A Roadmap for Building a National Health IT Ecosystem

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Scientists dream of achieving great things.
Engineers get them done!

Presentation@ eNigeria 2017

AAJI MATICS
Enabling Optimization

CEO@AAJIMATICS

Adekunle Ajiboye's educational and professional background gives him a broad range of domain expertise in the entire **eHealthsphere**, ICT Tools & Applications for Commerce, IoT + Big Data and Entrepreneurial Consulting. Aside from his leadership roles @ AAJIMATICS and other firms, he serves as a SME @ the GEIA among other institutions.

He is a celebrated alumnus of McMaster University Hamilton, Ontario Canada with graduate degrees in Engineering and eHealth and a Computer Information Systems graduate of the City University of New York-Lehman College, USA. **In celebration of Canada's 150th Anniversary, Adekunle was recognized as one of the outstanding top 150 McMaster Engineering graduates. In continued celebration of Canada's sesquicentennial, Adekunle is also honored with the distinguished Nation Builder Award by David Sweet who is the Conservative Member of Parliament for Flamborough-Glanbrook and Chair of the Conservative caucus.** He is a HIMSS-EP and member of IsFTEH, COACH and AMIA and also featured in Canada's Who's Who. **Adekunle continues to be heavily involved on the Entrepreneurship landscape in North America and Nigeria with experiential success and was nominated for the Niagara Entrepreneur of the Year-2016 Award in Canada.** Adekunle makes time to serve as an occasional professor at 2 of North America's leading universities as part of his commitment to impacting the next generation. He is also a frequent speaker on eTechnologies to academic and international conference audiences.

Major Accomplishments:

- ✓ **Africa Clients include Unified Payments & UBA**
- ✓ **eHealth Projects with FMoH|NITDA**
- ✓ **Projects with the GOC**
- ✓ **Projects in Jamaica, Trinidad & Tobago, Antigua & Barbuda**

Adekunle A. Ajiboye

AAJIMATICS is an electronic technologies solutions and services firm; combined, we direct these two areas of expertise to deliver ePlatforms for both established and growing markets.

We leverage Informatics to enable Processes, Procedures, Organizations, and Entities to function Optimally.

Our current focus is on delivering eHealth|eBusiness|eSecurity technologies to a varied clientele in North America and LRCs including Nigeria.

Theme
Fostering a Digital Economy Through Local Content Development and Effective Regulations

Sub theme:
Roadmap towards National ICT Skills Framework Development

Hallmarks of Advancing Digital Nations

- **Digitally Informed Leadership**
- **An empowered, focused government department for all national digital transformation, which is internationally minded and collaborates closely with ALL Industry sectors**
- **living, collaborative national plan, which is industry led with government investment**
- **Technologically aware, qualified and experienced political officials in every government organization**
- **Engineers and Digital Business leaders as elected politicians**

- **We are now in the Information & Telecommunications Revolution**
  - **Information Intensity +Connectivity+ Specialization + Globalization**

Digital Economy

- Nigeria's Economy & ICT
  - Communications->$70 B
- What is a Digital Economy?

An economy that is based on digital technologies, although we increasingly perceive this as conducting business through markets based on the internet and the World Wide Web.

The digital economy is not limited to traditional business models. It encompasses every aspect of modern life; entertainment, health, education, business to banking, the ability of the citizen to engage with government and society to stimulate new ideas and help influence political and social change.

