Federal Ministry of Education

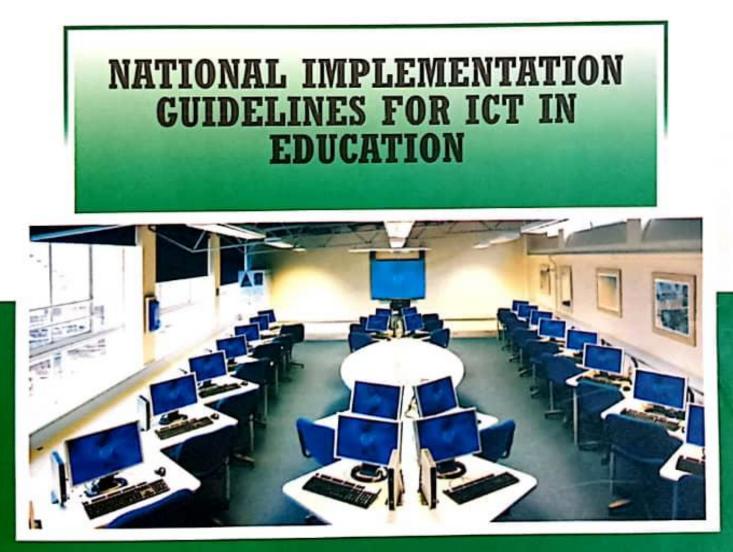# NATIONAL IMPLEMENTATION GUIDELINES FOR ICT IN EDUCATION

MAY 2019

Federal Ministry of Education

NATIONAL IMPLEMENTATION GUIDELINES FOR ICT IN EDUCATION

February 2019

TABLE OF CONTENTS

FOREWORD

The development of this first edition of the Implementation Guidelines for the National Policy on ICT in Education is necessitated by the need to facilitate the actualization of the policy within a given timeline. This document is the product of collaboration between the Federal Ministry of Education and other relevant Federal Ministries, Departments and Agencies, State Ministries of Education, IT Professional Bodies, Private Sector, Non-Governmental Organizations and International Development Partners.

The guidelines provide the modalities for targeting different beneficiaries of the policy at all levels of education for effective development and deployment of ICT in Education. It further provides a simplified framework on the responsibilities of the various stakeholders for the realization of the policy in specific focal areas such as Human Capital, Infrastructure, Research and Development, Awareness and Communication, Governance, Financing and Monitoring & Evaluation.

In addition, the document provides the indices for conducting baseline survey on the status of ICT development and deployment in Education and for monitoring and impact assessment within a specified period of time.

I therefore, call on all stakeholders in education to embrace this Implementation Guidelines in order to harness the benefits of ICT in Education for the development of our dear country.

Mallam Adamu Adamu
Honourable Minister of Education
March 2018

ACKNOWLEDGMENT

The development of the National Implementation Guidelines for ICT in Education is a milestone for the development and deployment of ICT in the sector. This achievement would not have been accomplished without the help of the Almighty.

The Federal Ministry of Education wishes to acknowledge the immense contributions of Federal and State Ministries and agencies, the Private Sector, Non-Governmental Organizations and International Development Partners to the policy. These include: Federal Civil Service Commission (FCSC), Federal Ministry of Communications, Federal Ministry of Interior (FMI), Federal Ministry of Justice (FMJ), Federal Ministry of Agriculture and Social Development (FMASD), Federal Ministry of Environment (FMEnv), Ministry of Budget and National Planning (MBNP), Ministry of Defence (MOD) and States Ministries of Education (SMOE).

Special thanks also go to the National Universities Commission (NUC), National Board for Technical Education (NBTE), National Commission for Colleges of Education (NCCE), Universal Basic Education Commission (UBEC), Nigerian Educational Research and Development Council (NERDC), National Teachers' Institute (NTI), Computer Professionals [Registration Council of Nigeria] (CPN), Teachers Registration Council of Nigeria (TRCN), National Mathematical Centre (NMC), Joint Admissions and Matriculation Board (JAMB), West African Examination Council (WAEC), National Examinations Council (NECO), National Business and Technical Examinations Board (NABTEB), National Open University of Nigeria (NOUN), National Library of Nigeria (NLN), Nigerian French Language Village (NFLV), National Institute of Educational Planning and Administration (NIEPA), National Information Technology Development Agency (NITDA), Nigerian Communications Commission (NCC), Galaxy Backbone PLC, Nigerian Copyright Commission (NCC), National Broadcasting Commission (NBC), Petroleum Trust Development Fund (PTDF), Universal Service Provision Fund (USPF), Raw Material Research and Development Council (RMADC), National Office for Technology Acquisition Programme (NOTAP), Standard Organization of Nigeria (SON), OSSAP-SDGs and Nigerian Television Authority (NTA).

Others that deserve commendation include: University of Ibadan, University of Abuja, Baze University, Federal Polytechnic Offa, Federal Government Boys' College, Apo and Federal Government Girls' College,

ACRONYMS

BOT	-	Build, Operate and Transfer
CBN	-	Central Bank of Nigeria
CBOs	-	Community-Based Organisation
CCTV	-	Closed Circuit Television
COREN	-	Council of Regulation of Engineers in Nigeria
CPN	-	Computer Professionals (Registration Council of Nigeria)
CSOs	-	Civil Society Organisations
DBM	-	Design, Build and Maintain
DBO	-	Design, Build and Operate
DPs	-	Development Partners
EFCC	-	Economic and Financial Crimes Commission
ERMS	-	Electronic Resource Management System
FBOs	-	Faith-Based Organisations
FCSC	-	Federal Civil Service Commission
FCT	-	Federal Capital Territory
FMC	-	Federal Ministry of Communication
FME	-	Federal Ministry of Education
FMEnv	-	Federal Ministry of Environment
FMF	-	Federal Ministry of Finance
FMIC	-	Federal Ministry of Information and Culture
FMITI	-	Federal Ministry of Industry, Trade and Investment
FMJ	-	Federal Ministry of Justice
FMPW&H	-	Federal Ministry of Power Works & Housing
FMST	-	Federal Ministry of Science and Technology
FMYS	-	Federal Ministry of Youth and Sports
FMWA	-	Federal Ministry of Women Affairs
GBB	-	Galaxy Backbone PLC
GESA	-	Grassroots Entrepreneurship Skill Acquisition
ICRC	-	Infrastructure Concession Regulatory Commission
ICT	-	Information and Communication Technologies
IDPs	-	International Development Partners
IEC	-	Information Communication and Education
IEIs	-	Innovation Enterprise Institutions
IPR	-	Intellectual Property Rights
IT	-	Information Technology
JAMB	-	Joint Admissions and Matriculation Board

KPI	-	Key Performance Indicator
LEMIS	-	Local Government Education Management Information System
LGA	-	Local Government Area
LGEAs	-	Local Government Education Authorities
LMS	-	Learning Management System
LRCN	-	Librarians' Registration Council of Nigeria
MB&NP	-	Ministry of Budget and National Planning
MDAs	-	Ministries, Departments and Agencies
M&E	-	Monitoring and Evaluation
MoD	-	Ministry of Defence
MOU	-	Memorandum of Understanding
NABTEB	-	National Business and Technical Examinations Board
NAN	-	News Agency of Nigeria
NASS	-	National Assembly
NBC	-	National Broadcasting Commission
NBS	-	National Bureau of Statistics
NBTE	-	National Board for Technical Education
NCC	-	National Copyright Commission
NCC	-	Nigerian Communications Commission
NCCE	-	National Commission for Colleges of Education
NCNE	-	National Commission for Nomadic Education
NCS	-	Nigeria Computer Society
NECO	-	National Examinations Council
NEMA	-	National Emergency Management Agency
NEMIS	-	Nigerian Education Management Information System
NERDC	-	Nigerian Educational Research and Development Council
NESREA	-	National Environmental Standards and Regulations Enforcement Agency
NFE	-	Non-Formal Education
NGOs	-	Non-Governmental Organisations
NgREN	-	Nigerian Research and Education Network
NIEPA	-	National Institute for Educational Planning & Administration
NITDA	-	National Information Technology Development Agency
NITDEF	-	National Information Technology Development Fund
NITEF	-	National Information Technology Education Framework
NIWIIT	-	Nigerian Women in Information Technology

NMC	-	National Mathematical Centre
NMEC	-	National Commission for Mass Literacy, Adult and Non-Formal Education
NOTAP	-	National Office for Technology Acquisition and Promotion
NOUN	-	National Open University of Nigeria
NPC	-	National Planning Commission
NUC	-	National Universities Commission
NUETAL	-	Nigerian Universities Electronic Teaching and Learning
NUT	-	Nigeria Union of Teachers
OEMs	-	Open Educational Materials
OERs	-	Open Educational Resources
ONSA	-	Office of the National Security Adviser
OPS	-	Organised Private Sector
Post-UTME	-	Post Unified Tertiary Matriculation Examination
PPP	-	Public-Private Partnership
PTDF	-	Petroleum Technology Development Fund
R&D	-	Research and Development
RMRDC	-	Raw Materials Research & Development Council
SAMEs	-	States Agency for Mass Literacy and Adult Education
SCSC	-	State Civil Service Commission
SDGs	-	Sustainable Development Goals
SEMIS	-	State Education Management Information System
SMoEs	-	States Ministries of Education
SMS	-	Short Message Service
SON	-	Standards Organisation of Nigeria
SUBEBs	-	States Universal Basic Education Boards
TETFund	-	Tertiary Education Trust Fund
TRCN	-	Teachers Registration Council of Nigeria
TSC	-	Teaching Service Commission
TV	-	Television
UBEC	-	Universal Basic Education Commission
USPF	-	Universal Service Provision Fund
UTME	-	Unified Tertiary Matriculation Examination
VEIs	-	Vocational Enterprise Institutions
VSAT	-	Very Small Aperture Terminal

DEFINITIONS

(i) **ICT**

ICT refers to the art and applied sciences that deal with data and information. It encompasses all (equipment including computational machinery - computers, hardware, software, firmware etc., tools, methods, practices, processes, procedures, concepts, principles and the sciences) that come into play in the conduct of the information activities: acquisition, representation, processing, presentation, security, interchange, transfer, management, organization, storage and retrieval of data and information.

(ii) **ICT-enhanced Education**

ICT-enhanced Education

- **Universally Accessible**

  (i) Takes into account a variety of student characteristics, including ethnicity, race, abilities, disabilities, age, gender, language abilities and preferred learning style.

  (ii) Uses proactive and inclusive way of teaching and designing courses and curricula.

  (iii) Barriers to learning are removed before they can affect anyone.

  (iv) Identifies and clearly expresses the essential course content, while recognizing that students can express understanding of essential course content in multiple ways.

  (v) Academic rigour is not compromised.

  (vi) Is consistent with universally recognized principles of good teaching.

- **Empowering**

  (i) Teachers and trainers use technology to support all learning across the curriculum, functioning as coaches, mentors, advocates and managers of information;

  (ii) Through on-going and comprehensive professional development, all teachers and trainers acquire the knowledge and skills to integrate technology into a

challenging and interdisciplinary curriculum which addresses specific needs, developmental levels and learning styles of learners;

(iii) The teachers and trainers are transformed, through technology, from authority-experts to facilitators guiding the students/learners to use technology to find answers online.

