

# NIGERIA E-GOVERNMENT MASTER PLAN

FEDERAL MINISTRY OF COMMUNICATIONS  
( A B R I D G E D V E R S I O N )



**e-G**  **VT**  
**MASTER PLAN**

FEDERAL MINISTRY OF COMMUNICATIONS

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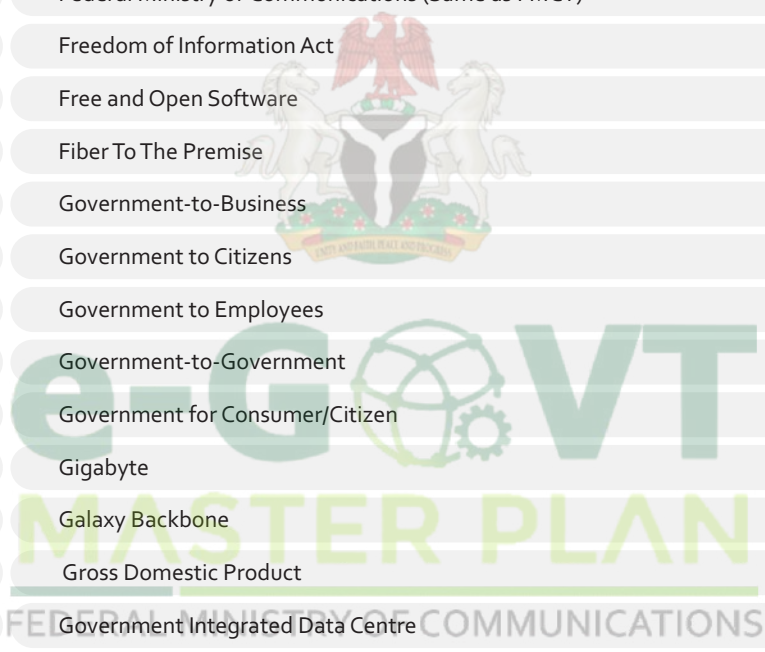
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## ABBREVIATIONS

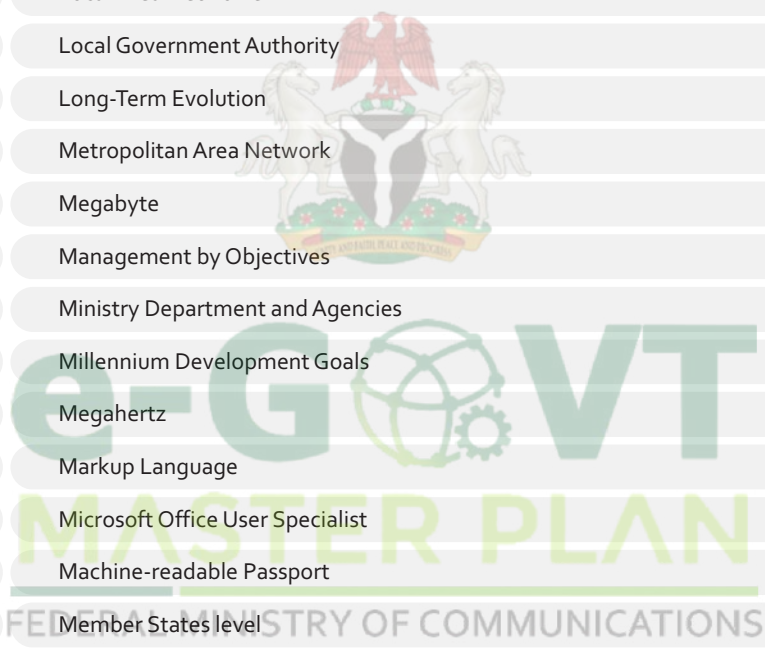
ABBREVIATION	FULL NAME
3G	Third Generation
4G	Fourth Generation
AfDB	African Development Bank
AHP	Analytic Hierarchy Process
API	Application Programming Interface
ASCON	Administrative Staff College of Nigeria
ASPA	American Society for Public Administration
B2G	Businesses to Government
BPSR	Bureau of Public Sector Reforms
BCP	Business Continuity Planning
BPR	Business Process Re-engineering
BRM	Business Reference Model
BSC	Balanced Scorecard
CA	Certificate Authority
CAC	Corporate Affairs Commission
CAGR	Compound Annual Growth Rate
CBN	Central Bank of Nigeria
CDMA	Code Division Multiple Access
CIO	Chief Information Officer
CSAS	Computer Skills Audit Solution
CSF	Critical Success Factor
CTC	Certified True Copy
CPN	Computer Professionals Registration Council of Nigeria
CSAS	Computer Skills Audit Solution
CTO	Chief Technology/Technical Officer
DB	Database
DESA	Department of Economic and Social Affairs (UN)
DLC	Distance Learning Centre
DMB	Digital Multimedia Broadcasting
DMZ	Demilitarized Zone
DPADM	Division for Public Administration and Development Management (UN)
DRM	Data Reference Model
DTM	Digital Terrain Model
EGDI	Electronic Government Development Index
e-GIF	e-Government Interoperability Framework



e-Government	Electronic Government
ECCDE	Early Childhood Care Development and Education
EDGE	Enhanced Data Rates for GSM (Global System for Mobile) Evolution
EPI	e-participation index
FAO	Food and Agriculture Organization of the United Nations
FAQ	Frequently Asked Questions
FCSC	Federal Civil Service Commission
FIRS	Federal Inland Revenue Service
FMARD	Federal Ministry of Agriculture & Rural Development
FMCT	Federal Ministry of Communication Technology
FME	Federal Ministry of Education
FMF	Federal Ministry of Finance
FMITI	Federal Ministry of Industry, Trade, and Investment
FMoC	Federal Ministry of Communications (Same as FMCT)
FOIA	Freedom of Information Act
FOSS	Free and Open Software
FOTP	Fiber To The Premise
G2B	Government-to-Business
G2C	Government to Citizens
G2E	Government to Employees
G2G	Government-to-Government
G4C	Government for Consumer/Citizen
GB	Gigabyte
GBB	Galaxy Backbone
GDP	Gross Domestic Product
GIDC	Government Integrated Data Centre
GIFMIS	Government Integrated Financial Management Information Systems
GITO	Government Information Technology Officers Council
GPRS	General Packet Radio Service
GPS	Global Positioning System
GR	Grade
GSA	General Services Administration
HCI	Human Capital Index
HRMIS	Human Resource Management Information System
HSPA	High Speed packet Access
HW	Hardware
ICT	Information and Communication Technology



ICT4D	Information and Communications Technologies for Development
ID	Identification
IFMIS	Implementing Financial Management Information System
IM	Instant Message
INVIL	Information Village
IoT	Internet of Things
IPR	Intellectual Property Rights
ISP	Internet Service provider
IT	Information Technology
KAV	Knowledge Access Venues
KFMIS	Korean Financial Management Information System
KOICA	Korean International Cooperation Agency
KPI	Key Performance Indicator
LAN	Local Area Networks
LGA	Local Government Authority
LTE	Long-Term Evolution
MAN	Metropolitan Area Network
MB	Megabyte
MBO	Management by Objectives
MDAs	Ministry Department and Agencies
MDGs	Millennium Development Goals
MHZ	Megahertz
ML	Markup Language
MOUS	Microsoft Office User Specialist
MRP	Machine-readable Passport
MS	Member States level
NCC	Nigerian Communications Commission
NCCT	National Council on Communication Technology
NGO	Non-Governmental Organization
NEIS	National Education Information System
NESREA	Nigeria Environmental Standard and Regulatory Authority
NICTIB	National Information and Communications Technology Infrastructure Backbone
NIGCOMSAT	Nigeria Communications Satellite Ltd
NII	National Information Infrastructure
NITDA	Nigeria Information Technology Development Agency
NOC	Network Operating Centre
NTA	Nigerian Television Authority



NUC	National Universities Commission
OAGF	Office of the Accountant General of the Federation
OECD	Organization for Economic Cooperation and Development
OFC	Optic Fibre Connections
OMB	Office of Management and Budget
OSGF	Office of the Secretary to the Government of the Federation
OSI	Online Service Index
PAV	Public Access Venues
PAYG	Pay-As-You-Go
PIN	Personal Identification Number
PKI	Public Key Infrastructure
PMO	Project Management Office
PPP	Public Private Partnership
PSIN	Public Service Institute of Nigeria
R&D	Research and development
ROI	Return on Investment
SDF	Service Development Framework
SDLC	System Development Lifecycle
SERVICOM	Service Compact with all Nigerians
SIFMIS	State Integrated Financial Management Information Systems
SITA	Societe International Telecommunication Aeronautiques
SMS	Short Message Service
SWOT	Strength, Weakness, Opportunities, Threats
TII	Telecommunications Infrastructure Index
TVET	Technical and Vocational Education & Training
UMTS	Universal Mobile Telecommunication System
UNCITRAL	United Nations Commission on International Trade Law
UNDESA	United Nations Department of Economic and Social Affairs
USPF	Universal Service Provision Fund
VSAT	Very Small Aperture Terminal
WAN	Wide Area Network
WAP	Wireless Application Protocol
WHO	World Health Organization
WIPO	World Intellectual Property Organization
WMO	World Meteorological Organization
XML	Extensible Markup Language



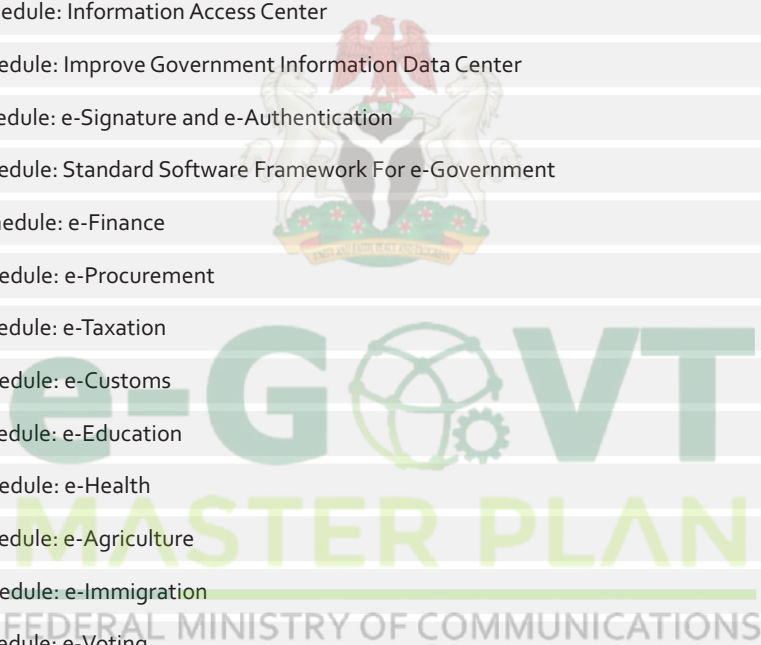


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### 1.1 Background

The Federal Ministry of Communications developed the Nigeria e-Government Masterplan in fulfilment of its mandate which is to; "Utilize ICT to drive transparency in governance and improve the quality and cost effectiveness of public service delivery in Nigeria". This was done through research, collaboration and extensive engagement with other relevant stakeholders with the support of the Korea International Cooperation Agency (KOICA).

The National e-Government Master Plan was developed with its vision and objectives linked to the Federal Government Economic Recovery Growth Plan (ERGP). Specific strategies are proposed that will improve the quality of citizen's lives by enhancing national competitiveness, facilitating market economy, promoting participatory democracy, and improving transparency in the public sector.

The Economic Recovery and Growth Plan (ERGP), a Medium Term Plan for 2017 – 2020, builds on the Strategic Implementation Plan and has been developed for the purpose of restoring economic growth while leveraging the ingenuity and resilience of the Nigerian people – the nation's most priceless assets. It is also articulated with the understanding that the role of government in the 21st century must evolve from that of being an omnibus provider of citizens' needs into a force for eliminating the bottlenecks that impede innovation and market-based solutions.

The Plan also recognizes the need to leverage Science, Technology and Innovation (STI) to build a knowledge-based economy. The ERGP is also consistent with the aspirations of the Sustainable Development Goals (SDGs) given that the initiatives address its three dimensions of economic, social and environmental sustainability issues.

Against this backdrop, the overall purpose and rationale of the e-Government Masterplan is to enhance the transparency, efficiency and the quality of public service administration by the developing the legal system, organizational framework, government service delivery, human capital, technology infrastructure and awareness.

The guiding principles that will ensure successful implementation of the e-Government Master Plan include but not limited to:

- The e-Government's vision is close to reality and not rhetoric;
- Citizen becomes the centre of the e-Governance vision of the country;
- Citizens are recognized as customers of the Government and robust customer relationship programs developed to continuously improve e-Government services
- Citizens have access to various delivery channels and not limited to being online;
- Stakeholders are carried along effectively
- Service improvement and process efficiency become key objectives of e-Government;
- Strong collaboration amongst various organs of the Government must be developed;
- e-Government outcomes must be clearly defined, and performance measured;
- Partnerships with the private sector becomes part of the objectives;

## 1.2 Objectives of the e-Government Masterplan

The overall purpose and rationale of the project is to strengthen the efficiency and transparency of public administration service

The project objectives are:

- To improve the government management structure and efficiency.
- To improve government processes and service delivery.
- To improve government transparency and accountability.
- To drive digital literacy and technology awareness of government officials and citizens.
- To enhance collaboration between various organs of the Government.
- To reduce the overall cost of governance.
- To enhance private sector partnerships in the service delivery model.
- To recognize citizens as customers of the Government and evolve strong customer relationship programs.
- To provide multiple access and delivery channels for citizens, businesses and government employees.

## 1.3 Vision

### Nigeria e-Government Vision

*"To create a world class open and digitized government that connects with people to drive efficiency in public administration, responsiveness of civil services and transparency in governance leading to improvement of the quality of life of Nigerians"*

The e-Government vision should be clearly stated and shared so that specific objectives and strategies which can show the future in advance can be set up; it is a desirable blueprint which is feasible as well as imaginative enough to allow people to foresee a beautiful future, and a driving force which makes all members endeavour to accomplish the goals.

### Phased Approach to Vision Realization

Development of e-Government largely consists of 3 phases: Pre-implementation, Implementation and Post-implementation.

**Pre-implementation phase:** It is the design stage where political leaders drive e-Government initiative, and there should be a few champions carrying out activities to increase social awareness.

**Implementation phase:** In this phase, the vision and strategic goals of e-Government need to be set based on the review of the environment and constraints. Secondly, the roadmap and milestones corresponding to the strategic goals need to be set up. Thirdly, strategic priorities should be decided by reviewing the degree of government innovation, aspects of demand and supply, bottom-up and top-down approach, sourcing, and the result of the stakeholder analysis. Fourthly, **As-Is analysis** and **To-Be model** for the present resources, which are key success factors, should be proposed. Finally, processes like BPR and SP and system development will start.

**Post-implementation phase:** At this phase, 3 tasks should be done; firstly, the performance of the project should be evaluated by monitoring whether it has been implemented according to the plan without risk. Secondly the operation and maintenance of the project should be considered along with management of information resources. Thirdly, the promotion of e-Government services to people and feedback for the project should be carried out to make the services fully utilized and to develop the second stage of e-Government, respectively.

Phases	Activities
Pre-Implementation	<ul style="list-style-type: none"> <li>• Leadership &amp; Awareness</li> <li>• Institution Building</li> <li>• Environment Analysis</li> <li>• Benchmarking</li> </ul>
Implementation	<ul style="list-style-type: none"> <li>• Vision statement</li> <li>• Build strategies</li> <li>• Draw tasks</li> <li>• Develop roadmap</li> <li>• Manage critical factors</li> <li>• System development</li> </ul>
Post Implementation	<ul style="list-style-type: none"> <li>• Evaluation</li> <li>• Operation</li> <li>• Feedback</li> </ul>

Table 1.1 Activities of Development Phases

### 1.4 Ten Principles

It is also recommended to adhere to the following principles when implementing the e-Government Masterplan.

#### Principle 1

##### More Attention to Organizational Changes

The primary goal of e-government lies in transformation and social change rather than IT Initiatives. More attention is to be paid to organizational changes than application developments or technicalities.

#### Principle 2

##### Consistent Policy throughout implementation phases

The remarkable achievement of e-Transformation is not made in a day or two, but it is the results from strenuous efforts and consistent policy line all through the implementation period.

#### Principle 3

##### Inclusion of the Users as a Feedback Mechanism

The success of e-Transformation projects is not determined by the IS outputs but the outcomes perceived by the users. Inclusion of the users in all sectors of e-Government system as a feedback mechanism is critical to the success.

#### Principle 4

##### **Shared Vision among all Stakeholders**

Vision is tomorrow's reality not yet realized today. Shared vision is the source of leadership stimulus to propel the e-Government project and the energy for the positive climate creation.

#### Principle 5

##### **Focus on the Citizens and not on the Government**

The focus should be on the citizens not on government. IT is simply a vehicle for value creation therefore we need to think hard what the citizens really want from e-government services.

#### Principle 6

##### **Establishing Data Reference Model (DRM)**

Global databases have to be designed first to cover entire government functions. Securing the data as shared resource common to all business units is the key to successful improvement of responsiveness of entire government and the source to develop a variety of services.

#### Principle 7

##### **New Practices of Managing Data by Attributes**

Data management practices have to be changed to accommodate new breeds of data. Data management should be shifted to the new practices of managing data by attributes, so that new types of data like social data streams and the data sensed from all artifacts in real world can be captured.

#### Principle 8

##### **Plan for Tomorrow**

e-Transformation plan has to be set up for tomorrow and not the present day. True ICT revolution is yet to come. We need to be attentive to the new opportunities provided by the Internet of Things (IOT), Artificial Intelligence, Blockchain, etc.

#### Principle 9

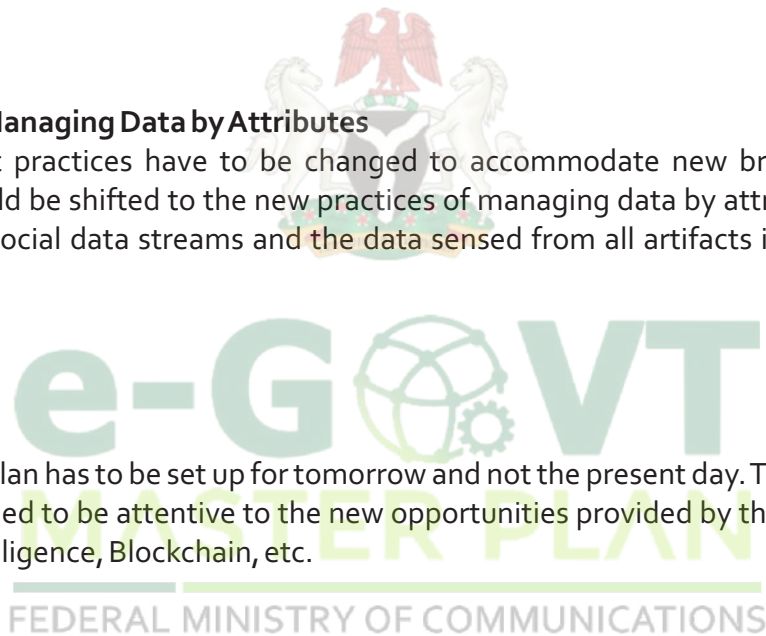
##### **Adaptive Officials and the Public**

A way to enlighten and train government officials and the public has to be found to make them adaptive to emerging information environment. We need a new breed of people who are capable of interpreting and utilizing multi-dimensional information.

#### Principle 10

##### **Laws Adaptive to Environmental Changes**

Laws adaptive to environmental changes should be prepared in advance. Management of growth simply means management of timing. We should be aware of the bust to come soon after rapid growth, which will in turn require tremendous social costs.



## 1.5 Critical Success Factors

In order to successfully implement the e-Government in Nigeria, the following seven critical success factors that underlie the notable achievement in e-Government of advanced countries are considered.

### ***CSF-1. Adoption of the Master Plan of Nigeria e-Government as a National Agenda***

### ***CSF-2. Sustained Investment in e-Government***

The sustained investment is required for transforming the nation by ICT/e-Government.

- Aspire to grow investment in e-Government to 1% of annual budget
- It is highly recommended to create and utilize the Information and Telecommunication Promotion Fund to build e-Government projects

### ***CSF-3. Appropriate Institution for Each Phase of e-Government Implementation***

In order to sustain e-Government implementation, appropriate laws need to be enacted during each phase ensuring a positive enabling environment for e-Government.

- The establishment of legal systems and the empowerment from the President to the project steering organization will keep Nigeria e-Government policies and strategies consistent.

### ***CSF-4. Dedicated Organization Structure for e-Government Implementation***

It is critical to form a dedicated organization structure for e-Government implementation.

- A supervisory committee shall be established directly under the President.
- CIOs shall be designated for central and regional e-Governments, thus creating streamlined support structure.
- Specialized e-Government technical support agencies including NITDA and GBB shall be utilized for field works required for the projects.

### ***CSF-5. Balance between Demand for and Supply of e-Government Services***

Nigerian government needs to develop policies for balanced development of information-oriented society on the demand and supply-side of the IT Industry, so that both sides can maintain a virtuous cycle where one side enforces the other.

- Efficient role division with the government taking care of e-Government policy making, IT companies providing technology and skills, and citizens actively participating are key factors in e-Government implementation and utilization

### ***CSF-6. Change Management for Public Officers in Emerging ICT Environment***

What is more important than anything else is to create a positive environment from the potential users like government officials and the general public.

- A scheme for change management in emerging environment needs to be developed to overcome resistance from the users which primarily is caused by the fear of workforce reduction and the avoidance of using information systems.

## CSF-7. Capacity Development Program for Civil Servants and Citizens

Capacity development program can be used as a catalyst for government reform.

- A dedicated training organization for e-Government has to be established.
- Optimized e-Government training courses for Nigeria have to be developed.

### 1.6 e-Government Masterplan Architecture

The Blueprint of the e-Government Vision is as depicted below.

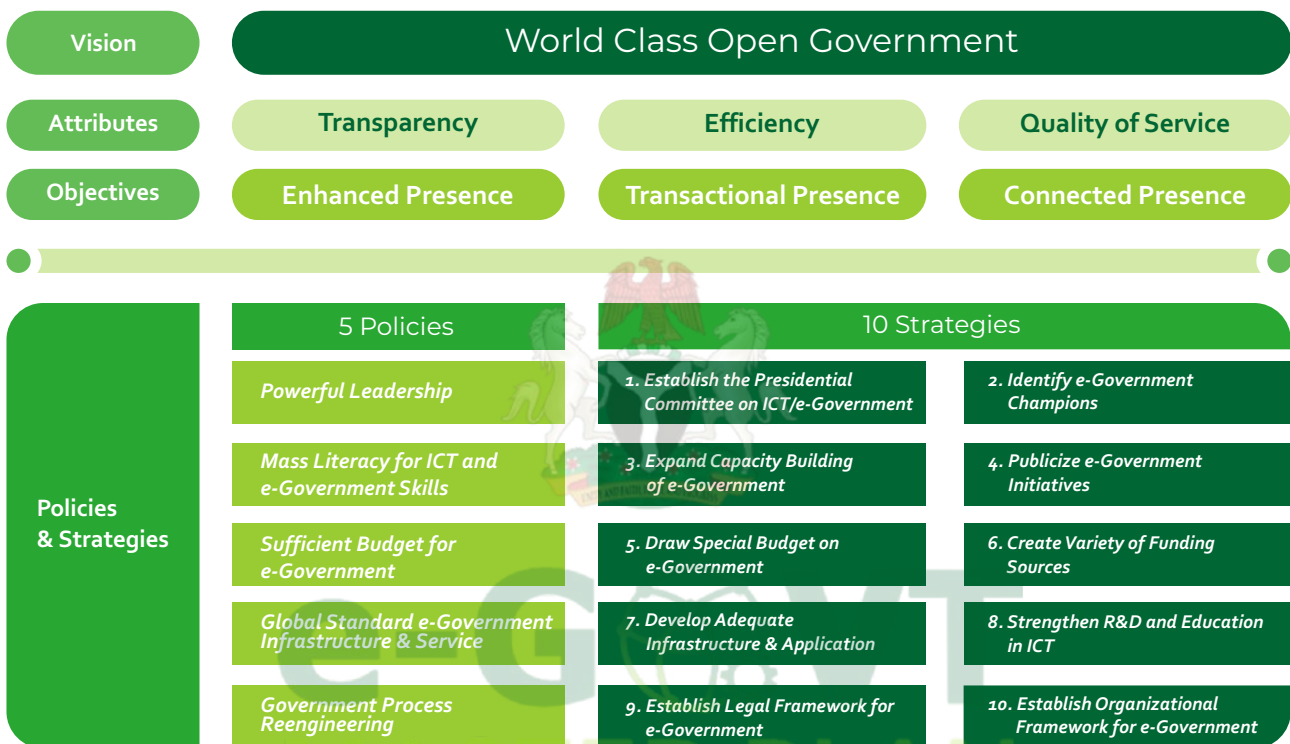


Fig. 1.1 e-Government Vision in Nigeria

The figure above depicts the conceptual view of the Nigeria's e-Government Vision that contains vision, value proposition, objectives, policies and strategies.

#### Attributes:

“Transparency, Efficiency and Quality of Service”

The overall purpose and rationale of the Master Plan for Nigeria e-Government 2020 is to strengthen the transparency in the policy making processes, the efficiency and the quality of public administration and the Quality of Service rendered to citizens, businesses, other government agencies, etc.

#### 5 Policies

1. Powerful Leadership
2. Mass Literacy for ICT and e-Government Skills
3. Sufficient Budget for e-Government
4. Global Standard e-Government Infrastructure & Service
5. Government Process Re-engineering



## 1.7 Policies, Strategies and Initiatives

A total of 25 e-Government project initiatives were identified to achieve the strategies for arriving at the Nigerian e-Government Vision 2020. e-Government can be seen as a socio-technical system consisting of technical subsystem (electronics) and social subsystem (government) which are interwoven with each other. The 25 e-Government project initiatives can be mapped into the subsystems

### 1.7.1 Policies, Strategies and Initiatives of the e-Government Master Plan

Subsystems	Components (6)	Policies (5)	Strategies (10)	Initiatives (25)	
Social Subsystems	Governance	Powerful Leadership	Establish the Presidential Committee on ICT/e-Government	Establish Presidential Committee on ICT/e-Government	
			Identify e-Government Champions	Develop a talent pool of e-Government Champions	
		Mass Literacy of ICT & e-Government	Expand Capacity Building of e-Government	Develop capacity building program	
			Publicize e-Government Initiatives	Conduct publicity campaign for e-Government	
				Develop Information Access Centre	
	Financial Resources	Enough budget for e-Government	Draw Special Budgeting on e-Government	Create and utilize e-Government promotion fund	
			Create Variety of Funding Sources	Funding through a variety of financing instruments	
	Legal & Regulatory Arrangement	Government Process Reengineering	Establish Legal Framework for e-Government	Laws necessary for e-Government	
				General laws for the information society	
	Organizational structure		Establish Organizational Framework for e-Government	Build the dedicated organization structure or e-Government implementation	
Technical Subsystems	Infrastructure and Technology	Global standard e-Government infrastructure and service	Develop Adequate Infrastructure & Application	Improve Government Integrated Data Centre (GIDC)	
				Develop e-Signature/Authentication	
				Establish Standard Software Framework for e-Government	
				e-Finance (GIFMIS/SIFMIS)	
				e-Procurement	Clean Civil Servant
				e-Taxation	
				e-Customs	
	e-Education				
	e-Health		Public Information Sharing System		
	e-Agriculture				
	e-Immigration				
	e-Voting				
	Service Application				Strengthen R&D and Education in ICT

Table 1.2 Sub-Systems Mapping into Policies, Strategies and Initiatives

## 1.8 Expected Outcomes

The **strategic outcomes** from the proposed e-Government Masterplan is a High Performing Government with the following features;

### i. High Performance Culture:

- Accountability for performance
- Citizen-centric government
- An integrated government

### ii. Right People:

- Competent, committed, non-corruptible public officers
- Public Service as employer of choice

### iii. Responsible Financial Management

- Fiscal Sustainability
- Effective and efficient use of financial resources

e-Government Master Plan Implementation Outcomes is mapped into improvement of the e-Government Development Index and the e-Participation Index. These are measurable impacts that will translate our e-Governance from the **emerging** to the **connected** stage of development.

EXPECTED OUTCOMES			
Components	Classification	KPIs (expected)	
e-Government Development Index	Online Service Index	<b>Emerging</b>	<ol style="list-style-type: none"> <li>1) government documents (e.g. policy, legislation)</li> <li>2) linkage with other agencies</li> <li>3) providing news and information directory</li> </ol>
		<b>Enhanced</b>	<ol style="list-style-type: none"> <li>1) interactive online services available</li> <li>2) downloadable civil application forms</li> <li>3) video services</li> <li>4) multi-language services</li> <li>5) partial online applications (eg., online request, post service)</li> </ol>
		<b>Transactional</b>	<ol style="list-style-type: none"> <li>1) online applications</li> <li>2) authentication services</li> <li>3) e-voting</li> <li>4) downloadable/up-loadable forms</li> <li>5) issuance of various certificates and licenses</li> </ol>
		<b>Connected</b>	<ol style="list-style-type: none"> <li>1) Web2.0 available</li> <li>2) facilitating communications with citizens</li> <li>3) integrating multi-agencies services</li> <li>4) tailored e-services for citizen's whole life and citizen's engagement</li> </ol>
		<b>Environment</b>	<ol style="list-style-type: none"> <li>1) information and services available on environment issues</li> <li>2) engaging citizens into environment issues</li> </ol>
	Particular Issues	<b>Openness</b>	<ol style="list-style-type: none"> <li>1) open portal for public information</li> <li>2) open data site and its related legislation and institutions</li> <li>3) open data directory and index available</li> </ol>
	Telecommunication Infrastructure Index		<ol style="list-style-type: none"> <li>1) PC penetration</li> <li>2) Internet users</li> <li>3) telephone line</li> <li>4) mobile subscription</li> <li>5) fixed broadband</li> <li>6) fixed internet subscription</li> </ol>
Human Capital Index		<ol style="list-style-type: none"> <li>1) adult literacy</li> <li>2) school gross enrollment rate</li> </ol>	
e-Participation Index	e-Information: policy available online	<ol style="list-style-type: none"> <li>1) provide information to facilitate citizen's engagement</li> <li>2) notice of online policy forum schedule</li> <li>3) online policy information</li> </ol>	
	e-Consultation: online participation in policy	<ol style="list-style-type: none"> <li>1) collect citizens opinion and provide feedback for citizen</li> <li>2) online survey of public opinion</li> <li>3) online chatting, instant message &amp; blog</li> </ol>	
	e-Decision: online policy making	<ol style="list-style-type: none"> <li>1) engaging citizens in policy making</li> <li>2) online forum, online petition &amp; online voting</li> </ol>	

Table 1.3 Expected Outcomes for e-Government

## 1.9 Top 6 Priorities in e-Government Master Plan

As the result of series of discussions including a strategy workshop and two technical workshops, 6 top priority initiatives were derived from the 25 initiatives. They are listed below:

No.	Initiatives
1	Establish Presidential Committee on ICT/e-Government
2	Develop capacity building program
3	Create and utilize e-Government promotion fund
4	Laws necessary for e-Government
5	Establish Standard Software Framework for e-Government
6	Implement e-Procurement

Table 1.4 6 Top Priorities



### 2.1 e-Government Status & Call for Action

The key challenges for the e-Government development of Africa include the widespread lack of infrastructure and functional literacy. Despite recent expansion in mobile telephony, most countries in Africa remain at the end of the digital divide. These challenges have been translated into a lower than world average e-Government development for all sub-regions.

### 2.2 Government Policy

Promoting Digital-led growth: To make the Nigerian economy more competitive in the 21st century global economy, its industrial policy must be linked to a digital-led strategy for growth. The ERGP seeks to build on The Smart Nigeria Digital Economy Project to increase the contribution from ICT and ICT-enabled activity to GDP. The overall goals of a digital-led strategy for growth centre on the establishment of an ICT ecosystem in Nigeria.

This is enabled through significantly expanding broadband coverage, increasing e-government capacities, and establishing ICT clusters, starting in the SEZs (Special Economic Zones). Government will also drive a programme to build the skills in this sector, focusing on training IT Engineers in software development, programming, network development and cyber security." This is the context within which e-Government leverages on the Government Policy.

### 2.3 ERGP & E-Governance Alignment

The overall purpose and rationale of the Master Plan for Nigeria e-Government is to strengthen the transparency, efficiency and quality of public services in line with the vision of the Nigerian Economic Recovery Growth Plan (ERGP) which is a sustained inclusive growth that will drive a structural economic transformation with an emphasis on improving both public and private sector efficiency.

**Strategy 55: Leverage technology to improve public service productivity.** Implement e-government across all Government bodies, starting with a pilot scheme in selected MDAs. Is a direct mandate for the implementation of e-Government from the Economic Recovery and Growth Plan.

**Strategy 16: Promote the ICT sector by supporting technology development.** Bullet point 11...Promote the use of e-governance and digitize Federal Government data speaks directly of the e-Government Project within the context of the ERGP

**Strategy 49: Improve transparency in the management of public resources.** The Federal Government seeks to 'Fulfil commitments to improve transparency under the Open Government Initiative'. The implementation of which is a core deliverable for the e-Government initiatives.

**Strategy 56: Develop the skills of public servants.** Develop institutional capacity in budgeting, planning, policy analysis, financial management, procurement, human resources management and leadership. In the context of the ERGP means development of the Digital Literacy and awareness of civil servants to be able to manage the new change in public administration using e-Governance.

### 2.3.1 ERGP Vision

The vision of Economic Recovery Growth Plan (ERGP) is one of sustained inclusive growth which is both a recovery and growth plan. There is an urgent need as a nation to drive structural economic transformation with an emphasis on improving both public and private sector efficiency. This is aimed at increasing national productivity and achieving sustainable diversification of production, to significantly grow the economy and achieve maximum welfare for the citizens, beginning with food and energy security.

#### The Vision Statement

*By 2020, Promote national prosperity and an efficient, dynamic and self-reliant economy to secure the maximum welfare, freedom and happiness of every citizen on the basis of social justice and equality of status and opportunity.*

Fig. 2.1 ERGP Vision Statement

### 2.3.2 Principles of the ERGP

Several principles have driven the thinking and the development of this Plan and they are:

- **Focus on tackling constraints to growth.** Economic growth in Nigeria faces various supply constraints including fuel, power, foreign exchange, and business unfriendly regulations. In addition, there is a shortage of requisite skills and appropriate technology necessary to drive growth. This Plan focuses on overcoming and resolving these challenges.
- **Leverage the power of the private sector.** Economic recovery and transformative growth cannot be achieved by the government alone. It is essential to harness the dynamism of business and the entrepreneurial nature of Nigerians, from the MSMEs to the large domestic and multinational corporations to achieve the objectives of this Plan. The Plan prioritizes the provision of a more business friendly economic environment.
- **Promote national cohesion and social inclusion.** Nigerians are the ultimate beneficiaries of more inclusive growth and therefore, the initiatives set out in this Plan are aimed at ensuring social inclusion and the strengthening of national cohesion.
- **Allow markets to function.** The ERGP recognizes the power of markets to drive optimal behaviour among market participants. The Plan prioritizes the use of the market as a means of resource allocation, where appropriate. However, the Plan also recognizes the need to strengthen regulatory oversight to minimise market abuse.
- **Uphold core values.** The ERGP is rooted in the core values that define the Nigerian society as enshrined in the 1999 Constitution, notably discipline, integrity, dignity of labour, social justice, religious tolerance, self-reliance and patriotism. It requires all citizens and stakeholders to adhere to these principles.

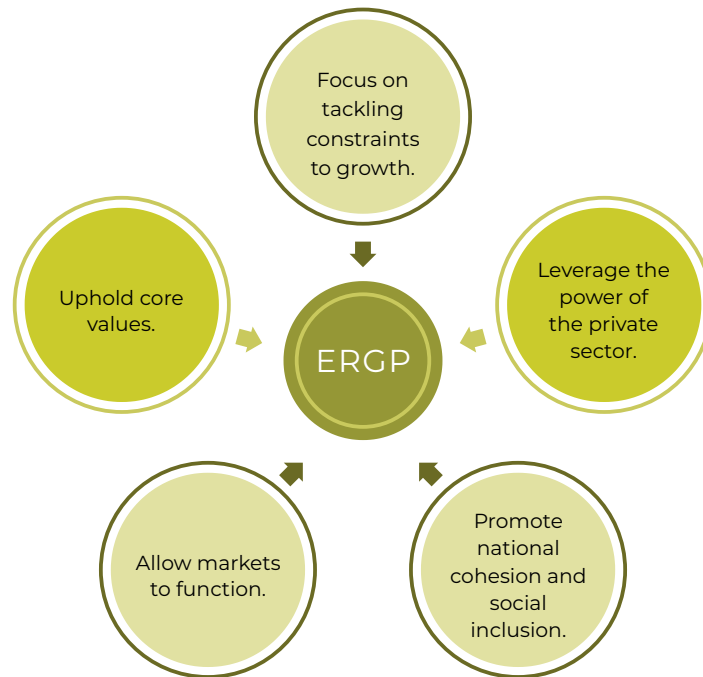


Figure 2.2 Principles of ERGP

### 2.3.3 Broad Objectives of the ERGP

The ERGP has three broad strategic objectives that will help achieve the vision of inclusive growth outlined above:

- 1) Restoring growth,
- 2) Investing in our people, and
- 3) Building a globally competitive economy.

