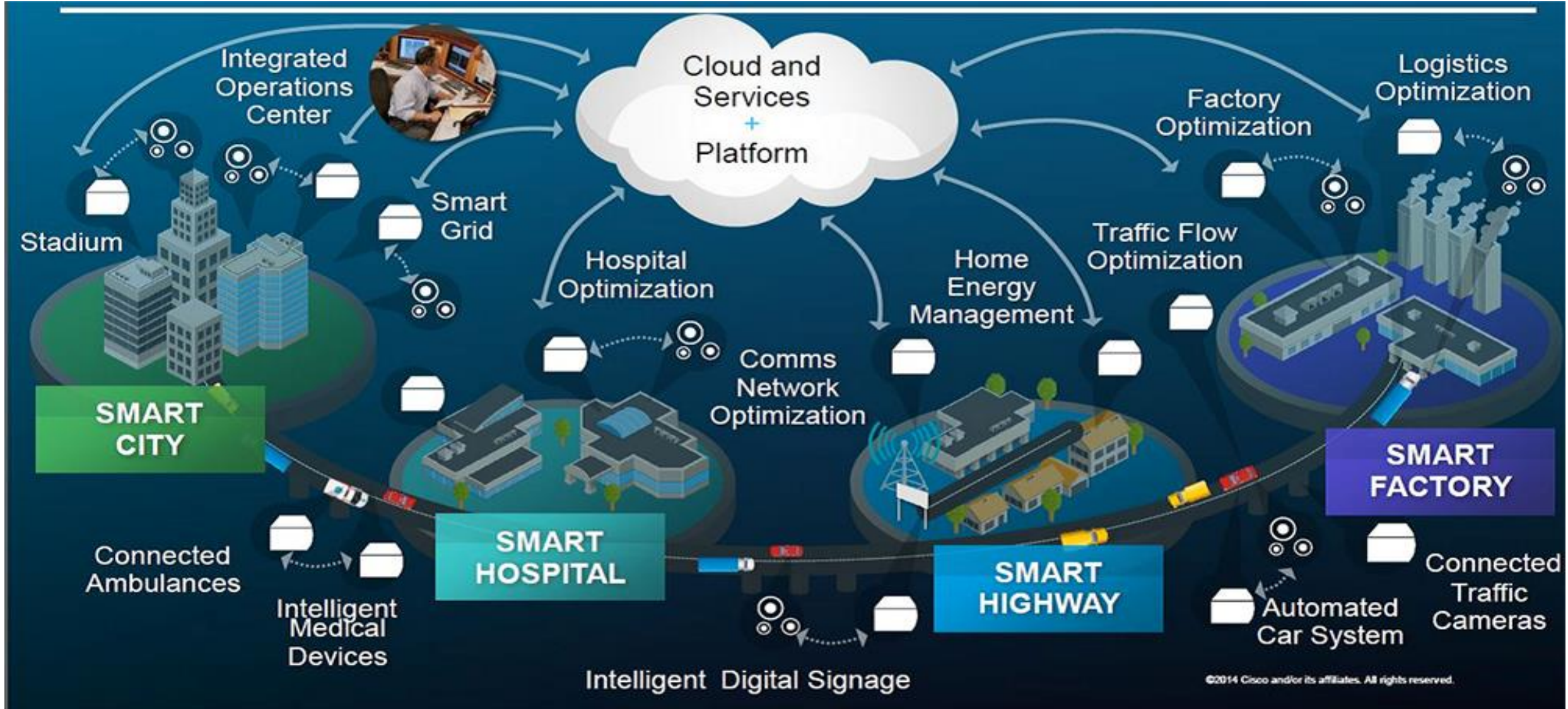
1. Smart Education

- A Smart, multi-disciplinary student-centric education system – linked across schools, tertiary institutions and workforce training, using:
  - Adaptive learning programs and learning portfolios for students.
  - Collaborative technologies and digital learning resources for teachers and students.
  - Computerised administration, monitoring and reporting to keep teachers in the classroom.
  - Better information on our learners.
  - Online learning resources for students everywhere.