(iv) The students/learners are empowered to find their own answers, making the learning process to become much more interesting.

(v) Instructional repertoire is expanded allowing opportunities for multimedia and interactivity that are impossible with more traditional instructional techniques.

(vi) The students/learners are transformed from passive recipients of the knowledge of the teacher/trainer to active participants in knowledge-seeking and knowledge-construction, with the teachers/trainers often learning new technology programmes along with them.

- **Enriching**

(i) The individual's collaborative intellectual processes, personal experiences of exploration and discovery, as part of the search for truth, are enriched;

(ii) Increased accessibility to information is engendered. For example, the Internet provides access to considerable amount of information, media and communications and if the students/learners have computer and internet access, assignments, activities, assessments, multimedia and so on can be provided over the web and completed anywhere, providing for a wider range of instructional opportunities for anytime, anywhere, any path and any pace learning.

- **Inclusive**

(i) All students are welcomed by their schools in age-appropriate, regular classes and are supported to learn, contribute and participate in all aspects of the life of the school.

(ii)   Schools, classrooms, programmes and activities are developed and designed so that all students including learners with special needs learn and participate together.

MEMBERS OF TECHNICAL COMMITTEE

1.	Uwemedimo E. Asomugha, *NPOM*	FME	Chairperson
2.	Dr. Flora Aderogba	FME	Member
3.	Mohammed Mahmud	FME	Member
4.	Olugbenga O. Oderemi	FME	Member
5.	Dr. Olawale Lateef Kareem	FME	Member
6.	Sobogun, O. O.	FME	Member
7.	Victor Onate	FME	Member
8.	Babalola, O. A.	FME	Member
9.	Mohammed, I. A.	FME	Member
10.	Madu Chioma	FME	Member
11.	Idowu Olusile	CPN	Member
12.	Anthony Adejumo	NUC	Member
13.	Anarado Kenneth	NBTE	Member
14.	Pius Ekireghwo	NCCE	Member
15.	Christian Obi	NERDC	Member
16.	Saleh Saidu Kanam	UBEC	Member
17.	Augustine U. Maduba	JAMB	Member
18.	Daniel Ubaka Onwoamaka	NABTEB	Member
19.	Bamidele Oluchi J.	NMC	Member
20.	Dr. Madu B. Galadima	NOUN	Member
21.	Babasola, T	NECO	Member
22.	Dr. M. I. Onu	NMEC	Member
23.	Mustapha A. Idris	NTI	Member
24.	Joy Egbuwoku	TRCN	Member
25.	Jerome Onyeje	NCNE	Member
26.	Dr. (Mrs) E. N. Epunobi	NTI	Member
27.	Patrick E. Areghan	WAEC	Member
28.	Olufemi Olufeko	FMC	Member
29.	Anuma Mgbo O.	MOD	Member
30.	Oyelola S. Stephen	FCT Edu	Member
31.	Tina Huzi	NCC	Member
32.	Apagu Gadzama	Galaxy Backbone	Member
33.	Bernard Ewah	NITDA	Member
34.	Serah Ashley	DELLEMC	Member
35.	Dr. A. Fapohunda	NCS	Member
36.	Dr. Wunmi Hassan	Hi-Tech Centre	Member
37.	Ngozi Awuzie	UNESCO	Member
38.	Professor Adenike Osofisan	UI	Consultant

1.0 INTRODUCTION

The Federal Government of Nigeria adopted a National Information and Communication Technology (ICT) Policy aimed at providing a framework for streamlining the ICT sector, and enhancing its ability to catalyse and sustain socio-economic development critical to Nigeria's vision of becoming a top 20 economy by the year 2020. Concurrently, the policy thrust will facilitate the transformation of Nigeria into a knowledge-based economy and will be used to develop action plans, sub-sectoral policies and specific implementation guidelines as appropriate.

The Federal Ministry of Education, recognizing the need to reposition education sector in Nigeria to meet global standards and competitiveness, developed the National Policy on Information and Communication Technologies (ICT) in Education in collaboration with relevant stakeholders. The policy was subsequently approved by the Federal Executive Council in April 2010 for implementation across the Federation. The policy aims at ensuring qualitative education for the enhancement of sustainable socio-economic development, global competitiveness and the individual's ability to survive in the contemporary environment. The Policy also provides the needed guidelines on expectations for the entire process of ICT integration in education to all stakeholders. Its implementation is expected to lead to speedy transformation of teaching, learning and educational administration in Nigeria.

A major provision in the National Policy on ICT in Education is the development of implementation guidelines using a multi-sectoral approach. The document is intended to guide stakeholders towards a coordinated implementation of the policy, by providing viable options for translating the policy intentions to concrete actions and results.

The first major attempt at ensuring the functionality of the policy is the collaboration among relevant stakeholders to develop the implementation framework on the seven focal areas of the policy:
- Human Capital Development
- Infrastructure
- Research and Development
- Awareness and Communication
- Governance
- Financing
- Monitoring and Evaluation

The document specifies the implementation strategies, sub-strategies, activities, deliverables, implementing agencies, timelines and Key Performance Indicators (KPIs) for the successful realization of the policy objectives.

It must be noted that this document provides a comprehensive approach that ensures standard in the implementation of the policy at all levels of Nigeria's education system. However, the complexities and capabilities of the various stakeholders within the federal structure will require creativity and political will for sustained implementation of the document for the desired impact. It is therefore imperative that this document, as with all human endeavours, be periodically reviewed and updated for relevance.

1.1 **Vision**

Education that is universally accessible, empowering, inclusive and enriching.

1.2 **Mission**

To meet the human capital requirement of the nation for attaining and enhancing sustainable socio-economic development, global competitiveness as well as the individual's ability to survive in a contemporary environment.

1.3 **Objectives**

The objectives of ICT in Education are:
(i)   To facilitate the teaching and learning processes.
(ii)   To promote problem-solving, critical thinking and innovative skills.
(iii)   To promote life-long learning and advance knowledge.
(iv)   To enhance the various teaching/learning strategies required to meet the needs of the population.
(v)   To foster research and development.
(vi)   To support effective and efficient education administration.
(vii)   To enhance universal access to information.
(viii) To widen access to education and the range of instructional options and opportunities for any-where, any-time, any-pace and any-path learning.
(ix)   To promote commercialization of ICT in Education.
(x)   To develop and support technical infrastructure that maximizes digital creativity, sharing and innovation.

1.4 **Policy Thrust**

Government shall:

(i)   build and encourage the development, utilization and sustenance of the ICT manpower required to achieve an ICT-enhanced Education;

(ii)   establish and sustain a common ICT infrastructure platform for education at all levels;

(iii)   ensure and encourage Research and Development (R&D) in ICT generally and ICT in Education in particular;

(iv) engage in and encourage regular stakeholder consultations (including the Private Sector), sensitization of the learning community, public awareness and inter-governmental relations to achieve a broad-based consensus on ICT in education;

(v) provide appropriate legal, regulatory and security framework to ensure that ICT in Education and the conduct of related activities are focused on achieving ICT-enhanced Education; and

(vi) adopt innovative and creative financing models for ICT in Education.

(vii) Use M&E as a veritable tool in ICT in Education for tracking policy implementation, efficient service delivery and compliance.

2.0 HUMAN CAPITAL DEVELOPMENT

Education is facing the challenge of severe shortage of ICT skills and personnel, obsolete curriculum, poor attitude and perception of teachers and administrators in ICT.

The intention is to improve ICT competencies and professional development of relevant stakeholders in the development and deployment of ICT in teaching, learning and educational administration. This will involve restructuring the environment for teaching, learning and educational administration, encouraging professional development and ICT skills acquisition, and periodical curricula review. It will also involve development of standards for IT education, strengthening blended and e-learning, open and distance education, encouraging private sector participation and carrying out monitoring and evaluation.

2.1 Policy Statement

Government shall build and encourage the development, utilization and sustenance of the ICT manpower required to achieve an ICT-enhanced education.

2.2 Strategies

(i)   Restructure the environment for teaching and learning as well as education administration to be ICT-enhanced.
(ii)   Carry out and encourage the continuous and mandatory professional development of core ICT Teachers and Administrators.
(iii)   Ensure appropriate continuing ICT training including content development and delivery for all staff.
(iv)   Review the curricula periodically to reflect emerging good practices in line with national goals.
(v)   Promote ICT proficiency in mass and non-formal education with special focus on children, women and people with special needs.
(vi)   Develop and strengthen standards and guidelines for content and instructional materials in electronic media and the use of ICT tools in formal and non-formal Education.
(vii)   Strengthen and expand Open and Distance Learning as well as blended and e-learning.
(viii) Carry out needs assessment to identify skill gaps and encourage acquisition of appropriate ICT skills to mitigate the gaps.
(ix)   Encourage private sector participation in Education and Training in ICT.
(x)   Encourage ICT Education at all levels.
(xi)   Ensure periodic quality assurance in the development, utilization and sustenance of ICT in Education.
(xii)   Establish a reward system for teachers, administrators and institutions that utilize ICT to improve quality of teaching and learning.
(xiii) Review constantly the specializations in the field of Computer Science/IT to reflect global trends.

2.2.1 Restructure the environment for teaching and learning as well as education administration to be ICT-enhanced.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBI-LITY	TIME-LINE	KPI
1.	Provide e-resources for learning (e.g. e-library, e-books, e-journals and other digitized learning materials.)	• Develop contents based on approved curricula. • Digitize existing local educational content. • Design instructional materials/media. • Leverage on instructional media and the life cycle of content. • Review contents periodically • Subscribe to e-library materials including free ones. • Provide digitization tools. • Obtain license to proprietary and copyrights for other products.	• Up-to-date instructional contents • Appropriate instructional media as interactive board, magic board, electronic board, etc. • e-library materials, e-books, e-journals digitized local content materials • Digitization tools e.g. scanners • License to proprietary and copyrights	FME, FCT, SMoEs, LGEAs, education Parastatals, SUBEBs, Heads of Institution, Proprietors of school, NITDA	3 Years	All Tertiary Institutions, 70% Post-Basic & 50% Basic Schools have access to e-resources (library, e-books, e-journals and other digitized learning materials.)
2.	Establish multimedia classrooms	• Provide e-classroom / m-classroom/virtual classroom • Provide interactive boards, multimedia projectors, software, teleconferencing studio, radio, television, Internet facilities for the school • Collaborate with others globally on virtual learning	• Continuous global exposure to learning • Functional e-class/ m-class/virtual classroom	FME, SMoEs, LGEAs, Education Parastatals, Heads of Institution, Proprietors of school, NITDA	3 Years	100% Tertiary Institutions, 75% Post-Basic & 50% Basic Schools have multimedia classrooms