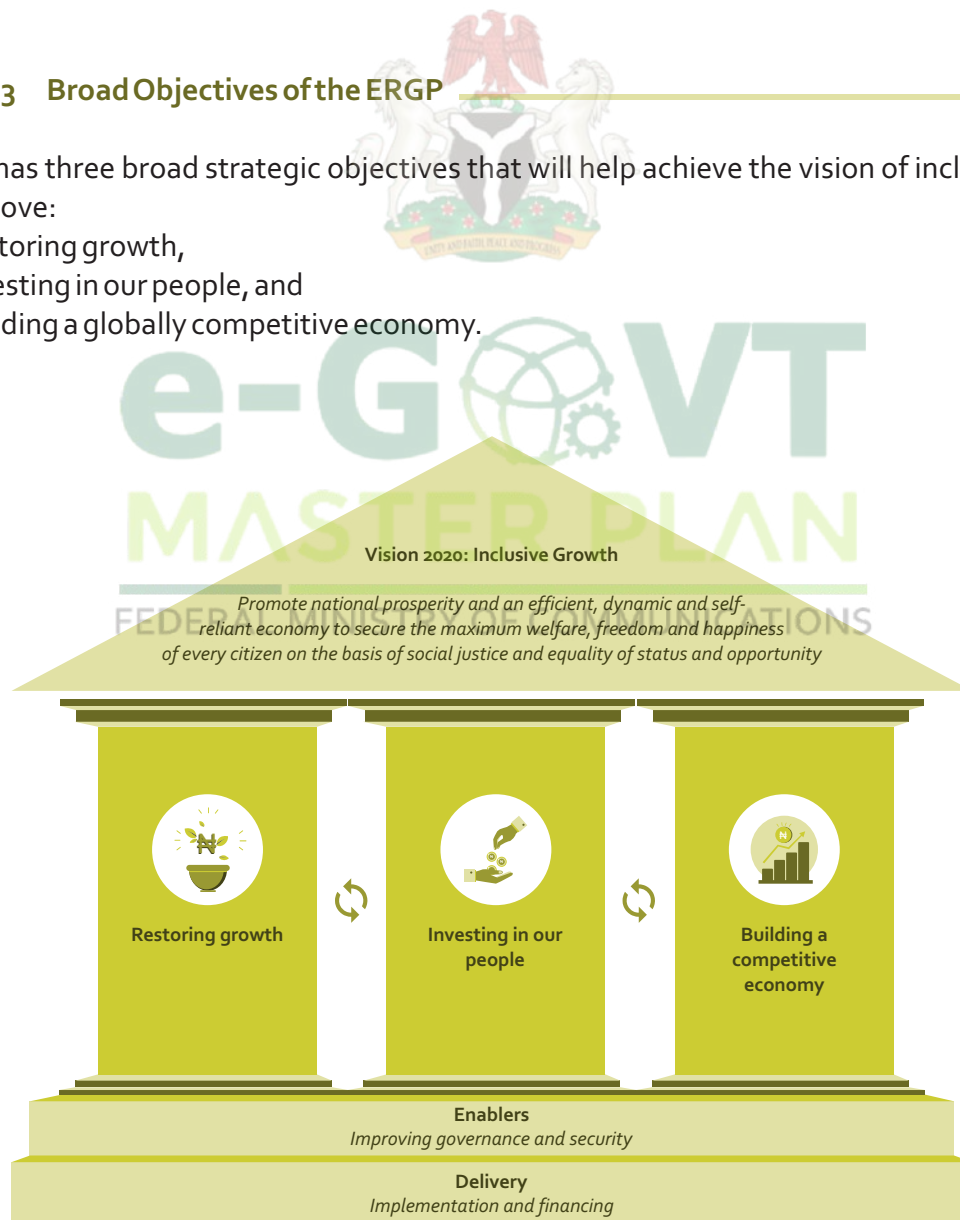


Fig. 2.3 Three Pillars of ERGP

- **Restoring Growth:** through macroeconomic stability and economic diversification
- **Investing in our People:** through investing in the Nigerian people through:
  - *Social inclusion*
  - *Job creation and youth empowerment*
  - *Improved human capital*
- **Building a Globally Competitive Economy:** by tackling the obstacles hindering the competitiveness of Nigerian businesses through:
  - *Investing in infrastructure*
  - *Improving the business environment*
  - *Promoting Digital-led growth*

## 2.4 Case for a National e-Government Masterplan

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e-Government in its broadest sense refers to the technology-enabled transformation of government – It presents the Nigerian Government's best hope to reduce costs, whilst promoting economic development, increasing transparency in government, improving service delivery and public administration while facilitating the advancement of an information society.

**Reducing Costs:** Putting services on-line substantially decreases the processing costs of many activities compared with the manual way of handling operations. Efficiency is also attained by streamlining internal processes and by enabling faster and more informed decision making.

**Promoting Economic development:** Technology enables governments to create positive business climates by simplifying relationships with businesses and reducing the administrative steps needed to comply with regulatory obligations. There is a direct impact on the economy, as in the case of e-procurement, which creates wider competition and more participants in the public sector marketplace. This feeds directly into the facilitation of the 60 strategies of the ERGP.

**Enhancing Transparency and Accountability:** e-Government helps to increase the transparency of decision-making processes by making information accessible – publishing government debates and minutes, budgets and expenditure statements, outcomes and rationales for key decisions, and in some cases, allowing the on-line tracking of applications on the web by the public and press.

**Improving Service Delivery:** government service delivery, in the traditional process, is time consuming, lacks transparency, and leads to citizen and business dissatisfaction. By putting government services online, e-Government reduces bureaucracy and enhances the quality of services in terms of time, content and accessibility.

**Improving Public Administration:** e-Government administrative components, such as a computerized treasury, integrated financial management information systems, and human resource management systems, lead to greater efficiency in public administration. Features include the integration of expenditure and receipt data, control of expenditure, human resources management, intelligent audit through data analysis and the publishing of financial data.

**Facilitating an e-Society:** One of the main benefits of an e-Government initiative consists of the promotion of ICT use in other sectors. The technological and management capacities required for e-Government administration encourage, in turn, the development of new training courses and modules in schools and universities trying to supply the required skills and capabilities to the market.

“The Economic Recovery and Growth Plan (ERGP) articulates our vision for the country for the period 2017-2020, and lays the foundation for long-term growth. The underlying philosophy is to optimize local content and empower local businesses. The Plan clearly stipulates the role of government in facilitating, enabling and supporting the economic activities of businesses.”

The e-Government Masterplan provides the government with the strategic key entrenchment of transparency in Government to enable and support the economic activities of businesses while improving the life of her citizens. This strategic key lies in the full implementation of the e-Government Masterplan that seeks to automate government service using information and communication technologies while reducing the cost of governance and the enhancement of public administration.





### 3.1 Stages of e-Government Development

The first of these includes questions relating to attributes that would be considered typical of an **Emerging Presence**, providing information that is limited and basic.

The second stage is **Enhanced Presence**, in which the government provides greater public policy and governance sources of current and archived information, such as policies, laws and regulation, reports, newsletters, and downloadable databases.

The third stage attributes to a **Transactional Presence**, allowing two-way interaction between the citizen and his/her government. It includes options for paying taxes and applying for ID cards, birth certificates/passports, license renewals and other similar C2G interactions by allowing citizens to submit these online 24-7.

The fourth and final stage is labelled **Connected Presence** (Networked), which represents the most sophisticated level in the online e-Government initiatives. It can be characterized by an integration of G2G, G2C and C2G (and reverse) interactions. The government encourages participatory deliberative decision-making and is willing and able to involve the society in a two way open dialogue. Through interactive features such as the web comment form, and innovative online consultation mechanisms, the government actively solicits citizens' views on public policy, law making, and democratic participatory decision making.



Fig. 3.1 e-Government Development Stages

## 3.2 Nigeria's e-Government Status

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### 3.1.1 Website Information Standardization

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The UN e-Government Survey of online service index values assesses each country's national website, including the national central portal, e-services portal and e-participation portal, as well as the websites of the related ministries of education, labor, social services, health, finance, and environment as applicable. In addition to being assessed for content and features, the national sites were tested for a minimal level of web content accessibility as described in the Web Content Accessibility Guidelines of the World Wide Web Consortium.

There have been efforts by the Nigerian Government towards the standardization of National Websites through the Bureau of Public Service Reforms Federal Government scorecard for ranking websites of federal MDAs. This is a strategic service improvement tool and peer review mechanism to track and ensure;

- i. That MDAs become more accessible to the public about its operations and overall mandates;
- ii. That MDAs' information are made readily available and disseminated widely to the public;
- iii. That MDAs websites are up to date and reviewed, as the need arises;
- iv. That MDAs are available within working hours to attend to public complaints/enquiries; and
- v. That MDAs promote transparency and accountability in line with the provisions of Freedom of Information Act and or any other related extant provisions.

The scorecard was introduced to assess, score and rank government websites in order to provide feedback around internal processes and external outcomes so institutions/managers can continually improve on their service delivery. Implementing the scorecard will not only compel public institutions to adhere to laid-down standards for government websites, it will also help to measure what actually matters when it comes to websites performance.

### 3.1.2 1-Gov.ng (Government Service Bus)

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The FMCT launched a single window portal and infrastructure for Citizens to gain access to Government information and services. The 1-GOV.NG infrastructure provides a secure and reliable platform for this portal along with all other websites of Government agencies and the connectivity into all other government application and services delivery.

1-GOV.NG infrastructure provides real-time connectivity between border control points, airports and a central processing server as well as with oversight systems within the Security Agencies. This platform is being hosted and managed by Galaxy Backbone

### 3.1.3 eCouncil: Electronic Document Management

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eCouncil is an Electronic Document Management and Automation System for the Federal Executive Council – 1-GOV.NG infrastructure provides a robust record keeping and memoranda generation system that improved executive efficiency across all Ministries.

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### 3.1.4 GOVMail: Government Wide Messaging and Collaboration

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Government Wide Messaging and Collaboration For the first time in Government History, Civil Servants in Ministries have access to secure email services for improved productivity. This platform was implemented by Galaxy Backbone and is in use by government officials. GOVmail is the e-mail platform created for Government officials and managed by GBB; it is based on “.gov.ng” and resides on the shared platform. It ensures Security of communications, ease of availability and non-repudiation.

There are presently over 40,000 mail boxes created and being managed on this platform and we expect it to grow as we increase awareness amongst government workers on the need to shun other e-mail addresses while carrying out government business.

### 3.1.5 NICTIB

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NICTIB is the “National ICT Infrastructure Backbone”. It entails the provision of requisite infrastructure by government (through GBB) in preparation for the expected increase in requirements due to adoption and implementation of e-Government.

The underlying infrastructure being provided through NICTIB, are essential for e-Government services and include – Backbone Fibre Optic cable, connecting to the Undersea internet cables at the coast and crisscrossing the country (passing through State capitals) to ensure that government offices across the country can benefit from low-cost Internet bandwidth. Over 1,320 km of fibre already laid (from the coast to Abuja) and another 3,440km expected to be laid in NICTIB-II (to connect mostly the northern states).

Fiber Metro ring in Abuja, to connect all government offices and ensure that all government officials can make use of facilities on the “1-Gov” platform. This will ensure efficiency in operations and seamless interactions.

World Class (Tier-III) Data Centre built in Abuja to host all government services, portals etc. there is a Backup Data centre in Enugu. NICTIB-II includes the building of another Data Centre in Kano for Disaster Recovery. Several other infrastructure to allow for Command & Control Centre; Video Conferencing; Contact Centre etc.

### 3.1.6 GOVComms:

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GOVComms provides connected Government. Pilot group of Civil Servants in select Ministries have access to toll free intercom services and video conferencing for better collaboration and productivity.

With regards to the 'whole-of-government' approach, we have designed a “Government Wide Messaging and Collaboration Service (GWMCS)” to allow for seamless communications and interaction amongst Government officials irrespective of their location. This entails the GOVmail (explained earlier); IP Telephony (Intercomms system); Teleconference etc.

### 3.3 Current Shape of e-Government Architectural Model in Nigeria

Nigeria's e-Government has leveraged an architectural model developed by Gartner Group even though there are limitations to this approach due to the lack of relevant information accessible to the master plan team. Shaded blocks show those components where Nigeria has acquired some substantial output.

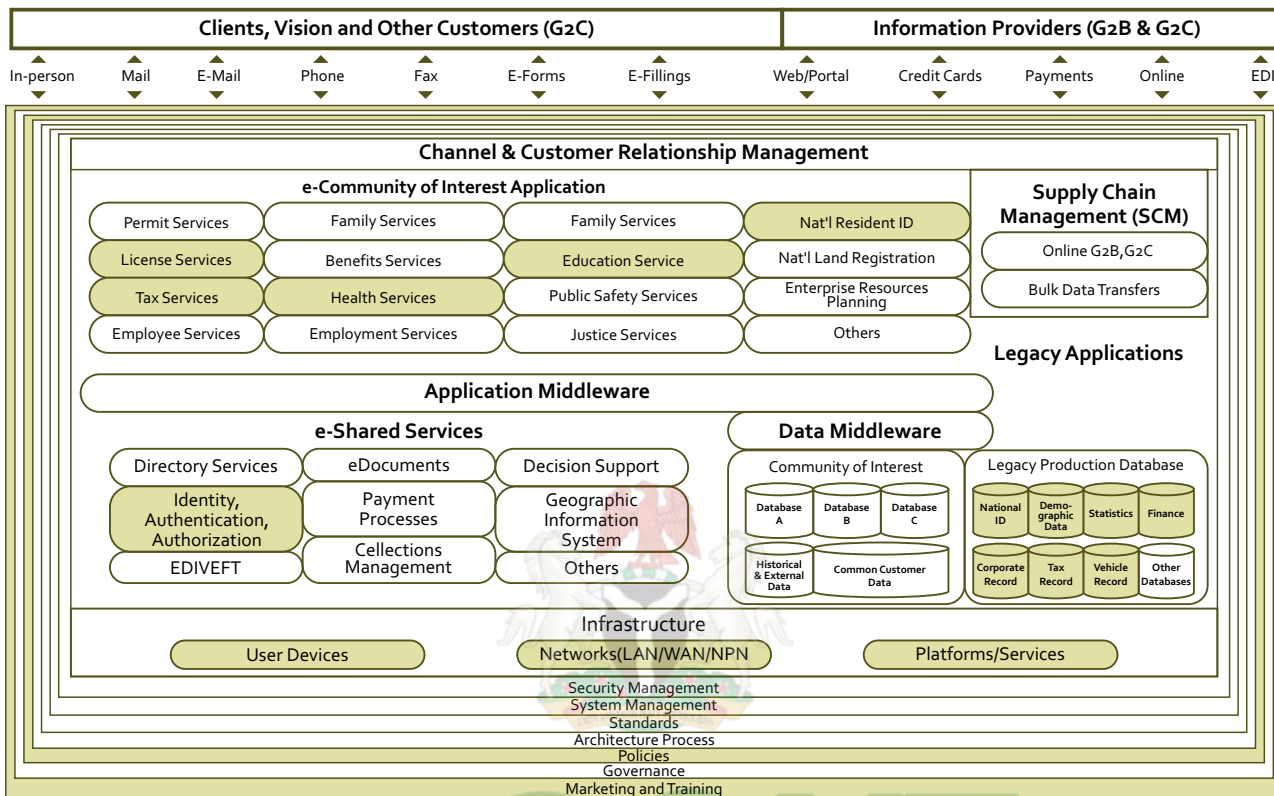


Fig. 3.2 e-Government Architectural Model

Nigeria has built some part in each block, but they are not organically integrated to function as a whole. Application service, application middleware, infrastructure and governance blocks are all weak and immature in Nigeria.

FEDERAL MINISTRY OF COMMUNICATIONS

#### 3.3.1 Existing e-Government Services (G2C/G2B/G2G)

For the government web-sites blocks each government, organizations are making their own websites.

Single Window Portal (<http://services.gov.ng>) is to get all information on G2C/G2B and government to foreign national services in Nigeria. This is a work in progress.

- **G2C**

#### Immigration

- e-Passport, MRP Seaman's Passport, ECOWAS Travel Certificate ([portal.immigration.gov.ng](http://portal.immigration.gov.ng))

#### Education and Learning

- Certificate Accreditation and Evaluation, joint admission and matriculation board (JAMB) registration ([jamb.org.ng](http://jamb.org.ng))

## Health and Welfare

- Mobile Drug Authentication, National Health Insurance Scheme ([www.nhis.gov.ng](http://www.nhis.gov.ng))

## Driving and Transportation

- Driver's License([www.nigeriadriverslicence.org](http://www.nigeriadriverslicence.org))
- Vehicle License([www.nvisng.org](http://www.nvisng.org))

## Finance and Tax

- Tax Payer Registration, Tax Clearance Certificate ([www.firs.gov.ng](http://www.firs.gov.ng))
- Government Treasury Single Account

## Citizenship and Voting

- National Identity Card ([ninenrol.gov.ng](http://ninenrol.gov.ng))

## Open Data

- Socio-economic data([www.nigerianstat.gov.ng](http://www.nigerianstat.gov.ng))

## G2B – Government to Business Services

### Permit Services

- Seed Import / Export Permit (Ministry of Agriculture and Natural Resources): just developed but not used
- NAFDAC Export Approval (National Agency for Food and Drugs Administration and Control: [www.nafdac.gov.ng](http://www.nafdac.gov.ng))

### License Services

- Trademark Application (Ministry of Trade and Investment)
- Business Registration (Corporate Affairs Commission: [new.cac.gov.ng](http://new.cac.gov.ng))
- Class Type License Application (Corporate Affairs Commission: [new.cac.gov.ng](http://new.cac.gov.ng))
- Spectrum License Application (Ministry of Communication Technology, NCC)

### Tax Services

- Tax Clearance Certificate Form (Federal Inland Revenue Service: [www.firs.gov.ng](http://www.firs.gov.ng))

### Ease of Doing Business

- Ease of Doing Business Portal in Nigeria; <https://easeofdoingbusiness.com> and <http://pebec.gov.ng>

### Others

- Nigeria Customs Services (Tools and guidelines rather than an e-Government service)
- Nigeria Oil & Gas Industry: joint qualification system ([portal.nogicjqs.com](http://portal.nogicjqs.com))

### G2G, Government to foreigner

- Entry visa, ECOWAS Residence Card ([portal.immigration.gov.ng](http://portal.immigration.gov.ng))
- Request for data ([nigerianstat.gov.ng/requests](http://nigerianstat.gov.ng/requests))

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### 3.3.2 Application Middleware

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- Non-existence of middleware blocks for integration and interoperability
- For the shared service block, identity, authentication and authorization have been developed and deployed to government organizations.
- For the DB blocks, legacy production databases are mostly existing, but data middleware that guarantee data share between different type of databases do not exist.

### 3.3.3 Infrastructure

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- **International connectivity**

- 340GB with a single international submarine cable in 2001
- 9Tbit/s by 2012
- 97.92Tbit/s by 2014
- Major issue: Access improvement and risk reduction through additional landing point

- **National Backbone & Metro Network**

- Substantial amount of infrastructure installed by licensed carriers
- Concentrated only on certain routes connecting state capitals and big urban cities
- Most rural areas are left out
- Metro networks are still limited to the major cities and state capitals
- Nigeria's backbone and metro networks infrastructure are not linked to each other
- The situation requires special government intervention to fibre cable infrastructure
- Major issues: Extremely high Right of Way (50-70% of investment), Recovery agreement between the cable companies

- **Last Mile Broadband Infrastructure**

- The primary delivery medium for broadband access is mobile broadband
- 2.5G (GPRS), EDGE, UMTS, HSPA, HSPA+ and CDMA EV-DO, 3G, 4G/LTE

- **Platforms/Services**

- 1Gov.NG services by GBB
- GIDC
- 4,000 locations & 350 MDAs connected
- Plan to connect the federal government to the state and local governments



### 3.3.4 Legal Framework

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As of now there are two laws related to e-Government in Nigeria, that is **NITDA Act of 2007** and **Freedom of Information Act of 2011**. **FOIA** is a law to provide for public access to public records and information and to protect public records. **NITDA Act** is to establish the **NITDA** and govern related matters for the IT promotion in Nigeria. One of functions of **NITDA** is to “develop guidelines for electronic governance and monitor the use of electronic data interchange and other forms of electronic communication transactions as an alternative to paper-based methods in government, commerce, education...” But there are no specific clauses related with the purpose of e-Government and how to implement it such as e-documents, e-signature and the functions and responsibility of MDAs.

According to the **FMoC** mandate, the ministry is supposed to support the use of **ICTs** for the facilitation of efficient, effective and transparent governance in Nigeria. However, it does not have any legal and organizational tools to carry out this mission effectively. An e-Government Bill is currently being worked on to solve this challenge.

For the policy block, several decisions were promulgated by Nigerian government, no specific rule of law on e-Government (the **NITDA Act 2007** is the only one). **Cyber-crime bill** and **e-transaction bill** was under the legislation process by the 2011-2015 parliament and has been passed since 2015. Roles and responsibilities of **FMCT** and ministries (inter) as well as even among agencies within **FMCT** (intra) are being delineated.

- inter – **OHCSF** (Head of Civil Service), **OSGF** (Secretary to the Government of the Federation), ministries, National DB agencies
- intra - **FMCT**, **NITDA**, **GBB**, **NCC**, **NPS**

There is need to investigate these pending bills and what kind of legal infrastructure should be prepared to guarantee the implementation of e-Government master plan including the following components

- goals and principles of e-Government
- roles and duties of the involving MDAs
- governing structure to obtain the top leadership, implementation, and evaluation
- securing the interoperability and systematic approach for information sharing and e-Government as a whole
- protecting the privacy and rights of the citizens

#### 4.1 e-Government Development Index

The United Nations E-Government Survey is produced every two years by the Department of Economic and Social Affairs. It is the only report in the world that assesses the e-Government development status of the 193 United Nations Member States. It serves as a tool for decision makers in the Nigerian government to identify their areas of strength and challenges in e-Government and to guide e-Government policies and strategies. The publication also highlights emerging e-Government trends, issues and innovative practices, as well as challenges and opportunities of e-Government development.

The United Nations e-Government development index (EGDI) is a composite indicator measuring the willingness and capacity of national administrations to use information and communication technology to deliver public services. It is based on a comprehensive survey of the online presence of all 193 Member States, which assesses the technical features of national websites as well as e-Government policies and strategies applied in general and by specific sectors for delivery of essential services.

The EGDI is a weighted average of three normalized scores on the most important dimensions of e-Government, namely: scope and quality of online services (Online Service Index, OSI), development status of telecommunication infrastructure (Telecommunication Infrastructure Index, TII), and inherent human capital (Human Capital Index, HCI). Each of these sets of indices is in itself a composite measure that can be targeted to improve our overall e-Government Development Index.

##### 4.1.1 Online Service Index (OSI)

To arrive at a set of online service index values, the researchers assessed each country's national website, including the national central portal, e-services portal and e-participation portal, as well as the websites of the related ministries of education, labor, social services, health, finance, and environment as applicable. In addition to being assessed for content and features, the national sites were tested for a minimal level of web content accessibility as described in the Web Content Accessibility Guidelines of the World Wide Web Consortium.

The **first** of these includes questions relating to attributes that would be considered typical of an emerging presence, providing information that is limited and basic.

The **second** stage is enhanced presence, in which the government provides greater public policy and governance sources of current and archived information, such as policies, laws and regulation, reports, newsletters, and downloadable databases.

The **third** stage attributes to a transactional presence, allowing two-way interaction between citizen and his/her government. It includes options for paying taxes and applying for ID cards, birth certificates/passports, license renewals and other similar C2G interactions by allowing citizens to submit these online 24-7.

The **fourth** and final stage is labelled connected presence, which represents the most sophisticated level in the online e-Government initiatives. It can be characterized by an integration of G2G, G2C and C2G (and reverse) interactions.

#### 4.1.2 Telecommunications Infrastructure Index (TII)

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The telecommunication infrastructure index is an arithmetic average composite of five indicators: estimated internet users per 100 inhabitants, number of main fixed telephone lines per 100 inhabitants, number of mobile subscribers per 100 inhabitants, number of wireless broadband subscriptions per 100 inhabitants and number of fixed broadband subscriptions per 100 inhabitants. The International Telecommunication Union (ITU) is the primary source of data in each case. Instead of fixed Internet subscriptions, wireless broadband subscription indicator was included in the computation of Telecommunication Infrastructure Index (TII) in the 2014 Survey.

In the 2018 survey, the sub-indicator of Telecommunication Infrastructure Index (TII) entitled “Wireless broadband subscriptions per 100 inhabitants” was replaced by “Active mobile-broadband subscriptions per 100 inhabitants” due to discontinuity of data collection for the latter by ITU.

#### 4.1.3 Human Capital Index (HCI)

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The Human Capital Index (HCI) consists of four components, namely: (i) adult literacy rate; (ii) the combined primary, secondary and tertiary gross enrolment ratio; (iii) expected years of schooling; and (iv) average years of schooling.

The definitions of the four indicators of HCI are:

1. Adult literacy is measured as the percentage of people aged 15 years and above who can, with understanding, both read and write a short simple statement on their everyday life.
2. Gross enrolment ratio is measured as the combined primary, secondary and tertiary gross enrolment ratio, of the total number of students enrolled at the primary, secondary and tertiary level, regardless of age, as a percentage of the population of school age for that level.
3. Expected years of schooling is the total number of years of schooling that a child of a certain age can expect to receive in the future, assuming that the probability of his or her being in school at any particular age is equal to the current enrolment ratio age.
4. Mean years of schooling (MYS) provides the average number of years of education completed by a country's adult population (25 years and older), excluding the years spent repeating grades.

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The first two components, i.e. adult literacy rate and the combined primary, secondary and tertiary gross enrolment ratio have been used for the past Surveys since 2002. Recognizing that education is the fundamental pillar in supporting human capital, the 2014 Survey introduced two new components to the human capital index (HCI), namely (i) expected years of schooling; and (ii) mean years of schooling. The preliminary statistical study commissioned by DESA/DPADM validated the use of the new HCI, accentuating that the two new components has strengthened the HCI and it does not introduce any error.

#### 4.2 E-Participation Index

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The e-participation index (EPI) is derived as a supplementary index to the UN E-Government Survey. It extends the dimension of the Survey by focusing on the use of online services to facilitate provision of information by governments to citizens (“e-information sharing”), interaction with stakeholders (“e-consultation”) and engagement in decision-making processes (“e-decision making”).

The framework of e-Participation is as follows:

- **E-information:** Enabling participation by providing citizens with public information and access to information without or upon demand
- **E-consultation:** Engaging citizens in contributions to and deliberation on public policies and services
- **E-decision-making:** Empowering citizens through co-design of policy options and coproduction of service components and delivery modalities.

A country's EPI reflects on e-participation facilities that are deployed by the government as compared to all other countries. The purpose of this measure is not to prescribe any particular practice, but rather to offer insight into how different countries are using online tools to promote interaction between citizen and government, as well as among citizens, for the benefit of all.

As the EPI is a qualitative assessment based on the availability and relevancy of participatory services available on government websites, the comparative ranking of countries is for illustrative purposes and should serve only as indicative of the broad trends in promoting citizen engagement. As with the EGDI, the EPI is not intended as absolute measurement of e-participation, but rather, it attempts to capture the e-participation performance of counties relative to one another at a particular point in time.

Other features and updates which were included the availability of information on the citizens' rights to access government information, providing outcome on feedback received from citizens concerning the improvement of its online services, providing the tools in order to obtain public opinion for public policy deliberation through social media, online polls, competition tools, voting tools, online- bulletin boards and online discussion forums.

Mathematically, the EPI is normalized by taking the total score value for a given country subtracting the lowest total score for any country in the Survey and dividing by the range of total score values for all countries.

Nigeria e-participation index **ranked 97th among 193 countries in 2014**. (In 2012 ranked 25<sup>th</sup> among 32 country groups). **In 2016** Nigeria's e-Participation index score was **around 0.3559 with a ranking of 118** out of 193 countries surveyed. **In 2018** it improved this score to **0.4831 but ranking 117** out of 193 countries surveyed. To put this in context, **South Africa is ranked 39** with an e-Participation index score of 0.8483 while the **Republic of Korea is ranked number 1** with an **e-Participation score of 1** scoring a perfect 100% in all 3 stages of the survey!

### 4.3 Nigeria's e-Government Development Index Ranking

Nigeria improved in its World e-Government development ranking from 162 in 2012 to 141 in 2014 and now slipped 2 spaces in 2016 and unchanged in 2018 to 143 according to UN E-Government Development Index (EGDI). Nigerian e-Government development score increased from 0.2676 in 2012 to 0.2929 in 2014 to 0.3291 in 2016 and up to 0.3807 in 2018. This slip in ranking occurred despite slight improvements in overall EDGI ranking in 2016 and 2018 mainly because of stronger showings from other countries within the same period. The rankings and scores of Components on e-Government development for selected countries compared with continental and world averages is shown in the table below.

Country/ Region	World e-Government Development Ranking				e-Government Development Index Scores			
	2012	2014	2016	2018	2012	2014	2016	2018
Nigeria	162	141	143	143	0.2676	0.2929	0.3291	0.3807
Rwanda	140	125	138	120	0.3291	0.3589	0.3390	0.4590
South Africa	101	93	76	68	0.4869	0.4869	0.5546	0.6618
Ghana	145	103	120	101	0.3195	0.3735	0.4181	0.5390
Republic of Korea	1	1	3	3	0.9283	0.9462	0.8915	0.9010
<b>Africa</b>					<b>0.2780</b>	<b>0.2661</b>	<b>0.2882</b>	<b>0.3423</b>
<b>Europe</b>					0.7188	0.6936	0.7241	0.7727
<b>Americas</b>					0.5403	0.5074	0.5245	0.5898
<b>Asia</b>					0.4992	0.4951	0.5132	0.5779
<b>Oceania</b>					0.4240	0.4086	0.4154	0.4611
<b>World</b>					0.4882	0.4712	0.4992	0.5500

Table 4.1 EDGI Rankings for Nigeria and Selected Countries Compared With Regional Averages

#### 4.4 Nigeria EDGI Ranking Vision

From the Table below Nigeria targets a jump from the present position of 143<sup>rd</sup> to 50<sup>th</sup> globally leapfrogging South Africa currently at 68<sup>th</sup>. It means significant improvements for the OSI, TII and HCI indices which requires a lot of funding and shared vision.

Year	Group	Online Service Index: UN Survey				GNI Ranking	
		EGDI Ranking	Emerging (7%)	Interactive (24%)	Transactional (30%)		Networked (39%)
2024	Very High	50 <sup>th</sup>	100%	90%	80%	80%	20 <sup>th</sup>
2022	High	75 <sup>th</sup>	90%	80%	60%	70%	
2020	High	100 <sup>th</sup>	80%	60%	30%	50%	
2018	Middle	143 <sup>rd</sup>	56%	36%	14%	30%	-
2014	Middle	141 <sup>st</sup>	56%	36%	14%	30%	25 <sup>th</sup>
2012	Low	162 <sup>nd</sup>	58%	12%	10%	25%	-

Table 4.2 Global Vision Target for EDGI Ranking

Country/ Region	World e-Government Development Ranking				e-Government Development Index Scores			
	2012	2014	2016	2018	2012	2014	2016	2018
Nigeria	162	141	143	143	0.2676	0.2929	0.3291	0.3807
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South Africa	101	93	76	68	0.4869	0.4869	0.5546	0.6618
Ghana	145	103	120	101	0.3195	0.3735	0.4181	0.5390
Republic of Korea	1	1	3	3	0.9283	0.9462	0.8915	0.9010
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2020	High	100 <sup>th</sup>	80%	60%	30%	50%	
2018	Middle	143 <sup>rd</sup>	56%	36%	14%	30%	-
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2012	Low	162 <sup>nd</sup>	58%	12%	10%	25%	-

Table 4.2 Global Vision Target for EDGI Ranking

## 4.5 Country Case Studies

Benchmarking is an activity to study the best practices of other countries and to utilize them as learning opportunities for the development and deployment of the Nigerian e-Government Masterplan. Currently, most countries are exposed to common analysis and indices, so it makes it easier to benchmark. However, their social, cultural and religious features including the political, administrative and market system are quite distinctive so note should be taken of that.

### Benchmarking Sources

#### Reviewing Past Experiences

The historical analysis on past experiences can help the successful implementation of the e-Government project. Problems have occurred repeatedly can be resolved by the same or similar solutions. Although social and institutional variables can be predicted by this analysis, the social framework may become a misfit for information technologies which are rapidly advancing.

#### Cross-sectional Analysis

Conducting cross-sectional analysis on foreign cases makes it easy to predict consequences of implementation, political forces, resources needed for execution. However, analysis and pre-performance evaluation should be carried out to assess whether the same outcome can be achieved by adopting e-Government cases implemented in different social context.

### 4.5.1 Republic of Korea

Computers were introduced to Korea, in the Ministry of Home Affairs (MOHA) in 1961, and the IBM 1401 for the task of survey and statistics in the Economic Planning Board (EPB) in 1967. However, the level of e-Government was still very low at that time. The earliest e-Government policy was started in 1978 when the Ministry of Government Administration (MOGA) formulated the first five-year Basic Plan for Administrative Computerization (1978~1982). Table 8 shows the different stages of development of e-Government in Korea.

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Period	Stage	Activities
1978-1986	Introductory Stage (G2G)	<ul style="list-style-type: none"> <li>Starting administrative computerization</li> </ul>
1987-1996	Foundation Establishment Stage (G2G)	<ul style="list-style-type: none"> <li>Developing e-Government infrastructure</li> <li>Establishing foundation of networking in each ministry</li> </ul>
1997-2002	Full Promotion Stage (G2G), (G2C)	<ul style="list-style-type: none"> <li>Completing integrated administrative network between agencies</li> </ul>
2003-2007	Advanced Stage (G2G), (G2B), (G2C)	<ul style="list-style-type: none"> <li>Implementation of e-Government projects</li> <li>Operating comprehensive service</li> </ul>
2008-Current	Further Advancement Stage	<ul style="list-style-type: none"> <li>Provide customer-oriented service</li> <li>Provide interactive administrative services</li> <li>Real-time public safety information network</li> <li>Information privacy and security level up</li> </ul>

Table 4.3 Development of Korea e-Government

## Success Factors of Korea e-Government

- 1. Environment:** The political Social and Technical Environment was right for e-Government to flourish. The IT development project was formed and implemented in mutual interaction of needs and seeds in the political & social as well as economic & industrial technical environment.
- 2. Political Will and Leadership:** In Korea's political system, in which presidential political power is so strong, the most important factor for the success in pursuing e-Government project was the interest and will of the president.
- 3. Vision & Goals and Project Priority:** The vision and goals of the e-Government presented by each administration are all the results of mutual interactions of political, social, economic and industrial, and technological environment factors.
- 4. Implementation Organization & Resource Distribution:** Strong government will led to Capacity Development for Korean Government Officials. By enhancing the capacity of government officials through consistent and systematic education and training, the Korean government could cope with socio-economic development policy issues and tasks.

### 4.5.2 Kenya

#### Overview of Kenya e-Government

Directorate of e-Government is a department in the ICT Authority under the Ministry of Information Communication Technology. It was established in 2003 with the mandate of overseeing and coordinating e-Government service delivery. The main functions of the department are to provide and implement e-Government strategy, develop and facilitate access to e-Government shared services, provide technological advice and policy framework, as well as development and enforcement e-Government standards.

#### Kenya e-Government Vision and Mission

The vision and strategy of Kenya e-Government is to strategically support Vision 2030. The vision and mission of e-Government can be summarized as follows.



Fig. 4.1: Kenya e-Government Vision and Mission



## e-Government Development Process

To attain the objective of developing e-Government strategy, the process was largely divided into three periods as was done in Korea: initial phase (1980~1990s'), the phase to build base (1999~2004) and enforcement in full scale (2005~) - 3 phases.