2. Virtual Classroom

- A **virtual classroom** is an online learning environment that allows live interaction between the tutor and the learners in learning activities.
- A shared online space where the learners and the tutor work together simultaneously.

3. Virtual laboratory

- A computer-based activity where students interact with an experimental apparatus through a computer interface.
- It allows the learner to "tinker" with **laboratory** equipment that behaves in almost the same way as in a real environment.
- Learners perform a series of experiments that yield authentic results.

Quick Comparison of Top Learning Management System (LMS) Software

LMS Software Features	Moodle	CANVAS LMS	TalentLMS	Litmos LMS	Lessonly	Easy LMS	iSpring Learn	Teachable	LearningStone	NEO LMS
Price	Not provided by vendor	Not provided by vendor	$29.00/ month	Not provided by vendor	Not provided by vendor	$20.00/ month	$2.82 month/user	$0.01/ month	$165.00/ month	$0.05/ month/user
Academic/Education	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔
Asynchronous Learning	✔	✔	✔	✔	✖	✖	✔	✔	✔	✔
Blended Learning	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔
Built-in Course Authoring	✔	✔	✔	✔	✔	✖	✔		✔	✔
Corporate/Business	✔	✔	✔	✔	✔	✔	✔	✔	✔	✖
eCommerce	✖	✖	✔	✔	✖	✔	✖	✔	✖	✔
eLearning Companies	✔	✔	✔	✔	✖	✖	✔		✔	✖
Gamification	✔	✔	✔	✔	✖	✔	✔	✖	✔	✔
Learner Portal	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Mobile Learning	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
SCORM Compliance	✔	✖	✔	✔	✔	✖	✔	✖	✖	✔
Synchronous Learning	✔	✔	✔	✔	✖	✔	✔	✔	✖	✔
Video Conferencing	✔	✔	✔	✔	✖	✖	✔	✔	✖	✔

Disruptive Technologies & eLearning

- Learn Anywhere, Anytime at Any Device
  - Features – On/Offline Mobile Learning, Integrated Virtual Classroom, Monitoring and Evaluation, Support for Visually Impaired, Personalised and Adaptive Learning, and Strong Collaboration tool

- Classera – HP (Promises Credible Examination and online Invigilation)

- **EduServ – Managed Educational Services**

Ministry of Human Resource Development - India

Electronics & Communications, Chemical Engineering, Chemical Sciences, Computer Science & Engineering, Civil Engineering, Mechanical Engineering, Electrical Engineering, Physical Sciences, Biotechnology and Biomedical Engineering,