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBI-LITY	TIME-LINE	KPI
3.	Apply ICT resources to educational administration	• Provide appropriate ICT applications to automate administrative processes • Deploy appropriate ICT tools e.g. Internet/Intranet connections in schools and offices, Document Servers for sharing content, e-labs, portals, etc.	• Functional e-Resource Management System (ERMS) • Informed decision making	FME, SMoEs, FCT, LGEAs, Education Parastatals, Heads of Institution, Proprietors of school, NITDA	2 Years	75% of all education ministries and parastatals, 100% of Tertiary Institutions, 75% of Post-Basic & 50% Basic Schools, have e-Resource Management System
4.	Establish ICT Resource/ Learning Centres	• Build and equip ICT resource centres in schools, ministries/ LGEAs and agencies including rural and under-served areas • Recruit trainers and facilitators • Provide ICT learning materials for self-development	• Functional ICT resource centres • Informed teachers and students • Competent workforce	FME, SMoEs, FCT, LGEAs, Education Parastatals, Heads of Institution, Proprietors of school, NITDA, PTDF, USPF, GBB	3 Years	100% of all education ministries & parastatals, 100% of Tertiary Institutions, 75% of Post-Basic & 50% Basic Schools, have e-Resource/ Learning Centres

2.2.2 Carry out and encourage the continuing and mandatory professional development of core ICT teachers and administrators.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSI BILITY	TIMELINE	KPI
1.	Organize professional training for ICT teachers/trainers and administrators.	• Carry out Needs Analysis • Select teachers and administrators for specialized training based on needs analysis • Establish linkages with ICT training institutions locally and internationally • Conduct professional training programme • Carry out in-house training periodically • Evaluate and assess impact of training	• ICT teachers and ICT administrators trained. • Report of impact assessment	FME, SMoEs, FCT, LGEAs, Education Parastatals, Heads of Institution, Proprietors of school, NITDA	Annual	• Evidence of professional certification • Improved learners performance in internal/ national examinations

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSI B-ILITY	TIMELINE	KPI
2.	Encourage ICT teachers and administrators to register with CPN/other relevant IT professional bodies	• Establish a database of all ICT teachers for all levels of education disaggregated by professional status • Sponsor ICT teachers to register with relevant professional bodies and participate in training, workshops, seminars, conferences, etc.	• Database of ICT professionals • Certificate of attendance	FME, SMoEs, FCT, LGEAs, Education Parastatals, Heads of Institution, Proprietors of school	Continuous	Evidence of: Professional registration Certificate of Attendance
3.	Encourage ICT teachers and administrators to attend professional conferences/seminars/workshops regularly.	• Organize workshops in schools in collaboration with professional bodies • Sponsor professional ICT teachers to attend workshops, seminars and conferences • Prescribe attendance of conferences/seminars/workshops as a prerequisite for career progression	• Competent professional ICT teachers and ICT administrators • Improved performance at work • Prescribed Certificates of Attendance	FME, SMoEs, FCT, LGEAs, Education Parastatals, Heads of Institution, Proprietors of school	Continuous	Evidence of attendance of professional ICT teachers and administrators in ICT Conferences/ seminars/ workshops annually.
4.	Provide opportunities for ICT teachers and administrators to design, produce, utilize and disseminate ICT-based instructional materials	• Conduct train-the-trainers' workshop on production of e-materials. • Provide requisite ICT tools and appropriate licensed software	• Availability of locally sourced ICT based instructional materials/ media	FME, SMoEs, FCT, LGEAs, Education Parastatals, Heads of Institution, Proprietors of school	Continuous	• Evidence of locally sourced ICT based instructional materials

2.2.3 Ensure appropriate continuing ICT training including content development and delivery for all staff.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBI-LITY	TIMELINE	KPI
1.	Organize appropriate ICT training for all staff regularly	• Carry out Needs Analysis • Develop training schedules based on the Needs Analysis • Establish linkages with NGOs, Private Sector and IDPs for ICT training • Conduct training on identified areas of need • Carry out in-house training periodically • Assess impact of training	• Staff trained • Report on Needs Analysis • Report of Impact Assessment Status	FME, SMoEs, FCT, LGEAs, Education Parastatals, Heads of Institution, Proprietors of school, NITDA, NGO, OPS	Continuous	• Evidence of ICT training for 30% of ICT staff annually • Evidence of Impact Assessment
2.	Organize Teachers Learning Conference on ICT	• Constitute Planning and Technical Committees • Establish linkages with relevant stakeholders for funding/sponsorship • Organize Learning Conference • Assess the impact of the conference	• Teachers Learning Conference held. • Impact Assessment Status	FME, SMoEs, FCT, UBEC, SUBEBs, development partners	Biennially	• Evidence of Impact Assessment • Evidence of biennial conference organized
3.	Develop ICT-based archive of training materials at all levels of education	• Warehouse all training materials centrally • Provide document management system for each strategic location and link them via Intranet. • Provide high capacity storage for all training centres	• Functional repository in place	FME, SMoEs, FCT, LGEAs, Education Parastatals, Heads of Institution, Proprietors of school	2 Years	• Central repository in place at various levels

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBI-LITY	TIMELINE	KPI
4.	Establish a process for training of staff to qualify as ICT teachers	• Select eligible science and technology teachers to undergo training to qualify as ICT teachers • Support the selected staff to undergo ICT programmes in approved tertiary institutions	• Availability of more professionally qualified ICT teachers	FME, SMoEs, FCT, LGEAs, CPN, NMC, NIEPA, Heads of Institution, Proprietors of school	Continuous	Evidence of staff training in ICT programmes in approved tertiary institutions
5.	Establish linkages through peer and social networks	• Create linkages through project based teams • Create awareness on professional social networks and encourage staff to join	• Peer networking • Social networking	FME, SMoEs, FCT, LGEAs, Education Parastatals, Heads of Institution	Continuous	Evidence of linkages through project-based teams and professional social networking

2.2.4 Review the curricula periodically to reflect emerging good practices in line with national goals.

S/N	SUB-STRATEGY	ACTIVITIES	DELIVERABLES	RESPONSIBI-LITY	TIMELINE	KPI
1.	Conduct curriculum review and resource inspections.	• Evaluate existing curriculum and minimum standards. • Identify emerging trends/issues in ICT • Conduct resource inspections in schools • Review curriculum and minimum standards using multi sectoral approach • Disseminate curriculum and minimum standards to schools	• Relevant and up-to-date curriculum in schools • Relevant Minimum standards in schools	FME, SMoEs, FCT, NERDC, NUC, NBTE, NCCE, CPN, TRCN, LRCN, NMC, Examination Bodies	3 Years	Evidence of relevant and up-to-date curriculum in schools and minimum standards in schools

2.2.5   Promote ICT proficiency in mass and non-formal education with focus on children, women and people with special needs.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBI-LITY	TIMELINE	KPI
1.	Provide appropriate ICT resources and training for those with special needs and the under-served.	• Carry out needs assessment of the specific focus groups • Provide requisite ICT resources including assistive teaching • Organize ICT training programmes	• Requisite ICT resources provided to focus groups • ICT training programmes organised	FME, SMoEs, LGEAs, Education Parastatals, Heads of Institution, NGOs, WIITSoN.	Continuous	Evidence of requisite ICT resources for focus group in ICT training centres Evidence of learners with special needs and the under-served children undergoing training
2.	Provide ICT content in indigenous languages.	• Organize appropriate manpower development on ICT content in indigenous languages • Establish linkages with relevant agencies, IDPs, Private Sectors and NGOs for support • Develop ICT content in the indigenous languages • Create awareness for the adoption of the content by stakeholders • Disseminate ICT content in indigenous languages to stakeholders	• Training organized • ICT content in indigenous languages provided • Awareness created • ICT Content disseminated	FME, SMoEs, LGEAs Education Parastatals, Heads of Institution	3 Years	Evidence of training on content development Adopted ICT content in indigenous languages disseminated to stakeholders

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBI-LITY	TIMELINE	KPI
3.	Organize appropriate programmes to make ICT attractive to under-served children, women and people with special needs.	• Identify and organize relevant ICT programmes on use of gesture-based computing and social media • Provide ICT centres in strategic locations especially in rural communities • Provide ICT based educational toys/tools in the centres • Provide mobile ICT centres in rural communities	• Functional ICT centres provided in strategic locations	FME, FMC, FMWA, FMYS, SMoEs, LGEAs, NMEC, NCNE, NCC, NMC, NITDA, SAMEs, WIITSoN, NGOs, Development Partners	2 Years	• Evidence of attendance at the programme • At least one functional ICT centre available in each LGA (Ward)
4.	Attract people with special needs and the under-served into IT profession	• Create awareness on ICT through mass and local media including social media. • Offer sponsorship on ICT to people with special needs and the under-served • Give concessional employment to IT professionals with special needs	• Sponsorships offered • Increased number of IT professionals among the under-served • Employment of IT professionals with special needs	FCSC, FME, FMC, FMIC, FMWA, SCSC, SMoEs, LGEAs, CPN, NMEC, NCNE, NCC, NITDA, SAMEs, CSOs, NGOs, FBOs, CBOs, Private Sector, Philanthropists, IDPs	3 Years	• Evidence of awareness through mass media • At least five under-served in each LGA receive sponsorship in IT professional training annually • Evidence of concessional employment per LGA for people with special needs

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBI-LITY	TIMELINE	KPI
5.	Establish ICT clubs as a co-curricular activity in Non-Formal Education (NFE) centres.	• Create ICT awareness • Develop the guidelines for the operation of the club • Establish ICT clubs • Institutionalize competitions, workshops and community development services for the clubs	• Functional ICT clubs established in NFE centres • Competitions, workshops and community services organized	FME, SMoEs, LGEAs, NMEC, NCNE, SAMEs, Institutions, WIITSoN, NGOs	1 Year	At least 60% of NFE centres with functional ICT clubs

2.2.6   Develop and strengthen standards and guidelines for content and instructional materials in electronic media and the use of ICT tools in formal and non-formal education.