Phase	Key Initiatives
Initial period of e-Government (1980s'~1990s')	<ul style="list-style-type: none"> <li>• Imported the 1st mainframe computer to Kenya (1967)</li> <li>• Government Computer Services were established</li> <li>• Microcomputer Information Systems Department (MISD)</li> <li>• Established basic plan of computerizing administration</li> <li>• The first connection to Internet (1995)</li> </ul>
Period to build the base of e-Government base (1999~2004)	<ul style="list-style-type: none"> <li>• Enacted Kenya Information and Communications Act (1999)</li> <li>• Government Information Technology Services (GITS) (2000)</li> <li>• Decided to enforce NII (National Information Infrastructure) (2002)</li> <li>• Announced e-Government strategy (2003)</li> <li>• Constituted e-Government Directorate (2004)</li> <li>• Established National ICT Policy to enhance national competitiveness (2004)</li> </ul>
Period when e-Government was pushed forward in full scale (2005~)	<ul style="list-style-type: none"> <li>• Announced Kenya Information &amp; Communications Bill (2006)</li> <li>• 3 areas were computerized; converting the payment system of public charge; government bond is sold &amp; bought by Internet; vehicle registration (2007)</li> <li>• Established National Science, Technology &amp; Innovation Policy &amp; Strategy (2008)</li> <li>• Built 4 lines of undersea Fibre Optic Cable (2009)</li> <li>• Representative home page of e-Government: opened (2010)</li> <li>• Selected 8 main tasks of e-Government and ICT Special Committee was operated</li> <li>• Amended Kenya Communication Act 2008 was effectuated (Jan.2009)</li> <li>• Announced basic plan to build high-speed IT base</li> <li>• Main administrative information, e.g., resident, property, car, economic statistics were digitized (2011)</li> <li>• Announced National ICT Master Plan (2013)</li> </ul>

Table 4.4 Kenya e-Government Development

### Lessons Learned:

- As e-Government has been projected forward for the next 30 years, the Kenyan Government now plans e-Government improvement projects for public service.
- As integration of administrative information and efficient administration was hindered by building system in each department, administration should be improved first by re-engineering business process.
- It is required to focus on pushing forward e-Government to commonly use public information and service for transparency and efficiency of administration.
- e-Government systems should be built to enable people to easily connect e-Government and to get diverse administrative service.

### 4.5.3 South Africa

In South Africa, ICT has been adopted as a cornerstone of Batho Pele (people first), a government framework for equal access to effective public service delivery (Government Gazette 2002). In the South African context, ICT initiatives are seen as key in the drive to alleviate poverty and effects of social exclusion. Since 1994, the South African government has been focusing on the concept of an information society with the aim of investigating how it can act as a modernizing catalyst in transforming the society and economy through the use of ICT. The core issues that affect the successful implementation of e-Government projects in a South African context is investigated here.

Based on the fundamental human rights to have access to information, the South African constitution places an obligation on the State to provide wide access to government information. In response to this obligation, the government, in partnership with private organizations, have launched numerous ICT initiatives in the country. Amongst the ICT initiatives are: Cape Gateway Project, Cape Information Technology Initiative (CITI), Tele-centres in rural areas in South Africa, SchoolNet South Africa Project, Mindset Network Organization and the Khanya Project.

The South African government has established statutory bodies to co-ordinate implementation of e-Government projects. Amongst these are the State Information Systems Agency (SITA) and Government Information Technology Officers Council (GITO Council). SITA is responsible for the acquisition, installation, implementation and maintenance of IT in the public sector.

#### Challenges of e-Government in South Africa

The research done shows a few challenges that were associated with the e-Government Implementation in South Africa...these are listed below;

- 1. Leadership Challenges:** Numerous dimensions of leadership challenges emerged from findings among them being leadership structure, success measures, continuity of leadership and sustained interest
- 2. Fragmentation of Projects:** The research findings show that some projects were fragmented along numerous lines e.g. financial, service and legislative lines. The fragmentation had a negative impact on the success rate of e-Government implementations.
- 3. Appreciation of Perceived IT Value:** Though it is typically assumed that it is the society at large that is mostly unaware of the value of IT, it was evident from the data that in some cases the providers of the services are unaware of the potential or primary benefits of e-Government.
- 4. Citizen Inclusion:** It appears that the hierarchical structures of the government are not compatible with the social inclusivity which the e-Government channels seek to afford the citizens. While channels for citizens to voice their socially constructed e-Government needs existed, hierarchical structures seem incapable of being sensitive to those needs.
- 5. Task Scheduling Conflict:** Task Prioritization is a constantly negotiated subject between government and citizens, government and the private sector, and internally within government itself. Task Cooperation Issues of task priority arise in cooperation and various other properties and categories feed into this concept, hence its separate consideration.

#### 4.5.4 United States of America (USA)

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##### Background

While the Internet boom of the 1990s paved the way for many private businesses to launch websites that provided goods and services to their customers using the web, the federal government did not establish its official e-Government task force until July 2001 (USA e-Government Task Force, 2002). The Office of Management and Budget (OMB) established the task force, and according to the official strategy issued by the federal government, the task force's initiatives were "targeted at improving the quality of services to citizens, businesses, governments and government employees, as well as the effectiveness and efficiency of the federal government" (USA e-Government Task Force, 2002). The official strategy outlined steps for expanding current e-Government services, and specifically focused on four variations of e-Government: Government to Citizen (G2C), Government to Business (G2B), Government to Government (G2G), and Internal Efficiency and Effectiveness (IEE).

In 2001, President Bush initiated several government reform efforts, collectively known as the President's Management Agenda (PMA), to make the Federal government more results-oriented, efficient and citizen-centred. It includes detailed information about the initial set of 24 cross-agency E-Government initiatives and other related efforts. These include selected agency E-Government accomplishments, the development of the Federal Enterprise Architecture (FEA), and the initial implementation of the E-Government Act of 2002 (P.L.107-347). Also, this report fulfils the requirements of House Report 107-575 by describing the process (known as "Quicksilver") used by the E-Government Task Force to review and adopt the 24 E-Government initiatives.

**Strategic Vision:** The vision was guided by three principles:

- Citizen-centred, not bureaucracy-centred;
- Results-oriented; and
- Market-based, actively promoting innovation.

The vision combined successful online operating practices with the federal government's human capital and physical assets to build a "click and mortar" enterprise. In this vision, organizations serve citizens, businesses, other government and federal employees. The goal was that services and information would rarely be more than three clicks away when using the Internet. Achieving this vision required that agencies integrate and simplify their operations.

**Strategy Breakdown:**

- Simplify work processes to improve service to citizens.
- Use the annual budget process and other OMB requirements to support e-Government implementation.
- Improve project delivery through development, recruitment and retention of a qualified IT workforce.
- Continue to modernize agency IT management around citizen-centred lines of business.
- Engage agency leadership to support E-Government project implementation.

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- Continue to modernize agency IT management around citizen-centred lines of business.
- Engage agency leadership to support E-Government project implementation.

**Key Challenges:**

- Leadership support: strengthen the connection between Lead Agencies, Partner Agencies, CIOs, and the PMC and improve how agency leaders work together to implement projects.
- Parochialism: address current policies and budget practices that reinforce “small hat,” agency-centric thinking.
- Funding: provide more resources in general (dollars and staff) and make the budget process more transparent and effective.
- Communication: better understand the inter-relationships among the E-Government initiatives, improve the interface between OMB and the Lead Agencies, and create a more cohesive, effective relationship with Capitol Hill.



### 5.1 Overview

The visions and objectives of E-Government can be shaped more concretely by establishing agenda or portfolio as intermediate goals providing information on roads, rest areas, milestones that indicate the direction to the destination (visions and objectives). In this level, the front office (G2C), the back office (G2G) and infrastructure building are generally used.

### 5.2 S.T.E.P.S: Success Indicators for the Provision of e-Government Services

Delivering an adequate e-Government service (e-service) is becoming more of a necessity in today's digital world. In order to improve e-services and increase the engagement of both users' and providers' side, studies on the performance evaluation of such provided e-services are taking places. However a clear identification of the key performance indicators from the e-Government providers' side is very important. The key performance indicators from the e-Government providers' side should be explored, for the conduct of a holistic evaluation of an e-service provision from the perspective of its stakeholders in order to improve e-services as well as to increase e-services take-ups.

To develop a new evaluation model that explains and predicts the success of an e-service, the collected factors from the focused groups and literature are analyzed and used to construct a new conceptual model called STEPS: **S**ervice, **T**echnology, **E**mloyees, **P**olicy and management and **S**ocial responsibilities analysis.

**Five main themes** represent the key performance indicators necessary for evaluating e-Government services from the perspective of providers. These are: e-Government Service; Employee Readiness; Policy and Management; Technology; and Internal and External Impact. We will discuss the indicators and their categories as part of the description of each theme.

#### 5.2.1 e-Government Services

e-Government Service is the first theme that refers to criteria that are directly relevant to the e-Government site. There are two indicators under this theme: Service Support and Efficiency.

- **Service support** refers to the provision of up-to-date information to the users that is directly relevant to their needs. e-Government sites with good service support also redirect users to other e-Government sites they may need in order to complete their transactions. An additional feature that represents good service support is the provision of the opportunity for users to choose the most convenient method for receiving notifications about the status of their transaction, such as SMS, email etc.
- **Efficiency** on the other hand assumes that for an e-Government website to provide a good service, it needs to be more efficient than traditional means in two ways. Firstly, the e-Government site has to be easy to use so that users can smoothly navigate the site, access historical transactions, and manage personal information. Secondly, the site also needs to provide usage efficiency by making it faster for users to find relevant information while alleviating the administrative burden and number of steps they need to go through for completing their service requests.

## 5.2.2 Employee Readiness

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Employee Readiness is the second theme from the analysis. It refers to the internal process of the government organization. Specifically, this theme refers to the readiness of employees in moving from traditional modes of providing services to electronic means and in maintaining the provision of such services at high standards. Ability and Engagement of employees are the two indicators under this theme.

- **Ability** refers to employees' capacity in providing electronic services. Possessing enhanced computer skills is necessary for learning specific computer software and operating programs to deal with specific challenges that may face them while delivering service requests. Since ability can be provided and developed, the organization also has some responsibility towards the employees in order to foster the needed capabilities within the organization.
- **Engagement** on the other hand, is also necessary for employees to provide quality electronic services. Engaged employees are those who are motivated enough and willing to collaborate amongst each other in order to migrate from traditional means to e-services. Having the ability to do so is necessary but not enough for successfully implementing and providing e-services.

## 5.2.3 Policy & Management

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This is the third theme from the analysis. Just like the previous theme, this one also refers to internal organizational matters namely, legal and contextual environment, change management, budget, and revenue.

- **Legal and contextual environment** refers to the existence of a legislative framework that allows smooth decisions around moving or providing e-services. It also refers to the support provided by government policy makers as well as management within a particular government organization in order to successfully implement the e-service.
- **Change management** was also found to be an important aspect of management that is necessary for a successful e-service implementation. This refers to the complexity of transforming and re-engineering processes from a traditional fulfillment mode to an electronic mode, as well as the speed of access to the internal information needed in order to execute such transformations. Change management also depends on the thoroughness of the planning phase and the clarity of the policies developed to support the process transformation in the future.
- **Budget** is another aspect that was found to be important particularly for the development, customization, and maintenance of the e-service. When the cost of development, customization and maintenance of an e-service exceed the allocated budget, problems may arise and may impact the success of the e-service in the future. Continuous investment in developing and maintaining an e-service can only be achieved when clear policies and managerial decision are in place and tailored specifically for the purpose of delivering the e-service.

- **Revenue** should be substantial enough for the stakeholders involved in e-services fulfilment to remain productive. This can be done by creating clear policies, contractual agreements to share cost, risk and benefit and opportunity among different engaging parties. Here technology can play a big role in improving the revenue to providers, while keeping the e-service cost to citizens either the same or possibility lower than traditional means.

#### 5.2.4 Technology

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This is the fourth theme from the analysis. It refers to the pre-existence of technological capabilities in the country that may contribute to the success of e-Government services. Infrastructure, security, and alignment are the three indicators that illustrate this theme.

- **Infrastructure** refers to the availability of prerequisites such as e-signatures or e-payments. The lack of such prerequisites may hinder the utilization of e-Government services. Other capabilities, such as internet availability and speed across the different regions in a country, may also be problematic especially when they are not sufficient enough to support fast transactions. These can have strong impact on user adoption of the e-Government service.
- **Security** is another related technology element. It depends on attitudes of people using e-services. On one hand, employees working on the fulfilment of e-services may have an attitude towards risk that hinder them from using external resources when needed out of fear of losing control over sensitive information. On the other hand, users in the country may have perceptions of high levels of threat to the privacy of their information, which may slow down users' adoption of e-services. Hence governments should use the appropriate means to relieve the fear on users and employees towards security issues. For instance, users fear can be removed by having security sign on the e-service website.
- **Alignment** refers to the interoperability between various government electronic systems. Incompatibility in data formats may be problematic for the successful development and implementation of e-Government services especially when the services are interdependent. This indicator measures the collaboration levels between the different government departments to deliver coherent and interoperable e-services.

#### 5.2.5 Internal & External Impact

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This is the fifth and final theme that emerged from the analysis. Providers perceived that organizational, social, environmental, and economic outcomes are also important indicators of the success of e-Government services.

- **Organizational Outcome** is an aspect that refers to desirable end-results at the level of an organization. First, a successful e-service should lead to reduced costs when compared to traditional means. An efficient e-Government provider should also increase the efficiency of providers by increasing the productivity of government staff.



- **Social Outcomes** represent the impact that e-Government services may have on the society as a whole in terms of transparency, participation, satisfaction and outreach. Successful e-services should decrease levels of corruption and increase levels of governmental transparency and accountability. They should also increase interaction with users in a way that improves relationships between the government and community; consequently increasing the engagement of stakeholders in government policy making. Social impact can also be measured through the extent to which the e-service is expanding the reach to users.
- **Environmental Outcomes** mainly relate to the management of pollution and environmental waste. This indicator measures the degree of improvement provided by the introduction of e-services versus the traditional ones. For example it is foreseen that e-services will contribute towards the reduction of the amount of paperwork involved in fulfilling services. Furthermore, providers will be able to electronically transfer information instead of relying on traditional inefficient internal transportation means.

### 5.3 e-Government Roadmap Structure

This table below provides details of the roadmap structure for Nigeria's e-Government implementation.

Policy	Strategy
Leadership	<ul style="list-style-type: none"> <li>• Establish the Presidential Committee on ICT/e-Government</li> <li>• Identify e-Government Champions</li> </ul>
ICT/e-Gov Literacy	<ul style="list-style-type: none"> <li>• Expand Capacity Building of e-Government</li> <li>• Publicize e-Government Initiatives</li> </ul>
Financial Resources	<ul style="list-style-type: none"> <li>• Draw Special Budgeting on e-Government</li> <li>• Create Variety of Funding Sources</li> </ul>
Global Standard Infrastructure and Service	<ul style="list-style-type: none"> <li>• Develop Adequate Infrastructure &amp; Application</li> <li>• Strengthen R&amp;D and Education in ICT</li> </ul>
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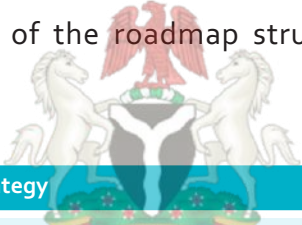
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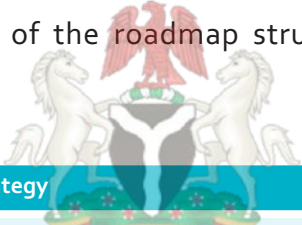
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Table 5.1 e-Government Roadmap Structure

### 5.3.1 Twenty-Five (25) Key e-Government Master Plan Initiatives



Fig. 5.1 Governance Initiatives within the Social Subsystem



Fig. 5.2 Initiatives within the Socio-Technical Subsystem

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Fig. 5.1 Governance Initiatives within the Social Subsystem



Fig. 5.2 Initiatives within the Socio-Technical Subsystem

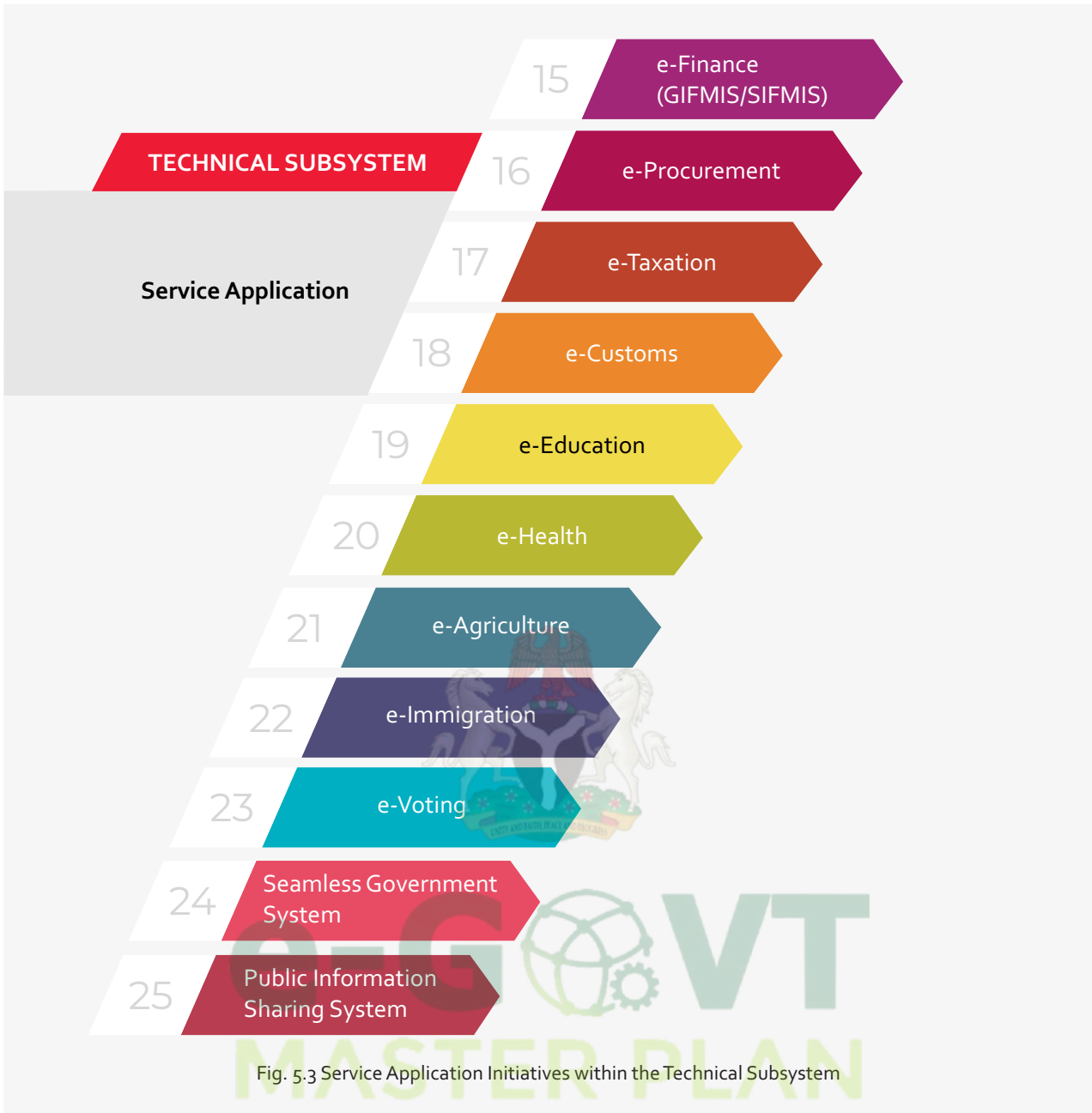


Fig. 5.3 Service Application Initiatives within the Technical Subsystem

FEDERAL MINISTRY OF COMMUNICATIONS



## 5.3.2 Key Implementation Strategies

Strategy	Current Issues	Counter Measures	Actions Required
<b>Establish the Presidential Committee on ICT/e-Government</b>	<ul style="list-style-type: none"> <li>• Inconsistent government policy</li> <li>• Poor implementation</li> <li>• Slow legislative process</li> <li>• Not on the priority list of government</li> <li>• Lack of advisory group at highest level</li> <li>• Lack of understanding and support from the leadership</li> <li>• Lack of synergy between MDAs and parastatals</li> </ul>	<ul style="list-style-type: none"> <li>• Consistent &amp; stable government policy</li> <li>• Strong implementation</li> <li>• Fast legislative process</li> <li>• Advisory group at highest level</li> <li>• Enforce collaboration amongst MDAs</li> </ul>	<ul style="list-style-type: none"> <li>• Adopt e-Government as a national agenda</li> <li>• Legislate the e-Government Act</li> <li>• Creation of Presidential Committee on ICT/e-Government</li> <li>• Transfer the Broadband Council under the Presidential Committee on ICT/e-Government</li> </ul>
<b>Identify e-Government Champions</b>	<ul style="list-style-type: none"> <li>• Lack of leadership vision on e-Government</li> <li>• Lack of understanding on the part of leaders</li> <li>• Low leadership support</li> </ul>	<ul style="list-style-type: none"> <li>• Identify proficient and experienced individuals</li> <li>• Expand leadership vision on e-Government at the cabinet level</li> <li>• Change management process</li> <li>• Create motivation/incentive systems</li> </ul>	<ul style="list-style-type: none"> <li>• Identify key project champions</li> <li>• Build critical mass of eLeaders and eChampions</li> <li>• Develop specialized training of the officers of the Federal and State</li> </ul>
<b>Expand Capacity Building of e-Government</b>	<ul style="list-style-type: none"> <li>• Lack of ICT/e-Government skills</li> <li>• Lack of ICT/e-Government training</li> <li>• Lack of transparency</li> <li>• Lack of commitment</li> <li>• Inadequate knowledge</li> </ul>	<ul style="list-style-type: none"> <li>• Basic ICT/e-Government education</li> <li>• ICT/e-Government training</li> <li>• Understanding of e-Government</li> <li>• Expand training facilities</li> <li>• Develop targeted training programs for ICT/e-Government</li> </ul>	<ul style="list-style-type: none"> <li>• Develop capacity building at the Federal Government and the State Government</li> <li>• Develop capacity building for citizens</li> <li>• Develop capacity building in Public Private Partnership</li> <li>• Expand training facilities</li> </ul>
<b>Publicize e-Government Initiatives</b>	<ul style="list-style-type: none"> <li>• Ignorance of ICT/e-Government</li> <li>• Lack of recognition of ICT/e-Government importance</li> <li>• High rate of ICT/e-Government illiteracy</li> <li>• Citizens apathy</li> </ul>	<ul style="list-style-type: none"> <li>• Basic ICT/e-Government education</li> <li>• ICT/e-Government training</li> <li>• Understanding of e-Government</li> <li>• Increase advocacy and sensitization</li> <li>• Adequate knowledge</li> </ul>	<ul style="list-style-type: none"> <li>• Conduct publicity campaign for e-Government</li> <li>• Create national e-Government awards</li> <li>• Establish citizen-service charter</li> <li>• Promote civic engagement in policy formulation</li> <li>• Create proper awareness forum</li> <li>• Develop Information Access Centre</li> </ul>
<b>Draw Special Budgeting on e-Government</b>	<ul style="list-style-type: none"> <li>• Lack of financial support on e-Government</li> <li>• Low priority in the government</li> <li>• Poor funding of e-Government projects</li> </ul>	<ul style="list-style-type: none"> <li>• Proper budgeting</li> <li>• Adequate funding</li> <li>• Special funding on e-Government</li> <li>• E-Government importance awareness</li> </ul>	<ul style="list-style-type: none"> <li>• Create and utilize e-Government promotion fund</li> </ul>
<b>Create Variety of Funding Sources</b>	<ul style="list-style-type: none"> <li>• Weak funding from the government</li> <li>• Limited support from International aid institutions</li> <li>• Lack of affordability</li> <li>• Poor project planning and cost overruns</li> </ul>	<ul style="list-style-type: none"> <li>• Find reliable, diverse, ongoing, and flexible funding approach</li> <li>• Employ alternative financial instrument</li> <li>• Strengthen partnership with private sectors and international donors</li> </ul>	<ul style="list-style-type: none"> <li>• Finance e-Government projects including infrastructure development by issuing bonds, on either the domestic or international capital markets</li> <li>• Develop PPP model for implementing e-projects</li> <li>• Utilise outsourcing and software licensing</li> <li>• Co-funding through advertising</li> </ul>

Strategy	Current Issues	Counter Measures	Actions Required
<b>Strengthen R&amp;D and Education in ICT</b>	<ul style="list-style-type: none"> <li>• Unstable power supply</li> <li>• Low broadband penetration</li> <li>• Poor Internet penetration</li> <li>• Lack of Integrated national data centre</li> <li>• Immature &amp; Expensive Infrastructure</li> <li>• Poor maintenance culture on the existing infrastructure</li> <li>• Low web presence</li> </ul>	<ul style="list-style-type: none"> <li>• Improve infrastructure</li> <li>• Encourage Public-Private-Partnership</li> <li>• Introduce subsidiary</li> <li>• Introduce waiver and tax</li> <li>• Train professionals for maintenance</li> <li>• Prepare sustainable plan &amp; management</li> <li>• Analyse requirements</li> </ul>	<ul style="list-style-type: none"> <li>• Develop action plan on infrastructure</li> <li>• Develop action plan on service application which are key initiatives</li> </ul>
<b>Develop Adequate Infrastructure &amp; Application</b>	<ul style="list-style-type: none"> <li>• Low ICT literacy</li> <li>• Lack of requisite skills</li> <li>• Lack of professionalism</li> <li>• Lack of adequately trained professionals</li> <li>• Inadequate or limited skilled ICT professionals in the public service</li> <li>• Lack of R&amp;D facilities</li> </ul>	<ul style="list-style-type: none"> <li>• Expand education in ICT</li> <li>• Cultivate ICT professionals</li> <li>• Retrain ICT professionals</li> <li>• Improve R&amp;D facilities</li> </ul>	<ul style="list-style-type: none"> <li>• Facilitate mobility of students and staff and professional mobility of graduates</li> <li>• Promote internationalization and global competitiveness</li> <li>• Raise quality of ICT education and contribute to economic development and growth</li> </ul>
<b>Establish Legal Framework for e-Government</b> Current Issues	<ul style="list-style-type: none"> <li>• Lack of capacity on e-Government laws and legislations</li> <li>• Lack of understanding on the need for the legal framework</li> <li>• Slow legislative process</li> <li>• Inadequate representation of ICT professionals at legislative level</li> </ul>	<ul style="list-style-type: none"> <li>• Strong sanctions</li> <li>• Remove conflict in policy Implementation</li> <li>• Adequate representation of ICT professionals at legislative level</li> <li>• Improve transparency</li> <li>• Remove resistance to change</li> </ul>	<ul style="list-style-type: none"> <li>• Establish national legal framework</li> </ul>
<b>Establish Organizational Framework for e-Government</b>	<ul style="list-style-type: none"> <li>• Ineffective operation of the steering committees</li> <li>• Inadequate institutional structure</li> <li>• Inconsistency and lack of change management</li> <li>• Unending rivalry among Government Institutions</li> <li>• Lack of information exchange and sharing</li> </ul>	<ul style="list-style-type: none"> <li>• Empower coordinating body</li> <li>• Reorganise institutional structure</li> <li>• Increase cooperation / synergy amongst MDAs</li> <li>• Improve transparency</li> <li>• Remove resistance to change</li> </ul>	<ul style="list-style-type: none"> <li>• Business process reengineering for e-Government</li> <li>• Build a dedicated organization structure for e-Government implementation</li> </ul>

Table 5.2 e-Government Implementation Strategy Analysis

## 5.4 Action Plan for Each Project Initiative

This section provides summary of the 25 selected projects to be implemented under the e-Government Masterplan. The Selected Initiatives to achieve the 10 Strategies in the e-Government Masterplan are as below:

### 5.4.1 Initiative #1: Establish Presidential Committee on ICT/e-Government

The prospective Presidential Committee on ICT/e-Government should consist of stakeholders from the government and private sectors-cutting across all MDA's, ministries and agencies. The ordinary citizen, legal experts, IT experts, and industry leaders are included as well. The committee will see to the following:

- Planning and implementation of the five years e-Government Master Plan in Nigeria
- Establish a legal and organizational framework and policies to drive the implementation of e-Government projects in the country.
- Work with the legislative and executive arms of government to facilitate the passing of an e-Government bill into law as soon as possible.

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<b>Strengthen R&amp;D and Education in ICT</b>	<ul style="list-style-type: none"> <li>• Unstable power supply</li> <li>• Low broadband penetration</li> <li>• Poor Internet penetration</li> <li>• Lack of Integrated national data centre</li> <li>• Immature &amp; Expensive Infrastructure</li> <li>• Poor maintenance culture on the existing infrastructure</li> <li>• Low web presence</li> </ul>	<ul style="list-style-type: none"> <li>• Improve infrastructure</li> <li>• Encourage Public-Private-Partnership</li> <li>• Introduce subsidiary</li> <li>• Introduce waiver and tax</li> <li>• Train professionals for maintenance</li> <li>• Prepare sustainable plan &amp; management</li> <li>• Analyse requirements</li> </ul>	<ul style="list-style-type: none"> <li>• Develop action plan on infrastructure</li> <li>• Develop action plan on service application which are key initiatives</li> </ul>
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Table 5.2 e-Government Implementation Strategy Analysis

# e-GOV MASTER PLAN

## 5.4 Action Plan for Each Project Initiative

### FEDERAL MINISTRY OF COMMUNICATIONS

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- Work with the legislative and executive arms of government to facilitate the passing of an e-Government bill into law as soon as possible.

Strategy	Current Issues	Counter Measures	Actions Required
<b>Strengthen R&amp;D and Education in ICT</b>	<ul style="list-style-type: none"> <li>• Unstable power supply</li> <li>• Low broadband penetration</li> <li>• Poor Internet penetration</li> <li>• Lack of Integrated national data centre</li> <li>• Immature &amp; Expensive Infrastructure</li> <li>• Poor maintenance culture on the existing infrastructure</li> <li>• Low web presence</li> </ul>	<ul style="list-style-type: none"> <li>• Improve infrastructure</li> <li>• Encourage Public-Private-Partnership</li> <li>• Introduce subsidiary</li> <li>• Introduce waiver and tax</li> <li>• Train professionals for maintenance</li> <li>• Prepare sustainable plan &amp; management</li> <li>• Analyse requirements</li> </ul>	<ul style="list-style-type: none"> <li>• Develop action plan on infrastructure</li> <li>• Develop action plan on service application which are key initiatives</li> </ul>
<b>Develop Adequate Infrastructure &amp; Application</b>	<ul style="list-style-type: none"> <li>• Low ICT literacy</li> <li>• Lack of requisite skills</li> <li>• Lack of professionalism</li> <li>• Lack of adequately trained professionals</li> <li>• Inadequate or limited skilled ICT professionals in the public service</li> <li>• Lack of R&amp;D facilities</li> </ul>	<ul style="list-style-type: none"> <li>• Expand education in ICT</li> <li>• Cultivate ICT professionals</li> <li>• Retrain ICT professionals</li> <li>• Improve R&amp;D facilities</li> </ul>	<ul style="list-style-type: none"> <li>• Facilitate mobility of students and staff and professional mobility of graduates</li> <li>• Promote internationalization and global competitiveness</li> <li>• Raise quality of ICT education and contribute to economic development and growth</li> </ul>
<b>Establish Legal Framework for e-Government</b> Current Issues	<ul style="list-style-type: none"> <li>• Lack of capacity on e-Government laws and legislations</li> <li>• Lack of understanding on the need for the legal framework</li> <li>• Slow legislative process</li> <li>• Inadequate representation of ICT professionals at legislative level</li> </ul>	<ul style="list-style-type: none"> <li>• Strong sanctions</li> <li>• Remove conflict in policy Implementation</li> <li>• Adequate representation of ICT professionals at legislative level</li> <li>• Improve transparency</li> <li>• Remove resistance to change</li> </ul>	<ul style="list-style-type: none"> <li>• Establish national legal framework</li> </ul>
<b>Establish Organizational Framework for e-Government</b>	<ul style="list-style-type: none"> <li>• Ineffective operation of the steering committees</li> <li>• Inadequate institutional structure</li> <li>• Inconsistency and lack of change management</li> <li>• Unending rivalry among Government Institutions</li> <li>• Lack of information exchange and sharing</li> </ul>	<ul style="list-style-type: none"> <li>• Empower coordinating body</li> <li>• Reorganise institutional structure</li> <li>• Increase cooperation / synergy amongst MDAs</li> <li>• Improve transparency</li> <li>• Remove resistance to change</li> </ul>	<ul style="list-style-type: none"> <li>• Business process reengineering for e-Government</li> <li>• Build a dedicated organization structure for e-Government implementation</li> </ul>

Table 5.2 e-Government Implementation Strategy Analysis

# e-GOV MASTER PLAN

## 5.4 Action Plan for Each Project Initiative

### FEDERAL MINISTRY OF COMMUNICATIONS

This section provides summary of the 25 selected projects to be implemented under the e-Government Masterplan. The Selected Initiatives to achieve the 10 Strategies in the e-Government Masterplan are as below:

#### 5.4.1 Initiative #1: Establish Presidential Committee on ICT/e-Government

The prospective Presidential Committee on ICT/e-Government should consist of stakeholders from the government and private sectors-cutting across all MDA's, ministries and agencies. The ordinary citizen, legal experts, IT experts, and industry leaders are included as well. The committee will see to the following:

- Planning and implementation of the five years e-Government Master Plan in Nigeria
- Establish a legal and organizational framework and policies to drive the implementation of e-Government projects in the country.
- Work with the legislative and executive arms of government to facilitate the passing of an e-Government bill into law as soon as possible.

- Help achieve the objective of the e-Government project; that is 'helping to positively affect development by strengthening the efficiency and transparency of the public administration services, promoting the ICT industry and reducing the transaction cost and allocating the resources efficiently and increasing the productivity in line with Nigeria's e-Government Vision
- Help in providing periodic reports on the progress of the Master Plan, and facilitate the coordination, collaboration and engagement of the various stakeholders during implementation.

The following figure depicts the relationship between Presidential Committee on ICT/e-Government and key government organizations.

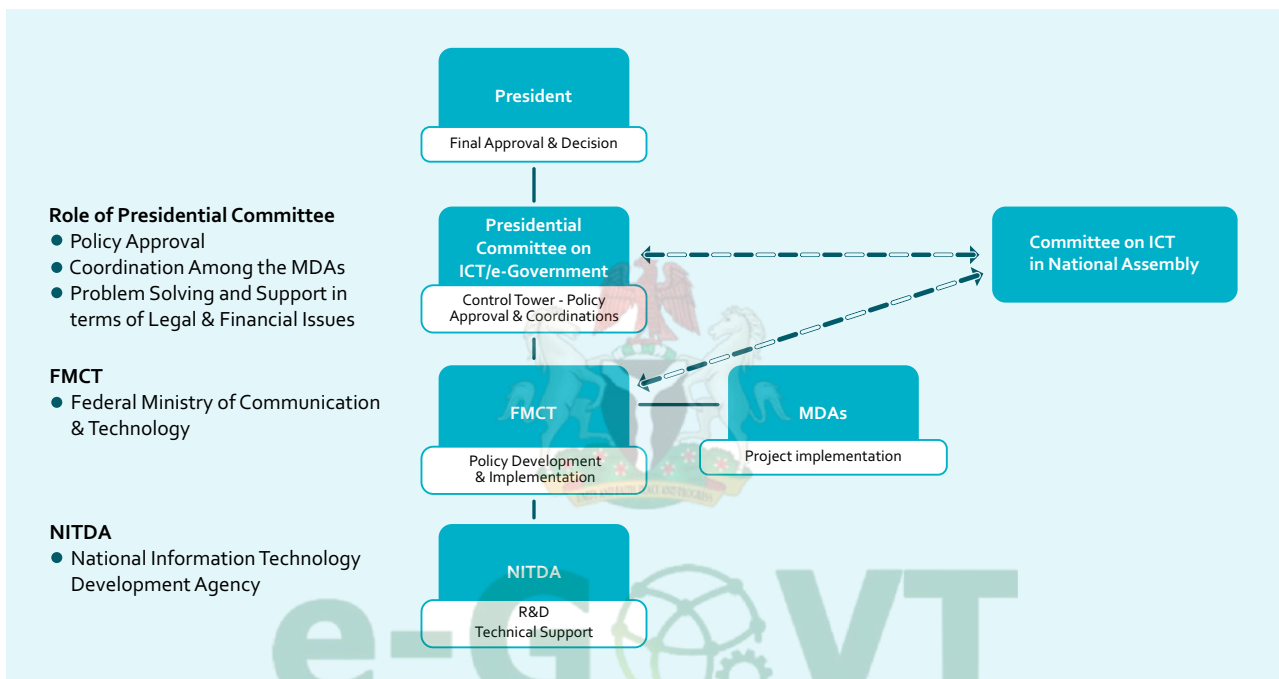


Fig. 5.4 Presidential Committee and Key Government Organizations

#### 5.4.2 Initiative #2: Develop a Talent Pool of e-Government Champions

Federal Government e-Government training centre at PSIN should be developed with world class rating programs and general activities. However, in order to develop a successful program that can result in a talent pool of e-Government Champions, training programs must be arranged based on the different job roles or functions as analyzed below:

- **E-Government Champions Program:** designed politicians and administrative Heads of Departments, who may not be concerned with project details, but who can provide leadership and an enabling environment.
- **Chief Information Officers:** These categories of individuals must be equipped with comprehensive skills which will enable them to effectively implement e-Government project from conceptualization to complete rollout.
- **Chief Technology Officers (CTO):** Provide the CTO's with knowledge on advanced topics like Security, IT Architecture, Standardizations etc. to supplement their skill set appropriately.
- **Users of IT Systems in Government Departments:** Will get trained specifically on Application Package as part of the project implementation process. A large number to be trained per project.