The UK internet economy is likely to grow by 10 per cent per year, reaching 10 per cent of Gross Domestic Product (GDP) by 2017.
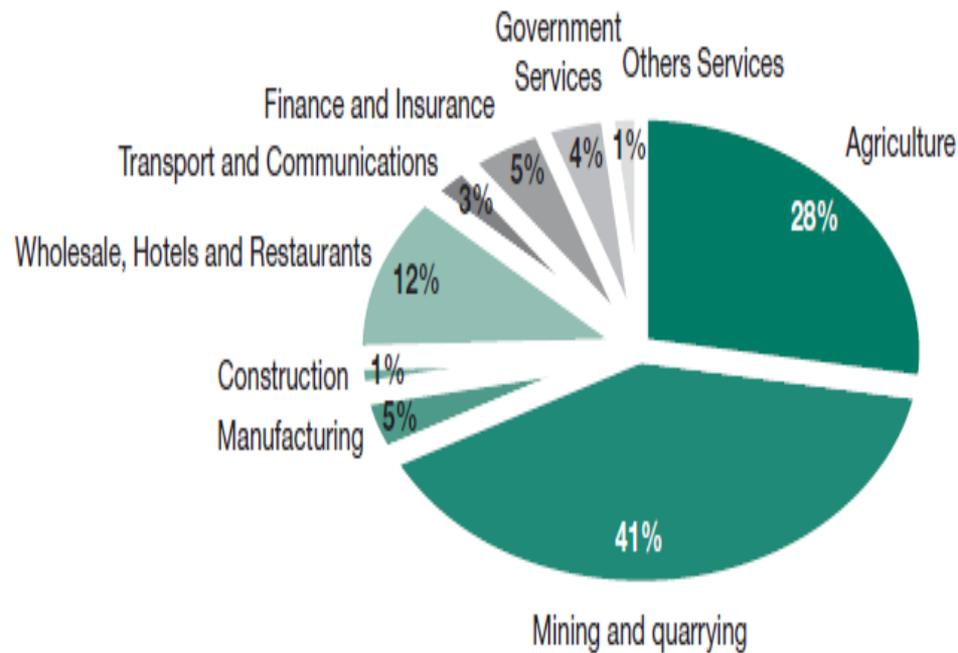
National Health ICT Vision

"By 2020, health ICT will help enable and deliver universal health coverage in Nigeria."
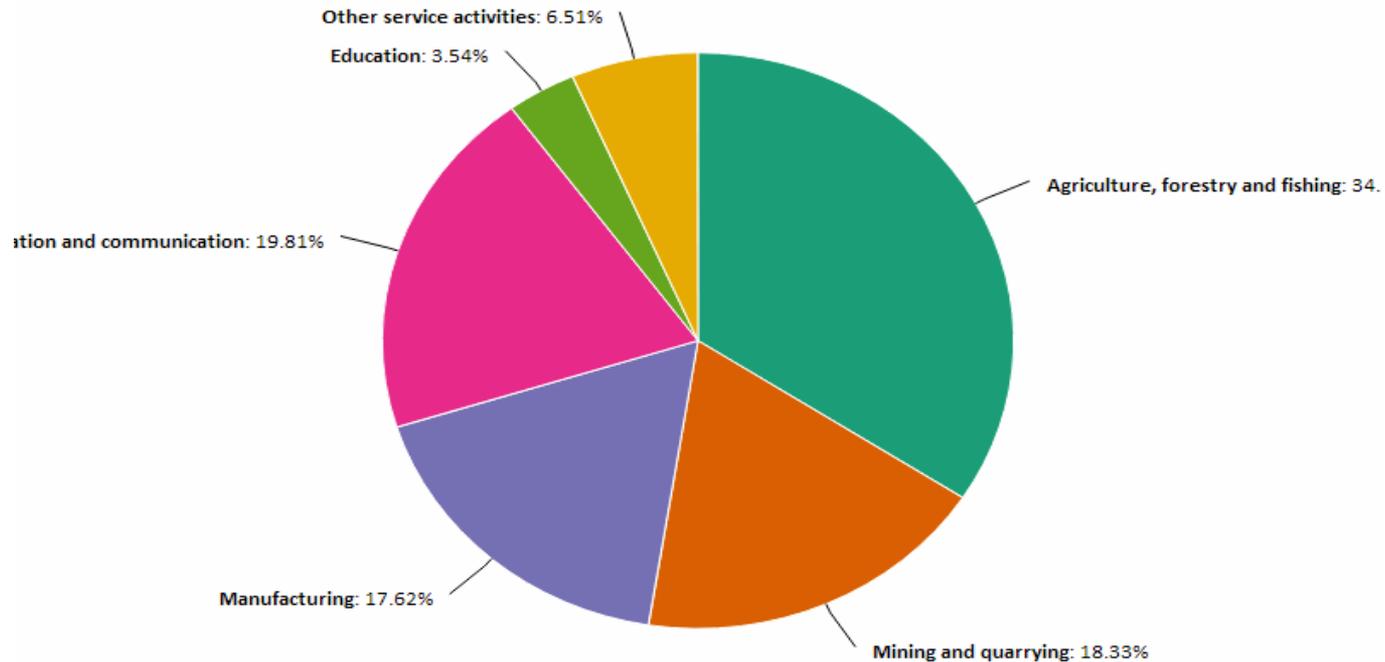
Preamble.