S/N	SUB-STRATEGY	ACTIVITIES	DELIVERABLES	RESPONSIBI-LITY	TIMELINE	KPI
1.	Review existing ICT standards and guidelines for content and instructional materials using a multi-sectoral approach	• Review existing Standards for ICT resources • Disseminate reviewed Standards using appropriate media	• Up-to-date Standards for ICT resources available to all stakeholders	FME, FMC, SMoEs, FCT, LGEAs, Education Parastatals, CPN	2 Years	Minimum ICT Standards for content and instructional materials available to all stakeholders

2.2.7 Strengthen and expand Open and Distance Learning as well as blended and e-learning.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBI-LITY	TIME-LINE	KPI
1	Liaise with relevant Agencies to expand Nigeria Research and Education Network (NgREN)	• Liaise with FMC to expand NgREN	• National Data Centre in place • Campus networks in place	FME, FMC, NUC, NBTE, NCCE, TETFund, UBEC, NITDA, NCC, CPN, NMEC, NCNE, USPF, PTDF, Galaxy Backbone, NgREN, Telecom industries	3 Years	NgREN in place All tertiary institutions interconnected
2.	Develop content and design instructional materials/media	• Engage content developers and instructional designers • Train teachers on content development and Learning Management System (LMS) • Provide and ensure the use of centralized Learning Management System	• Functional LMS in place • Centralized LMS in place.	FME, SMoEs, FCT, LGEAs, Federal and State Education Parastatals, Heads of Institution, Proprietors of schools, NITDA	2 Years	Evidence of: • Teachers trained annually on content development and LMS • Teachers and Learners with access to LMS.
3.	Leverage on existing resource centres to increase access to learning.	• Identify and create database of existing resource centres • Provide access to the centralized LMS through the centres	• Database of resource centres in place.	FME, SMoEs, FCT, NBS, LGEAs, Education Parastatals	1 Year	100% of resource centres captured.
4.	Expose learners to access and use open educational resources (OERs) online	• Create awareness and engage learners to access the resources • Train learners on the use of OERs	• Learners able to access OERs effectively	FME, SMoEs, FCT, LGEAs, Education Parastatals, Heads of Institution, Proprietors of school	Continuous	50% of learners use OERs

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBI-LITY	TIME-LINE	KPI
5.	Provide appropriate Electronic Resource Management System (ERMS)	• Identify and provide appropriate e-Resource Management System (ERMS) • Build capacity of users	• Functional ERMS in place	FME, SMoEs, FCT, LGEAs, Education Parastatals, Heads of Institution, Proprietors of school	1 Year	Evidence of functional ERMS in schools
6.	Enhance the use of electronic media to increase access to ICT education.	• Establish linkages with Radio and TV stations and Telecommunication companies for the broadcast of ICT educational programmes • Broadcast ICT educational programmes on television, radio, mobile devices, Internet and professional social media	• Broadcast of ICT educational programmes on television, radio stations and electronic mobile devices, professional social media.	FME, FMC, FMIC, SMoEs, LGEAs, Education Parastatals, Radio and television stations, telecommunication companies, Guilds of Professional Bloggers	6 months – 3 Years	MOU on collaboration with media and telecommunication outfits in place Evidence of broadcast

2.2.8 Carry out needs assessment to identify skill gaps and encourage acquisition of appropriate ICT skills to mitigate the gaps.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBILITY	TIME-LINE	KPI
1.	Determine the skills gap in ICT.	• Develop and administer appropriate instruments to identify skill gaps • Carry out analysis of the skill gaps based on data collected • Develop an action plan to mitigate the gaps • Implement the Action Plan	• Skill gaps identified • Identified gaps bridged • Action Plan in place.	FME, SMoEs, FCT, Education Parastatals, Heads of Institution, proprietors of school	3 Years	Evidence of staff trained on identified gaps

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBILITY	TIME-LINE	KPI
2.	Engage people with appropriate ICT skills	• Recruit staff with requisite ICT skills • Partner with Private Sector, NGOs and DPs for technical support	• Increase in ICT professionals in the education sector.	FME, SMoEs, LGEAs, Education Parastatals, Heads of institution, proprietors of school.	Continuous	Evidence of increase in ICT professionals in the sector
3.	Encourage acquisition of ICT skills through self-development.	• Establish Computer Ownership scheme. • Provide staff with requisite ICT tools.	• Computer Ownership Scheme in place.	FME, SMoEs, LGEAs, Education Parastatals, Heads of Institution, proprietors of school	Continuous	100% of staff own and use ICT tools
4.	Organize ICT competitions for teachers and learners at all levels	• Constitute Planning committees • Create awareness through media • Link up with Private Sector and other stakeholders for support • Organize ICT competitions for teachers and learners at all levels and confer awards • Organize annual National ICT competitions	• ICT competitions for teachers and learners organized. • Annual National ICT competitions organized	FME, SMoEs, LGEAs, Education Parastatals, Heads of Institution, proprietors of school	Periodic/ Annual	Evidence of ICT competitions for teachers and learners. Evidence of awards.

2.2.9   Encourage private sector participation in education and training in ICT.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBILITY	TIMELINE	KPI
1.	Establish a forum to coordinate private sector participation through corporate social responsibility initiatives.	• Identify areas of needs. • Identify partners. • Create forum for interaction. • Invite relevant corporate organizations to intervene.	Public and private participation in ICT in education	FME, SMoEs, LGEAs, Education Parastatals, Heads of Institution, Proprietors of school	Continuous	• Evidence of PPP in ICT in Education Forum • Evidence of initiatives through PPP.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBILITY	TIMELINE	KPI
2.	Solicit for incentives from donors of ICT educational resources.	• Seek and promote tax waivers/break • Sensitize executive and legislative arms of government • Sponsor relevant bills on incentives • Identify and recognize deserving donors through awards, commendations, etc.	• Incentives for donors in place	FME, FMJ, NASS, SMoEs, FCT, States Ministry of Justice, States House of Assembly	Continuous	Evidence of: • Tax waivers/ Break • Letters of commendation/awards to donor agencies and private organizations

2.2.10 Encourage ICT Education at all levels.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBILITY	TIMELINE	KPI
1.	Ensure compliance with the policy on the implementation of ICT education for all learners at all levels	• Create continuous awareness to schools to offer ICT as an examinable subject. • Review National Policy on ICT in Education periodically in line with national vision and emerging global trends • Strengthen regulatory bodies to monitor and ensure compliance • Produce and disseminate monitoring report.	ICT as an examinable subject at terminal levels of Education. Monitoring report.	FME, SMoEs, LGEAs, NUC, NBTE, NCCE, NERDC, CPN, Examination Bodies, Heads of Institution, proprietors of school	Continuous	• Up-to-date National Policy on ICT in Education • Evidence of ICT exams at all levels • Monitoring report.
2	Employ ICT Teachers	• Liaise with FCSC/TSC for employment of ICT Teachers				•

2.2.11 Ensure periodic quality assurance in the development, utilization and sustenance of ICT in Education.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBILITY	TIMELINE	KPI
1.	Conduct quality assurance in the development, utilization and sustenance of ICT in Education at all level using multi-sectoral approach	• Develop appropriate instruments for Quality assurance. • Identify and engage experts with requisite skills for assessment. • Partner with relevant agencies and private sector for technical support. • Carry-out quality assurance periodically • Document, Publish and Communicate quality assurance assessment reports.	• Quality assurance mechanism/ processes and instruments in place	FME, SMoEs, FCT, LGEAs, NUC, NBTE, NCCE, NERDC, CPN, Examination bodies, Heads of Institution, proprietors of school, NGOs, Development Partners	continuous	Quality assurance instruments. Assessment and compliance reports.

2.2.12 Establish a reward system for teachers, administrators and institutions that utilize ICT to improve quality of teaching and learning

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBILITY	TIMELINE	KPI
1.	Provide appropriate incentives for ICT teachers, administrators and institutions.	• Institutionalize award for outstanding ICT teachers, administrators and their institutions • Provide ICT teachers and administrators allowances	• Special Awards institutionalized • ICT professionals allowance	FME, SMoEs, FCT, LGEAs, Education Parastatals, Heads of Institution, Proprietors of school, NITDA	Continuous	• Evidence of Annual Merit awards, prizes and letters of commendation for outstanding ICT teachers, ICT administrators and their institutions • Payment of ICT professionals allowance

17

2.2.13 Review constantly the specializations in the field of Computer Science/IT to reflect global trends.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBILITY	TIMELINE	KPI
1.	Conduct review of specializations in Computer Science/IT.	• Identify emerging specializations in the field of Computer Science/IT. • Evaluate existing curriculum and minimum standards. • Develop curriculum and minimum standards using multi sectoral approach • Disseminate curriculum and minimum standards to schools	• New specialisations in the field of Computer Science/IT in schools • Relevant curriculum and minimum standards in schools	FME, SMoEs, FCT, NERDC, NUC, NBTE, NCCE, CPN, TRCN, LRCN, NMC, Examination Bodies	3 Years	Evidence of: • New specialisations in the field of Computer Science/IT • Relevant curriculum • Minimum standards in schools

3.0 INFRASTRUCTURE

There is inadequate ICT infrastructure in the country in general and in the Education sector in particular. Therefore, the need to provide the infrastructure required to attain improved ICT in Education, using innovative methods to support consistent research and development, integration and sustenance of ICT in education, is imperative.

The emphasis therefore, is to create a common ICT platform for the sharing of resources in teaching, learning, research and educational administration; support equitable access to ICT resources; and provide facilities for storage and management of data. Also, it is to promote indigenous content, provide alternative power supply and develop a mechanism for disposal of unserviceable ICT equipment as well as technical support.

3.1 Policy Statement

Government shall establish and sustain a common ICT infrastructure platform for education at all levels.

3.2 Strategies

(i)   Ensure adequate supply of ICT systems for access to software applications, local and International contents and online learning resources at all educational institutions and establishment.

(ii)   Ensure that all educational institutions and establishments are interconnected to create a common platform that will facilitate the sharing of resources and reduce duplication. The platform will provide a secure network for administrative purposes as well as access to the Internet for instructional and professional development.

(iii)   Ensure that ICT systems for education administration are in place and all necessary common infrastructure for the storage and management of the ensuing data are provided in all educational institutions and establishments.

(iv)   Promote and encourage the design, development, acquisition and hosting of indigenous content.

(v)   Facilitate data and content sharing among educational institutions and establishments.

(vi)   Ensure provision of cost effective and sustainable alternative power supply.

(vii)   Develop a mechanism for the disposal of unserviceable ICT equipment in educational institutions and establishments.

(viii) Adopt strategies for technical support, maintenance for ICT in education and Business Continuity.

3.2.1 Ensure adequate supply of ICT systems for access to software applications, local and International contents and online learning resources at all educational institutions and establishment.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBI-LITY	TIMELINE	KPI
1.	Provide requisite ICT Systems for access	• Carry out Needs analysis on ICT resources • Acquisition of ICT equipment from OEMs • Provide resources (hardware and software) to users • Provide technical support and maintenance	• Requisite ICT resources provided and utilized • Report on needs analysis	FME, FMC, FMWA, MOD, Interior, SMoEs, FCT, LGEAs, NCC, NITDA, USPF, PTDF, Education Parastatals, Heads of Institution, Proprietors of school	3 Years	• Device/Teacher ratio: 1:1. • Computer/Student ratio 1:1 at Tertiary level and 1:3 per laboratory attendance at the Basic and Post-Basic schools
2.	Provide access for connectivity to the National Education Backbone.	• Liaise with FMC to provide access to connectivity to the National Education Backbone. • Establish a Data Centre/Server Room	• Access to the National Education Backbone • Data Centre/Server Room in place	FME, FMC, SMoEs, FCT, LGEAs, NITDA, Heads of Institution, Proprietors of School, Galaxy Backbone, NgREN, USPF, PTDF	3 Years	Data centre in place Evidence of connectivity to National Education Backbone
3.	Ensure that ICT systems specifications conform with global standards	• Identify existing ICT systems specification in line with current standards • Upgrade/update systems in line with the current trends and standards	• ICT Systems upgraded/updated	FME, FMC, NITDA, SMoEs, FCT, LGEAs, Education Parastatals, Heads of Institution, Proprietors of School, Galaxy Backbone	Continuous	Evidence of compliance with minimum standards 100% of ICT Systems upgraded/updated