- Help achieve the objective of the e-Government project; that is 'helping to positively affect development by strengthening the efficiency and transparency of the public administration services, promoting the ICT industry and reducing the transaction cost and allocating the resources efficiently and increasing the productivity in line with Nigeria's e-Government Vision
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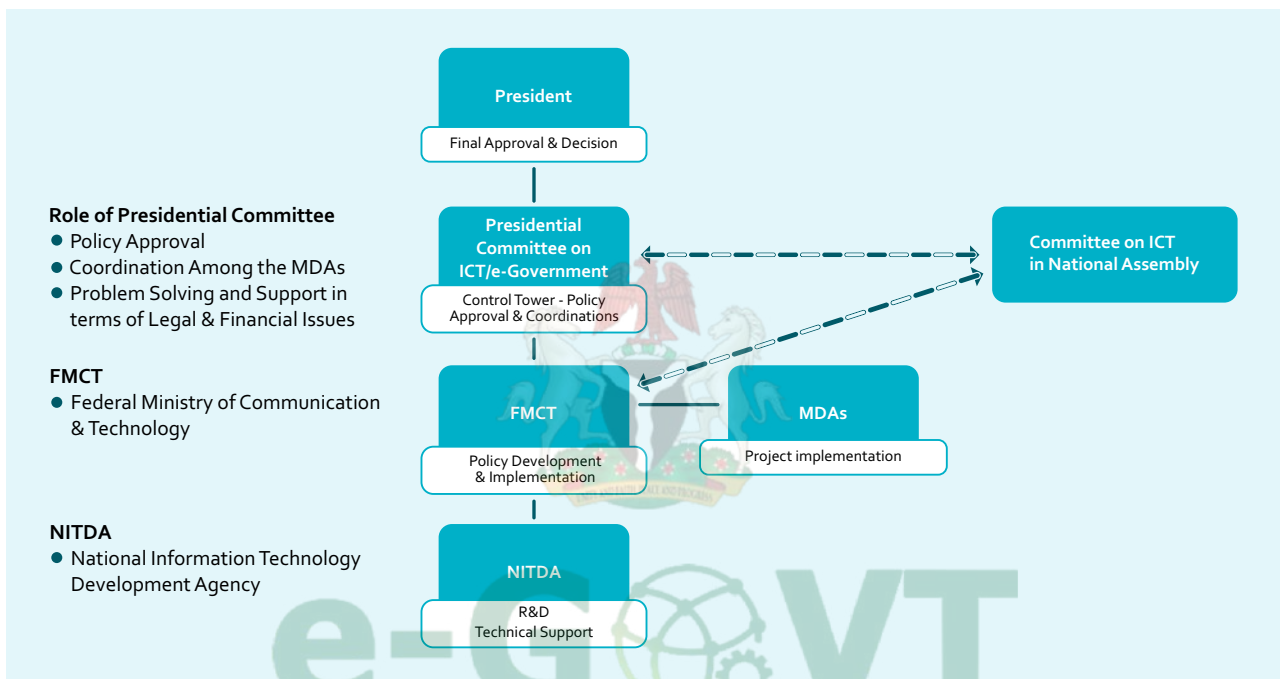


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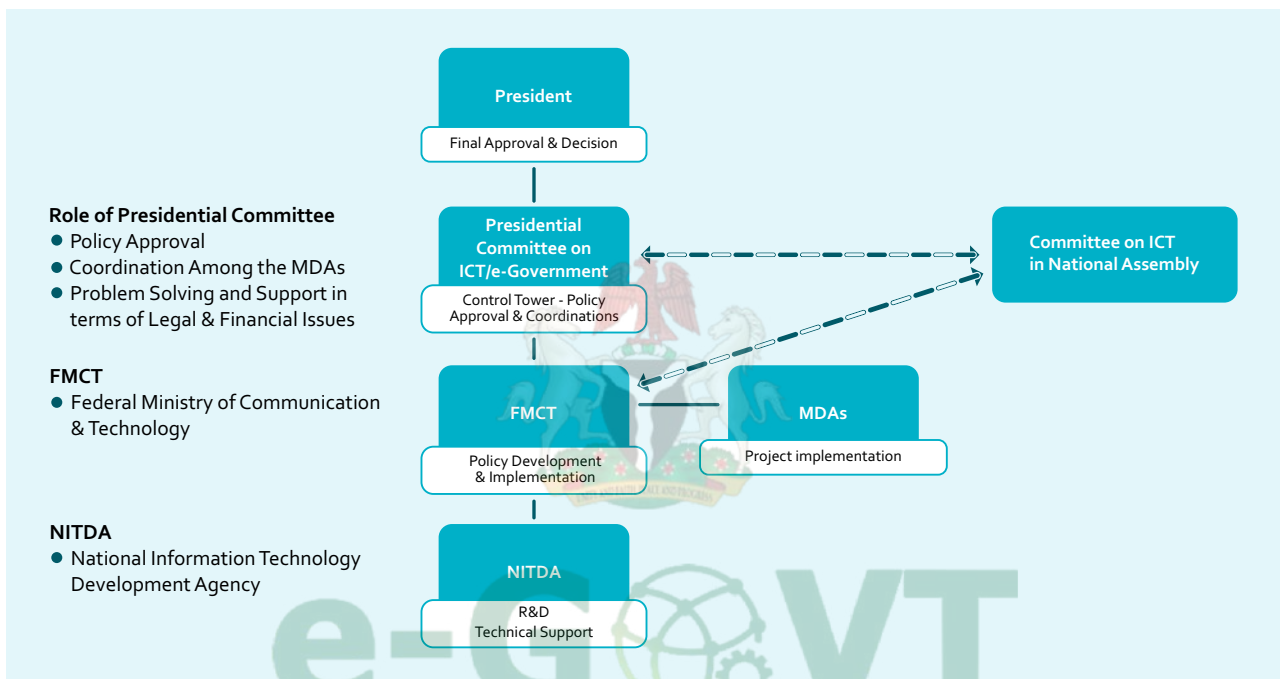


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- External Users: These may include Company Secretaries and Chartered Accountants acting on behalf of companies.
- General IT Awareness and Training for Nigerian citizens.

### 5.4.3 Initiative #3: Develop Capacity Building Program

For successful e-Government in Nigeria, capabilities must be built at all levels from the top leadership to the user of e-Government services. It is equally important to foster an attitude and mindset that is receptive to ICT based administration and delivery of services. Public administration personnel must be divided into groups according to a specific taxonomy so as to schedule the most adequate training for the most suitable actors.

The objectives of the Capacity Building Program are as follows:

- To make public servants understand e-Government not only as a technology but also a tool for government innovation and efficient service delivery to the people.
- To foster an environment for smooth coordination in terms of reducing possible conflicts of interests among MDAs in the implementation process of e-Government system
- To minimize resistance from staff of MDAs to the adoption of e-Government systems
- To develop ICT related capacity building program for citizens
- To build capacity in public private partnerships for e-Government implementation for commercially viable projects.

#### Strategies For Civil Servants:

- Set priorities on the training programs for top leaders and higher officials.
- Develop special training programs for IT/e-Government experts who provide the policy makers and implementation teams with full time support.
- Set up independent training institutions for e-Government under the FMoC, which should be able to work out a self-sustaining business and financial model.
- Maximize the utilization of existing training institutions by improving their programs/facilities.
- Recognize and reward skilled personnel by developing proper assessment and certification.

#### For Citizens:

- Target to train every single Nigerian.
- Mobilize all relevant tools for capacity building amongst citizens.
- Develop Public Private Partnership (PPP) models for ICT/e-Government training programs.

#### Who Must Be Trained

For successful e-Government in Nigeria, capabilities must be built at all levels from the top leadership to the user of e-Government services. It is equally important to foster an attitude and mindset that is receptive to ICT based administration and delivery of services.

Public administration personnel must be divided into groups according to a specific taxonomy so as to schedule the most adequate training for the most suitable actors.

- Legislators
- Politicians.
- Top Management Civil Servants
- Staff-Level Civil Servants
- ICT-Related Civil Servants



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Item	2015	2016	2017	2018	2019	2020
The Federal Government	E-Executive Program					
	Other Programs					
State Government	10 States	22 States	36 States			
CDP By Commissioned Education						
Cyber Training						
Develop Capacity Building in PPP						

Table 5.3 Tentative Schedule: Develop Capacity Building Program

#### 5.4.4 Initiative #4: Conduct Publicity Campaign for e Government

Awareness is a critical factor to the success of e-Government. E-government calls for new roles and skills for both public servants and the private sector. It is the starting point for the behavioral change that is called for by both citizens and public servants, creating the foundation for understanding and ultimately support for the new environment created by e-Government. It comes from communications and marketing by the government to its citizens, businesses and employees, more fundamentally, awareness comes from the accumulated experience of citizens interacting with government and of public servants interacting with their organizations.

The primary objective is to enlighten the general public on the potential benefits of e-Government to service delivery.

The strategies are to:

- Promote ICT-awareness for top leadership
- Drive Publicity campaigns supported by the political leaders
- Promote and advertise the government initiatives
- Reduce digital divide

#### Expected Effects

- Creating public awareness has the potential to provide a precursor for community buy-in;
- Creating public awareness has the potential to create “champions” at national governmental, local or civil society levels, as well as among the Youth, Business Community, and other Beneficiary Communities;
- Creating public awareness has the potential to endow e-Government in a jurisdiction with a life and identity of its own which will continue beyond the seed-funding phase
- Qualitative effects:
  - Spread understanding of e-Government
  - Increase advocacy and sensitization
- Expand adequate knowledge

Program	2015		2016		2017		2018		2019		2020	
	1	2	1	2	1	2	1	2	1	2	1	2
1. Reduce digital divide (%)	10	20	30	40	50	60	65	70	75	80	80	80
(1) Provide communal access through CRC, RITC, IT Centre and establish 100 new Centres (CRC or RITC) per year												
(2) Provide incentives to the private sector to donate equipment and training												
2. Improve e-literacy (%)	10	20	30	40	50	60	65	70	75	80	80	80
(1) Ensure all contents are in local languages												
(2) Develop applications that use speech or pictures												
(3) Include all educational components in e-Government projects												

Table 5.4 Tentative Schedule: Conduct Publicity Campaign for e-Government

#### 5.4.5 Initiative #5: Develop Information Access Centre

As a means to develop rural communities in this ICT era, existing Public Access Venues (PAVs) and Knowledge Access Venues (KAVs) can be re-modeled to Information Village (INVIL) and Smart Class respectively. This is in line with the benchmarked Governments who in their e-Government development stage, implemented a regional Informatization Project as a means to develop rural communities as information era evolved.

INVIL will establish self-sustainable village communities that are capable of continued growth by creating information network environments and improving the income of residents through e-commerce in agricultural, fishing, and mountain regions usually excluded from information networks.

The main areas of the INVIL Projects will include:

- Establish the IT infrastructure
- Secure the space or building for the Village Information Centre
- Distribute free PCs to households
- IT training for residents
- Develop Information Contents
- Establish an Operation Organization
- Business Model development and Marketing

For INVIL centers to support e-commerce activities, they should serve as a computer learning centre and community information centre.

## 7 MAIN AREAS OF THE PROJECT

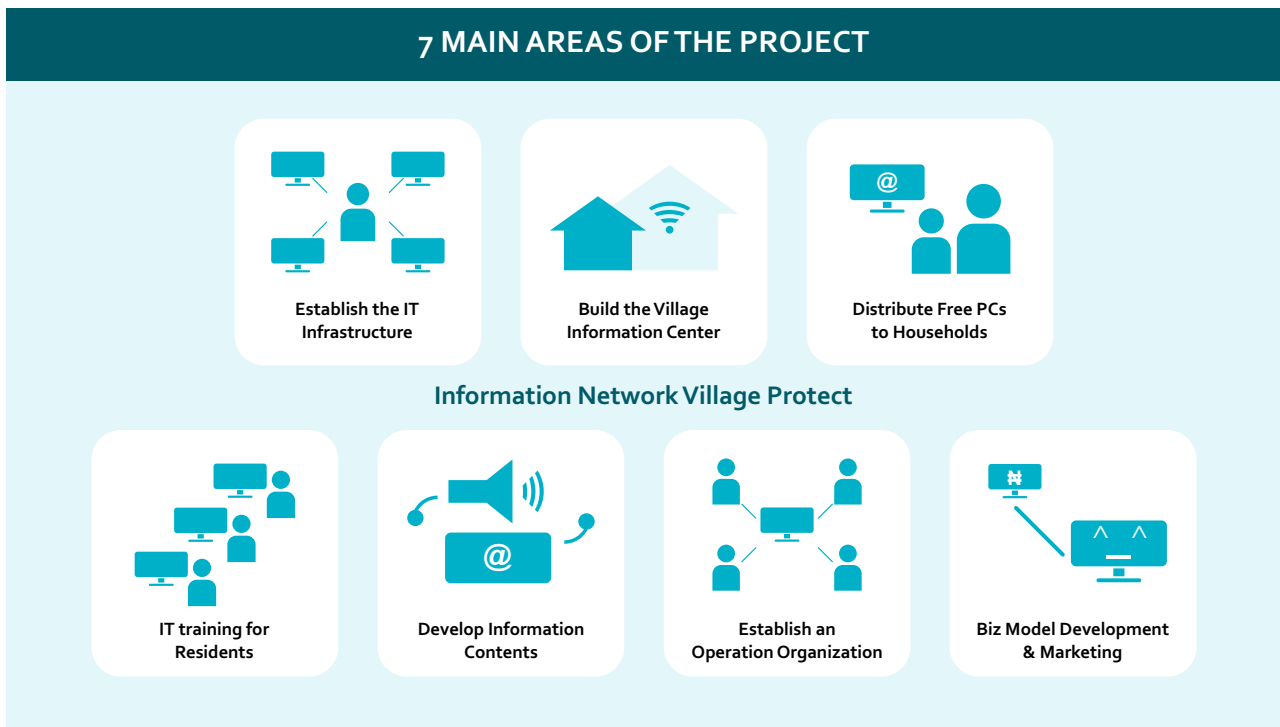


Fig 5.5 Main Areas of the INVIL initiative

The KAVs can be re-modelled and empowered by relevant technologies and qualified technicians for the next generation of education and training system with an interactive learning environment. The KAVs can be equipped with smart class solutions as follows:

- LCD- or LED-based Interactive Whiteboard system
- Interactive Education Support Solution
- Tablet Pcs



Fig 5.6 Smart Class: To-Be Model of Knowledge Access Venue

Items	2014	2015	2016	2017	2018	2019	2020
Harmonizing authority and implementation body							
Blueprint, Concept paper, Feasibility Study							
INVIL Pilot Projects							
Smart Class pilot projects							
INVIL Main Projects							
Smart Class main projects							
Capacity building							

Table 5.5 Tentative Schedule: Develop Information Access Center

### 5.4.6 Initiative #6: Expand Education in ICT and Enhance Quality of ICT Education

The essence of human skills and capacity development in and for e-Government cannot be over-emphasized. It is a continuous learning.

E-Government skills & capacities needed to be built are:

- Design and development of e-Government solutions
- Evaluation, procurement and management of technology solutions
- Training and sensitization of the businesses
- Training citizens to leverage on e-Government solutions.

To embark on above mission, government should first assess the quality & quantity of the existing human resource pool in the country.

#### Objectives

- Expand ICT literacy in government by training ICT skilled manpower in the sector
- Increase ICT training facilities (basic & professional)
- Enhance ICT education in schools and colleges
- Raise basic literacy levels in the country and train e-literate citizens

#### The Strategies include:

- Improve ICT awareness among top leaders.
- Develop Capacity Building Programs for civil servants:
  - By conducting ICT training for public servant according to their level of ICT literacy;
  - By expanding the provision of e-learning; and
  - By developing and including ICT training Programs in the Federal Government Training Institutions (see To-Be Model and Action Plan for Initiative #4).
- Develop and train ICT professionals within the Government:
  - By assisting ICT professionals in the Government to obtain international ICT Certifications; and
  - By establishing nodal agencies.

- Facilitate promotion & proliferation of ICT industry:
  - By introducing training programs to develop ICT experts; and
  - By establishing ICT-related departments at universities and provide assistants.
- Sensitize enough to the use of ICT in business operations.
- Educate citizens to become ICT literate:
  - By introducing programs that will cater to all classes of citizens irrespective of their occupations, literacy level, disabilities and age. and
  - By expanding Community Communications Centre for improving ICT literacy

#### 5.4.7 Initiative #7: Create and Utilize e-Government Promotion Fund

E-Government requires a huge amount of financial input for each stage. As such Government can resolve to allocate more funds to e-Government related projects by developing fiscal policy that ensures a percentage of Government and private sector income is contributed to e-Government development in the country. The objectives for creating and utilizing promotion funds for e-Government is to ensure that lack of funds does not become a challenge.

##### To-Be Model for Funding e-Government Implementation

- Federal e-Government Budget Request: Aspire to grow investment in e-Government to 1% of the national budget.
- A new way to secure the budget is the Informatization Promotion Fund which would be created in order to invest in the research and development of ICT industry and promote its applications to society.
- The budget for e-Government can be separated from the Informatization Promotion Fund, and the appropriate ministry should be designated as a major implementation agency responsible for integrating and implementing the lump sum budget for e-Government which will be separately allocated to each ministry as a part of regular budget in order to enhance cross-agency integration and linkage.

##### Directions and Strategies

- Direct Government Intervention:
  - Government can resolve to allocate more funds to e-Government related projects
  - Develop fiscal policy that ensures a percentage of Government and private sector income is contributed to e-Government development
  - Evaluate e-government endeavors under a cost-benefit lens in order to justify the fund that is allocated to such programs.

#### 5.4.8 Initiative #8: Funding through a Variety of Financing Instruments

Government shall treat e-Government projects as capital expenditures. Funding through long-term financing instruments, such as bonds or leasing arrangements that guarantee long-term funding and smooth expenditures for large investments by spreading expenses over several periods.

## Directions and Strategies

- **Issuing Bonds (domestic or international capital markets):** Government can finance e-Government projects through issuance of bonds (domestic or international capital markets).
- **Public Private Partnership:** The most successful version of public-private partnership is the Private Finance Initiative, where the project is exclusively funded by private capital. The private sector can also contribute technical know-how.
- **Other forms of funding for e-Government:**
  - Outsourcing: companies do also offer to install and pay for new systems and also make a monthly charge for their use
  - Software leasing: Companies can choose to finance the use of software over an agreed period of time and then having the option of buying the software license (or licenses) at a predetermined price at the end of that period.
- **Long-run cost recovery of e-government projects:** Irrespective of the mix of public and private management of e-government projects, long-run cost recovery rests on three options, namely user charges, general budget, and co-funding through advertisements.

### 5.4.9 Initiative #9: Laws Necessary for e-Government

In order to establish a proper legislative framework, some of the current laws related to information management and government services should be revised to be consistent with the legal bases as depicted below. It is suggested that the legal framework for the e-Government for Nigeria consists of three major parts: laws necessary for e-Government; general laws for the information society and; specific laws supporting e-Service in each MDA (as shown below).

#### i. e-Government Act

There are two distinct approaches to building legal framework of e-Government in other countries; to enact a single e-Government law separately from other component laws and/or; to make a cluster of component laws regarding e-Government such as laws on general administration, public information, electronic signature, and data protection, etc. The following items should be included in the e-Government Act of Nigeria:

- Definition of e-Government objectives; principles; and structure;
- Online provision of government information and services

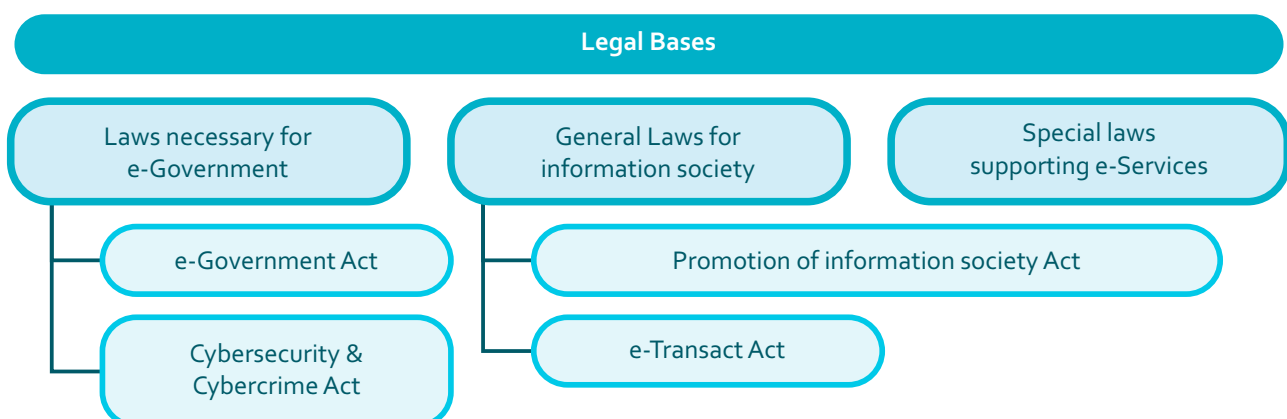


Fig 5.7 Legal Bases for e-Government in Nigeria



## ii. Cybersecurity and Cybercrime Act

This master plan places emphasis on 'national cyber-security strategy as an effective tool for assessing how severe Nigeria's cyber-security vulnerabilities, policies and additional legal reforms should be adopted. This strategy is also helpful to strengthen organizational cooperation and governance structure on cyber-securities and cybercrimes. Similar to e-Government that needs a whole-of-government approach, information security also poses leadership and organizational challenges.

Objectives and principles of Cybersecurity and Cybercrime Act:

- Protection of critical national information infrastructure
- Offences and penalties(punishment)
- Duties of service providers
- Administration and enforcement
- Search, arrest and prosecution
- Jurisdiction and international cooperation

### 5.4.10 Initiative #10: General Laws for the Information Society

#### i. ICT Promotion Act

Most of the challenges and issues in e-Government arise from the deficiency of comprehensive ICT policies and regulatory framework to facilitate effective deployment of networks, devices and services for the businesses as well as citizens. This act aims to promote the building of ICT infrastructure such as network and devices, usage of the ICT services in diverse areas, and the growth of ICT industry.

The following items should be included in the ICT Promotion Act of Nigeria:

- Definition of ICT promotion
- Role of government for ICT promotion of Nigeria
- Broadband Network Deployment
- ICT for knowledge economy in key economic and social areas
- Promotion of ICT industry
- Digital divide and awareness raising
- ICT Agencies & research institutes

#### ii. e-Transaction Act

For legally valid e-transactions, not only authentication of electronic records is necessary, signatures of the parties to the online transactions are also required. Offering e-transaction services online can present important legal questions about the validity of electronic versus paper documents. The Model Law on Electronic Commerce developed in 1996 by the UN Commission on International Trade Law (UNCITRAL) could be a good reference together with its sister law on electronic signature (2001). The following legal items as follows should be contained in the draft e-commerce act:

#### Objectives

- Electronic documents and records
- Electronic signature
- Personal data protection (private as well as public institutions)
- Electronic contracts
- Consumer protection
- Service providers and vendors

### 5.4.11 Initiative #11: Build the Dedicated Organization Structure for e-Government Implementation

One of the Critical Success Factors for effective implementation and sustainability of e-Government is establishment of a dedicated organization structure. Digital revolution leads to the useful construction of e-Government. The structure of e-Government is horizontal with partnership and also information and technology based. All stakeholders involved in e-Government projects participate in the process of decision making which is collaborative. Through collective decision making, public problems can be solved by IT-based partnership. The following is thus proposed.

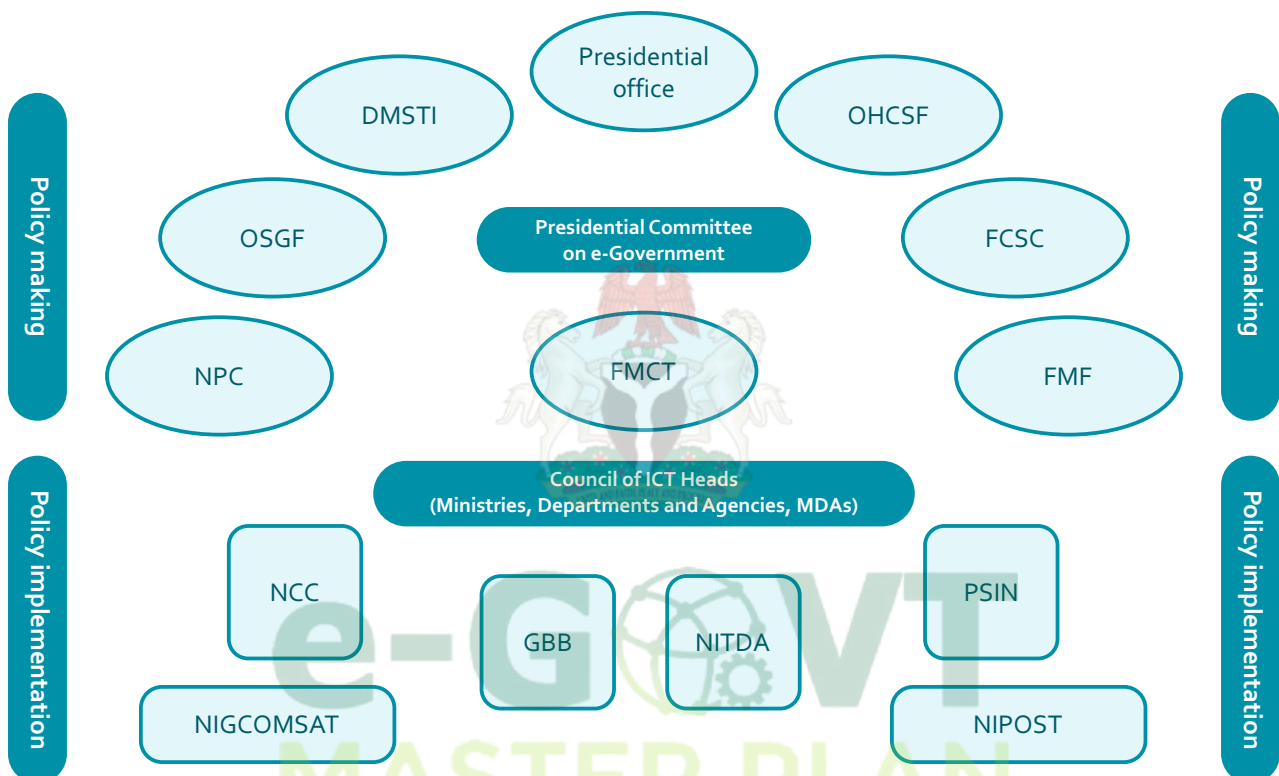


Fig. 5.8 Conceptual To-Be Model of Organizational Framework for e-Government

FEDERAL MINISTRY OF COMMUNICATIONS

#### Proposed Directions and Recommendations are:

- Strengthening the collaborative structure of e-Government
- Composing a national e-Government steering committee
- Reactivating the stakeholder consensus building meeting
- Reinforcing communication channels between FMoC and MDAs
- Utilizing the Council of ICT Heads
- Close connections between e-Government institutions and public sector reform agencies
- e-Government Infrastructure to be established

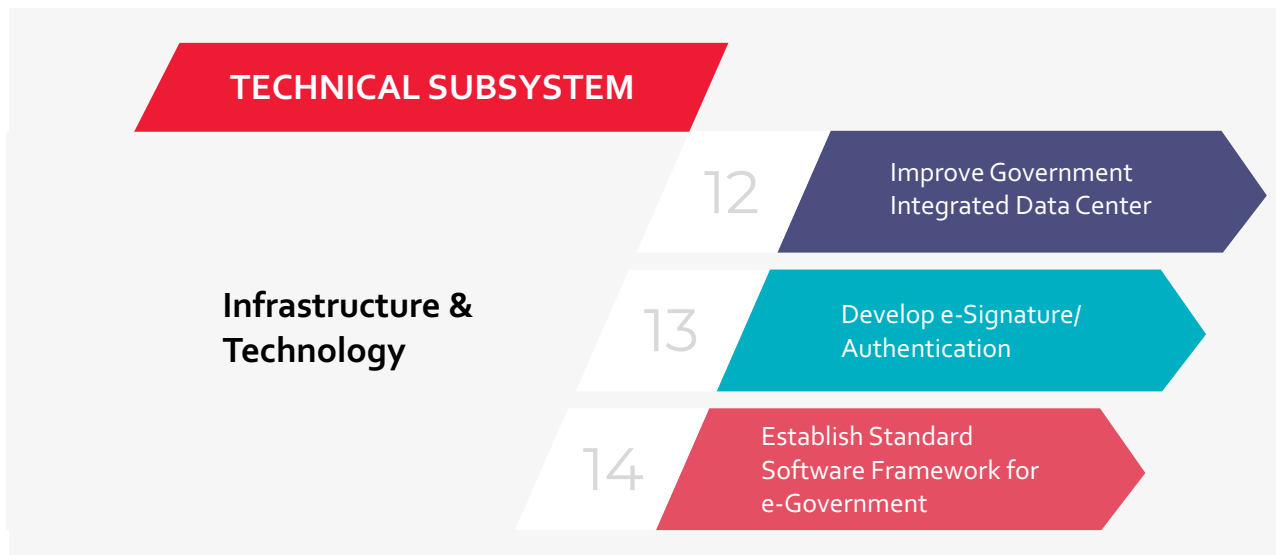


Fig. 5.9 Infrastructure and Technology required for e-Government Implementation

#### 5.4.12 Initiative #12: Improve Government Integrated Data Centre (GIDC)

The Galaxy Backbone's Government Integrated Data Centre (GIDC) offers ICT solutions such as server/application hosting, collocation services, business continuity and data administration services to the government and other customers. The data centre integrates all existing networks into a single IP- based national network and connects all major government buildings using fibre optic rings. With the fibre optic cables, GBB is able to provide a backbone nodal network that is tapped by state capitals in the country. Galaxy Backbone provides network and internet connectivity to locations in Abuja and VSAT connectivity to over 3,800 locations nationwide.

The objective of this initiative is to implement an integrated data centre which provides secure, efficient, credible and innovative services to the MDAs and their clients.

##### To-Be Model: Integrated Data Centre for e-Government

To ensure reliable, safe and efficient e-Government services 24/7 with quality infrastructure and technical expertise, Government Integrated Data Centre (GIDC) is to be equipped with:

- Buildings which can withstand stronger than level 7 of earthquakes with resistant design;
- Intelligent systems for power supply, cooling and firefighting;
- The intelligent information security system; and
- A group of world class security experts guarantees seamless system operation to prevent any type of cyber-attacks from illegally intruding the system.

The GIDC is to provide MDAs with the followings:

- Integrated operation and management of information resources of MDAs including servers, storages, network, and security equipment
- Integrated Security Management of e-Government Systems that protects information systems from both physical and cyber attacks
- Integrated IT Resources Management of e-Government Systems to design and implement bulk purchase of IT resources such as H/W and system S/W
- Exclusive government communications network for all MDAs
- Optimal infrastructure that ensures stable operation of e-Government systems
- Business Continuity Plan (BCP) that provides stable IT-based government service without interruptions even in disaster.
- Modularized platforms to be shared by e-Government applications

Items	2014	2015	2016	2017	2018	2019	2020
Concept Paper							
2nd Data Centre Implementation							
BPR / ISP							
Management Improvement							
e-GovFrame Cloud Development							
Capacity Building							

Table 5.6 Tentative Schedule: Improve Government Information Data Center

### 5.4.13 Initiative #13: Develop e-Signature & e-Authentication

The Objective of this initiative is to build the national PKI system of Nigeria. This initiative is to be driven by the FMCT and NITDA from the development of a Concept Paper and capacity building for government workers and the technology implementers. There was a multi-stakeholder PKI committee setup by NITDA to make recommendations on a PKI framework.

#### To-Be Model

The Functional requirement of the PKI systems can be divided into two parts: establishment of systems for Root CA (certification authority) and establishment of systems for CA. Figure 31 shows a proposed PKI Scheme.

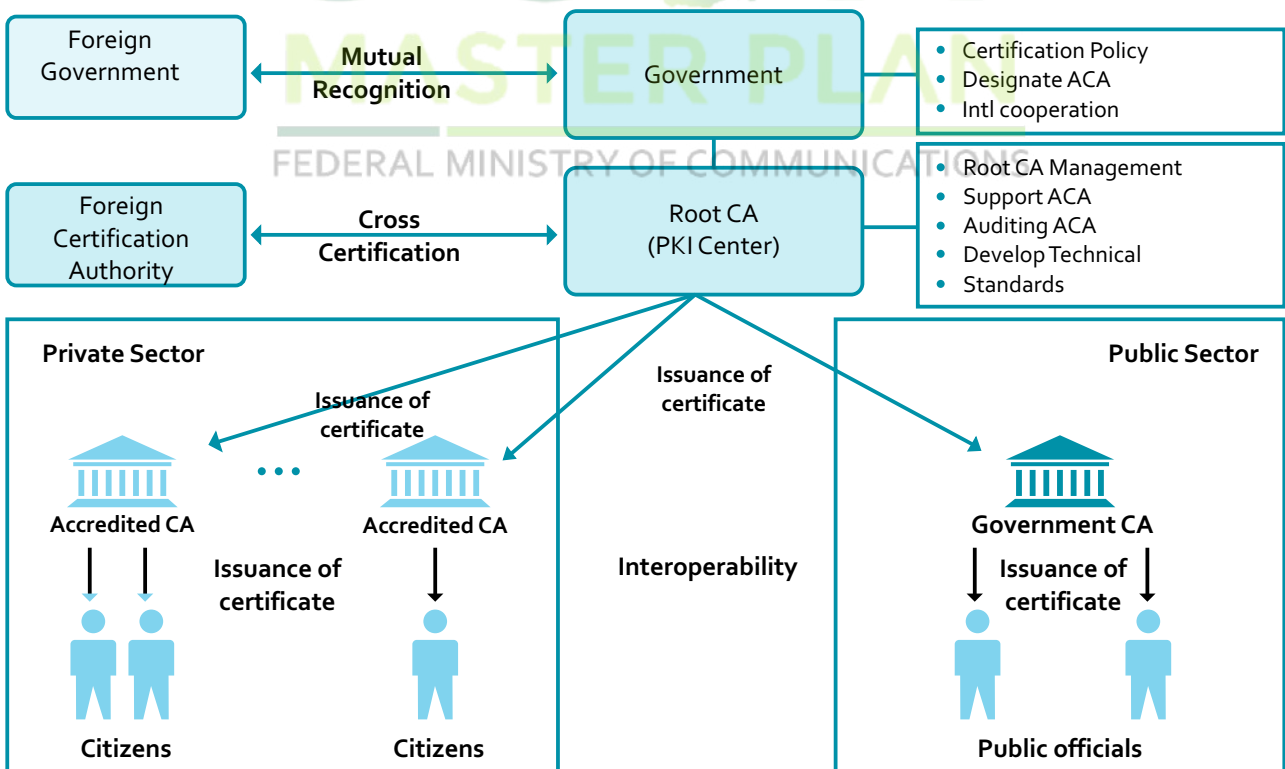


Fig. 5.10 Proposed PKI Scheme

Items	2014	2015	2016	2017	2018	2019	2020
Concept Paper	●	●	●	●	●	●	●
Master Plan / Feasibility Study	■	■	■	■	■	■	■
Legal & Organizational Framework	■	■	■	■	■	■	■
System Implementation	●	●	●	●	●	●	●
Rolling-out and expansion if PKI application	■	■	■	■	■	■	■
Capacity Building	●	●	●	●	●	●	●

Table 5.7 Tentative Schedule: e-Signature and e-Authentication

The following implementation activities should be included:

- Organizational and legal PKI framework establishment;
- Renewal of legal systems and policies;
- Implementation of PKI system;
- Recommendations on how to link PKI system with Nigeria e-Government master plan;
- Framework establishment on certificate issuance and application procedures for government officers;
- Capacity building programs including promoting activities; and
- Rolling-out and expansion of PKI applications.

#### 5.4.14 Initiative #14: Establish Standard Software Framework for e-Government

The objective of this initiative is to implement a standard software development platform for all government service applications. For efficient development and simple maintenance, a well-developed standard software framework, which is a special case of software libraries in that they are reusable abstractions of code wrapped in a well-defined API, can be one of the key success factors for e- Government service implementation in terms of infrastructure and technology. The FMCT and NITDA are the leading MDAs for the implementation of this initiative.

To avoid dependency on any single supplier and to avoid the use of multiple frameworks for the development of applications in different parts of the administration the lead MDAs have to develop a standardized software framework.

Items	2014	2015	2016	2017	2018	2019	2020
Concept Paper	●	●	●	●	●	●	●
Master Plan / Feasibility Study	■	■	■	■	■	■	■
Legal & Organizational Framework	■	■	■	■	■	■	■
System Implementation	●	●	●	●	●	●	●
Rolling-out and expansion if PKI application	■	■	■	■	■	■	■
Capacity Building	●	●	●	●	●	●	●

Table 5.7 Tentative Schedule: e-Signature and e-Authentication

The following implementation activities should be included:

- Organizational and legal PKI framework establishment;
- Renewal of legal systems and policies;
- Implementation of PKI system;
- Recommendations on how to link PKI system with Nigeria e-Government master plan;
- Framework establishment on certificate issuance and application procedures for government officers;
- Capacity building programs including promoting activities; and
- Rolling-out and expansion of PKI applications.

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To avoid dependency on any single supplier and to avoid the use of multiple frameworks for the development of applications in different parts of the administration the lead MDAs have to develop a standardized software framework.