The NgREN offers cost-effective (at least 50% reduction) provision of innovative ICT tools available for everyday activities.
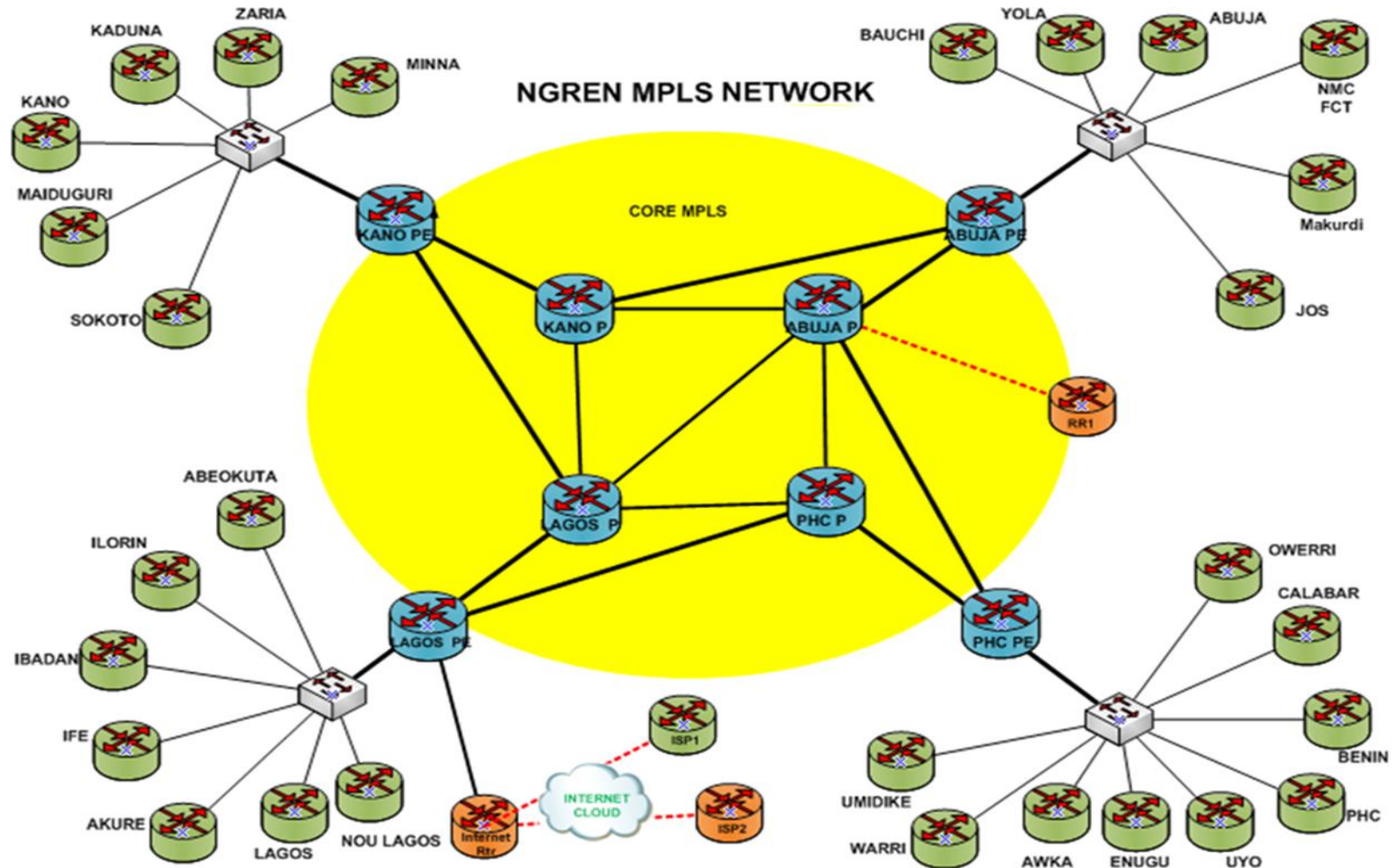
Concluding Remarks

Services Rendered:

- Scope of NgREN Services:
  - ✓ Planned Services (Virtual Library Resources, Storage and Network Facilities)
  - ✓ Security services
  - ✓ Electricity Supply
  - ✓ Provision of Internet bandwidth
- Enhanced interconnectivity within and outside the country for teaching and research collaborations:
  - ✓ Create and share requisite academic contents;
  - ✓ Develop high impact collaborative teaching and learning platforms;
  - ✓ Develop high impact collaborative research programmes.

Concluding Remarks

- In the Developed Nations:
  - ✓ Not much is lost
  - ✓ Online Matriculation
  - ✓ Online Teaching
  - ✓ Online Examination
  - ✓ Online Convocation
- Private Universities in Nigeria
  - Online Teaching, Online Examination, & Online Matriculation, etc.

Which Way Nigeria?

- Online Education can help solve the challenge of:
  - ✓ Access, Quality and Continuity
- We must move from Talking to Action!!

Thank You.

QUESTIONS?