3.2.2 Ensure that all educational institutions and establishments are interconnected to create a common platform that will facilitate the sharing of resources and reduce duplication. The platform will provide a secure network for administrative purposes as well as access to the internet for instructional and professional development.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIB-ILITY	TIMELINE	KPI
1.	Develop and implement functional Campus Network	• Liaise with FMC (where necessary) to design and provide comprehensive campus network based on local needs • Implement the Campus Network	• Functional Campus Network and colocation/hosting PPP	FME, FMC, SMoEs, FCT, LGEAs, NUC, NBTE, NCCE, UBEC, TETFUND, SUBEB, NgREN, USPF, PTDF, NITDA, Heads of Institution, Proprietors of School	3 Years	Availability of design report. Functional school network and hosting/ colocation with PPP
2.	Establish Inter-connectivity for Educational Institutions and Establishments	• Liaise with FMC to: - carry out Needs analysis, design and provide comprehensive common ICT Infrastructure Platform - build capacity of users - create awareness on national inter-operability framework - inter-connect Educational Institutions and Establishments to the common ICT Infrastructural Platform in accordance with the national inter-operability framework	• Needs analysis report • Functional common ICT Infrastructure Platform in place • Establishments and Institutions inter-connected	FME, FMC, Galaxy Backbone, NgREN, NCC, USPF, NITDA, Heads of Institution, Proprietors of School	3 Years	• Functional common ICT Infrastructure Platform • Hosting/colocation with PPP • All tertiary institutions interconnected • Evidence of improved connectivity in Basic and Post-Basic schools.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIB-ILITY	TIMELINE	KPI
3.	Adopt and implement Minimum Standards for ICT infrastructure	• Identify existing ICT infrastructure • Adopt and disseminate Minimum Standards for ICT infrastructure • Update/upgrade periodically existing ICT infrastructure to align with set standards • Update and disseminate ICT standards as the need arises. • Monitor compliance with minimum standards.	• Minimum Standards for ICT infrastructure adopted • Existing ICT infrastructure updated and upgraded • Monitoring report	FME, FMC, SMoEs, FCT, Education Parastatals, NITDA, PTDF, Galaxy Backbone, NgREN	1 Year	• Minimum Standards for ICT in Education in place. • Functional and up-to-date ICT infrastructure in place. • Monitoring report
4.	Encourage collaboration among establishments and institutions to share ICT resources	• Identify areas of collaboration among establishments and institutions on ICT resources • Establish an MoU with relevant stakeholders • Commence the collaboration	• MoU in place	FME, FMC, SMoEs, FCT, Education Parastatals, NITDA, Galaxy Backbone, Heads of Institution, Proprietors of School. Development Partners	1 Year	Evidence of: • signed MoU • collaboration

3.2.3 Ensure that ICT systems for education administration are in place and all necessary common infrastructure for the storage and management of the ensuing data are provided in all educational institutions and establishments.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBI-LITY	TIMELINE	KPI
1.	Provide functional and scalable School Administration and Management portal linked to FME Data	• Provide and ensure usage of School Administration and Management portal • Build capacity of users	• Functional School Administration and Management	FME, SMoEs, FCT, LGEAs, Education Parastatals, Heads of	3 Years	Evidence of: • Functional School Administration and Management

	Centre	• Provide technical support	portal in place	Institution, Proprietors of School		portal • Capacity building
2.	Develop disaster management and business continuity Plans	• Identify threats to and vulnerability of ICT resources (hardware and software) • Formulate disaster management and business continuity policies • Prepare disaster management and business continuity plans • Backup data in National Data Centre and the Cloud	• Disaster management and business continuity plan in place • Data replicated in Galaxy Backbone and the Cloud • Policy in place	FME, FMC, SMoEs, FCT, LGEAs, Education Parastatals, Galaxy Backbone, Heads of Institution, Proprietors of School	Continuous	Appropriate plans in place. Policy in place.

3.2.4 Promote and encourage the design, development, acquisition and hosting of indigenous content.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIB-ILITY	TIMEL INE	KPI
1.	Promote software development in indigenous languages	• Identify and collaborate with software developers • Organize software exhibition • Commercialize software in indigenous languages • Establish training programmes for software development	• Software in indigenous languages developed and deployed	FME, FMIC, SMoEs, FCT, LGEAs, Education Parastatals, NITDA, Heads of Institution, Proprietors of School	Annual	Evidence of: • Exhibition • Collaboration • Software in indigenous language developed • Training programmes in place
2.	Encourage the development of indigenous content based on approved curriculum	• Identify and collaborate with content developers • Sensitize relevant Professionals on the need to develop content based on approved curriculum • Commercialize indigenous	• Digitized content based on approved curriculum in place • Teachers and learners trained • Relevant	FME, SMoEs, FCT, LGEAs, NITDA, NUT, Education Parastatals, Heads of Institution, Proprietors of	Continu ous	• Indigenous digitized content in place. • Evidence of training

		content developed • Train teachers and learners on content development	professionals sensitized	School		• Evidence of sensitization

3.2.5 Facilitate data and content sharing among educational institutions and establishments.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIB-ILITY	TIME-LINE	KPI
1.	Establish institutional web portal linked to National Education platform	• Design and develop web portal based on the needs • Host the developed web portal and provide link to the National Education platform	• Web portals hosted • Links to the National Education platform established	FME, SMoEs, FCT, LGEAs, Education Parastatals, Galaxy Backbone, Heads of Institution, Proprietors of School	1 Year	Evidence of functional web portal with Links to the National Education platform
2.	Digitize hard copies of all educational content	• Identify educational contents • Digitize and backup content using relevant technologies	• Digitized and backup content in place	FME, SMoEs, FCT, LGEAs, Education Parastatals, GBB, Heads of Institution, Proprietors of School	Continuous	Digitized and backed up content

3.2.6 Ensure development and provision of cost effective and sustainable alternative power supply.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBI-LITY	TIMELINE	KPI
1.	Develop and provide cost effective and sustainable alternative power supply	• Determine power requirement for ICT systems • Develop alternative power supply and backups • Provide and deploy cost effective and sustainable	• Cost effective and sustainable alternative power supply deployed	FME, FMPW&H, SMoEs, FCT, LGEAs, Education Parastatals, Heads of Institution, Proprietors of	3 Years	Evidence of cost effective and sustainable alternative power supply

S/N					School		

3.2.7   Develop a mechanism for the disposal of unserviceable ICT equipment in educational institutions and establishments.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBILITY	TIMELINE	KPI
1.	Comply with the National E-waste Management Policy, taking into consideration the security of the content of the related devices	• Create awareness on e-Waste management • Implement relevant aspects of National e-Waste management policy	• Proper disposal of e-waste	FME, FMEnv, FMC, FMIC, SMoEs, LGEAs, FCT, NITDA, Education Parastatals, NESREA, Heads of Institution, Proprietors of School	Continuous	Evidence of compliance with e-Waste disposal policy

3.2.8   Adopt strategies for technical support and maintenance for ICT in education as well as Business Continuity.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBILITY	TIMELINE	KPI
1.	Provide preventive and routine maintenance	• Sign support and maintenance agreement with vendors • Regular training for maintenance and support staff	• Maintenance and Support agreement • Minimal down time • Maintenance and support staff trained	FME, SMoEs, FCT, LGEAs, Education Parastatals, Heads of Institution, Proprietors of School	Continuous	• Maintenance and Support agreement signed • Record of maintenance and support • Evidence of Staff trained

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBILITY	TIMELINE	KPI
2.	Update/upgrade existing software/hardware as prescribed by the OEMs	• Engage OEMs, NITDA or authorized dealers in the update/upgrade where necessary	• Software/ hardware updated/ upgraded	FME, FMC, SMoEs, FCT, LGEAs, Education Parastatals, NITDA, GBB, Heads of Institution, Proprietors of School	Continuous	Updated software/ hardware in place
3.	Ensure after-sale support agreement	• Sign an after-sale maintenance and support agreement with OEMs/authorized dealers	• Signed after-sale maintenance and support agreement	FME, FMC, SMoEs, FCT, LGEAs, Education Parastatals, NITDA, GBB, Heads of Institution, Proprietors of School	Continuous	Signed after sales maintenance and support agreement in place
4.	Establish Business Continuity and Disaster Recovery System.	• Develop and implement Business Continuity and Disaster Recovery Plan. • Create awareness on the Plan. • Build capacity of staff on Emergency Management including Fire-drills, Muster points, etc. • Provide and maintain appropriate and functional fire detectors and extinguishers.	• Emergency Management, Business Continuity and Data Recovery Plan in place. • Appropriate and functional fire detectors and fire extinguishers at strategic locations.	FME, FMC, FMPW&H, SMoEs, FCT, Education Parastatals, Galaxy Backbone, NEMA, Federal/State Fire Service, Heads of Institution, Proprietors of School.	Continuous	Evidence of: • Business Continuity and Disaster Recovery plan. • Functional Fire detectors and extinguishers in strategic locations. • Mock drills or test carried out

4.0   **RESEARCH AND DEVELOPMENT**

Research and Development (R&D) is crucial to the attainment of education that is engaging, empowering, enriching and enabling for sustainable socio-economic development. There is therefore the need to give necessary attention to R&D in education.

In order to ensure sustained investment and commitment to R&D in ICT in education, strategies should be developed to encourage R&D initiatives in teaching and administration, personnel motivation, adaptation of concepts, methodology and innovations.

4.1   **Policy Statement**

Government shall ensure and encourage Research and Development (R&D) in ICT generally and in ICT in Education in particular.

4.2   **Strategies**

(i)   Provide legislation to ensure dedicated funding to support R&D.

(ii)   Increase fund allocation to R&D initiatives to improve new pedagogies, teaching and learning, administration techniques and tools amongst others.

(iii)   Provide and encourage opportunities for R&D initiatives that are result-oriented and geared towards meeting national needs.

(iv)   Encourage and motivate R&D personnel.

(v)   Support R&D in the adaptation of concepts, methodologies and innovations.

(vi)   Develop and promote R&D plan for ICT in Education.

(vii)   Encourage the implementation of research findings in ICT in Education.