## To-Be Model: Standard Software Platform for e-Government

In developing the model, two steps were considered:

- Developing a framework as a Comprehensive Software Development Platform: It is strongly recommended to adopt a framework template-based programming to maximize the development productivity and;
- Developing a standard Software Framework for e-Government: a common standard framework is crucial for technical interoperability between different services and for the reduction of the development cost and time.

Following this, the recommended structure of the standard software framework for e-Government in Nigeria consists of four environments (runtime, operation, development and management) and 230 common components to cover system development lifecycle (SDLC) as depicted below.

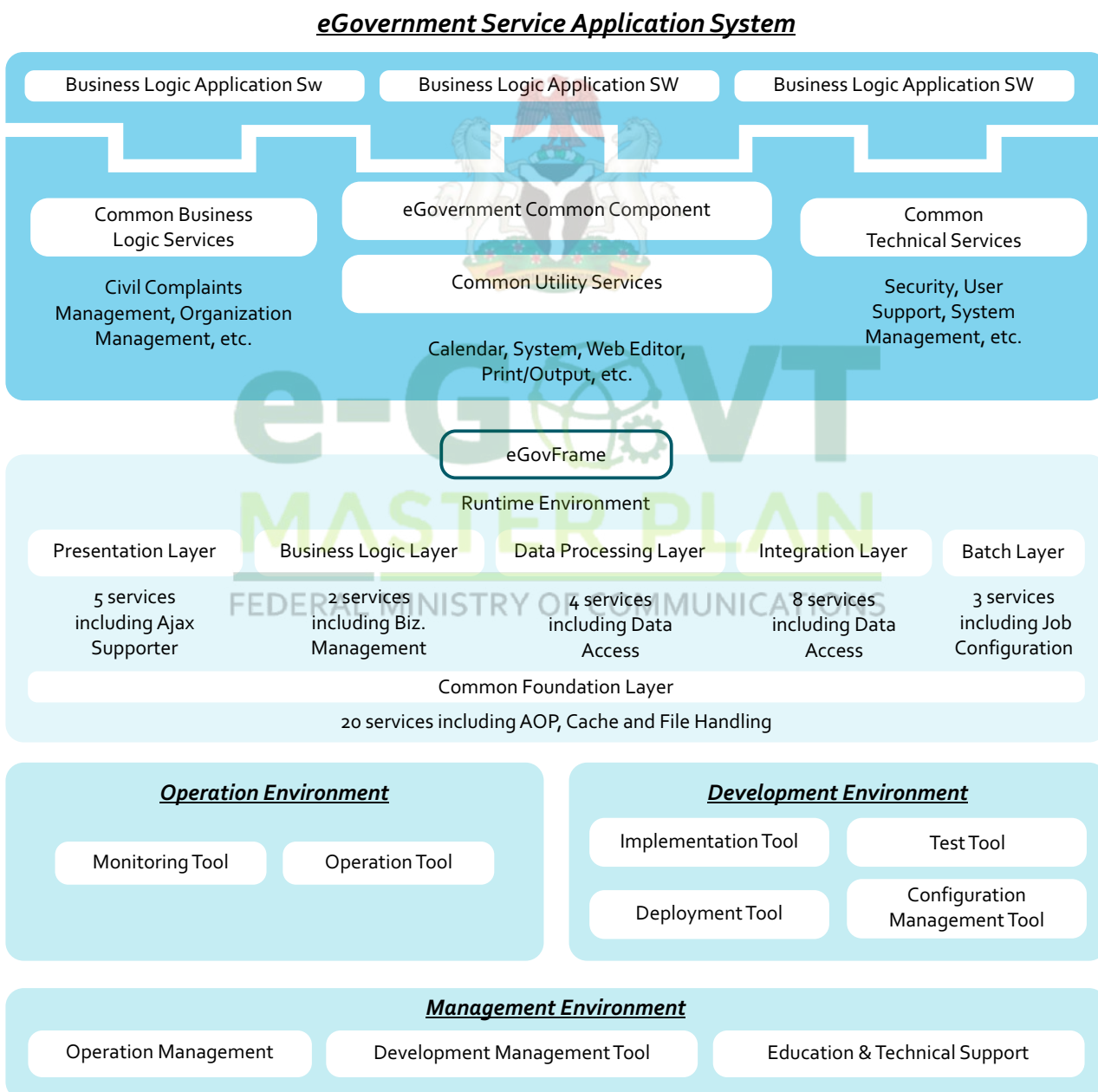


Fig. 5.11 Structure of the e-Government Standard Framework

**Strategies for implementation will include:**

- Benchmark using successful case studies (e.g. Korea).
- Use the standard software framework as a catalyst for creation of a continent-wide open-market for information system software.
- Design the operating model in detail.
- Use the standard software framework as the catalyst for local contents development.

Items	2014	2015	2016	2017	2018	2019	2020
e-GovFrame Centre Setup							
Portal Development							
Open Market Creation							
Cloud Service Development							
Open Community							
Capacity Building							

Table 5.8 Tentative Schedule: Standard Software Platform for e-Government



Fig. 5.12 Service Application Initiatives Required for e-Government Master Plan Implementation



### 5.4.15 Initiative #15: e-Finance (GIFMIS/SIFMIS)

The objective of this initiative is to improve the existing national financial management information system (GIFMIS/SIFMIS) to be more efficient, transparent and better-integrated.

#### To-Be Model

The figure below shows the conceptual map of To-Be model of the e-Finance System.

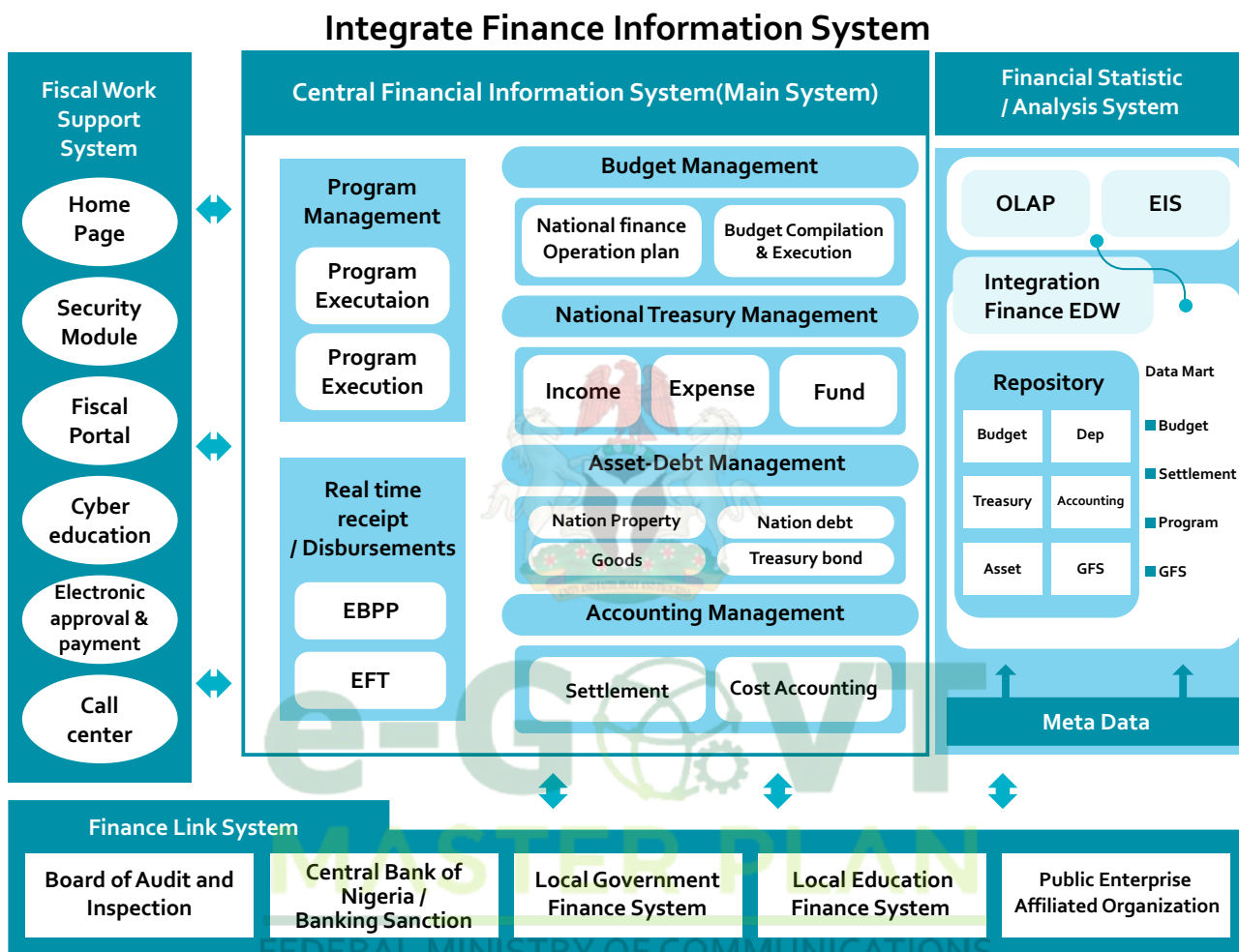


Fig. 5.13 Conceptual Map of Integrated Finance Information System

Characteristics of the e-Finance system can be described as follows:

- Adoption of new finance management ideas
- Systematic Sharing of government finance management information
- Securing accountability, transparency, and real-time operability
- Efficient finance and national treasury management
- Clean system which reduces the possibility of corruption

Items	2014	2015	2016	2017	2018	2019	2020
Blueprint, Concept Paper, Feasibility Study							
BPR / ISP							
System Upgrade Phase I							
System Upgrade Phase II							
Capacity Building							

Table 5.9 Tentative Schedule: e-Finance

### 5.4.16 Initiative #16: e-Procurement

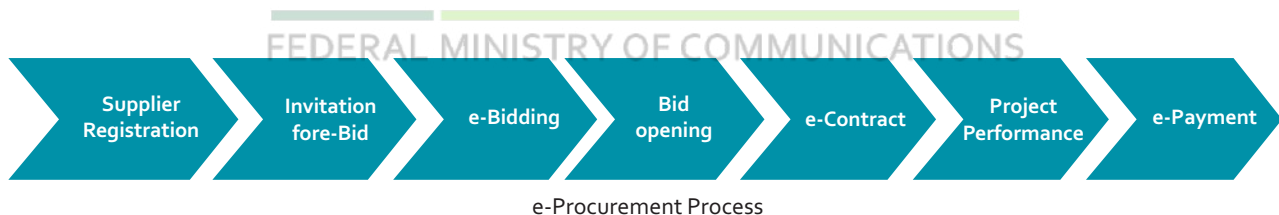
The objectives of this initiative are:

- To improve the efficiency of the procurement administration through development of a high-quality procurement system that support all procurement procedures;
- To enhance the transparency; and
- To increase the accessibility and easiness to the Government procurement system

#### To-Be Model

The unified and comprehensive e-procurement system should cover the following procedures:

- Supplier registration
- Invitation for e-Bid
- e-Bidding
- Bid-opening
- e-Contract
- Project Performance
- e-Payment



The system should have the following sub-systems:

- e-Procurement single window portal
- e-Bidding system
- e-Contract system
- e-Payment
- Follow-up management system
- Detailed Implementation Plan

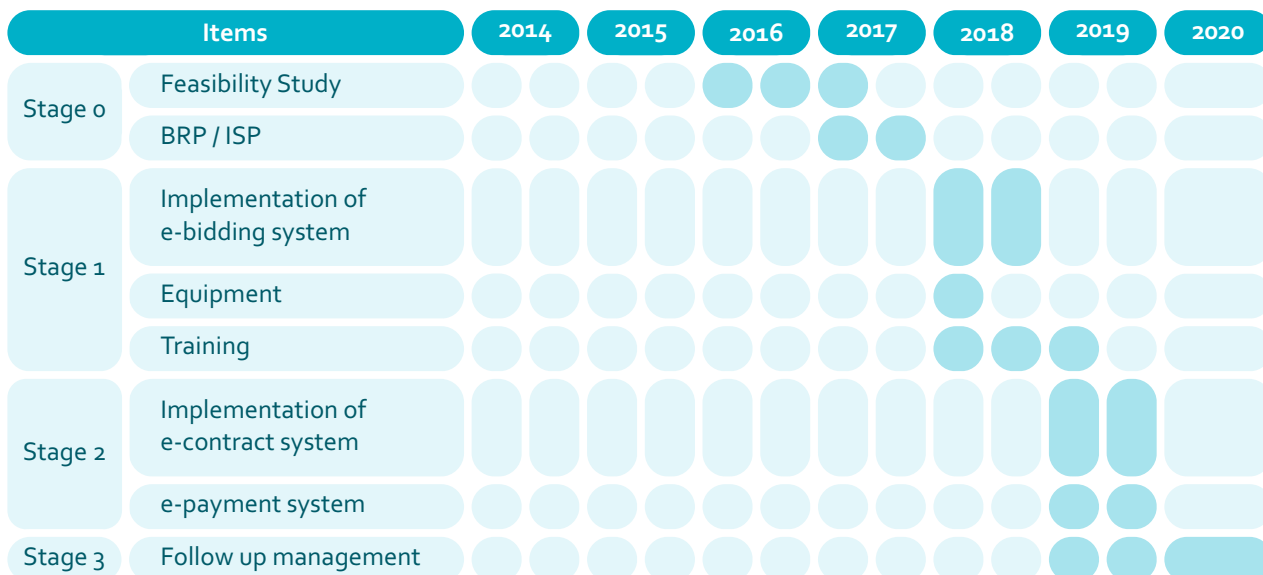


Table 5.10 Tentative Schedule: e-Procurement

### 5.4.17 Initiative #17: e-Taxation

The Federal Inland Revenue Service (FIRS) is the major body in Nigeria responsible for tax administration in the country. The current "e-tax pay" of the FIRS allows tax payers to pay their taxes online through payment service providers such as Banks. It also allows citizens to calculate their taxes online.

A comprehensive tax system which enables taxpayers to handle tax affairs online at home or office without visiting tax offices has to be implemented. This model will make a one stop tax service possible. Taxpayers can handle most tax related activities online without visiting offline tax offices and banks, as described below.

#### To-Be Model: Comprehensive Tax System

A comprehensive tax system which enables taxpayers to handle tax affairs online at home or office without visiting tax offices has to be implemented as depicted in the following Figure 40.

This model will make a one stop tax service possible as described below:

- Certificates of tax payment are issued online;
- Tax returns are filed via the Internet;
- Tax payments are made online; and
- Taxpayers who visit tax offices can go through the entire process of application services using electronic devices.

Major components of this comprehensive e-tax service will be:

- e-Filing;
- e-Payment;
- e-Notification;
- e-Civil Service
- e-Certificate Service; and
- Inquiry Service.

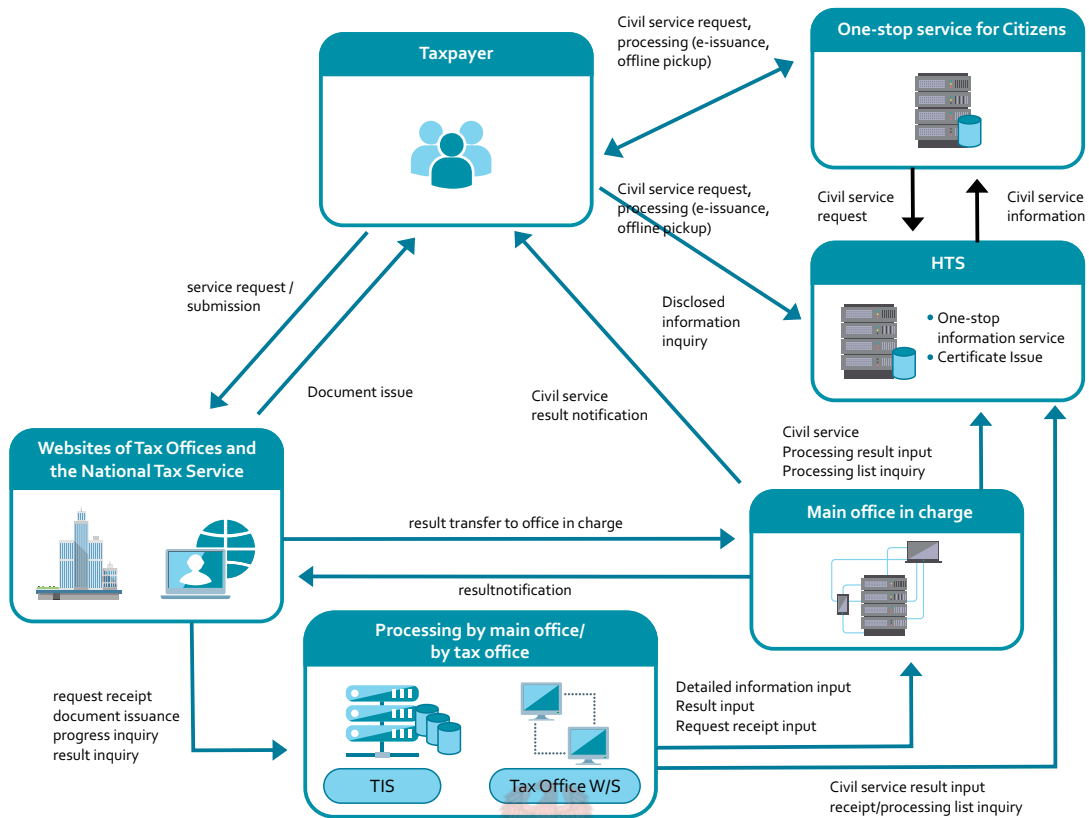


Fig 5.15 Concept Map of Comprehensive One-stop Tax Service

Items	2014	2015	2016	2017	2018	2019	2020
Feasibility Study							
BRP / ISP							
Upgrade Nigeria Tax Portal							
Integration & Service Enhancement							
Equipment							
Training							
Completion							

Table 5.11 Tentative Schedule: e-Taxation

#### 5.4.18 Initiative #18: e-Customs

The objectives are to:

- Improve the efficiency of the customs administration through development of a high-quality customs system that support all customs procedures such as clearance, cargo, collection, etc.
- Enhance the transparency
- Increase the nation's tax revenue.

#### To-Be Model: Structure Overview

The proposed system can be subdivided as follows:

- Single window
- Clearance management system
- Cargo management system
- Information management system, and
- Administration system.

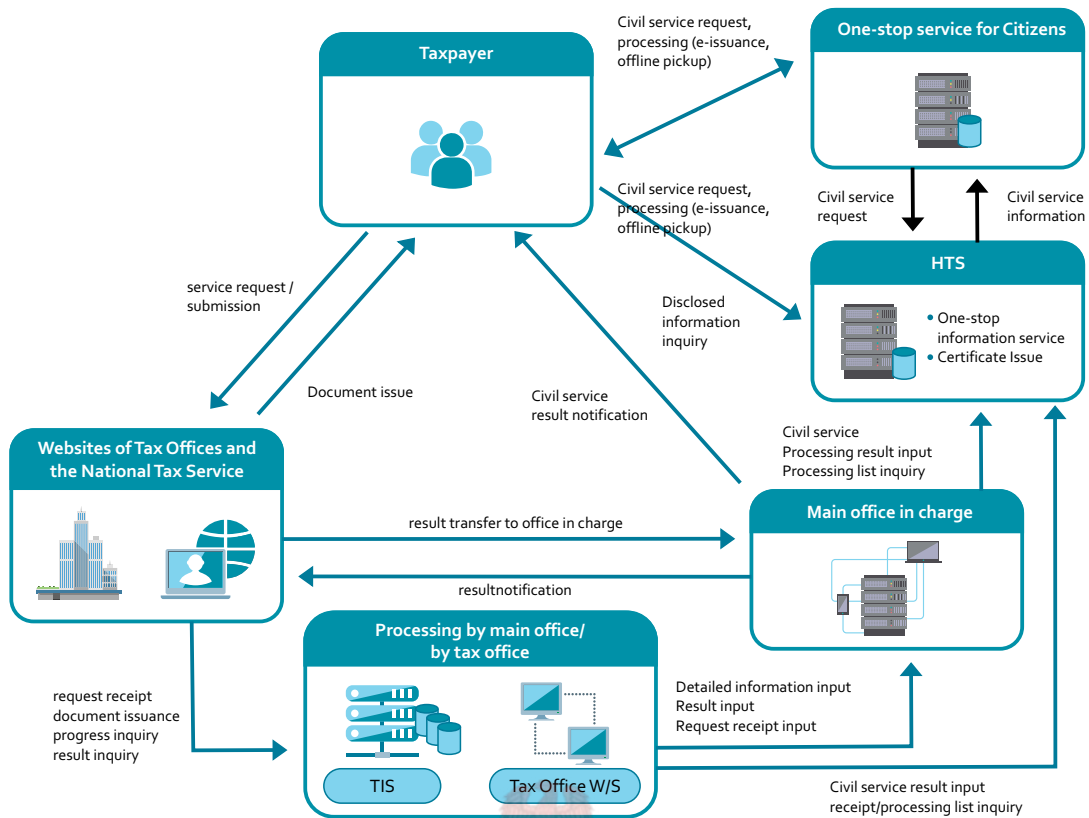


Fig 5.15 Concept Map of Comprehensive One-stop Tax Service

Items	2014	2015	2016	2017	2018	2019	2020
Feasibility Study							
BRP / ISP							
Upgrade Nigeria Tax Portal							
Integration & Service Enhancement							
Equipment							
Training							
Completion							

Table 5.11 Tentative Schedule: e-Taxation

#### 5.4.18 Initiative #18: e-Customs

The objectives are to:

- Improve the efficiency of the customs administration through development of a high-quality customs system that support all customs procedures such as clearance, cargo, collection, etc.
- Enhance the transparency
- Increase the nation's tax revenue.

#### To-Be Model: Structure Overview

The proposed system can be subdivided as follows:

- Single window
- Clearance management system
- Cargo management system
- Information management system, and
- Administration system.

Items	2014	2015	2016	2017	2018	2019	2020
Feasibility Study							
BRP / ISP							
Upgrade e-Customs Portal							
Integration & Service Enhancement							
Equipment							
Training							
Completion							

Table 5.12 Tentative Schedule: e-Customs

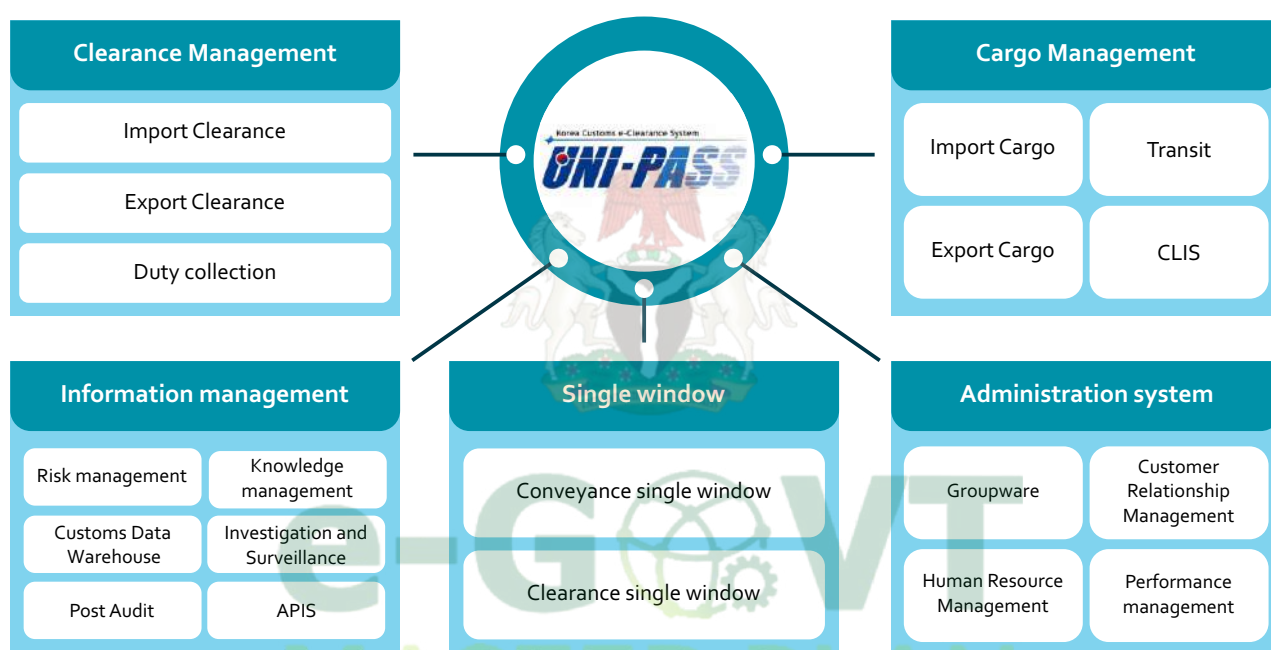


Fig. 5.16 UNI-PASS Structure Overview

FEDERAL MINISTRY OF COMMUNICATIONS

#### 5.4.19 Initiative #19: e-Education

The objectives of utilizing ICT in education are to enhance the quality of school education and academic research, to provide opportunity for every citizen to develop capacity and to learn life-long, and to reduce the gap of knowledge and information.

##### To-Be Model: Structure Overview

National Education Information System (NEIS) consist of services for students, parents, and educational administrators. Building NEIS should be a nationwide government initiative to connect all educational institutions into one network.

Items	2014	2015	2016	2017	2018	2019	2020
Feasibility Study							
BRP / ISP							
System Development							
S/W Installation & Integration							
Equipment Installation							
Training							

Table 5.13 Tentative Schedule: e-Education

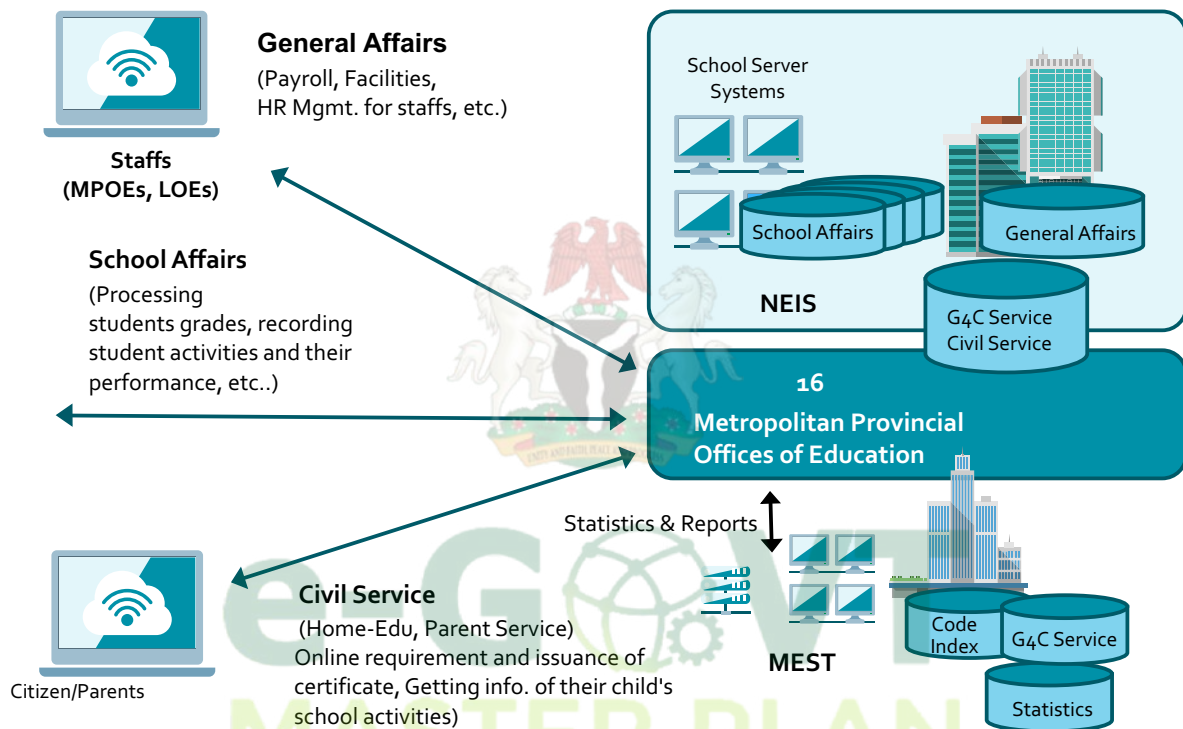


Fig. 5.17 Concept Map of National Education Information System

FEDERAL MINISTRY OF COMMUNICATIONS

### Strategies include:

- Develop an Information System Planning (ISP) for National Education Information System
- Develop a Basic ICT educational Structure
- Expand National Education Information System
- Reengineer the administrative processes in the educational sector
- Develop a knowledge society oriented e-Government.

### 5.4.20 Initiative #20: e-Health

The objective of developing the public health portal is to provide the following services:

- Online Medical Certificates Issuance: Users can get medical certificates such as medical report and immunization certificate as well as search diagnosis information online.
- Health information in daily life: Serviced-health information, self-diagnosis, health lecture, health reports, etc.
- Provides the latest health news: Health policy information, legislation data, academic data, etc.
- Provides the latest health policy information: Press release/health and medical news/news on my public health centre/health column, etc.

#### To-Be Model

The e-healthcare service needs to be developed for integrated management of national health system and public health service improvement including disease control through information sharing among hospitals, pharmacies, patients and governments.

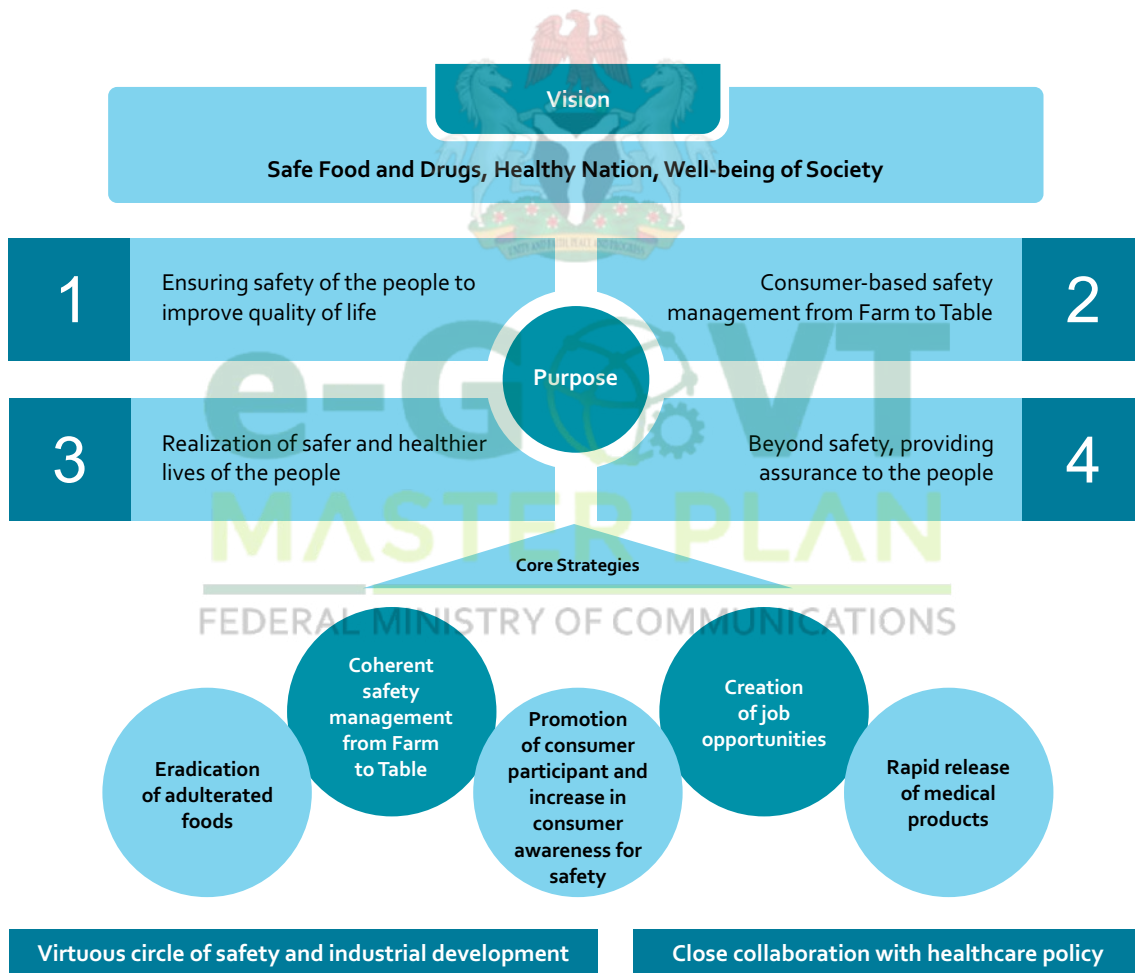


Fig 5.18 Vision of e-Health



In order to achieve the vision of e-Health in Nigeria: A public health portal and Health Institutions Integrated Information System should be developed.

- **Public Health Portal:** designed to provide convenient health and medical services to users. The objective of developing the public health portal is to provide the following services:
  - Online Medical Certificates Issuance
  - Provides the latest health news.
  - Provides the latest health policy information.
  
- **Health Institutions Integrated Information System:** link up all the health institutions around the country to provide safe and efficient health administrative services. The objective of developing Health Institutions Integrated Information System is to provide the following services:
  - Digitization of diagnosis and clinical support services.
  - Digitization of health businesses and administrative works.
  - Digitization of statistical business process.

### Directions and Strategies

- Develop an Information System Planning (ISP) for National Health Information System
- Development a Basic Structure for Health facilities information system
- Expand the National Health Information System

Items	2014	2015	2016	2017	2018	2019	2020
Feasibility Study							
BRP / ISP							
System Development							
S/W Installation & Integration							
Equipment Installation							
Training							

Table 5.14 Tentative Schedule: e-Health

### 5.4.21 Initiative #21: e-Agriculture

The objectives of this initiative are:

- Improve and sophisticate the existing e-Agriculture services;
- Improve infrastructure (PAV) which provides the farmers in rural areas with the access to those services;
- Improve transparency of Government's support to the farmers;
- Improve efficiency of farm management; and
- Implement e-Commerce Portal that sells mainly local goods produced or supplied by Information Village (INVIL) communities through NIPOST postal network

### To-Be Model

As shown below, the unified and comprehensive e-Agriculture initiative should include:

- development of applied system with effective combination of Bio Tech and ICT;
- Information system development for farm management improvement.

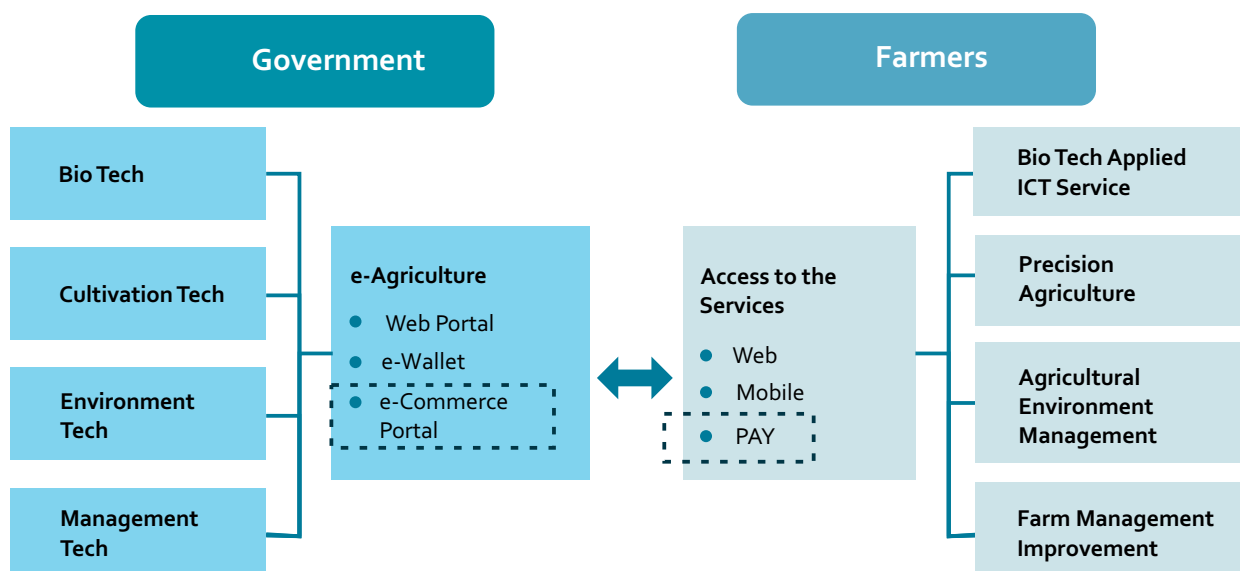


Fig. 5.19 Conceptual Map of e-Agriculture

## Strategies and Directions

- High level government engagement in the implementation of e-Agriculture initiatives
- Update existing e-Agriculture services;
- Provide adequate infrastructure (PAV) in all rural areas;
- Leverage on INVILs to provide access to the e-Commerce Portal, for rural farmers to sell their produce (see Initiative #5 for the details of INVIL).