4.2.1   Provide legislation to ensure dedicated funding to support R&D.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIB-ILITY	TIMELINE	KPI
1.	Review existing laws related to R&D	• Constitute a Committee to review existing laws on R&D • Carry out needs assessment on R&D. • Identify gaps in the existing laws in line with global best practices. • Sensitize stakeholders on the need for the existing laws on R&D. • Collaborate with FMJ to present a bill on the amendment of the existing laws on R&D.	• Documented needs assessment. • Stakeholders awareness on the existing laws • Draft bill	FME, FMC,FMJ, SMoEs, FCT, CPN, NUC, NBTE, NCCE, UBEC, NMEC, NCNE	1 Year	Draft bill Evidence of needs assessment
2.	Enact new laws to strengthen R&D	• Mobilize support for the public hearing on the draft bill. • Present the draft bill to the FEC. • Present the draft bill to NASS. • Ensure the passage of the bill	• Public Hearing on the bills on R&D held • Laws on R&D enacted • Documented policies and laws in electronic and hard copies	FME, FMC, FMJ, NASS, SMoEs, FCT CPN, NUC, NBTE, NCCE, UBEC, NMEC, NCNE	3 Years	New R&D Act in place Evidence of public sensitization on the new R&D Acts

4.2.2 Increase fund allocation to R&D initiatives to improve new pedagogies, teaching and learning, administration techniques and tools amongst others.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBILITY	TIMELINE	KPI
1.	Carry out survey on existing use of ICT in teaching, learning, research and administration	• Develop instruments for baseline survey of existing use of ICT in teaching, learning, research and administration • Carry out baseline survey • Determine needs based on global trends	• Baseline report • Needs assessment report	FME, SMoEs, FCT, NUC, NBTE, NCCE, UBEC, NERDC, NMEC, NCNE	1 Year	Baseline report Needs Assessment report
2.	Provide funds for ICT research, tools and Research Collaboration	• Provision of fund in the annual budget by Federal and State Governments • Build capacity on Research Proposal writing • Synergise with stakeholders for provision of funds	• Quality Research proposals • Availability of fund	FME, SMoEs, FCT, Education Parastatals MDAs, Heads of Institution, Proprietors of School	Annual	Evidence of: • Grant winning proposals • Budgetary provision for ICT research • Intervention from stakeholders

4.2.3 Provide and encourage opportunities for R&D initiatives that are result-oriented and geared towards meeting national needs.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBILITY	TIMELINE	KPI
1.	Facilitate access to research grants/funds from partner institutions and linkages	Constitute a committee to: • Identify stakeholders ready to give grants • Liaise with identified stakeholders for support • Provide a template for eligibility to access grants/funds • Provide list of eligible beneficiaries to access grants/funds	• List of stakeholders ready to give grants generated • List of available grants/funds provided • Template for eligibility to access grants/fund provided • List of eligible beneficiaries	FME, SMoEs, FCT, Education Parastatals, Heads of Institution, Proprietors of School, Development Partners	2 Years	Evidence of: • Template for eligibility • Disbursement of grants/funds to beneficiaries
2.	Create enabling environment for research	Constitute a committee to: • Provide a template on eligibility for awards • Institutionalize awards, prizes and commendations • Encourage networking and collaboration	• Availability of template • Awards/prizes, commendations • Networking and collaboration	FME, SMoEs, FCT, Education Parastatals, Heads of Institution, Proprietors of School	Annual	Evidence of: • Eligibility for the award • Awards/Prizes
3.	Ensure judicious utilization of R&D funds	• Hold meetings, workshops, seminars with institutions and stakeholders receiving funds • Monitor and evaluate the use of R&D funds • Produce reports • Sanction/commend institutions on level of compliance	• Monitoring and Evaluation report in place • Report on innovative products and services produced • Sanctions/ commendations in place	FME, FMF, SMoEs, FCT, Education Parastatals	Annual	Evidence of: • Innovative products & services • Sanctions/commendations as necessary • M&E report

4.2.4 Encourage and motivate R&D personnel.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBILITY	TIME-LINE	KPI
1.	Train personnel in ICT research and development	• Identify personnel in ICT research and development and their training needs • Develop a training plan • Identify training partners • Organize training	• List of personnel in ICT R&D with training needs • Training plan • Training partners • Trained personnel	FME, SMoEs Education Parastatals, Heads of Institution, Proprietors of School	Annual	Evidence of: • training plan • Personnel trained • Innovation
2.	Provide the necessary ICT tools	• Carry out inventory of available ICT tools • Identify the gaps in ICT tools • Provide necessary tools	• Requisite and functional ICT tools	FME, SMoEs, Education Parastatals, Heads of Institution, Proprietors of School	Annual	• List of available ICT tools • List of necessary tools • Requisite tools available
3.	Reward excellence in R&D	• Constitute committee to assess R&D results • Award prizes for excellence	• Assessment committee in place • Guideline for assessment of R&D results • Award forum	FME, SMoEs, Education Parastatals, Heads of Institution, Proprietors of School	Annual	Evidence of: • Assessment committee • Guideline for assessment • Award of prizes

4.2.5 Support R&D in the adaptation of concepts, methodologies and innovations.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIB-ILITY	TIMELINE	KPI
1.	Ensure adaptation of research results through compliance with existing laws, policies and ethics.	• Collate all research results • Apply to Nigerian Copyright Commission (NCC) for protection • Create awareness on indigenous ICT research results and their compliance with laws, policies and	• List of R&D results • Protection of R&D results • Awareness created	FME, SMoEs, FCT, Education Parastatals, RMRDC, NOTAP, Heads of Institution, Proprietors of School, NCC	Annual	Evidence of: • Research result collated • Awareness created • Copyright Protection • Patronage of

		ethics • Encourage patronage of indigenous ICT research products				indigenous ICT research products
2.	Encourage private sector participation in R&D	• Sensitize private sector on the need to participate in R&D • Involve private sector in public lectures and fora. • Create synergy between private sector and research institutions • Utilize indigenous R&D results	• Enlightenment programmes organized • Indigenous R&D results utilized • Funding from private sector	FME, SMoEs, FCT, NOTAP, Education Parastatals, Heads of Institution, Proprietors of School, Private Sector, Development Partners	Continuous	Evidence of: • Private Sector participation • Collaboration between private sectors and research institutions • Funding of R&D by private sector
3.	Organize exhibitions and competitions to promote innovations	• Constitute an Innovations Committee • Develop guidelines to assess innovations • Organize exhibitions and award ceremony • Enlist sponsorship for identified innovations.	• Committee on Innovations • Assessment guidelines on innovations • List of assessed innovations • List of awards • List of sponsors	FME, SMoEs, FCT, NOTAP, Education Parastatals, Heads of Institution, Proprietors of School	Annual	Evidence of: • Guidelines • Exhibition • Award given • sponsorship
4.	Rank educational institutions on ICT deployment	• Develop instruments to rank educational institutions on ICT deployment and use • Rank educational institutions on ICT deployment and use • Disseminate results of the ranking	• Instruments to rank educational institutions on ICT • Results of the ranking	FME, SMoEs, FCT, FCT, NUC, NBTE, NCCE, NMC, CPN, NERDC	Annual	Evidence of: • Instruments for ranking • Result of ranking
5.	Encourage research on the use of open-	• Create awareness on the use of open-source software • Call for research proposals	• Awareness on the use of open-source software created • Research proposals on	FME, SMoEs, FCT, NUC, NBTE, NCCE, NMC, NITDA	Annual	Evidence of: • Research proposals submitted

		on the use of open-source software	open-source software			• Use of open-source software
source software		• Constitute Research Appraisal Committee • Fund research on the use of open-source software	• Research Appraisal Committee Constituted			• Research Appraisal Committee Constituted • Funding

4.2.6 Develop and promote R&D plan for ICT in education

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBILITY	TIME-LINE	KPI
1.	Develop R&D plans	• Identify areas of national needs • Prepare R&D plans on annual basis • Disseminate R&D plans	• R&D plans on annual basis • Disseminate R&D plans in appropriate media	FME, FMC, SMoEs, FCT, Education Parastatals, Heads of Institution, Private Sector	Annual	R&D plans in place
2.	Ensure the protection of intellectual property rights (IPR) and royalties	• Create awareness on IPR laws (Copyright, Patents and Trademarks, etc) • Create Desks to address IPR violation and payment of royalties • Engage in constant advocacy on IPR	• Stakeholders Forum • Desks on IPR created • Regular advocacy on IPR	FME, FMTII, SMoEs, NUC, NBTE, NCCE, CPN, NOTAP, FMJ Nigerian Copyright Commission, Heads of Institution	Annual	Evidence of: • Desk on IPRs created • Regular advocacy
3.	Promote the establishment of R&D Centres of Excellence for ICT in Education	• Create awareness on the need to establish R&D Centres of Excellence • Adopt criteria for establishment of R & D Centres • Establish and fund R&D Centres of Excellence in collaboration with private sector, OEMs, DPs, etc.	• Awareness on the need for establishing R&D centres created • Synergy with private sector and relevant stakeholders • Centres of excellence established	FME, SMoEs, TETFUND, NUC, NBTE, NCCE, CPN, PTDF, USPF, NITDA, SON, Galaxy Backbone	3 Years	• Evidence of awareness created • Synergy with development partners • R&D centres established

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBILITY	TIME-LINE	KPI
4.	Publish and disseminate research results	• Establish converged database • Collate and publish the research results • Sensitize stakeholders on research results • Create credible local journals for publications of R&D findings • Establish a Quality Control Unit for the assessment of local journals to meet globally acceptable standards • Constitute a Peer Review Committee on locally sponsored R&D on ICT in Education • Strengthen the framework for funding targeted research and ensure that the research results are published in authorized journals • Disseminate research results	• Converged database established • Research results disseminated in approved journals • Nigerian ICT Journal established • Quality Control Unit established • Peer Review Committee constituted • Framework for funding strengthened • Research results published	FME, FMST, SMoEs, NUC, NBTE, NCCE, NERDC, CPN, Heads of Institution, COREN, NMC, NIEPA, NCS, Academies of Science and Engineering	Annual	Evidence of: • Published results in appropriate media • Converged database • ICT Journals

4.2.7   Encourage the implementation of research findings in ICT in education

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONS-IBILITY	TIMELINE	KPI
1.	Identify research findings	• Constitute a committee to identify research findings that are crucial to ICT in education. • Prioritization of research findings based on available resources and national needs. • Ensure patency and royalty to the researcher(s).	• Crucial research findings identified • Prioritized research • Agreement of patency and royalty in place	FME, SMoEs, FCT, NMC, NUC, NBTE, NCCE, CPN, NOTAP	1 Year	• Documented research findings available • Patency and royalty agreement available

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONS-IBILITY	TIMELINE	KPI
2.	Implementation of research findings in ICT in education	• Constitute a committee on implementation of research findings that are crucial to ICT in education • Identify relevant stakeholders for implementation of research findings • Disseminate research findings with timelines for feedback • Enter into MoU with the stakeholders/researchers for support	• MoU signed with identified stakeholders • Timelines for implementation • Commercialization and utilization of end products	FME, SMoEs, CPN, NUC, NBTE, NCCE, UBEC	1 Year	Evidence of: • Prioritize Research findings • Executed MoU • Feedback

5.0   AWARENESS AND COMMUNICATION

Public awareness on ICT in education is necessary to achieve a broad-based consensus and effective participation in its implementation. The emphasis should be on periodic public awareness using appropriate media and national fora to promote interest in ICT security and ethical practices.

5.1   Policy Statement

Government shall engage in and encourage regular stakeholder consultations (including the Private sector), sensitization of the learning community, public awareness and inter-governmental relations to achieve a broad-based consensus on ICT in education.

5.2   Strategies

(i)   Ensure and promote periodic public awareness campaigns on ICT in education using appropriate media with due consideration for children, women and people with special needs.

(ii)   Establish national fora to generate and promote interest for ICT in the learning community.

(iii) Sensitize the citizenry on their responsibilities to adhere to good ICT security practices.

(iv)   Sensitize the Private sector on the opportunities for investment and returns in ICT in Education.

5.2.1 Ensure and promote periodic public awareness campaigns on ICT in education using appropriate media with due consideration for children, women and people with special needs.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSI-BILITY	TIMELINE	KPI
1.	Use print, electronic and social media for public awareness	• Design and develop IEC materials, jingles and documentaries taking into account children, women and those with special needs • Engage selected print, electronic and social media	• Features designed and developed of IEC materials • Print, electronic and social media engaged • Sponsored features in the media, posters and pamphlets included	FME, FMIC, FMWA, FMYD, SMoEs, FCT, Education Parastatals, Heads of Institution, Proprietors of School, NGOs	Continuous	IEC materials in place; Evidence of engagement of print, electronic and social media

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSI-BILITY	TIMELINE	KPI
2.	Carry out advocacy and sensitization programmes on ICT in education	• Advocacy through visits, memoranda, bills, etc. • Organise Stakeholders fora at National, State and Zonal levels • Organise ICT in Education Rallies/town hall meetings, etc at grassroots level. • Create awareness on ICT in Education in print and electronic media including websites and social media platforms	• Advocacy visits, memoranda, bills etc • Stakeholders fora organized • ICT in Education Rallies in rural communities held • Print and Electronic Media engaged	FME, FMIC, SMoEs, FCT, LGEAs, Education Parastatals, Heads of Institution, Proprietors of School, NGOs, WIITSoN, NCS, NITRA	Continuous	Evidence of: • advocacy visits • Stakeholders Fora • ICT in Education Rallies/town hall meetings • Awareness on print and electronic media
3.	Partner with media organizations to create public awareness on ICT in education	• Collaborate with Print, electronic Media and Telecommunication Organisations • Solicit and obtain donations/discounts on Airtime, Print, electronic media and Telecommunication organisations as part of their corporate social responsibility.	• Collaboration with Print, electronic Media and Telecommunication Organizations established • Reduced cost of adverts on ICT in Education • Informed citizenry. • Sensitization of Private Sector	FME, SMoEs, FCT, FMIC, FMC, Education Parastatals, NCC, Heads of Institution, Proprietors of School, NGOs, Media Houses, NBC, NAN, WIITSoN, NITRA, Telecommunication Organization	Continuous	Evidence of: • Collaboration with print and electronic Media and Telecommunication Organizations • Free or discounted Airtime, Print space, etc. from Media Organizations • Private Sector sensitization

5.2.2 Establish national fora to generate and promote interest for ICT in the learning community.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSI-BILITY	TIMELINE	KPI
1	Organize a National ICT week	• Constitute National Standing Committee • Organize the National ICT Week comprising ICT competitions, exhibitions, fair, symposia, career talks, press conferences, etc. • Reward excellence	National ICT Week organized	FME in collaboration with SMoEs, FCT, Education Parastatals, NITDA, WIITSoN, Private Sector, NGOs, NCS, Development Partners.	Annual	• Standing Committee on National ICT Week in place • Evidence of competitions • Evidence of awards.
2.	Use branded items for ICT in education fora	• Produce ICT in education branded items such as T-shirts, Face-caps, Stationeries, flash drives, CDs, etc • Distribute ICT in education branded items in all ICT in Education fora	• ICT in education branded items designed and produced • ICT in education branded items distributed at all ICT in Education fora	FME, SMoEs, FCT, LGEAs, Education Parastatals, Heads of Institution, Proprietors of School, NGOs, Private Sectors	Continuous	Evidence of: • ICT in education branded items. • Distribution of branded items.
3.	Organize national stakeholders fora	• Constitute Committee to convene Stakeholders' fora on ICT in Education periodically • Organise National ICT in Education Conference • Produce Communiqué for stakeholders • Produce report for policy makers	• Committee in place • National Conference on ICT in Education organized • Stakeholders' fora in ICT in Education organized • Communiqué produced • Report produced	FME, SMoEs, FCT, Education Parastatals, Heads of Institution, Private Sector, NGOs, Development Partners	Annual	• Committee in place • Report on National Conference • Report on stakeholders' fora • Communique produced

5.2.3   Sensitize the citizenry on their responsibilities to adhere to good ICT security practices.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIB-ILITY	TIMELINE	KPI
1.	Create awareness on threats, preventive and remedial measures on ICT security practices	• Develop and disseminate IEC materials on good ICT practices • Collaborate with telecom companies to send bulk e-mails and SMS to the target groups. • Engage print and electronic media • Use social media platforms to create awareness	• IEC materials on ICT security practices measures produced and distributed. • Bulk e-mails and SMS sent to the target groups. • Print and electronic media engaged	FME, SMoEs, FCT, LGEAs, FMIC, Education Parastatals, Heads of Institution, Proprietors of School, NGOs, Media House, Telecom Companies, Security agencies	Continuous	Evidence of • IEC materials on good ICT security practices disseminated • Distribution list • Bulk e-mails and SMS sent to the target groups. • Adverts
2.	Disseminate ethical ICT Security practices	• Develop, produce and disseminate IEC materials on ethical ICT Security practices. • Carry out sensitization meetings on ethical ICT Security practices • Collaborate with telecom companies to send bulk e-mails and SMS to the target groups. • Engage print and electronic media for dissemination.	• Ethical ICT Security practices established • Awareness created on ethical ICT Security practices	FME, FMC, FMIC, SMoEs, LGA, NITDA, NCC, Education Parastatals, Heads of Institution, Proprietors of School, NGOs, Media House, NITRA.	Continuous	Evidence of: • IEC Materials on Ethical ICT Security practices • Dissemination

5.2.4   Sensitize the Private sector on the opportunities for investment and returns in ICT in Education.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSI-BILITY	TIMELINE	KPI
3.	Organize fora with the private sector	• Constitute Committee to convene fora on ICT in Education with the private sector periodically • Organise the fora • Produce Communiqué for stakeholders • Produce report for policy makers	• Committee in place • National Conference on ICT in Education organized • Stakeholders' fora in ICT in Education organized • Communiqué produced • Report produced	FME, SMoEs, FCT, Education Parastatals, Heads of Institution, Private Sector, NGOs, Development Partners	Annual	• Committee in place • Report on National Conference • Report on stakeholders' fora • Communiqué produced

6.0 GOVERNANCE

Governance of ICT in Education requires the formulation of plans, efficient management framework, harmonization of institutional strategy for directing and controlling the use of ICT in the sector. The strategies involve the review of the existing laws, standards and guidelines, enactment of new laws and practices, review of standards and guidelines, development of counter measure to security threats, monitoring and accreditation of ICT programmes and institutions, development of strategies to deal with licensing, intellectual property rights, use of software, security and information dissemination.

6.1 Policy Statement

Government shall provide appropriate legal, regulatory, administrative and security framework to ensure that ICT in education and the conduct of related activities are focused on achieving ICT-enhanced education.

6.2 Strategies

(i)   Review existing laws and enact new ones to strengthen governance of ICT in Education.
(ii)   Provide and continually review standards and guidelines for ICT in Education in line with national goals and global trends.
(iii)   Review and implement ICT in Education policies in line with national goals and global trends.
(iv)   Accredit and monitor ICT programmes in institutions.
(v)   Develop strategies to deal with licensing, intellectual property rights, use of software, security and information dissemination issues associated with ICT in the Education System.

6.2.1 Review existing laws and enact new ones to strengthen governance of ICT in Education.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBILITY	TIMELINE	KPI
1.	Review existing laws related to ICT in Education	• Carry out a Needs Assessment on ICT in Education. • Constitute a Committee to review existing laws on ICT in Education • Identify gaps in the existing laws in line with global good practices. • Review existing law to guide access and control of security threats • Collaborate with FMJ to present a draft bill on the reviews of the existing laws on ICT in education. • Identify and digitize all ICT in Education-related laws.	• Documented Needs Assessment. • Draft bill • All Education related laws digitized	FME, FMC,FMJ, SMoEs, FCT, CPN, NUC, NBTE, NCCE, UBEC, NMEC, NCNE, ONSA, NASS	2 Year	Evidence of: • Needs Assessment report • Digitized related laws • Technical Committee • Draft bill

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBILITY	TIMELINE	KPI
2.	Enact new laws to strengthen governance of ICT in Education.	• Sensitize stakeholders on the need for the new laws • Present the draft bills to FMJ • Mobilize support for the public hearing of the new draft bills. • Disseminate new laws	• Stakeholders sensitized on the need for new laws • Participation in the Public Hearing on the bills on ICT in Education • Laws on ICT in Education enacted • Enacted laws in electronic and hard copies	FME, FMC, FMJ, NASS, SMoEs, FCT, CPN, NUC, NBTE, NCCE, UBEC, NMEC, NCNE	3 Years	New ICT in Education Act in place Evidence of public sensitization on the new ICT in Education Act Enacted laws in electronic and hard copies

6.2.2 Provide and continually review standards and guidelines for ICT in Education in line with national goals and global trends.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBILITY	TIMELINE	KPI
1.	Ensure the review of Standards and Guidelines for ICT in education	• Constitute review Committee on Standards and Guidelines • Identify national goals and global trends in ICT in Education • Review National Standards for IT Education periodically • Review Standards for ICT resources periodically • Review existing practices on ICT in education in line with national goals • Present the draft document at stakeholders' fora • Publish and disseminate Standards and Guidelines	• National goals and global trends in ICT in Education identified • National Standards for IT Education reviewed • Document on ICT in Education Standards developed and adopted • Standards and Guidelines published and disseminated	FME, FMC, SMoEs, FCT, CPN, NITDA, NUC, NBTE, NCCE, NERDC, NECO, WAEC,JAMB, NABTEB, UBEC, NMEC, NCNE, NITDA, Heads of Tertiary Institutions, Organized IT private sector	2 Years	• Standards and Guidelines for ICT in Education in place • Evidence of dissemination

6.2.3 Review and implement ICT in Education Policies in line with national goals and global trends

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONS-IBILITY	TIMELINE	KPI
1.	Review National Policy on ICT in Education periodically	• Constitute a multi-sectoral committee to review existing policy • Carry out a Needs Assessment to identify gaps in the existing policy • Develop a draft policy document and implementation strategy for adoption by stakeholders • Present draft policy to NCE and FEC for approval • Sensitize and disseminate approved policy for implementation	• Multi-sectoral committee constituted • Gaps in existing policy identified • Draft policy and implementation strategy developed and approved • Policy document published and disseminated • Sensitization meetings held	FME, FMC, FMIC, NITDA SMoEs, FCT, Education Parastatals, relevant NDAs, Private Sector, NGOs, Development Partners	3 years	Evidence of Needs Assessment report Policy in place Evidence of dissemination
2	Coordinate implementation of ICT in Education policy	• Organize bi-annual coordination meetings within each tier of government and within each sub-sector • Produce and disseminate implementation status report to FME • Organize annual coordination meeting with States • Produce and disseminate implementation status report to States • Conduct nationwide monitoring exercise on compliance with policy implementation	• Bi-annual coordination meetings held • Implementation status reports received • Annual coordination meeting with states held • Implementation status reports produced and disseminated • Monitoring exercise held	FME, SMoEs, FCT, NUC, NBTE, NCCE, UBEC, NERDC, CPN, NMEC, NCNE	Annual	Evidence of: • Coordination meetings • Implementation status reports • Monitoring reports