Items	2014	2015	2016	2017	2018	2019	2020
Feasibility Study							
BRP / ISP for e-Commerce							
System Development							
System Installation & Pilot Test							
System Launch							
System Improvement							
Improvement of web portal & e-wallet							
Improvement of PAV (Refer to Initiative #5)							

Table 5.15 Tentative Schedule: e-Agriculture

### 5.4.22 Initiative #22: e-Immigration

The objective of this initiative is to implement a comprehensive and unified e-Immigration system is to:

- Analyze the information on passengers scheduled to enter beforehand
- Handle the entire process of immigration electronically.
- Improve the national security with better reaction capability to forged passports.
- Provide foreigners with online visa application service

To alleviate inefficiency generated from the isolated systems, the system should be a truly integrated and optimized immigration management system.

#### To-Be Model

Information on passengers scheduled to enter is analyzed beforehand, while the entire process of immigration such as checking of forged passports is handled electronically. The proposed model of Nigeria e-Immigration is depicted below.

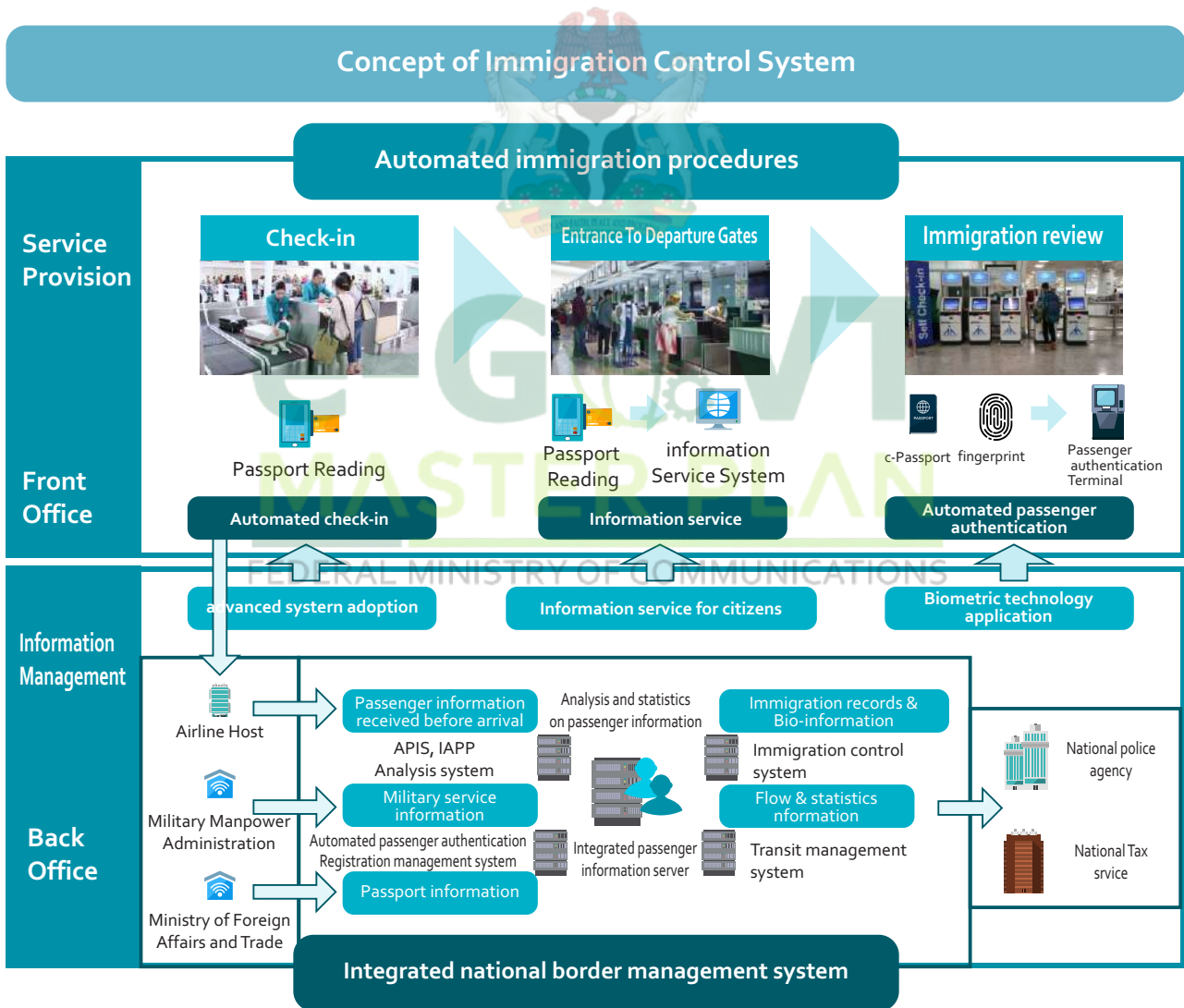


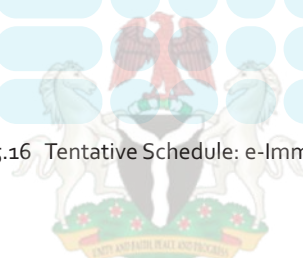
Fig. 5.20 To-Be Model of e-Immigration

The services to be implemented based on this model are:

- Transmission of passenger information to the immigration authority from air carriers before their arrival to facilitate faster immigration.
- Use of e-passport IC chip reading technology to detect forged passports.
- Immigration control by applying bio-information (facial images) and biometrics technology (fingerprints).
- Collection of visitor's fingerprint data for accurate identification of disaster or accident victims and crime investigations.

Items	2014	2015	2016	2017	2018	2019	2020
Feasibility Study							
BRP / ISP							
Upgrade Current e-Immigration System							
Integration & Service Enhancement							
Equipment							
Training							
Completion							

Table 5.16 Tentative Schedule: e-Immigration



### 5.4.23 Initiative #23: e-Voting

The objective of this initiative is to implement systems where all the voting process including the recording, casting and counting of votes in political elections can be done electronically.

#### To-Be Model

- e-Voting in controlled environments in polling stations, polling kiosks or other locations under the supervision of staff appointed by INEC.
- Internet voting as an alternative channel

#### Directions and strategies

- Clearly define goals of the e-voting system
- e-Voting system developed by international partners with local companies
- Get key stakeholders to buy in.
- Develop e-voting system
- Plan for training, professional development, and civic and voter education. Well-informed stakeholders will find it easier to trust a new system.
- Develop and implement sustainability framework

Items	2014	2015	2016	2017	2018	2019	2020
Feasibility Study							
BRP / ISP							
Implementation							
Equipment Installation							
Training							
Completion							

Table 5.17 Tentative Schedule: e-Voting

#### 5.4.24 Initiative #24: Clean Civil Service: Real-time Monitoring System at Local Government

The objective of this initiative is to implement a clean local administration to be trusted by the people.

##### To-Be Model

Clean civil service is an initiative to develop a real-time monitoring system in Government which will increase government reliability and transparency at all levels. The proposed model is depicted below.

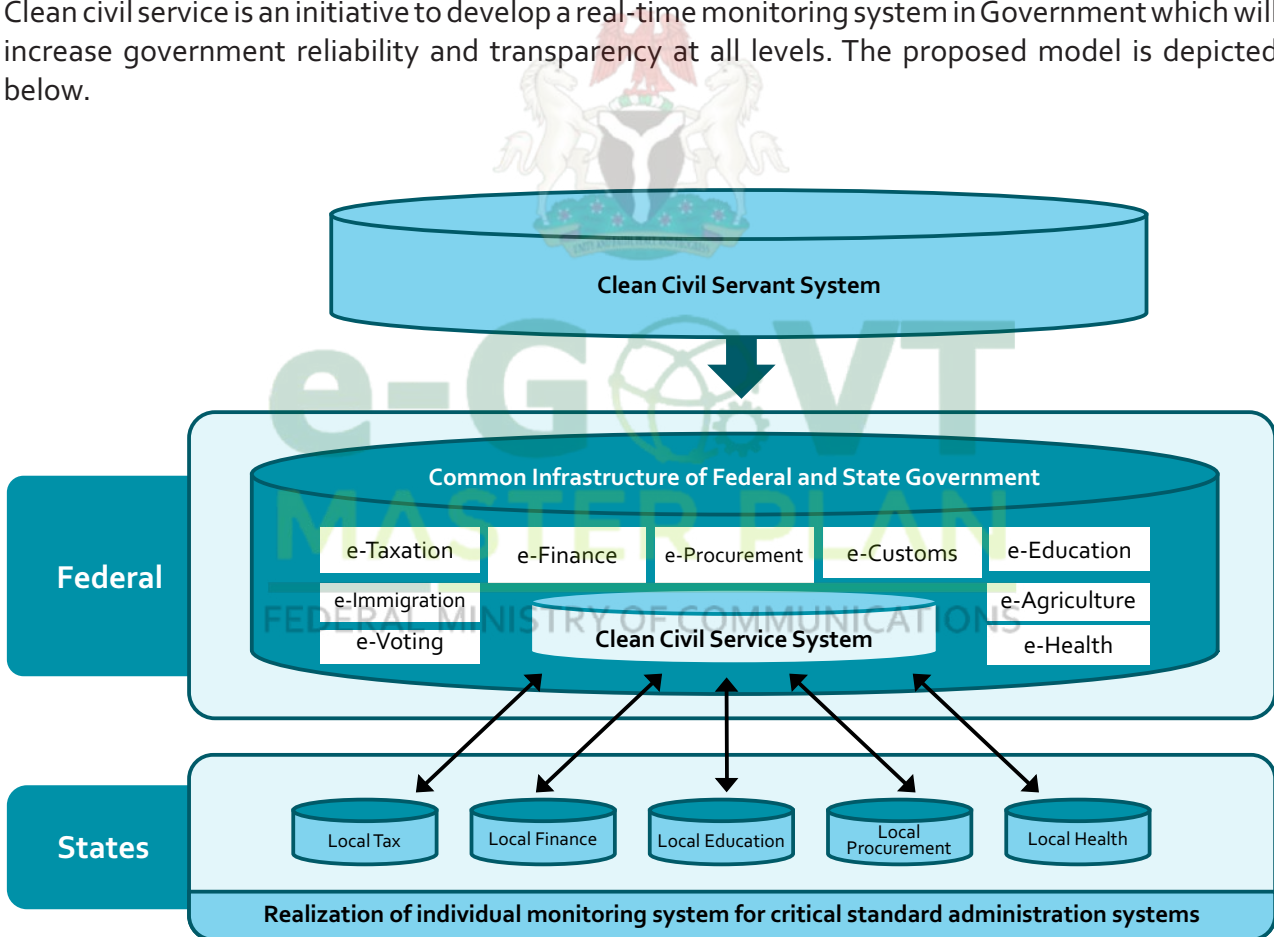


Fig. 5.21 Conceptual Map of Clean Civil Servant

- **Directions**

- Address the root causes of misbehavior of manipulating the administrative systems.
- Establish internal control system for local administration.
- Eliminate manual handling of data in licensing and permitting processes.
- Prevent revenue source omissions and maintain accounting transparency.

Items	2014	2015	2016	2017	2018	2019	2020
Concept Paper							
BRP / ISP							
1st Pilot Project							
2nd Pilot Project							
Nation-wide Distribution							
Capacity Building							

Table 5.18 Tentative Schedule: Clean Civil Servant

### 5.4.25 Initiative #25: Public Information Sharing System (PISS)

Enormous amount of paper transaction instead of data transaction is still the main method of business communication within (or between) MDAs.

The objective of this initiative therefore is to increase productivity by:

- Providing one-stop administrative services;
- Maximizing the official work efficiency and convenience; and
- Providing all MDAs with infra-service for online collaboration.

#### To-Be Model

PISS is an initiative to introduce shared resource system to e-Government in Nigeria, to improve collaboration between MDAs. Figure below shows the to-be model of PISS.

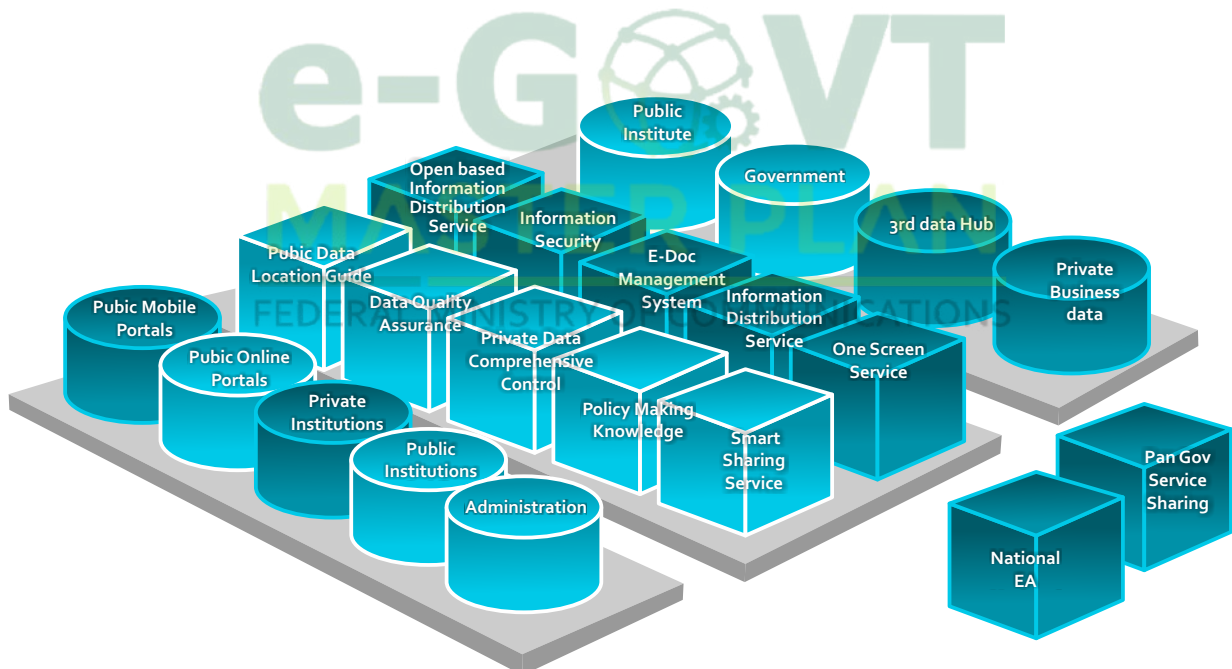


Fig 5.22 To-Be Model of Public Information Sharing System (PISS)

#### • Directions

- Maximize the interoperability between different systems.
- Maximize the usage of the standard software framework.

Items	2014	2015	2016	2017	2018	2019	2020
Concept Paper							
BRP / ISP							
1st Phase							
2nd Phase							
3rd Phase							
Capacity Building							

Table 5.19 Tentative Schedule: Public Information Sharing System

## 5.5 Change Management

Changes in technology affects policy, culture, mindset, organizational structure and processes, thus, change management is needed for a successful e-Government implementation because it addresses elements these issues.

### Approaches to developing a change management plan:

- Identify issues existing operational procedures e.g. bureaucracy, silos, and cultures in the public sector; and reinvent these processes and functions.
- Address issues leading to employee's resistance to change e.g. lack of clarity of a vision, inadequately support of the top management, un-measurable benefits, disjointed systems and departments, fear of job loss, etc.



## 5.5.1 Change Management in e-Government Implementation

The table below summarizes the strategies for change implementation for the e-Government Masterplan.

Element	Areas Affected
<b>Technology</b>	<ul style="list-style-type: none"> <li>• National information infrastructure</li> <li>• Network infrastructure and network databases</li> <li>• Architecture interoperability</li> <li>• Compatible data standards (Extensible Markup Language – XML)</li> <li>• Compatible technical standards</li> <li>• Security models</li> <li>• Implementation of discussion support, multimedia, automation, tracking and tracing and personal identification technologies</li> </ul>
<b>Processes</b>	<ul style="list-style-type: none"> <li>• Changes to the entire process (consideration of business process change principles from the private sector)</li> <li>• Significantly accelerated process execution (from a few minutes to a couple of seconds); process can be executed 24/7</li> <li>• Horizontal (integration among functions and departments) and vertical process executions (integration among organizations)</li> <li>• Changes to the rules, which determine the process (trust, safety, maintenance and integrity must be dealt with therein)</li> </ul>
<b>People</b>	<ul style="list-style-type: none"> <li>• Employees must gain a horizontal process view</li> <li>• New and complex skills (e.g. self-organisation, confrontation with unexpected tasks) and knowledge</li> <li>• Staff training must be organized, collective learning must be encouraged</li> <li>• Leaders must be able to combine their ICT knowledge and skills with their understanding of the process dimension</li> <li>• Leaders must be able to develop a strategic vision and comprehensive human resource management, project management and user-orientation strategies</li> </ul>
<b>Organizational Culture</b>	<ul style="list-style-type: none"> <li>• Transition to a service-oriented culture</li> <li>• Employees must overcome departmentalization thinking</li> <li>• Organisational loyalty must be strengthened</li> <li>• Employees must be encouraged to perform more challenging tasks, be willing to take responsibility</li> <li>• Inter-departmental and inter-organisational cooperation and trust must be strengthened</li> <li>• Understanding of organizational learning must be strengthened</li> <li>• Leaders' way of thinking must be radically changed</li> </ul>
<b>Structure</b>	<ul style="list-style-type: none"> <li>• It must be taken into account, that, on one hand, due to the horizontal and vertical integration (activities are being de-centralised, a great level of flexibility in task-performing is required), tasks are undergoing a de-specialisation process, while on the other hand, a new task-structuring is required</li> <li>• Data digitalisation must be standardised, procedures being standardized for several departments or organisations simultaneously (e.g. the introduction of e-public procurement), common standards being applied (e.g. XML structures) as procedures are simplified and informatised, the level of formalization is decreased, while, on the other hand, a new procedure execution method requires new record safety, trust, maintenance and integrity rules decisions on the introduction of e-Government is transferred to e-leaders, which appear both on the top (eLeadership) and the middle level (eChampions, CIO leaders), which leads to a decentralized decision-making process, nevertheless their coordination and control role is strengthened hierarchical structure is transformed into one network</li> </ul>

Table 5.20 Change Management for e-Government Implementation



Setting New Directions	
Policy of e-Government	Understanding the environment principles, policies, and foundations
Thinking Challenges	Applying systems thinking to complex e-Government
Planning	Planning and organizing strategically for e-Government
Change	Transforming organizations and cultures to sustain e-Government
Transforming Processes and Resource Use	
Collaboration	Collaborating across boundaries to achieve e-Government goals
Architecture and Systems	Understanding and applying effective architecture and enterprise integration for e-Government
Human Capital	Using new models to extend human capital for e-Government
Financial Resources and Investment Management	Planning and managing funds resources strategically for e-Government
Performance management	Managing Performance based e-government programs and projects
Execution/Implementation	Moving from concept to reality
Using Information Strategically	
Information and Knowledge Resources	Providing the right information and knowledge at the right time within and across boundaries
Security and Privacy	Balancing security, privacy, access issues, and protection of information
Technologies	Understanding strategic uses of information through the use of technologies

Table 5.21 e-Government Leadership Competencies

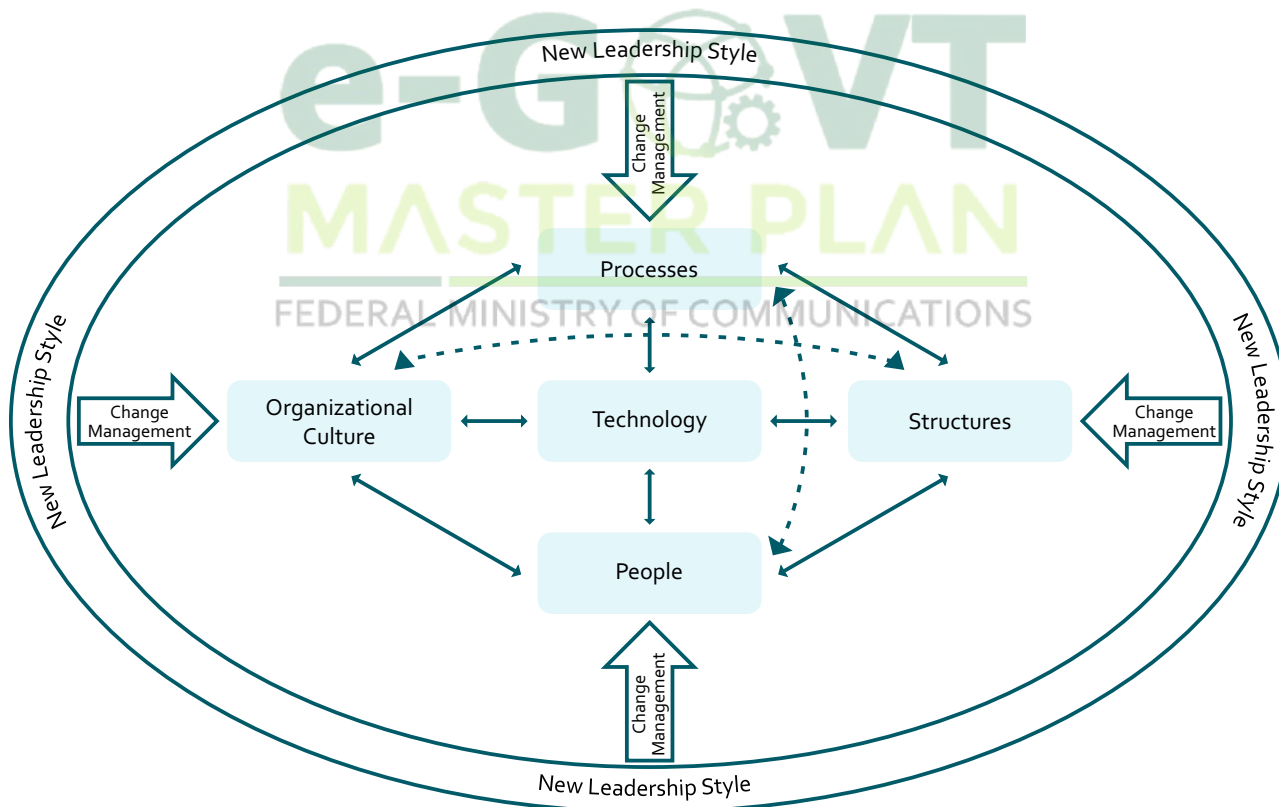


Fig 5.23 Change Management Model of e-Government Implementation  
 Source: Nograsedk (2011), Business Systems Research, Vol.2, No.2, p. 20

Steps	Initiatives/Activities	Main Ministry	2014	2015	2016	2017	2018	2019	Capacity Building		
Leadership & Awareness	2: Develop a Talent Pool of e-Government Champions	FMCT	Redefine ICT Head Council	Relevant Laws & Regulations	Capacity Building	Capacity Building	Capacity Building	Capacity Building	Capacity Building		
		FMCT NITDA/NCCT FME/State Gov.	Develop Campaign Program	Mass Media Road Show Annual Award	Mass Media Road Show Annual Award	Mass Media Road Show Annual Award	Mass Media Road Show Annual Award	Mass Media Road Show Annual Award	Mass Media Road Show Annual Award		
	Institution Building	3: Establish Presidential Committee on ICT/e-Government	FMCT	Task Force Set Up	Set up & in Operation	Presidential Committee	Presidential Committee	Presidential Committee	Presidential Committee	Presidential Committee	
			FMCT	Task Force Set Up	Partnership Building: Presidential Committee	Presidential Committee	Presidential Committee	Presidential Committee	Presidential Committee	Presidential Committee	
		11: Build the Dedicated Structure for e-Government Implementation	FMCT	Task Force Set Up	e-Government Special Committee & Information Promotion Committee	Phase I-2	Phase I-3	Phase II-1	Phase II-2	Phase II-3	
	Analyse Environment	3: Develop Capacity Building Program	FMCT OHCSF State Gov FME	Prepare CDP	Phase I-1	Phase I-2	Phase I-3	Phase II-1	Phase II-2	Phase II-3	
			FMCT, FMIT, FME, UBEC, NMEC, NCNE	Federal/State	9,480/22,000	9,480/18,400	9,480/79,000	9,480/79,000	9,480/79,000	9,480/79,000	9,480/79,000
			FMCT (NITDA)	Cyber Training & CDP for Citizen	Establish Center Develop Program	Training	Training	Training	Training	Training	Training
			NITDA	Develop ICT Education Enhance Program	Government Industry/Citizen	Government Industry/Citizen	Government Industry/Citizen	Government Industry/Citizen	Government Industry/Citizen	Government Industry/Citizen	Government Industry/Citizen
			FMCT	Task Force Set Up Blueprint Preparation	Harmonizing Authority Setup 500+a	Expand 700+a	F/S & 30Pilot Smart Info Centre	Smart Info Centre	Smart Info Centre	Smart Info Centre	Smart Info Centre
	Benchmarking	5: Develop Information Access Center	FMCT	Case Study of Korea	Other Countries	Continued	Continued	Continued	Continued	Continued	
FMCT			Case Study of Korea	Other Countries	Continued	Continued	Continued	Continued	Continued		
Vision & Goals	8: Expand Education in ICT and Enhance Quality of ICT Education	FMCT & Related MDAs	Redefine	Evaluate	Evaluate	Evaluate/Update	Evaluate	Evaluate	Evaluate		
		FMCT & Related MDAs	Prioritization & Description	Revision	Revision	Revision	Revision	Revision	Revision		
Develop Roadmap	8: Expand Education in ICT and Enhance Quality of ICT Education	FCSF, OHCSF, OSGF	Task Force Set up	Special Committee on Gov. Innovation	Special Committee on Gov. Innovation	Special Committee on Gov. Innovation	Special Committee on Gov. Innovation	Special Committee on Gov. Innovation	Special Committee on Gov. Innovation		
		FMF, NPC	Information Promotion Fund	Separate e-Government Budget	e-Government Budget	e-Government Budget	e-Government Budget	e-Government Budget	e-Government Budget		
Reform	Create and utilize e-Government promotion fund	FMF, NPC	Working Group	Information Promotion Fund	e-Government Budget	e-Government Budget	e-Government Budget	e-Government Budget	e-Government Budget		
		FMF, NPC	Working Group	Information Promotion Fund	e-Government Budget	e-Government Budget	e-Government Budget	e-Government Budget	e-Government Budget		
Implementation	12: Improve Government Integrated Data Center	FMCT (GBB)	Plan: MOU with NOA	ISP for Tier 4, GIDC	Special Bond, Economic Development Cooperation Fund, ODA from AfDB, World Bank, etc.	Special Bond, Economic Development Cooperation Fund, ODA from AfDB, World Bank, etc.	Special Bond, Economic Development Cooperation Fund, ODA from AfDB, World Bank, etc.	Special Bond, Economic Development Cooperation Fund, ODA from AfDB, World Bank, etc.	Special Bond, Economic Development Cooperation Fund, ODA from AfDB, World Bank, etc.		
		FMCT (GBB)	2nd Center Development	Under Construction	Cloud by e-Gov Frame	Scale-up to Tier 4	Scale-up	Scale-up	Scale-up	Scale-up	
		FMCT (NITDA)	CDP Concept Paper	Capacity Building	Capacity Building	Capacity Building	Capacity Building	Capacity Building	Capacity Building	Capacity Building	
		FMCT (NITDA)	CA: Blueprint, TF MOU with KISA	CA Establishment	CA Establishment	CA Establishment	CA Establishment	CA Establishment	CA Establishment	CA Establishment	
		FMCT (NITDA)	Concept Paper for PKI	FSJ/BPR/ISP, SYS DEV	FSJ/BPR/ISP, SYS DEV	FSJ/BPR/ISP, SYS DEV	FSJ/BPR/ISP, SYS DEV	FSJ/BPR/ISP, SYS DEV	FSJ/BPR/ISP, SYS DEV	FSJ/BPR/ISP, SYS DEV	
		FMCT (NITDA)	Education Training	Course & Material	Course & Material	Course & Material	Course & Material	Course & Material	Course & Material	Course & Material	
		FMCT (NITDA)	TF MOU with NIA	Center Establish	Center Establish	Center Establish	Center Establish	Center Establish	Center Establish	Center Establish	
		FMCT (NITDA)	ISP For Portal	Portal Development	Portal Development	Portal Development	Portal Development	Portal Development	Portal Development	Portal Development	
		FMCT (NITDA)	Capacity Building	Course & Material	Course & Material	Course & Material	Course & Material	Course & Material	Course & Material	Course & Material	
		FMCT (NITDA)	Working Group	e-Government Act, Cybersecurity & Cybercrime Act	e-Government Act, Cybersecurity & Cybercrime Act	e-Government Act, Cybersecurity & Cybercrime Act	e-Government Act, Cybersecurity & Cybercrime Act	e-Government Act, Cybersecurity & Cybercrime Act	e-Government Act, Cybersecurity & Cybercrime Act	e-Government Act, Cybersecurity & Cybercrime Act	
		FMCT (NITDA)	Working Group	ICT Promotion Act, e-Transaction Act	ICT Promotion Act, e-Transaction Act	ICT Promotion Act, e-Transaction Act	ICT Promotion Act, e-Transaction Act	ICT Promotion Act, e-Transaction Act	ICT Promotion Act, e-Transaction Act	ICT Promotion Act, e-Transaction Act	
Application Development	15-23: e-Finance, e-Procurement, e-Taxation, e-Custom e-Education, e-Health, e-Agriculture, e-Immigration, e-Voting	FMCT & RELATED MDAs	BPR	FSJ/BPR/ISP, SYS DEV	Complete System	Upgrade	Upgrade	Upgrade	Upgrade		
		FMCT, OHCSF	BPR	FSJ/BPR/ISP, SYS DEV	Complete System	Upgrade	Upgrade	Upgrade	Upgrade		
Evaluation	24: Clean Civil Servant Government System	FMCT	BPR	FSJ/BPR/ISP, SYS DEV	Complete System	Upgrade	Upgrade	Upgrade	Upgrade		
		FMCT	BPR	FSJ/BPR/ISP, SYS DEV	Complete System	Upgrade	Upgrade	Upgrade	Upgrade		
Operation	25: Public Information Sharing System	FMCT	BPR	FSJ/BPR/ISP, SYS DEV	Complete System	Upgrade	Upgrade	Upgrade	Upgrade		
		FMCT	BPR	FSJ/BPR/ISP, SYS DEV	Complete System	Upgrade	Upgrade	Upgrade	Upgrade		
Utilization Mgt	Develop monitoring check list & evaluation criteria	FMCT	Control Body	Periodical Monitoring and Ad-hoc, Interim, Post-Project Evaluation	Periodical Monitoring and Ad-hoc, Interim, Post-Project Evaluation	Periodical Monitoring and Ad-hoc, Interim, Post-Project Evaluation	Periodical Monitoring and Ad-hoc, Interim, Post-Project Evaluation	Periodical Monitoring and Ad-hoc, Interim, Post-Project Evaluation	Periodical Monitoring and Ad-hoc, Interim, Post-Project Evaluation		
		FMCT	Control Body	Comprehensive Plan for Operation & Maintenance, Appropriate Budget Allocation, Information Resources Management	Comprehensive Plan for Operation & Maintenance, Appropriate Budget Allocation, Information Resources Management	Comprehensive Plan for Operation & Maintenance, Appropriate Budget Allocation, Information Resources Management	Comprehensive Plan for Operation & Maintenance, Appropriate Budget Allocation, Information Resources Management	Comprehensive Plan for Operation & Maintenance, Appropriate Budget Allocation, Information Resources Management	Comprehensive Plan for Operation & Maintenance, Appropriate Budget Allocation, Information Resources Management		
Post-Implementation	Promote the system utilization of the users	FMCT	Control Body	Publicity Activities, Training to Facilitate Systems, Feedback	Publicity Activities, Training to Facilitate Systems, Feedback	Publicity Activities, Training to Facilitate Systems, Feedback	Publicity Activities, Training to Facilitate Systems, Feedback	Publicity Activities, Training to Facilitate Systems, Feedback	Publicity Activities, Training to Facilitate Systems, Feedback		
		FMCT	Control Body	Publicity Activities, Training to Facilitate Systems, Feedback	Publicity Activities, Training to Facilitate Systems, Feedback	Publicity Activities, Training to Facilitate Systems, Feedback	Publicity Activities, Training to Facilitate Systems, Feedback	Publicity Activities, Training to Facilitate Systems, Feedback	Publicity Activities, Training to Facilitate Systems, Feedback		

Fig. 5.22 Full e-Government Project Implementation Schedule

### 6.1 Need for Organisational Framework for e-Government Master Plan Implementation

E-Government is a core agenda for national development in Nigeria; the President of the Federal Republic of Nigeria has placed e-Government as a top priority of his administration. Particularly in order to accomplish the ERGP, e-Government is being recognized as a driving force for economic leap. The president recently emphasized the importance of technology and innovation.

The increasing importance of e-Government policies worked as a momentum to strengthen the organizational framework of e-Government in Nigeria for the past ten years. Many institutions and agencies have been newly established to push forward e-Government policies since the year 2000. Also, existing agencies have introduced new e-Government systems and accordingly reinforced various organizational structures to implement them.

The creation of Federal Ministry of Communication and Technology (FMCT) has transformed the ICT and e-Government policy into a national agenda in Nigeria and developed systems for better public service. More importantly, the department of e-Government within FMCT was established in 2013 to facilitate the development of national e-Government strategy and lay the foundation for long term adoption of e-Governance in the country.

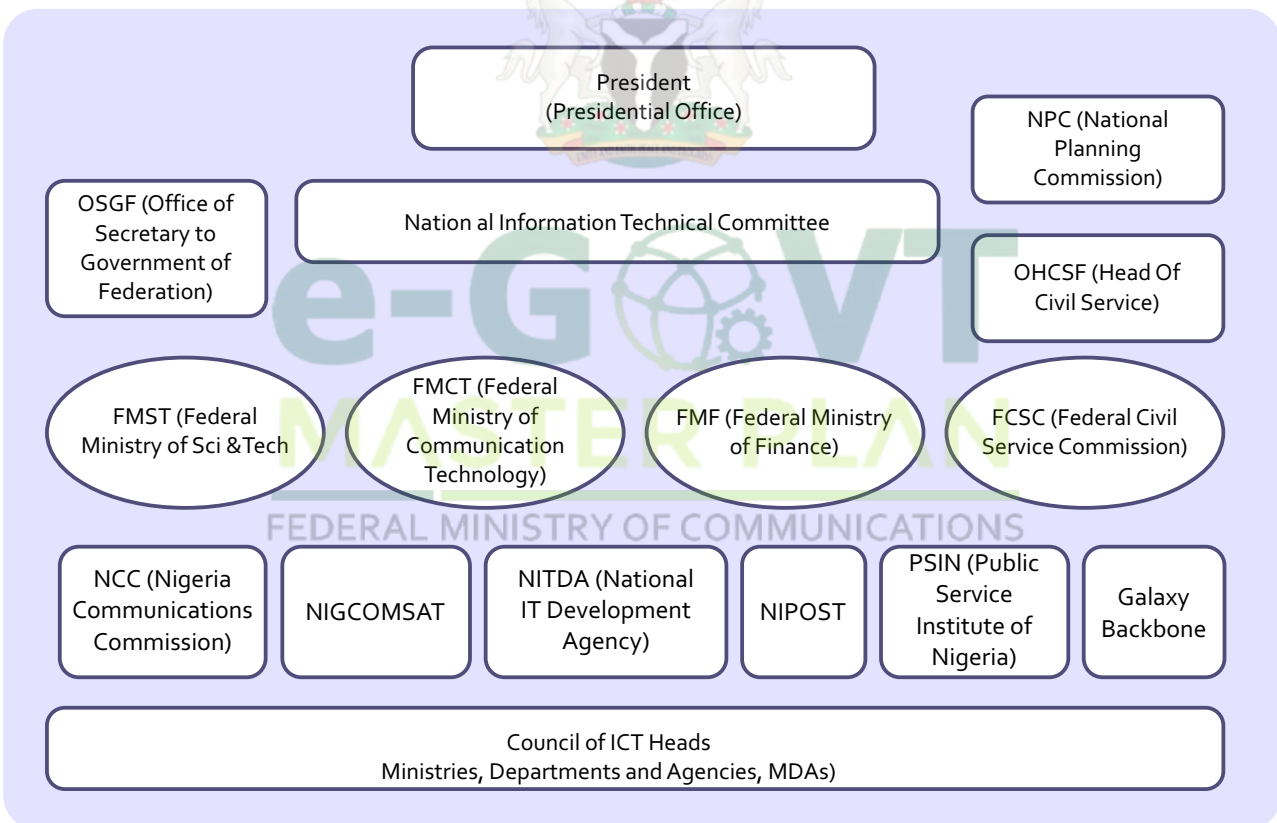


Fig. 6.1 Proposed Governance Structure for e-Government in Nigeria.

## 6.2 Roles and Responsibilities of e-Government Organizations

### 6.2.1 Federal Ministry of Communications Technology (FMCT)

Federal Ministry of Communications and Technology (FMCT) established in 2011 to promote the use of ICT as a key tool in the transformation agenda for Nigeria in the areas of job creation, economic growth and transparency of governance. The major role of the ministry is to coordinate the activities of ICT agencies to achieve better performance of the sector.

The Ministry has five agencies under its purview: Nigerian Communications Commission (NCC), Nigerian Communications Satellite Limited (NIGCOMSAT), Nigerian Postal Services (NIPOST), Galaxy Backbone (GBB) and National Information Technology Development Agency (NITDA).

- E-Government functions of the Ministry

The e-Government department was created in 2013. It is saddled with the responsibility of bringing government information and services to the citizens through application of ICT in order to improve transparency, internal efficiency, by automating the delivery of public services. The IT department will collaborate in this effort as required, especially in the area of Capacity Building and management of the IT cadre within the Public Service. Other e-Government functions include the following:

- Facilitate and encourage public private partnership initiatives to develop the ICT sector e.g. ICT parks.
- Support ICT Capacity building programs.
- Liaise with international ICT organizations to promote national ICT development.
- Provide a National portal to facilitate single window access to public services.
- Facilitate the development of national databases to ensure seamless access to data.
- Oversight role (on behalf of the Ministry) on various e-Government projects being deployed by other MDAs to ensure proper alignment with the National framework and achieve savings for government.
- Support research and policy development.
- Champion the adoption of ICTs (especially using the Internet and 'new media' platforms) as a tool for better governance.
- Continuous improvement and optimization of e-Government services and platforms.

FEDERAL MINISTRY OF COMMUNICATIONS

### 6.2.2 National Information Technology Development Agency (NITDA)

National Information Technology Development Agency (NITDA) was created in 2001 to foster the development and growth of IT in Nigeria. The vision and mission of NITDA is to become the prime catalyst for transforming Nigeria into IT driven economy. To maximize the effectiveness of ICT policies, NITDA regulates, monitors, evaluates, and verifies progress on an ongoing basis under the supervision and coordination of FMCT.

### 6.2.3 Galaxy Backbone (GBB)

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Galaxy Backbone (GBB) was established in 2006 in response to the increasing proliferation of disparate IT networks and assets across Federal Government Ministries, Departments & Agencies (MDAs) and Institutions. The intent for the establishment of Galaxy Backbone was, therefore, to enable the Federal Government derive more value from its investments in information and communication technology by eliminating duplication, establishing economies of scale, enhancing interoperability of systems and improving Government's capacity to deliver electronic services. GBB is the sole provider of bandwidth & connectivity, ICT infrastructure, applications and services to federal government MDAs and institutions, e.g. manage government data centres and databases, directory services, national information repositories, IP telephony and other solutions.

### 6.2.4 Office of the Secretary of Government and Federation (OSGF)

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The purposes of the Office of the Secretary to the Government of the Federation (OSGF) are to provide efficient services for the overall development of the country and its citizens through its mandates. These include: (1) monitor and coordinate the implementation of government policies and programs; (2) serve as frontline advisory institution of the presidency; (3) drive Policy formulation, harmonization, and implementation; and (4) monitor institutions of governance.

### 6.2.5 Federal Civil Service Commission (FCSC)

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The functions of Federal Civil Service Commission is based on section 153(l)d of the 1999 Constitution of the Federal Republic of Nigeria, Part I(d) paragraph II of the third schedule. The commission is responsible for appointing persons to offices in the federal/state civil services and dismissing and exercising disciplinary control over persons holding such offices.

### 6.2.6 Office of the Head of Civil Service of the Federation

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The office of the Head of Civil Service of the Federation emanated from Section 169 of the 1999 Constitution of the Federal Republic of Nigeria (as amended). The Civil Service of the Federation and the Office of the Head of the Civil Service of the Federation (OHCSF) are legal entities with juristic personalities as administrative machineries for implementing government policies and programmes with diligence and commitment for advancing the welfare and well-being of the citizenry through the judicious use of human, material and financial resources and qualitative service delivery based on observance of the Rule of Law/Due Process.

The Federal Civil Service under the leadership of the Head of the Civil Service of the Federation recognizes the OHCSF as the engine of governance with key contributory roles by the private sector as stakeholders in the development process. In this regard, the OHCSF creates platforms to promote public/ private partnerships in the development of competencies and exchange of professional ideas/ knowledge. It also pursues the capacity development of officers through the efforts of the Administrative Staff College of Nigeria (ASCON), the Public Service Institute and the Federal Training Centres to harness the staff potentials for self-development and promotion of the common good.

## 6.2.7 Council of ICT Heads

After the establishment of FMCT, Council of ICT Heads was constituted. The Council is an advisory body with no decision-making authority but can deploy influence, peer pressure and moral suasion to enable change within MDAs. It also acts as sounding board for the Ministry of Communication Technology in ICT policy formulation and execution. The Council Heads are aimed to drive internal efficiency in MDAs, ensure improved IT service delivery, coordinate federal government IT strategy and implementation, effective IT project management, and integrated IT budgeting within federal MDAs.

## Organizations for e-Government Policy Management in Nigeria

Name	Functions
FMCT	ICT policy development and coordination
FMCT (e-Government)	e-Government policy development and coordination
NCC	ICT industry regulations
NITDA	ICT support and development
NIPOST	Postal service delivery and access infrastructure
Galaxy Backbone	ICT infrastructure provision for federal government and in agencies
NIGCOMSAT	Commercialization of government's satellite resources
USPF	Managed fund to incentivize universal access
NITDEF	Managed fund to incentivize universal access
PSIN	Training for civil servants

Table 6.1 Organizations for e-Government Policy Management in Nigeria

## 6.3 Challenges for e-Government Service Development and Deployment

- Rapid technological changes and lack of proper capacity building programs for civil servants and citizens
- The digital divide
- Resistance to change
- Privacy and security concerns and lack of security infrastructure including PKI
- Legislative and regulatory barriers
- Inefficient investment of resources
- Lack of proper and common technical frameworks and infrastructure
- Challenges to sharing a common vision
- Insufficient political will
- Insufficient communication and collaboration between MDAs
- Insufficient motivation for public-private partnership

## 6.4 Challenges of ICT Infrastructure

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*High Cost of Installation:* The cost of installing terrestrial fibre optic networks in Nigeria is high. Telecom operators spend close to 12-20% of their capital expenditure on infrastructure. Multiple taxations by the government also account for the expensive cost of acquiring Right of Way to lay fibre optic cables. This makes the deployment of infrastructure to less commercially viable (rural areas) unattractive. Many telecom operators concentrate on the urban areas while neglecting rural areas. 3G and 3.5g mobile data services are centred primarily in the urban areas.

*High Cost of Internet Connectivity:* Additional costs incurred by infrastructure providers are passed onto consumers making access to ICT infrastructure expensive. Internet connectivity is very expensive and characterized by slow connections and limited download ability for the subscriber and others. The unreliability of the service has forced many businesses to invest in independent satellite communications as alternative and more reliable access to the internet.

*Cyber threats:* Cyber security threats pose a great problem to e-Government initiatives. Citizens lack confidence in the government to protect them from cybercriminals and government establishments also face risks of cyber-attacks.

*Vandalism:* There have been recent violent attacks on base transceiver stations especially in Northern Nigeria. Telecom operators also have to grapple with theft of their equipment such as generating set. Fibre optic cables are also stolen by vandals with little consequence or recourse to the perpetrators of the act.

*Duplication of Regulation and Multiple Taxation:* Telecom operators in Nigeria complain that each of their base transceiver station is subject to regulations from different bodies such as the NCC, FAAN, NESREA, and the Ministries of Environment of the federal and state governments. Each regulator requires an Environmental Impact Assessment for the piece of land where the base station shall be situated.

*Lack of Regular Power Supply:* Irregular supply of electricity is a problem that has affected the development of the nation and clearly affects the robustness, quality, cost and availability of telecom infrastructure. Telecom providers have to equip their base stations with alternative source of power with the attendant requirements for fueling, maintenance and security.

### 7.1 National Human Resource Aspirations

The overarching targets of Nigeria e-Government Vision are indicative of Nigeria's desire to achieve two broad objectives over the medium to long term:

- Optimize her human and natural resource potential to achieve rapid and sustained economic growth.
- Translate economic growth into equitable social development that guarantees a dignified and meaningful existence for all her citizens.

The Vision is encapsulated in a set of national aspirations which describe the desired end state for the year 2020. These aspirations are defined across four dimensions: Social Dimension, Economic Dimension, Institutional Dimension, and Environmental Dimension.

A healthy and economically productive population that is growing at a sustainable pace, supported by a healthcare system that caters for all, sustains a life expectancy of not less than 70 years and reduces to the barest minimum the burden of infectious and other debilitating Diseases.

A modern and vibrant educational system that meets international standards of quality education, is accessible, and adequately aligned to the changing needs of the society and the demands of industry.

### 7.2 Human Resources Strategic Framework

#### Investing in human capacity development to enhance national competitiveness:

In Nigeria today, education and health, the foundations for lifelong learning and capacity building are currently constrained by under-funding, inadequate and poor infrastructural, as well as capacity gaps. A vast majority of Nigerians do not have access to good quality education and affordable healthcare and, therefore, cannot unleash their full productive potentials.

Without a doubt, a holistic government-led effort to revive the education and health sectors of the Nigerian economy is required to support the Vision 20:2020 aspirations. In the immediate term however, public policy will be focused on these three critical imperatives:

- Improving the quality of basic and vocational education to ensure greater alignment with the human capacity requirements of the country in view of her growth aspirations
- Redefinition of the roles of the different tiers of government to enhance the framework for health care delivery, and subsequent massive investment to significantly improve quality of healthcare services
- Stimulating public behaviour to support the attainment of a sustainable population growth rate
- Guaranteeing the productivity and well-being of the Nigerian is one of the fundamental pillars of ERGP Vision and fully details Nigeria's strategy for transforming her people into catalysts for growth and national renewal, and a lasting source of comparative advantage.



## Guaranteeing the productivity and well-being through building the human capacity:

Education is both a basic human right and a critical element in human development. Therefore, human capacity development facilitated by strong learning systems is central to the attainment of Nigeria's ERGP. The aim of the ERGP Capacity development Program is to ensure that all boys and girls, irrespective of ethnicity, gender or disability, complete a full course of basic education - 12 years of formal education consisting of 3 years of Early Childhood Care Development and Education (ECCDE), 6 years of primary schooling and 3 years of junior secondary schooling. This would be followed by at least 3 years of vocational training (informal/formal education) or senior secondary schooling. Meeting this basic target will speed progress towards the achievement of all the other targets for NV 20:2020, including the eradication of poverty and hunger, as well as accelerated economic development. The Demographic Health Survey conducted by UNICEF in 2015 but released in 2018 puts the total number of out-of-school children at 13.2 million (intended beneficiaries of the Universal Basic Education) who are either out of school, or have very poor progression from primary to secondary schooling. This was in addition to gross inadequacy of tertiary education – all federal and state universities have capacity to absorb only about 100,000 out of the 900,000 applicants for university education, annually.

This requires a drastic action plan, to expand access and quality at all levels. Previous reforms in the education sector, including the National Policy on Education (2004) (which encompasses the Universal Basic Education Act) and the Education Roadmap, have not achieved the desired results, due to persistent constraints of under inadequate and poor facilities, among others.

The daunting task to expand educational access calls for a massive infrastructural upgrade, including the provision of more schools on an incremental basis, annually (to cater for the expected population growth). These schools must also be fully equipped with labor quality. Public-Private-Partnerships in formal education and vocational training will be pursued as a viable mechanism to improve the effectiveness of education system in a cost compromising equity. Properly regulated private participation, leading to healthy competition among providers of service, will lower costs and improve responsiveness to the needs of the populace. It can also encourage the public sector to improve the quality and efficiency of public schools.

### Strategies for enhancing education for employment:

Developing a more labour-market relevant curriculum requires reviewing the entire school curricula, especially senior secondary and tertiary, and making them employment – sensitive, by introducing new subject matters including:

- Life skill programmes such as critical thinking skills, social skills and functional skills needed in the employment market
- Entrepreneurship skills, emphasizing motivation and creativity
- Streamlining the existing skills and entrepreneurs development agencies into a consolidated 'Skills for Enterprise and Employment Programme and collaborate with national and international development organizations, to develop skills and manpower for the productive sectors of the economy
- Assisting job-seekers by enhancing the information efficiency of the labour market and its institutions
- Improving capability and relevance in the global labour market through ICT diffusion and targeted skills development

### 7.2.1 The Formulation and Implementation of the Framework

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A sound framework would enable the relevant implementing authorities to expand access, increase equity and enhance the quality of educational provision, while promoting international-standards in teaching resources, content, and methodologies, across all levels.

Capacity building will be based upon clear and dynamic strategies geared towards policy measures that:

- strengthen education as the foundation for lifelong learning,
- foster the development of Research and Development,
- promote worker education and training,
- foster innovation and entrepreneurship,
- facilitate the diffusion of Information and Communication Technology, as well as
- seek equal access and opportunity for women and other vulnerable groups

Educational reform is fundamental to human capacity building. The ERGP seeks to re-focus the educational system in terms of access and equity, quality, infrastructure, teacher quality and development, curriculum relevance, funding and planning. In addition, more attention would be given to Technical and Vocational Education & Training (TVET), which was instituted to provide skilled manpower in applied science, engineering technology and commerce to operate, maintain and sustain the nation's economic activities for rapid socioeconomic development.

TVET was designed to impart necessary skills and competencies leading to the production of artisans, technicians and technologists who will be enterprising and self-reliant, thus having the greatest potential to generate employment, reduce poverty and eliminate social miscreants known as 'Area Boys' and the 'Area Boy Syndrome'. Continuing education, especially for the working population, will also be addressed through greater collaboration with corporate organizations and enhanced ICT diffusion.

### 7.3 Capacity Building for ICT Skills

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Transformation to a knowledge-based economy requires significant investment in the development of ICT skills. These skills are required to support innovation, infrastructure and effective business models that underpin a knowledge-based society.

#### Situation of ICT skills:

Proficiency in ICT is still very low among ICT professionals and the general populace in Nigeria. This translates to a huge skills gap which in turn signposts untapped benefits that ICT could potentially deliver to Nigeria's socio economic development. Therefore, strengthening of ICT human capital should be accorded the highest priority.

#### Objectives of building ICT skills:

- To integrate ICT into the national education curriculum;
- To promote the culture of lifelong learning;
- To promote development of ICT skilled personnel; and
- To support training and capacity building among public sector employees in the development and use of ICT tools and applications to improve the delivery of Government services.

## Strategies of building ICT skills:

The Government will:

- Facilitate the establishment of globally competitive training institutions in the field of ICT;
- Introduce mandatory training and appropriate courses in ICT at all tiers of education;
- Encourage continuous training for professionals through specialized training institutes (e.g. Digital Bridge Institute, Abuja; NTA College, Jos; Radio Nigeria Training School, Lagos; etc.);
- Foster an ICT driven educational administration environment;
- Train and retool teachers and facilitators at all levels, to enhance their ICT competence;
- Promote ICT awareness and proficiency in mass and non-formal education with emphasis on children, youth, women, and the physically challenged;
- Promote the development of instructional materials in electronic format; and
- Develop and implement ICT training programs for public sector employees, in connection with the implementation and institutionalization of e-Government and other digital functions within Government offices.

### 7.4 Developing e-Government Framework

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To ensure the success of the e-Government framework, there are three environmental factors that need to be considered from the client/citizen point of view: Public awareness and orientations, level of information technology in society, and the client business process adjustment.

The Public awareness and orientations is the key to the success of the e-Government, all the end users must be educated and enlightened about the government goals and objectives.

The Level of Information Technology development in the society must be reviewed and a proactive step to ensure the required infrastructure is commercially available and affordable to the populace must be taken. The support foundation is a window for the e-Government framework involving various proactive activities upon which e-services delivery will depend.

This foundation create enabled environment conducive for all other levels of the framework. These activities include Business Process and Policies, Legal & Regulation Policies, Capacity Building, and Network Security Framework.

The new emerging information based economy, creates new opportunities, and new effective way of service delivery. However, the human capacity development will play a crucial role in taken advantage of the new technological efficiency and the success of e-Government implementation. Training of government staff members (from federal to local municipals) on the new technology and the new process will lay a solid foundation for making the vision for e-Government framework achievable.

### 7.5 Digital Literacy Program for Public Sector

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Government wide digital literacy program should be aggressively pursued. Everyone should get basic level functional computer or digital literacy skill within the first twenty four months of the program. MDA ICT departments/units should each provide in-house and in plant basic/specialized computer training for all staff of the ministry.

A common e-literacy or computer competence/proficiency curriculum should be developed for Nigerian public service. Every staff is directed and encouraged to test his/her current computing and online skills so as to provide basis for further training required to meet minimum competence standard.

This general capacity building program should be started with a service wide computer skills audit solution (CSAS). CSAS is a service designed to deliver quick and valid assessment of Computer Skills in federal MDAs.

It is designed and developed to:

- Determine the hands on computer competence of each public servant in an MDA.
- Instantly rate, archive and feedback on individual computer skill scores and level – Beginner, Intermediate or Advanced.
- Specify appropriate levels of computer training need for each personnel.
- A basic certification can be attached to this program and it will become a standard for e-Literacy accreditation in the entire country.

### 7.5.1 e-Executive Program

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This training program is intended for political and administrative heads of departments / organizations who may not be concerned with the details of an e-Government project, but who nonetheless have to provide the leadership and an environment conducive to make it happen. Since such persons are typically extremely busy people, a short weekend program needs to be designed to familiarize them with the main issues that a Chief Information Officer (CIO) has to deal with and key perspectives regarding their role, particularly in change management, decision making and financial management among others.

Such program will lead to:

- Empowerment to make the right decision based on facts and implication
- Ensure the right resources allocation to at the right time be it financial or personnel appointment to key areas of the program
- Ensuring long term financial viability and sustainability of a project
- Institutionalization of mechanism for meeting operational costs
- Ensuring efficiency and efficacy in resource allocation against various expenditure categories
- Conceptualization and development of Public Private Partnership (PPP) models
- Ensuring inventory (or asset) tracking
- Ensuring quality in financial reporting

### 7.5.2 e-Technical Officer Program

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In general, any e-Government project that is not led and driven by a senior person from within the government domain in which it functions, is unlikely to succeed. Mostly such people, however, may not have the skills to lead a project through all its developmental stages. Hence a comprehensive training program extending over duration of 3-6 months needs to be designed for such identified officials.

Typically, such persons (may have) had a scientific or technical background or an aptitude for project management. After undergoing this training program, an official is expected to have all the skills necessary to implement an e-Government project from conceptualization to complete rollout stage. The program needs to be designed in collaboration with the Capable Private Provider specialized in the area of Management Information system and related field. The number of candidates for this training will cut across various MDAs, and state government, however, must be manageable size to cover all the stakeholders over the entire country. However, their impact on accelerating spread of e-Government is enormous.

Since most projects require extensive technical skills such as Chief Information Officers (CIOs) as defined above may not have, key personnel drawn from technical bodies or state government departments are proposed to be trained to impart the skills that they need to have other than purely technical skills. Such Chief Technology/Technical Officers (CTOs) with good domain knowledge could also function as CIOs. Another effort in this area is to provide opportunities for technical personnel to undergo advanced training programs in security, architecture, standards and so on to supplement their skill set appropriately. The candidate for this program will be responsible for providing technology leadership, change management and process re-engineering for their various environments as guided by the e-Government framework:

### Technology leadership responsibilities include:

- Ensuring quick turnaround in developing and conceptualizing the technological solution for each department/functional area which is interoperable, standardized and scalable; taking it to a point where implementation agencies could be deployed for specific work
- Development of standards for systems, applications and processes across the State
- Development, integration and leveraging of infrastructure of various departments across geographies for reducing overall investments
- Change Management and Process Reengineering responsibilities includes: Creating suitable plans to deal with organizational issues that arise during implementation of e-Government projects. E-government projects tend to redefine power equations within departments. Stakeholders outside government are also often impacted. Some people lose power, some people gain. This leads to stresses and strains within and outside the organization, which if not managed with finesse, lead to early demise of the project.
- To clearly identify all internal and external stakeholders in a project, their goals, the extent to which these can be harmonized and factored in, the likely impact on all stakeholders and their likely reaction. This forms the basis of a credible and effective change management plan
- Ensuring continuity of the program and project in the event of change in key persons/project champions, during the course of the project
- Synchronization of individual initiatives with the Federal level / State level initiatives
- Providing “capacity ramp-up” plan for manpower scaling
- Providing full ownership to the State Government and Government Departments for implementing the projects
- Catalyzing administrative, process and legal changes required within the State Government
- Providing stronger focus on change management through efficient communication, workshops, etc.
- Alignment of interests of the key stakeholders (Central Line Ministries, State Governments, Department of IT at Centre and State, etc.) thereby synergizing various efforts

### 7.5.3 Technology End User Program

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The candidate and personnel are trained specifically on the package developed for their organization in line with the e-Government scheme. Since this involves performance of tasks that they were already performing manually before the advent of the computerized system, a short two-week training program shall be more than quite adequate. Typically, such training is part of the project and is built into the project in terms of cost, timing and content. The number of people to be trained depends on the size of the organization and the activities covered by the e-Government project. Typically, it runs into several hundred candidates per project for the internal staff members with objectives of:

- Enabling administrative and legal changes through involvement of top leadership in the state
- Adoption of a project oriented approach for the e-Government initiatives in the State
- Development of program and project plans integrating timelines, roles and responsibilities
- Development of a communication plan
- Establishment of project control mechanisms like responsibility matrix, escalation matrix, etc.
- Undertaking mid-course corrections (if required)

In many projects, there will be need to organize training for organized bodies of external users of specific systems. An extensive training program, awareness building and sensitization are necessary to be built into the project as a part of the change management plan. Most e-Government projects have external stakeholders for whom a capacity building plan is essential for success of the project in terms of utilization.

#### 7.5.4 ICT Essential Program

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As computers become more pervasive, it is necessary to impart training to existing employees in use of computers for general purposes like word processing, spreadsheet, power point, etc. Typically, a five to ten days program is required to be implemented via outsourcing to private training institutions. A large number of people is expected to be trained in this IT and computer appreciation program.

#### 7.6 Institutional Requirements for Digital Literacy

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To initiate any e-Government project, the capacities required a much more comprehensive and holistic than a conventional Software Development Life Cycle project. e-Government initiatives entail policy development/refinement, Financial Management, Program Management and warrant a higher emphasis on Change Management. Apart from this, creation of institutional structure brings continuity to a project. Hence while initiating any e-

Government projects there is an urgent need to develop capacities in all these areas at all the levels of Governance – Federal MDAs, State, and Municipal Local entities. To address these issues, the federal structure of the country has been factored in, so there is a need to create suitable institutions/capacities at different levels.

##### for Federal Government (MDAs),

- Overall Policy Development, direction and Financial Management
- Program Management and Support for e-Government at federal level
- Management and implementation of projects under the Federal Government MDAs

##### for State Government,

- Providing direction at the state level to the e-Government initiatives from the highest office in the State Government
- Providing full time knowledge support to the policy makers and implementation teams
- Individual project management
- Creation/Strengthening of State Training Institutions

### for **Municipal Local Entities (LGAs)**

- For having in-house capabilities to manage e-Government initiatives
- Training Program

### for **Citizens**

- Awareness Program
- Right to Information
- Civil Society Organizations

The capacity development is required to address the digital divide in the country in an integrated and holistic manner. This can only be made possible when the citizens are made aware about the e-Government scheme and how they can effectively utilize it in their day-to-day interaction with the government, and likewise, the civil servants will be able to discharge their duties in a cost effective and efficient manner.

The capacity building amongst citizens could be done through mobilization of all relevant tools like Internet, cable TV, community/FM radio and the vernacular press, combined with appropriate content, connectivity and capacity building measures. Educating citizens about their powers under the right to information is important to increase the e-service uptake. The e-Government scheme has the potential to revolutionize the strategy on the economic development path and to facilitate better quality public services in areas such as health, education, environment, provision of business services providing market prices and other information, e-trade opportunities, e-entertainment, e-banking, e-learning, digital photos, e-booking of tickets, internet linked services, etc.



### 8.1 SWOTS Analysis

A strategy workshop was conducted to grasp the strategic intention of top government officials and to solicit support from them for the establishment of the Master Plan. Thus, the objective of the strategy workshop is to derive the vision, objectives, and operational strategies for the future of Nigeria's e-Government. The analysis of its results was also useful to derive specific tasks to be performed and to prepare the action plan identifying threats (risks) and leveraging our strengths and opportunities.

SWOT Analysis	<b>Opportunities</b> <ul style="list-style-type: none"> <li>International partnership</li> <li>Fast growing economy</li> <li>Nigeria Strategic importance and influence in Africa</li> <li>People's demand for change</li> <li>Growth of foreign investment</li> </ul>	<b>Threats</b> <ul style="list-style-type: none"> <li>Corruption</li> <li>Insecurity</li> <li>Resistance to change</li> <li>Political instability</li> <li>Lack of policy continuity</li> </ul>
	<b>Strengths</b> <ul style="list-style-type: none"> <li>Human Resource</li> <li>Natural Resource</li> <li>Capital Resource</li> <li>Climate</li> <li>Large population &amp; Market size</li> </ul>	<b>SO</b> <ul style="list-style-type: none"> <li>Expand Capacity Building of e-Government</li> <li>Create Variety of Funding Sources</li> </ul>
<b>Weaknesses</b> <ul style="list-style-type: none"> <li>Bad governance</li> <li>Weak in policy implementation &amp; execution</li> <li>Poor leadership</li> <li>Poor infrastructure</li> <li>Disunity</li> </ul>	<b>WO</b> <ul style="list-style-type: none"> <li>Develop Adequate Infrastructure &amp; Application</li> <li>Strengthen R&amp;D and Education in ICT</li> </ul>	<b>WT</b> <ul style="list-style-type: none"> <li>Establish Legal Framework for e-Government</li> <li>Establish Organizational framework</li> <li>Publicize e-Government Initiatives</li> </ul>

Table 8.1 SWOTS Analysis from Workshop

### 8.2 Risk Identification

#### 8.2.1 General Risks:

There are 3 general categories that risks to e-Government Project initiatives can come from;

#### People:

Public Service personnel may not have the necessary Digital Literacy skills to manage the new e-Government applications and systems implemented. This risk can manifest in unavailability of suitably qualified personnel and their understanding of the project/programme as well as lack of adequate training and capacity building for the available personnel.

Lack of **citizen awareness** and knowledge of e-Government services can also pose a high risk to the success of the e-Government program.



### Processes:

Risks arising from changes to normal ways and processes management by individuals exercising authorities for personal reasons to e-Government automated processes delivering higher efficiencies may not be correctly perceived. Change management issues will arise as a risk factor as well as the magnitude of change. Process Impact measurement is a necessity after process change has occurred.

### Technology:

The choice for the appropriate technology as well as the need for appropriate standards all pose serious risks for e-Government initiatives. Budget, Skill, in-house, outsourcing, standards, and emerging technologies are all variables to be addressed. New and emerging technologies may be fascinating but may be laced with its risk of failure of unproven methodologies are employed..

## 8.2.2 Contextual Risks:

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Cultural Resistance is at the top of the identification of risks in the context of our nation. e-Government initiatives mean changes of status in some degree. Usually most people are resistant to changes in any form. Cultural resistance can arise from the government culture of secrecy and seniority, individualism, corruption and to a certain degree lack of imagination.

Cyber security threats pose one of the greatest risks to e-Government initiatives. Citizens lack confidence in the government to protect them from cybercriminals and government establishments also face risks of cyber-attacks from a number of system threats.

There is therefore a need for legislation to tackle diverse issues such as responsibility for authentication and security, and the allocation of risks for losses arising from the carrying out of unauthorized transactions in e-banking, protection of personal information, jurisdictional issues, admissibility of electronic transactions in evidence and other issues peculiar to the ICT environment.

There are largely the risks of data security, loss and corruption. This management solution requires skilled coordination and monitoring to ensure that the Government is not exposed to these avoidable risks.

Another risk consideration is the performance indicator for departmental heads is the ability to spend the allocated budget within the fiscal year; officers who fail to spend their allocated budgets are perceived as less productive. Consequently, officers tend to shy away from "projects which appear to take forever" and may not therefore allow them to spend their allocated funds. In cases where departments embark on such projects, the projects tend to fail due to lack of financial commitment.

Lack of continuity in leadership can effectively lead to the failure of projects. When a leader with a vision and passion for a specific project leaves, there is often a risk that the replacement may not have a similar attitude towards the project. Further, the new leader would have to contend with a multitude of legislation and other information in order to proceed with assigned e-Government initiatives. This hurdle on its own can cause the stagnation of projects.

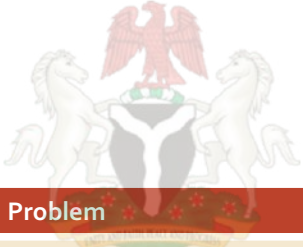
On one hand, there is the risk of employees working on the fulfilment of sensitive government services may have an attitude e-services fulfillment when needed out of fear of losing control over sensitive information. On the other hand, citizens may have perceptions of high levels of threat to the privacy of their information, which may slow down users' adoption of e-services.

As e-Government initiatives progress, we become increasingly vulnerable to a range of risks from interruption of operations to loss of confidential data. Government agencies at all levels (national, state, and local) must protect the computer and communication systems that they own and operate. Information security requires a combination of business, management, and technical measures in an ongoing process.

Lack of information exchange and sharing Accessibility of information by other agencies, including information sharing is the most ranked risk for e-Government implementation in Nigeria. Such risks are often found as misuse of e-Government services and increased criticism by other agencies and citizens.

Unstable power supply poses risk to e-Government implementation since Nigeria does not have regular supply of electricity across the country, despite being one of the petroleum exporting countries.

### 8.3 Risk Mitigation and Control



Risk	Problem	Corresponding Strategy
<b>Strategy</b>	The project fails to achieve national goal, causing uneconomical management of the organization	Validity review for direction of e-Government
<b>Administrative Culture</b>	Sectionalism and resistance of bureaucracy against changes and standards	Strong determination and involvement of the leader
<b>Change Management</b>	More emphasis on automation of existing process than effective solution suggested by BPR, and more focus on the demand and convenience of the organization than the demand and satisfaction of citizens	Staffs' participation in planning process and provision of training for them
<b>Project Management</b>	Poor procurement plan and dependency on a few vendors	Development of competitive procurement plan and introduction of incentive system
<b>Finance</b>	Errors in estimation of lifetime cost, little cost reduction, the existence of legacy system and sunk cost	Utilization of neutral and professional financial plan made by the third party
<b>Performance Management</b>	More emphasis on the system operating time, rather than the performance benefit of the project	Introduction of an evaluation method enabling assessment of long-term, intangible effects
<b>Standard</b>	Adoption of sectional standard based on the internal demand of the organization rather than interoperability among organizations	Cooperation among ministries focusing on ministerial linkage
<b>Technology</b>	Adoption of promptly applicable tools and methods suggested by a few vendors and adoption of poorly functioning applications	Adoption of competitive bidding, piloting/prototyping

Risk	Problem	Corresponding Strategy
<b>Data Management</b>	Errors made by data loss/misuse, possibility of data dependency on other organizations	Data warehouse/backup, process mapping, information - sharing and co-utilization
<b>User Demand</b>	Development of the system not reflecting the users' demand	Full adoption of users' demand
<b>Personal Information</b>	Violation of privacy, intellectual property right, and classified national information	Control access to electronic authentication trainings
<b>Information Security</b>	Vulnerability of system, website, networks and information misuse	Security plan authentication corresponding to the level of threats, firewalls

Table 8.2 Risk Mitigation and Control Table



**e-GOV**  **VT**  
**MASTER PLAN**  
 FEDERAL MINISTRY OF COMMUNICATIONS

### 9.1 Monitoring & Evaluation

The project monitoring includes all activities performed to ensure the success of the project from the implementation up to post-evaluation of the project. The monitoring plan, corresponding to the evaluation objectives, should be set up at the early stage. In addition, it is crucial to comprehensively monitor not only external risk factors impacting the implementation of e-Government, but also internal restraints resulting from the system development.

The core risks should be closely monitored during project implementation is detailed below.

#### 9.1.1 Project Monitoring

The project management body performs general management of the project, controlling major factors including the scope of the project schedule, expenses, quality, human resources, telecommunication, risks, purchases and customer relationship. The project monitoring includes all activities performed to ensure the success of the project, such as systematically collecting managerial and financial information generated from the implementation of the project reconfirming the objectives, identifying and addressing potential problems at the early stage, and collecting input information for post-evaluation. The monitoring plan, corresponding to the evaluation objectives, should be set up at the early stage to effectively carry out monitoring. In addition, it is crucial to comprehensively monitor not only external risk factors impacting the implementation of e-Government, but also internal restraints resulting from the system development.

Perspective	Factors	Monitoring Items
Vision and Change	Vision & Leadership	<ul style="list-style-type: none"> <li>• Clear vision and long-term goals</li> <li>• Leader's concern and involvement</li> </ul>
	Government Reform	<ul style="list-style-type: none"> <li>• Linkage to government reform</li> <li>• Examination of external barriers</li> </ul>
Institutional Rearrangements	Inter-agency Coordination	<ul style="list-style-type: none"> <li>• Inter-agency cooperation and coordination</li> <li>• Inter-agency information sharing and interoperability</li> </ul>
	Resource Allocation	<ul style="list-style-type: none"> <li>• Budget allocation</li> <li>• Human resource</li> <li>• State-of-the-Art Technology</li> </ul>
	Institutional	<ul style="list-style-type: none"> <li>• Legal and institutional rearrangements</li> </ul>
Customer	Access	<ul style="list-style-type: none"> <li>• Respond to customer needs</li> <li>• Improving access to online services</li> </ul>
	User Requirements	<ul style="list-style-type: none"> <li>• Users and stakeholders</li> </ul>
Governance	Accountability	<ul style="list-style-type: none"> <li>• Inter-agency accountability</li> <li>• Self-correction mechanism</li> <li>• Public relations</li> </ul>
	Security and Privacy	<ul style="list-style-type: none"> <li>• Privacy protection</li> <li>• Information security</li> </ul>

Table 9.1 Checklist for Monitoring Progress

Perspective	Factors	Monitoring Items
Project Management	Scope	<ul style="list-style-type: none"> <li>Consistency between vision &amp; goals and project</li> </ul>
	Time Schedule	<ul style="list-style-type: none"> <li>Managing time schedule</li> </ul>
	Risk	<ul style="list-style-type: none"> <li>Overcoming dependency of outsourcing</li> <li>Protecting privacy and national credentials</li> </ul>
	Customer	<ul style="list-style-type: none"> <li>Reflecting user requirements</li> <li>Upgrading user expediency</li> </ul>
	Change	<ul style="list-style-type: none"> <li>Explaining rationales for change</li> <li>Managing change content and its expected effects</li> </ul>

Table 9.1 Checklist for Monitoring Progress

### 9.1.2 Evaluation

#### Significance of Evaluation Activities

Evaluation is a kind of control activity, systematically analyzing the overall process from objective setting to project completion in order to improve the performance of the project. The evaluation activities include the pre-assessment to generate the best outcome, the performance evaluation to review whether the original objectives were well achieved, the process evaluation to assess the appropriateness of project processes, and the meta evaluation to examine the appropriateness of evaluation system.

In general, the national assembly and the citizens show great interests in the outcome of the input budget. Yet, it is quite difficult to quantitatively measure the outcome of resources input to e-Government, shown as Return on Investment (ROI), performance. Accordingly, many countries are developing a variety of methods to measure long-term, intangible and potential benefits of e-Government.

Standard	Expected Value	Methodology	Direction
Impact	Intangible, long-term	Balanced Scorecard (BSC)	↑
Outcome	Benefit and cost	Benefit/cost analysis (BCA) Information Economics (IE)	
Output	Tangible and short-term	Return on investment (ROI) Internal Rate of Return (IRR) Net Present Value (NPV)	

Table 9.2 Methods of e-Government Evaluation

#### Contents and Methods

The evaluation for the e-Government project is difficult because its performance is not long term and tangible, but short and intangible. Due to such reasons, a lot of evaluation models including the Balanced Score Card (BSC) model, which is good for evaluating long-term performance, are developed and adopted by many countries. The BSC carries out the evaluation by looking at the government projects in terms of finance, internal process innovation, training for staffs' development, customer satisfaction. Yet, most of government projects are evaluated by ROI, which is measurable and factual.

In the Korean case study, evaluation of e-Government project is done in 3 stages; formation, implementation and performance. At the formation on stage, the relevance of goals and fullness of the content of the plan are weighted by 20%. At the implementation stage, the efficiency and appropriateness of processes are weighted by 30%. Lastly, at the performance stage, 50% weight is imposed on effectiveness and impact. Imposing 50% weight on performance can be found in many evaluation models including the Office of Management & Budget Program Assessment Rating Tool (PART) made by USA.

The result of performance evaluation of the e-Government project can be differed by the way of setting performance objectives. The objectives should be able to show an ideal and desirable future, while relatively tangible and concrete. Such objectives can help the constituents of the organization perform better management by objectives (MBO).

Performance Index	Sub-Index	Measurement
Finance	Budget (personnel) reduction Income Increase	Cost/Benefit Analysis Return on Investment
Service Improvement	Service response	Reduction in time taken to process civil services (getting approvals/permissions) The number of visitors and viewers of website
	Customer satisfaction	Staff satisfaction Customer satisfaction
Process Innovation	Reduction in repetitive work processes Reduction in overlapping investment in IT	Work process streamlining and reduction in attached documents Co-utilization of database

Table 9.3 Exemplary Performance Objectives of e-Government

## 9.2 Operation & Maintenance

### 9.2.1 System Operation and Maintenance

It is important for securing users' convenience to set up the plan for system operation and maintenance after development. Firstly, a comprehensive plan should be set up for system operation and maintenance. In general, the system receives 'after service' during several months for customization. Yet, chances are high that the operational plan after 'after service' is not developed or implemented. Without full preparation for this stage, the users would experience inconvenience, becoming reluctant to use the system. Therefore, the thorough plan for operation and maintenance should be developed; bearing in mind that it also requires expertise to maintain and operate the system, just like system development.