6.2.4   Accredit and monitor ICT programmes and institutions.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBILITY	TIMELINE	KPI
1.	Accredit ICT programmes and Institutions	• Review guidelines for accreditation periodically • Produce templates for accreditation in line with guidelines • Carry out accreditation exercise periodically • Publish accreditation reports	• Guidelines for accreditation reviewed • Templates for accreditation produced • Accreditation report produced	FME, SMoEs, FCT, NUC, NBTE, NCCE, CPN, Examination Bodies	Annual	• Guidelines for accreditation in place • Templates for accreditation in place • Accreditation reports in place
2.	Monitor and evaluate ICT programmes and Institutions	• Develop instruments for monitoring and evaluation • Disseminate monitoring and evaluation instruments to institutions • Conduct monitoring and evaluation exercises • Analyze data • Produce and disseminate report	• Instrument for monitoring and evaluation developed • Report of monitoring and evaluation produced and disseminated	FME, SMoEs, FCT, CPN, NUC, NBTE, NCCE, UBEC, NMEC, NCNE, NERDC, Heads of Institution	Annual	• Instruments for monitoring and evaluation in place • Monitoring and evaluation report on ICT programmes and institutions produced • Evidence of dissemination

6.2.5   Develop strategies to deal with licensing, intellectual property rights, use of software, security and information dissemination issues associated with ICT in the Education System.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBILITY	TIMELINE	KPI
1.	Ensure the implementation of existing laws and policies that address issues in	• Identify the existing laws and policies • Carry out advocacy, sensitization and mobilization on legal and enforcement issues	• Improved awareness of IPR and other existing laws • Sensitization	FME, FMC, FMITI, SMoEs, FCT, FMC, FMJ, CPN, NCC, NUC, NBTE, NCCE, UBEC, NERDC, NP,	2 Years	Evidence of: • Public awareness of existing laws • Capacity building of legal and

| | ICT in education | • Build capacity of legal practitioners, FME/SMoEs ICT Desk officers, Enforcement and Regulatory Officers, and Trade Registrars
• Collaborate with law enforcement agencies and other relevant professionals to enforce compliance | and mobilization carried out
• Compliance report | EFCC, NITDA, NOTAP | | enforcement officers.
• Sanctions and commendations for compliance. |

7.0 FINANCING

ICT in Education is capital intensive. The traditional budgetary by Government should therefore be improved upon and other relevant stakeholders encouraged to finance ICT in education. The focus is to ensure increase funding for ICT in education, exploit existing funding channels, intensify use of creative financing models and harness partnerships with development partners.

7.1 Policy Statement
Government shall adopt innovative and creative financing models for ICT in Education.

7.2 Strategies
(i)   Allocate at least 5% of Education annual capital budget to ICT in Education.
(ii)   Exploit existing funding channels/schemes such as TETFund, UBEC, PTDF, USPF, NITDEF for ICT in Education.
(iii)   Intensify the use of innovative and creative financing models such as Public Private Partnership (PPP)
(iv)   Harness partnerships with development partners for funding ICT in Education.

7.2.1 Allocate at least 5% of Education annual capital budget to ICT in Education.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBILITY	TIMELINE	KPI
1.	Increase budgetary allocation for ICT in education programmes/ projects	• Carry out advocacy to strengthen political will for improved budgetary allocations and release for ICT in Education • Carry out sensitization on the importance of ICT in education at all levels of education	• Advocacy to Political Office holders (Executive and Legislative arms) • Mass media sensitization	FME, FMC, FCT, FMF, NASS, SHAs, SMoEs, LGEAs, Education Parastatals, NITDA, Heads of Institution, Proprietors of School, NGOs, USPF, PTDF, WIITSoN	Continuous	Evidence of: • Sensitization on mass media • Increased budgetary provision • Advocacy
2.	Provide grants to schools at all levels that meet ICT in education standards	• Constitute an Assessment Committee • Develop template for assessment of ICT in Education • Train staff to analyze template • Administer template to schools • Rank schools based on the set standards • Award grants	• Standard template for assessment at all levels developed • Staff trained to analyze template • schools ranked based on set standards • Grants given to deserving schools	FME, FMC, FCT, SMoEs, LGEAs, UBEC, SUBEBs, NITDA, CPN, TETFund, USPF, Development Partners	Annual	Evidence of: • Assessment Committee established • Standard template in place • Grants

7.2.2   Exploit existing funding channels/schemes such as TETFUND, UBEC, PTDF, USPF, NITDEF, CBN for ICT in Education.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBILITY	TIMELINE	KPI
1.	Ensure the use of existing funding channels	• Identify areas for intervention • Hold fora on needs with existing funding channels • Write proposals to seek intervention for the funding of ICT in education from TETFund, USPF, PTDF, NITDA etc • Build institutional capacity to manage funds	• Areas of need for intervention identified • Proposals for interventions submitted • Institutional capacity to manage and monitor funds developed • Fora organized	FME, FMC, FCT SMoEs, LGEAs, CBN, NITDA, Education Parastatals, USPF, PTDF, Heads of institution, Proprietors of School, WIITSoN	Annual	• Evidence of proposals submitted • Evidence of intervention from funding channels • Fora organized • Capacity building developed
2.	Collaborate with CBN on a loan scheme in support of education with emphasis on ICT infrastructure development	• Identify existing guidelines for loan related to technology development by CBN and other financial institutions • Submit proposals to the ministry in line with guidelines • Constitute a Committee to review proposals • Submit proposals to CBN • Joint monitoring with CBN	• Proposals from schools submitted • Committee constituted • Proposals submitted to CBN	FME, SMoEs, LGEAs, FMF, CBN, Financial Institutions, Proprietors of School, Heads of Institution, NGOs	Continuous	Evidence of: • collaboration with CBN • Proposals submitted • Loans and grants • Monitoring report

47

7.2.3 Intensify the use of innovative and creative financing models such as Public Private Partnership (PPP).

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBILITY	TIMELINE	KPI
1.	Source for funds from development partners	• Identify and establish collaboration with Development Partners • Develop capacity of staff on proposal writing • Submit proposals for donations, contributions and grants • Comply with guidelines for Utilizing the funds	• Capacity of staff built • Collaboration with Development Partners established • Proposals for support submitted to Development Partners • Interventions obtained • Compliance with guidelines ensued	FME, MB&NP, FCT, SMoEs, LGEAs, Education Parastatals, Heads of Institution, Proprietors of School, Development Partners	Annual	Evidence of: • Capacity building • Collaboration with Development Partners • Proposals submitted • Interventions
2.	Employ appropriate PPP models such as Build, Operate and Transfer (BOT), Design, Build and Maintain (DBM) and Design, Build and Operate (DBO), etc for ICT in education	• Identify appropriate PPP model • Organize partnership meetings to create awareness on ICT in Education framework • Engage ICRC where necessary • Collaborate with interested partners • Enter into Agreement with partners	• Appropriate PPP Model identified • Partnership meetings organized • Collaboration with interested partners established • Agreement signed	FME, FMST, FCT, FMC, FMJ, SMoEs, LGEAs, Education Parastatals, NOTAP, NITDA, NCC, Heads of institution, Proprietors of School	Continuous	Evidence of: • Partnership meetings • Collaboration with interested partners • Signed agreement

7.2.4 Harness partnerships with development partners for funding ICT in Education.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBI-LITY	TIMELINE	KPI
1.	Seek intervention for the funding of ICT in education	• Identify areas for intervention through Needs Analysis • Develop capacity for proposal writing • Present proposals to Development Partners	• Baseline study conducted • Capacity built • Proposal for interventions presented	FME, FCT, FMC, MB&NP, SMoEs, LGEAs, Education Parastatals, Heads of institution, Proprietors of School	Continuous	Evidence of: • Proposals submitted • Capacity-building • Intervention from Development partners
2.	Establish and sustain collaboration for exchange and linkages programmes with Development Partners	• Identify Development Partners that will collaborate on exchange and linkages programmes • Establish a partnership forum on ICT in Education	• Partners identified • Partnership forum established • Collaboration for exchange and linkages programmes established	FME, FCT, MB&NP, SMoEs, Education Parastatals, NPC, Heads of institution, Proprietors of School, Development Partners	Continuous	Evidence of exchange and linkages programmes

8.0   MONITORING AND EVALUATION

It is necessary that Monitoring & Evaluation (M&E) of programmes and projects of ICT in Education be carried out periodically to assess the impact and extent to which the objectives of the policy have been achieved. It is the process of determining the efficiency and the effectiveness of policy implementation effort as it relates to the key outcomes.

8.1   Policy Statement
Government shall use M&E as a veritable tool in ICT in Education for tracking policy implementation, efficient service delivery and compliance.

8.2   Strategy
(i)   Monitor and evaluate the implementation of the National Policy on ICT in Education.
(ii) Carry out impact assessment of the National Policy on ICT in Education.

8.2.1   Monitor and evaluate the implementation of the National Policy on ICT in Education

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBILITY	TIMELINE	KPI
1.	Develop monitoring and evaluation framework	• Constitute M&E Committee which shall work hand-in-hand with the relevant stakeholders (including the Private Sector). • Design the M&E Framework. • Produce and disseminate M&E framework.	• M&E Committee and TOR in place • M&E Framework, designed, produced and disseminated	FME, SMoEs, LGEA, Education Parastatals, Heads of Institution, Proprietors of School	Within 3-6 months of implementation	Evidence of: • M&E Committee and TOR • Framework • Dissemination
2.	Conduct baseline study	• Constitute technical committee. • Develop study instruments. • Develop capacity of the monitors and evaluators • Determine scope of the study. • Conduct the survey. • Analyse the result. • Produce Reports • Organise Stakeholders meeting to disseminate reports.	• Committee constituted • Instruments developed • Monitors and evaluators trained • Survey conducted. • Results analysed • Reports produced • Stakeholders' Meeting held and feedbacks obtained	FME, SMoEs, LGEA, Education Parastatals, NGOs, Development Partners	Within 2-4 months of policy production	Evidence of: • Analysed Result • Study Reports • Stakeholders' feedbacks

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBILITY	TIMELINE	KPI
3.	Monitor policy implementation	• Develop monitoring instruments. • Build capacity of M&E officers. • Monitor policy implementation. • Produce reports.	• Monitoring instruments developed • M&E officers trained • Monitoring exercises carried out • Reports produced	FME, SMoEs, LGEA, Education Parastatals, CSOs, Development Partners	Biannual	Evidence of: • Monitoring Instrument • Officers trained • Monitoring report

8.2.2   Carry out impact assessment of the National Policy on ICT in Education.

S/N	SUB-STRATEGIES	ACTIVITIES	DELIVERABLES	RESPONSIBILITY	TIMELINE	KPI
1.	Carry out impact assessment of the policy.	• Constitute Technical Committee. • Carry out impact analysis. • Consult with relevant stakeholders and the general public. • Produce and disseminate reports.	• Technical Committee constituted • Impact analysis conducted • Stakeholders consulted • Results produced and disseminated.	FME, SMoEs, LGEA, Education Parastatals, Heads of Institution, NGOs	Continuous	• Technical Committee in place • Impact assessment report in place • Evidence of dissemination of report
2.	Carry out post-implementation review impact assessment	• Choose relevant Resource Person as Lead and constitute Evaluation Committee. • Assess the impact of the policy. • Evaluate the results of assessment. • Produce and disseminate reports.	• Evaluation Committee constituted • Impact assessment conducted • Results evaluated • Reports produced and disseminated.	FME, SMoEs, LGEA, Education Parastatals, Heads of Institution, NGOs	After 3 years of Implementation	• Evaluation Committee in place • Impact assessment report in place • Evidence of dissemination of report