Secondly, the appropriate budget should be allocated to operation and maintenance. In general, it is about 10% of the budget for system development. However, the leader who considers only visible outcome shows interests in the development of the information system, but does not care for management of the developed system. As a result, it becomes difficult to secure sufficient financial and human resources as well as appropriate operational structure crucial for system management. In this case, the utilization of the system may be hindered, making the system a total failure.

The structure of expenses required for system operation and maintenance after system design and development is as follows:

- Hardware: Maintenance, Upgrading, Lifecycle renewal
- Software: Maintenance, Upgrading, Patent loyalty
- Operation and maintenance support (government, contractor)
  - Supervision of program management
  - Operation
  - Security
  - Helpdesk
- Education and on-the-job training
- Other operation and maintenance activities

The system cannot properly provide services if the expenses for operation and maintenance are not reflected at the budget, before the completion of system development. Generally, the cost for system operation and maintenance does not fluctuate, unlike the case of system development. However, it should be considered that royalty may have to be additionally paid for the system developed by other ministry according to an IPR contract.

### 9.2.2 Information Resource Management

Information resources management means a comprehensive system to manage technological resources of e-Government, including hardware, software and network. The need for comprehensive management of information resources is increasing, as a lot of resource inputs are made to the E-Government project corresponding to rapid development in ICT.

If there is no national plan to comprehensively manage information resources, chances are high that a lot of information resources are duplicated or dead-stored, due to lack of cooperation among ministries, causing an uneconomical result. In addition, many governmental organizations may fail to secure either enough experts or sufficient place, required to manage the information system, causing concerns for the efficiency and security of information system management. Therefore, the effective management of information resources should be viewed as a national task, as critical as system development. Yet, many countries not only fail to set up a comprehensive plan for information resources management, but even do not understand the current status of information resources.

As e-Government aims at seamless integration and linkage, many discussions are ongoing regarding the economics of integrated management as well as security of information resources. The integrated management of information resources has many advantages, in general, yet, can be heavily criticized from a standpoint of security. Some argue that the physical collocation of information resources is vulnerable to terrors or physical attacks, while the others point out that it contributes to achieving the economy of scale for information security. In this case, a systematic design for backup functions is crucial.

## 9.3 Utilization Management

### 9.3.1 Publicity Activities

One of the practical problems the e-Government project is facing after completion is how to promote the system utilization of the users. The system can be fully utilized, delivering services customized to reflect users' interests and securing convenience and timeliness of usage based on high acknowledgment of users, regarding the services.

There is a paradox promotional activities face; the active promotion of the system by the government aiming at increase of system utilization, will lead to high expectation of users, making even small errors of system operation intolerable. On the other hand, without active promotion, the system will be poorly utilized since users' acknowledgment for services provided by the system is low. Therefore, the level of promotional activities should be appropriately decided so that e-Government services are not recognized as a panacea of civil services.

One solution for this dilemma is to make people understand the fact that information services, unlike face-to face administrative services, are delivered online, causing some administrative and technical problems, which can be perfectly customized after trials and errors at the early stage. For this, the Gartner Group suggested the Hype Cycle Mode of e-Government; the peak of inflated expectation for e-Government, caused by a technical trigger, will soon be lowered while going through the trough of disillusion. After moving up the slope of enlightenment and the plateau of productivity, it evolves into the maturity level (Gartner, 2002).

### 9.3.2 Training & Feedback

Appropriate training to facilitate users' system utilization are one of the important post-implementation activities

Feedback is an activity of comprehensive reviewing the outcomes of e-Government processes including planning, implementation and evaluation, and applying the learning to the next project. The implementation of e-Government generates a variety of success and failure cases. In order to feedback the studying result of success and failure cases to the next project, the responsibility of keeping daily records should be assigned to a staff. At the same time, it is desirable to make some of committee members and public officers, who participated in the previous e-Government project, work for the next one as well, in order to keep work consistency and continuity in spite of power transition.

#### Recording the Implementation Process of the Project

The special committee for e-Government preserved the records of the comments each member made and the meeting minutes generated during the implementation of the first and second phase of e-Government. In addition, it published the white paper on e-Government, which contained all related records and documents including the project plan, progress reports, the list of participants (committee members, public officers, private companies), success factors and restraints, lessons. The records and archives are important, being used not only as a tool to secure administrative transparency and responsibility but also as critical learning materials for next e-Government project.



1. B Adeyemo (2011), "E-Government implementation in Nigeria: An assessment of Nigeria's global e-Government ranking," *Journal of internet and information system* Vol. 2(1), pp 11-19, January. <http://www.academicjournals.org/JIIS>
2. Agunloye, O. (2008), e-Government program implementation in Nigeria: Implication for public private partnership policy.
3. Ajayi, L. (2007). "ICT Business in Nigeria: Challenges and Opportunities," [www.nitpa.org/articles/globalit/NCS\\_Paper.pdf](http://www.nitpa.org/articles/globalit/NCS_Paper.pdf)
4. Apostolou, D., Mentzas, G., Stojanovic, L., Thoenssen, B., & Pariente Lobo, T. (2011). A collaborative decision framework for managing changes in e-Government services. *Government Information Quarterly*, 28, 101-116.
5. Ayodele A. Adebisi, Charles K. Ayo, Opeyemi Akinusi, Marion O. Adebisi (2010), "Design and Implementation of Electronic Government Procurement (e-GP) System for Nigerian Public Sector," *Proceedings of the International Conference on Software Engineering and Intelligent Systems*; July 5-9, Ota, Nigeria.
6. Babalola Yemisi. T (2013), "Nigeria's Information Infrastructure Policy: Implications for e-Government," *Arabian Journal of Business and Management Review (OMAN Chapter)* Vol. 2, No.11; June.
7. Babalola, Y.T. (2013), Nigeria'S Information Infrastructure Policy: Implications for E-Government, *Arabian Journal of Business and Management Review*, Vol. 2, No.11, pp. 8-15.
8. Backus, Michiel (2001), "E-Governance and Developing Countries: Introduction and Examples," *Gartner, Research Report*, No. 3, April.
9. Basu, S. (2004), E-Government and Developing Countries: An Overview, *International Review of Law Computers & Technology*, Vol. 18, No. 1, pp. 109-132.
10. Bellamy, C., and Taylor, J. A. (1998) *Governing in the Information Age*, Buckingham, UK: Open University Press.
11. Bhuiyan S. (2009). *EGovernment in Kazakhstan: Challenges and Its Role to Development*. *Public Organization Review* (2010) 10:31-47.
12. Books.google.com.ng/jun e-Government survey 2010 (leveraging e-Government at a time of financial and economic crisis)
13. Bostrom, R., & Heinen, J. (1977). MIS Problems and Failures: A Socio-Technical Perspective. *MIS Quarterly*, 1(3), 17-32.
14. Braa, J., Monteiro, E. and Sahay, S. (2004) "Networks of action: Sustainable health information systems across developing countries", *MIS Quarterly*, Vol 28, No. 3, pp 337-362.
15. Business news of October 23, 2013. Available at <http://businessnews.com.ng/2013/10/23/nitda-isaca-unveil-mechanism-check-bank-fraud/>
16. CASTELLS, Manuel (1998). *End of Millennium*. Malden, MA, Blackwell. CHARBONNIER, Georges (1973), 'Primitive' and 'civilized' peoples: A conversation with Claude Lévi-Strauss. In DISCH, R. (Ed.): *The future of literacy*. Englewood Cliffs, NJ, Prentice-Hall.
17. Cogburn, D. L., and Adeya, C. N. (1999) *Globalization and the Information Economy: Challenges and Opportunities for Africa*, Report from the United Nations Economic Commission for Africa
18. COTTEN, Sheila (2010), "A vision realized or a continuing digital divide?: Examining the One Laptop Per Child program in Birmingham, Alabama," Paper presented at the Department of Education, University of California, Irvine, 2..
19. CROWE, Christina (2009), "A costly lesson: A look at Birmingham's curious commitment to the XO laptop," In: *Black & White* 26.11.2009, Available at: [http://www.bwcitypaper.com/Articles-i-2009-11-26-232786.113121\\_A\\_Costly\\_Lesson.html](http://www.bwcitypaper.com/Articles-i-2009-11-26-232786.113121_A_Costly_Lesson.html).
20. CRYSTAL, David. *English as a global language*. Cambridge, Cambridge University Press 1997.
21. Dada, D. (2006) *The Failure of E-Government in Developing*. A Literature Review. *The Electronic Journal of Information Systems in Developing Countries* Vol. 22, No.3. <http://www.ejide.org>.
22. DE CASTELL, Suzanne & LUKE Allan (1986), "Models of literacy in North American schools: Social and historical conditions and consequences," In DE CASTELL, Suzanne; LUKE, Allan; & EGAN, Kieran (Eds.). *Literacy, society, and schooling*. New York, Cambridge University Press, p. 87-109.
23. DFID (2011), *Summary of DFID's work in Nigeria 2011-2015*.
24. Dias de Lima, J. (2009). *Managing Change: Winning Hearts and Minds*. Harvard Business Publishing.
25. Dr Olufemi Jacob Fatile (2012), "Electronic Governance: Myth or Opportunity for Nigerian Public Administration?" *International journal of academic research in Business and Social Sciences*, Sept., Vol.2, N.9 [www.hrmars.com/journals](http://www.hrmars.com/journals)
26. Education Initiatives. Available at: <http://www.birminghamal.gov/pdf/education.pdf>. Access on 25.5.2010.
27. Elnaghi, M., Alshawi, S., & Missi, F. (2007). A Leadership Model for e-Government Transformation. *Proceedings of European and Mediterranean Conference on Information Systems 2007*, 1-12.
28. Eom, Seok-Jin (2010), "The Institutional Dimension of e-Government Promotion: A Comparative Study on Making 'Business Reference Model (BRM)' in the U.S. and Korea". National Centre for Digital Government. Paper 37.
29. *European Interoperability Framework for Pan-European e-Government Services*, January, 2004, p. 5.
30. Farelo, M., and Morris, C. (2006) "The status of EGovernment in South Africa", *Research Paper, STAfrica Conference*, Pretoria, South Africa.
31. Farina. O. and Kayode .M, (2007), "Promoting E-governance through Public-Private Partnership. A study of Nigeria," *Pension administration*
32. Federal Ministry of Communication Technology (2014). *Connected for Growth. Progress Report on Projects and Programme Implementation*. July 2011 – February 2014, p. 13
33. Fuchs, C., and Horak, E. (2008) "Africa and the digital divide", *Telematics and Informatics*, Vol 25, No.2, pp 99-116.
34. Gage, J (2002), "Some thoughts on how ICTs could really change the world," In the *Global Information Technology Report 2001-2002. Readiness for the Networked World*, Centre for International Development, Howard Universities.
35. Galaxy Backbone Limited (2014). *Company profile*. p. 7.
36. Globacom Company Profile (2014). *Network Infrastructure*. Available at: <http://www.gloworld.com/nigeria/globusiness/network-infrastructure/>

37. B Adeyemo (2011), "E-Government implementation in Nigeria: An assessment of Nigeria's global e-Government ranking," *Journal of internet and information system* Vol. 2(1), pp 11-19, January. <http://www.academicjournals.org/JIIS>
38. Agunloye, O. (2008), e-Government program implementation in Nigeria: Implication for public private partnership policy.
39. Ajayi, L. (2007). "ICT Business in Nigeria: Challenges and Opportunities," [www.nitpa.org/articles/globalit/NCS\\_Paper.pdf](http://www.nitpa.org/articles/globalit/NCS_Paper.pdf)
40. Apostolou, D., Mentzas, G., Stojanovic, L., Thoenssen, B., & Pariente Lobo, T. (2011). A collaborative decision framework for managing changes in e-Government services. *Government Information Quarterly*, 28, 101-116.
41. Ayodele A. Adebisi, Charles K. Ayo, Opeyemi Akinusi, Marion O. Adebisi (2010), "Design and Implementation of Electronic Government Procurement (e-GP) System for Nigerian Public Sector," *Proceedings of the International Conference on Software Engineering and Intelligent Systems*; July 5-9, Ota, Nigeria.
42. Babalola Yemisi. T (2013), "Nigeria's Information Infrastructure Policy: Implications for e-Government," *Arabian Journal of Business and Management Review (OMAN Chapter)* Vol. 2, No.11; June.
43. Babalola, Y.T. (2013), Nigeria'S Information Infrastructure Policy: Implications for E-Government, *Arabian Journal of Business and Management Review*, Vol. 2, No.11, pp. 8-15.
44. Backus, Michiel (2001), "E-Governance and Developing Countries: Introduction and Examples," Gartner, Research Report, No. 3, April.
45. Basu, S. (2004), E-Government and Developing Countries: An Overview, *International Review of Law Computers & Technology*, Vol. 18, No. 1, pp. 109-132.
46. Bellamy, C., and Taylor, J. A. (1998) *Governing in the Information Age*, Buckingham, UK: Open University Press.
47. Bhuiyan S. (2009). EGovernment in Kazakhstan: Challenges and Its Role to Development. *Public Organization Review* (2010) 10:31-47.
48. Books.google.com.ng/un e-Government survey 2010 (leveraging e-Government at a time of financial and economic crisis)
49. Bostrom, R., & Heinen, J. (1977). MIS Problems and Failures: A Socio-Technical Perspective. *MIS Quarterly*, 1(3), 17-32.
50. Braa, J., Monteiro, E. and Sahay, S. (2004) "Networks of action: Sustainable health information systems across developing countries", *MIS Quarterly*, Vol 28, No. 3, pp 337-362.
51. Business news of October 23, 2013. Available at <http://businessnews.com.ng/2013/10/23/nitda-isaca-unveil-mechanism-check-bank-fraud/>
52. CASTELLS, Manuel (1998). *End of Millennium*. Malden, MA, Blackwell. CHARBONNIER, Georges (1973), 'Primitive' and 'civilized' peoples: A conversation with Claude Lévi-Strauss. In DISCH, R. (Ed.): *The future of literacy*. Englewood Cliffs, NJ, Prentice-Hall.
53. Cogburn, D. L., and Adeya, C. N. (1999) *Globalization and the Information Economy: Challenges and Opportunities for Africa*, Report from the United Nations Economic Commission for Africa
54. COTTEN, Sheila (2010), "A vision realized or a continuing digital divide?: Examining the One Laptop Per Child program in Birmingham, Alabama," Paper presented at the Department of Education, University of California, Irvine, 2..
55. CROWE, Christina (2009), "A costly lesson: A look at Birmingham's curious commitment to the XO laptop," In: *Black & White* 26.11.2009, Available at: [http://www.bwcitypaper.com/Articles-i-2009-11-26-232786.113121\\_A\\_Costly\\_Lesson.html](http://www.bwcitypaper.com/Articles-i-2009-11-26-232786.113121_A_Costly_Lesson.html).
56. CRYSTAL, David. *English as a global language*. Cambridge, Cambridge University Press 1997.
57. Dada, D. (2006) *The Failure of E-Government in Developing. A Literature Review*. *The Electronic Journal of Information Systems in Developing Countries* Vol. 22, No.3. <http://www.ejide.org>.
58. DE CASTELL, Suzanne & LUKE Allan (1986), "Models of literacy in North American schools: Social and historical conditions and consequences," In DE CASTELL, Suzanne; LUKE, Allan; & EGAN, Kieran (Eds.). *Literacy, society, and schooling*. New York, Cambridge University Press, p. 87-109.
59. DFID (2011), *Summary of DFID's work in Nigeria 2011-2015*.
60. Dias de Lima, J. (2009). *Managing Change: Winning Hearts and Minds*. Harvard Business Publishing.
61. Dr Olufemi Jacob Fatile (2012), "Electronic Governance: Myth or Opportunity for Nigerian Public Administration?" *International journal of academic research in Business and Social Sciences*, Sept., Vol. 2, N.9 [www.hrmars.com/journals](http://www.hrmars.com/journals)
62. Education Initiatives. Available at: <http://www.birminghamal.gov/pdf/education.pdf>. Access on 25.5.2010.
63. Elnaghi, M., Alshawi, S., & Missi, F. (2007). A Leadership Model for e-Government Transformation. *Proceedings of European and Mediterranean Conference on Information Systems 2007*, 1-12.
64. Eom, Seok-Jin (2010), "The Institutional Dimension of e-Government Promotion: A Comparative Study on Making 'Business Reference Model (BRM)' in the U.S. and Korea". National Centre for Digital Government. Paper 37.
65. *European Interoperability Framework for Pan-European e-Government Services*, January, 2004, p. 5.
66. Farelo, M., and Morris, C. (2006) "The status of EGovernment in South Africa", Research Paper, STAfrica Conference, Pretoria, South Africa.
67. Farina. O. and Kayode .M, (2007), "Promoting E-governance through Public-Private Partnership. A study of Nigeria," *Pension administration*
68. Federal Ministry of Communication Technology (2014). *Connected for Growth. Progress Report on Projects and Programme Implementation. July 2011 – February 2014*, p. 13
69. Fuchs, C., and Horak, E. (2008) "Africa and the digital divide", *Telematics and Informatics*, Vol 25, No.2, pp 99-116.
70. Gage, J (2002), "Some thoughts on how ICTs could really change the world," In the *Global Information Technology Report 2001-2002. Readiness for the Networked World*, Centre for International Development, Howard Universities.
71. Galaxy Backbone Limited (2014). *Company profile*. p. 7.
72. *Globacom Company Profile (2014). Network Infrastructure*. Available at: <http://www.gloworld.com/nigeria/globusiness/network-infrastructure/>

73. Globacom Telecommunications. Available at <http://www.gloworld.com/nigeria/news-and-education/glo-to-build-nigerias-largest-data-centre/>
74. Global Information Technology Report 2013. Available at: <http://www.weforum.org/reports/global-information-technology-report-2013> Goafrit.wordpress.com/2010/06/12/ict-and-e-Government-in-nigeria-prof-akunyili Greyling and Zulu, 2010
75. Griffin, D., Foster, A., & Halpin, E. (2004). Joinedup E-Government: an exploratory study of UK local government progress. *Journal of Information Science and Technology*, 58-83.
76. Heeks, R (1998). "Information System for Public Sector Management; Information Systems and Public Sector Accountability", IDPM Working Paper Series, Paper No.1, University of Manchester.
77. Heeks, R (2002). *E-governance in Africa: Promise and Practice*, Manchester: Institute for Development Policy and Management, University of Manchester
78. Heeks, R. (2000). *Reinventing Government in the Information Age*. Routledge Press, London.
79. Heeks, R. (2001). "Understanding e-governance for Development", i-Government Working Paper Series, Paper No. 11. University of Manchester, Institute of Development Policy and Management.
80. Hiatt, J. (2010). »The definition and history of change management«.
81. Ho, A. T.-K. (2002). Reinventing Local Governments and the E-Government Initiative. *Public Administration Review*, 62(4), 434-444.
82. ICT for Government: ICT for Government and Public Services, (Official e-Government site of the European Commission) [www.ec.europa.eu/information.../e-Government/index\\_en.htm](http://www.ec.europa.eu/information.../e-Government/index_en.htm)
83. Ifinedo, P. (2005). "Measuring Africa's e-readiness in the global networked economy: A nine-country Data Analysis", *International Journal of Education and Development using ICT*. 1(1)
84. Ifinedo, P. E. (2005). "E-Government: Precursors, Problems, Practices and Prospects: A case of Nigeria". In Soliman, K.S (Ed.), *Proceedings of the 2004 International Business Information Management (IBIM) Conference 2004* (pp. 1-10), Amman, Jordan.
85. Ifinedo, P., and Uwadia, C. (2005). "Towards e-governance in Nigeria: Shortcomings, successes, swish or sink". In *Proceedings of the International Federation of Information Processing (IFIP) WG 9.4 Conference (75-86)*, Abuja, Nigeria.
86. Isaac Olawale Albert (2009), Culled from *African journal of political science and international relations* vol. 3 (4) pp. 133-141. April, 2009
87. Items International and Hernán Moreno Escobar. e-Government architectures, technical and political situation in Latin America, ECLAC and @LIS, 2007, <http://www.eclac.org/SocInfo>.
88. ITU Guidelines for the transition from analogue to digital broadcasting, pp. 4-8. Available at [www.itu.int/pub/D-HDB-GUIDELINES.01-2010/en](http://www.itu.int/pub/D-HDB-GUIDELINES.01-2010/en)
89. Jansenn, M. and Klievink, B. (2010). Coordinating eGovernment service delivery. *Proceedings of the 11th Annual International Digital Government Research Conference on Public Administration Online: Challenges and Opportunities*. <http://portal.acm.org/citation.cfm>
90. Jansenn, M. and Wagenaar, R. (2007). *Developing Generic Shared Services for eGovernment*. *Electronic Journal of eGovernment* Volume 2 Issue 1 (31-38).
100. Joyce, P. (2002). E-Government, strategic change and organisational capacity. V E. M. Milner, *Delivering the Vision. Public services for the information society and the knowledge economy*. (pp. 156-171). London: Routledge.
101. Kanya, Rislana Abdulazeez and Alice Good. "ICT4D: A Case Study of Jigawa State Government in Nigeria."
102. Kifle, H., & Low Kim Cheng, P. (2009). e-Government Implementation and Leadership – the Brunei Case Study. *Electronic Journal of e-Government* Volume, 7(3), 271-282.
103. Kitaw Y. (2006). E-Government in @frica Prospects, challenges and practices. [http://people.itu.int/~kitaw/egov/paper/EGovernment\\_in\\_Africa.pdf](http://people.itu.int/~kitaw/egov/paper/EGovernment_in_Africa.pdf)
104. Kitaw, Y (2006), *E-governance in Africa: Prospects, challenges and practices*, Lausanne: Division of the Telecommunication Development Bureau of the International Telecommunication Union (ITU).
105. Kreizman, G., Baum, C. Fraga, E. (2003), "Gartner Enterprise Architecture: A Home for E-Government," (<http://whitepapers.techrepublic.com.com>)
106. Lagos State Government. <http://www.lagosstate.gov.ng>.
107. LEECH, Marie (2010), "XO laptops are loved, but use is limited," *Birmingham News* 18.3.2010. Available at: [http://blog.al.com/spotnews/2010/03/xo\\_laptops\\_are\\_loved\\_but\\_use\\_i.html](http://blog.al.com/spotnews/2010/03/xo_laptops_are_loved_but_use_i.html)
108. Leitner, C., & Kreuzeder, M. (2005). Organisational Changes, Skills and the Role of Leadership Required by eGovernment. *EGOV 2005, LNCS 3591*, M.A. Wimmer et al. (Eds.), 210-217.
109. LIEVROUW, Leah A. (2000), "The information environment and universal service," In: *The Information Society* 16/2000, pp. 155-159.
110. Matavire, R, Chigona, W, Roode, D, Sewchurran, E, Davids, Z, Mukudu, A and Boamah-Abu, C. (2010), "Challenges of eGovernment Project Implementation in a South African Context" *The Electronic Journal Information Systems Evaluation*, Volume 13, Issue 2, (pp153 - 164)
111. Ministry of Communication Technology (2013). *Nigeria ICT Report*. pp. 14-15.
112. Misuraca, G. (2007), *E-Governance in Africa*, Trenton A Handbook on ICTs for Local Governance, NJ Africa World Press and Ettawa, Canada International Development Research Centre.
113. Moodley, S. (2005) "The Promise of E-Development? A Critical Assessment of the State ICT for Poverty Reduction Disclosure in South Africa", *Perspectives on Global Development and Technology*, Vol 4, No.1, pp 1-25.
114. Nahmah Ajikanle Nurudeen (2013). *Nigeria: MTN to Start Home Delivery of Fibre Optic Daily Trust Newspapers* of 14 June, 2013.
115. Ndou V. (2004) "EGovernment for developing countries: Opportunities and challenges", *The Electronic Journal on Information Systems in Developing Countries*, Vol 18, No.1, pp 1-24.
116. Ndou, V. (2004). 'E-Government for developing countries: Opportunities and challenges.' *The Electronic Journal on Information Systems in Developing Countries*, 18, 1-24.

117. Ndukwe E.C.A. (2007) ICT as a tool for achieving the millennium development goal in Nigeria.
118. NITDA (2011), Development of e-Government Framework for Federal Public Service.
119. Niger State Government. "Niger State Vision 3:2020." Available at: <http://www.nigerstate.gov.ng/epubl/vision>.
120. Nigeria Communications Week e-newspaper. Available at <http://nigeriacommunicationsweek.com.ng/e-business/davis-huawei-boss-commends-galaxy-backbone-s-centre>.
121. Nigerian Communications Act 2003.
122. Nigerian Communications Commission (2013). Nigeria National Broadband Policy of 2013 – 2018.
123. Nigerian Communications Commission (2013). Nigeria Spectrum Frequency Management
124. Policy 20130618. Available at: [http://www.ncc.gov.ng/index.php?option=com\\_content&view=article&id=83&Itemid=97](http://www.ncc.gov.ng/index.php?option=com_content&view=article&id=83&Itemid=97)
125. Nigerian Communications Commission (2014). Monthly telecoms subscriber data 2014. Available at the NCC website: [http://www.ncc.gov.ng/index.php?option=com\\_content&view=article&id=125&Itemid=73](http://www.ncc.gov.ng/index.php?option=com_content&view=article&id=125&Itemid=73)
126. Nigerian Communications Commission (2014). NCC Legal-Enforcement 2014 Activities Summary. p. 3.
127. Nigerian Cyber Security and Data Protection Agency Bill 2008.
128. Nigerian ICT Action Plan Document (2013). Inception Draft. pp. 4-8.
129. Nigerian Legal Information Databank of the National Institute for Legislative Studies. Available at <http://www.legislativedatabank.nassnig.org/>
130. Nigerian Muse (2012). Nigeria's Fibre Optic Cables Still under Utilized. Available at: <http://www.nigerianmuse.com/20121231040737zg/nm-projects/telecomproject/nigerias-fibre-optic-cables-still-under-utilised-opeke-main-one/>
131. Nigerian National Telecommunications Policy 2000.
132. Nigerian Vision 20:2020 Economic Transformation Blueprint
133. NITDA (2008), Nigerian ICT for Development (ICT4D) Strategic Action Plan for 2008-2011.
134. Nograšek, Janja (2011). "Change Management as a Critical Success Factor in e-Government Implementation," *Business Systems Research*, Vol.2, No.2, pp. 13-24.
135. NYE, David (1990), *Electrifying America: A social meaning of new technology, 1880-1940*. Cambridge, MA, MIT Press.
136. O'Donnell, O., Boyle, R., & Timonen, V. (2003). Transformational aspects of E-Government in Ireland: Issues to be addressed. *Electronic Journal of e-Government*, 23-32.
137. Ochara, N. M. (2008) "Emergence of the eGovernment artifact in an environment of social exclusion in Kenya", *The African Journal of Information Systems*, Vol 1, No.1, pp 18-43.
138. OECD (2008), *OECD e-Government Studies*: Belgium.
139. OECD. (2003a). *OECD E-Government Flagship Report »The E-Government Imperative«*. Paris: Public Management Committee, OECD.
140. OECD. (2003b). *Policy Brief, Checklist for eGovernment leaders*.
141. Olatokun, Wole Michael and Busola M. Adebayo (2012), "Assessing E-Government Implementation in Ekiti State Nigeria." *Journal of Emerging Trends in Computing and Information Sciences*, 3 (4): 497-505.
142. Oloniteru, Justus Olutoyin and Adegboyega Ojo (2014), "On Ekiti's Smart Governance for Development Approach – A Reflexive Account."
143. Olufemi, F.J. (2012), *Electronic Governance: Myth or Opportunity for Nigerian Public Administration?*, *International Journal of Academic Research in Business and Social Sciences*, Vol. 2, No. 9, pp. 122-140.
144. Omobola Johnson (2012). *Building of a National ICT Infrastructure: The Role of States and Local Governments*. A Presentation by Nigeria's Minister of Communication Technology. December.
145. Organization for Economic Cooperation and Development (2004), *The E-Government Imperative*.
146. Otubu, Akintunde Kabir (2009), "E-Government and Land Administration in Nigeria – A Recipe for Lagos State." *Journal of Private and property Law University of Lagos*, 26 (May): 1-22.
147. Ouchetto H et al. (2005) "A Comparative Study of the e-Government Architectures," *International Conference on E-Business & E-learning (EBEL'05)*, Amman, Jordanie, May, pp. 23-24.
148. Oyewunmi, A.O. (2012), *The ICT Revolution and Commercial Sectors in Nigeria: Impacts and Legal Interventions*, *British Journal of Arts and Social Sciences*, Vol.5 No.2, pp. 234-247
149. Park, Chul-Geun and Suh, Sung-Chul (2011), "A Study on Efficient Implementation of the e-Government in the Developing Countries," *Journal of the Korea Academia-Industrial Cooperation Society*, Vol.12, No. 9, pp.4169-4182.
150. Peristas, Tsekos, Th., and Tarabanis, K, (2002) "Realising e-Government: Architected/Centralised versus Interoperable/Decentralised ICTs and Organizational Development," *Proceedings of European Group for Public Administration Annual Conference (EGPA Conference 2002)*, 4-7, September, Potsdam, Germany.
151. PRESTON, Paschal & FLYNN, Roderick (2000), "Rethinking universal service: Citizenship, consumption norms, and the telephonell," *The Information Society* 16/2000, p. 91-98.
152. REEVES, Douglas (2002). *Accountability in action*. Denver, Colorado, Advanced Learning Press.
153. Research ICT Africa (2003) *e-Nigerian Communications Act (2003 No 19)*. Telecommunications Networks Interconnection Regulations 2003. Part I, 1(1). Available at: [http://www.researchictafrica.net/countries/nigeria/Nigerian\\_Communications\\_Act\\_2003.pdf](http://www.researchictafrica.net/countries/nigeria/Nigerian_Communications_Act_2003.pdf)
154. Riordon, S. (2009) *SchoolNet South Africa: Accessing a world of Learning*, Retrieved June 10, 2009 from <http://www.sciencein africa.co.za/school.htm>
155. Saboohi, N., & Sushil. (2010). *Managing continuity and change: a new approach for strategizing in e-Government*. *Transforming Government: People, Process and Policy*, 4(4), 338-364.
156. Sacheva, S. (2009). *Change Management for e-Governance*. *I-Ways Journal of E-Government Policy and Regulation* 32, IOS Press, 109-117.

155. Sarmad A. Hamid A. (2009). EGovernment evaluation: Citizen's perspective in developing countries. *Information Technology for Development*; 2009, Vol. 15 Issue 3, p193-208, 16p.
156. Schedler, K., & Schmidt, B. (2004). Managing the e-Government organization. *International Public Management Review*, 1-20.
157. Scholl, H. (2007). Central research question in e-Government, or which trajectory should the study domain takes? *Transforming Government: People, Process and Policy*, 1(1), 67-88.
158. SEEDS II Technical Committee, Directorate of Budget and Economic Planning. 2009. "Jigawa State Comprehensive Development Framework."
159. Signore O. Chesi F. Pallotti M. (2005). E-Government: Challenges and Opportunities. *Proceedings from CMG Italy – XIX Annual Conference 7-9 June 2005 Florence Italy*.
160. Snellen Ingace (2005), "E-Government: A Challenge for Public Management," Ferlie, Ewan, Lynn Jr, and Pollitt, Christopher (eds.), *The Oxford Handbook of Public Management*, Oxford University Press, Oxford, UK. <http://scholarworks.umass.edu/ncdg/37>.
161. Song, Hee Joon (2007), E-Government of Korea, Research Paper, National Information Society Agency.
162. Suleiman Mohammed, Mohammad Kabir Abubakar and Amina Bashir (2010), "E-Government in Nigeria: A catalyst for national development."
163. The Nation Newspapers. Law on Cyber Security. Available at: <http://www.thenationonlineng.net/2011/index.php/business/35334-wanted-a-law-on-cyber-security.html>
164. Thisday eNewspapers of 27th December, 2012. Main One to build full capacity data centre for Nigerians. Available at <http://www.thisdaylive.com/articles/mainone-to-build-full-capacity-data-centre-for-nigeria/134591/>
165. Thisday live Newspapers of 12 January 2014 . Nigeria Cyber security Outlook for 2014. Available at : <http://www.thisdaylive.com/articles/nigeria-cyber-security-outlook-for-2014/168570/>
166. UNDP (2000), *Human Development Report 2000*. New York, Oxford University Press.
167. UNDP (2003) *Human Development Report*. United Nations Development Programme. NY. (<http://www.undp.org/hdr2003>)
168. UNDP (2006), *Fighting Corruption with e-Government Applications APDIP e-Note 8*. UNDP \_ Democratic governance for Development 2012-2015 UNDP \_ Federal Public Accountability 2009-2013
169. United Nations (2008). *United Nations e-governance Survey 2008 – From e-governance to Connected Governance*, New York: Department of Economic and Social Affairs, Division for Public Administration and Development Management.
170. United Nations Global e-Government Survey 2010
171. United Nations Global e-Government Survey 2012 (e-Government for the people)
172. Universal Service Provision Fund. Strategic Plan 2007-2011. <http://www.uspf.gov.ng>
173. UNPA and ASPA (2001) *Bend Marking E-Government A Global Perspective* (<http://unpatil.com.org/ntradoc/group/public/document/un/unpan103984.pdf>).
174. Van Dijk, J. and Hacker, K. (2003) "The digital divide as a complex, dynamic phenomenon", *The Information Society*. Vol 19, No.4, pp 315–326.
175. VIGDOR, Jacob L. & Ladd, Helen F. (2010), "Scaling the digital divide: Home computer technology and student achievement," *NBER Working Paper No. 16078*, 2010. Access on 21.6.2010. Available at: <http://www.nber.org/papers/w16078>.
176. Vilanek, J. and Walter, B. (2004), *Status and future aspects of e-Government in Austria: Austrian Country Paper*, available at [http://intosaiitaudit.org/moscow/austria\\_%20e\\_government.pdf](http://intosaiitaudit.org/moscow/austria_%20e_government.pdf).
177. Wales, J. (2008) *computer forensic analysis experts office in Manchester and London: A personal appeal*. <http://wikimediafoundation.org/wiki/computercrim>.
178. WALTON, Anthony. (2011), "Technology vs. African-Americans," *Atlantic Monthly* 1999. Access on 1.11.2000. Available at: <http://www.theatlantic.com/issues/99jan/aftech.htm>.
179. WARSCHAUER, Mark & AMES, Morgan (2010), "Can One Laptop per Child save the world's poor?" *Journal of International Affairs* 64, pp. 33-51.
180. WARSCHAUER, Mark & MATUCHNIAK, Tina (2010). "New technology and digital worlds: Analyzing evidence of equity in access, use, and outcomes," *Review of Research in Education* 34, pp. 179-225.
181. WARSCHAUER, Mark (2003), *Technology and social inclusion: Rethinking the digital divide*. Cambridge, MA, MIT Press.
182. WARSCHAUER, Mark, ARADA, Kathleen, & ZHENG, Binbin (2010), "Laptops and Inspired Writing," *Journal of Adolescent and Adult Literacy* 54/2010, p. 221-223
183. Wilson, M. (2003). "Understanding the International ICT and Development Discourse: Assumptions and implications", *The Southern African Journal of Information and Communication*, Vol 3.
184. World Bank (2003), *World Development Indicators* (<http://www.worldbank.org/datawdi2003>).
185. World Bank (2009). *Project Appraisal Document for a Second State Governance and Capacity Building Project*. November 2, p. 1. <http://wikimediafoundation.org/information and communication technologies for development>
186. <http://wikimediafoundation.org/international telecommunications union>
187. <http://www.budde.com.au/Research/Nigeria-Telecoms-Mobile-Broadband-and-Forecasts.html?r=51>
188. <http://www.cgwic.com/In-OrbitDelivery/CommunicationsSatellite/Program/NigComSat-1.html>
189. <http://www.commtech.gov.ng>
190. <http://www.enigeria.org>
191. <http://www.jidaw.com/digitalnigeria.html>
192. <http://www.nigeria.gov.ng/>
193. <http://www.nitda.gov.ng>
194. <http://www.un.org/en/development/desa>
195. <http://www.unpan.org/dpag>
196. <http://www2.unpan.org/egovkb/>
197. <https://www.facebook.com/commtech.gov.ng/info>
198. <http://www.legislativedatabank.nassnig.org>

199. <http://www.nass.gov.ng>
200. <http://www.ncc.gov.ng>
201. <http://www.negst.com.ng>
202. <http://www.oecd.org/dac/aideffectiveness>
203. <http://www.oecd.org/dac/stats/idsonline>
204. <http://www.opendata.com.ng>
205. <http://www.psin.gov.ng>
206. <http://www.slideshare.net/undesae/ecosoc>
207. <http://www.slideshare.net/undesae/unite-nations-egovernment-survey-2012>



# e-G<sub>VT</sub> MASTER PLAN

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