- **NGR GDP**
  - **Health Care Expenditure**
    - **Low Health Coverage & Financing**
  - **Health Budget=<$200M**
  - **2014-2015-Mediacal Tourism:$1B for Government Officials|$6.3B by Private Citizens**

- **Health GDP in USA/CDN/UK**

- **ICT & CommTech**
  - **Opportunities abound because of NGR's rising ICT Sector**
  - **An enabling Environment for ICTs for Health exists in NGR**

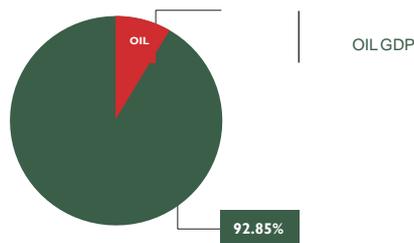- **..**

Nigeria's GDP.

Figure 3 - **GDP by Sector in 2002**

- Government Services 4%
- Others Services 1%
- Finance and Insurance 5%
- Transport and Communications 3%
- Wholesale, Hotels and Restaurants 12%
- Construction 1%
- Manufacturing 5%
- Mining and quarrying 41%
- Agriculture 28%

Nigeria's GDP Q4-2016

Nigeria's GDP Q4-2016..

CONTRIBUTION OF OIL AND NON-OIL SECTORS

OIL

OIL GDP

92.85%

REAL GDP GROWTH RATE OF OIL AND NON-OIL SECTORS

	Q4 2015	Q1 2016	Q2 2016	Q3 2016	Q4 2016
	(8.28)	(1.89)	(17.48)	(22.01)	(12.38)

	Q4 2015	Q1 2016	Q2 2016	Q3 2016	Q4 2016
NON-OIL GDP	3.14	(0.18)	(0.38)	0.03	(0.33)

OIL PRODUCTION (MBPD)

Q2 2015	Q3 2015	Q4 2015	Q1 2016	Q2 2016	Q3 2016	Q4 2016
2.07	2.17		2.11	1.69	1.63	1.90
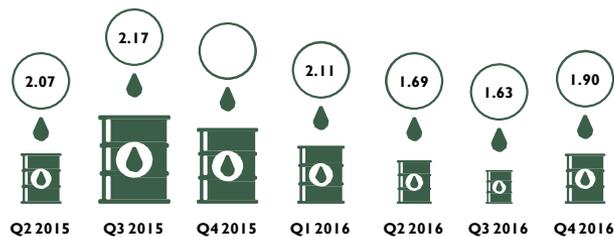
CONTRIBUTION TO REAL GDP Q4 2016 (%)

54%

26%

SERVICES

AGRICULTURE

INDUSTRIES

20%
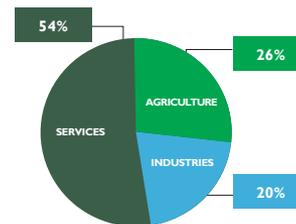
The Chasm..

To Pivot?

eHealth Issues in Africa

- **Approach variably Uncoordinated**
- **Largely pilots yet to be scaled up**
- **Human Resources**
  - **Capacity**
- **Change Management**
  - **Sensitization-Community Health**
- **Sustainability & Legislation**
  - **Financial Independence|Self Funding**

Capabilities Africa Needs in Order to Pivot

- **Infrastructure**
  - **Digital Technologies Enabling Infrastructure**
- **Skilled Manpower**
- **Visionary Leadership**
- **Affordable & Scalable Solutions**

The Opportunity

- **Digitally Literate Unemployed Youth**
  - **n=>40M**
- **n=>180M**
  - **n=>380M-ECOWAS**
- **n=<10M Insured**
  - **NGR**
- **n=<25K Physicians**
  - **NGR**
- **..**

Terms & Definitions

Health Informatics is the appropriate and innovative application of the concepts and technologies of the information age to improve health care and health. With the evolution of the field, health informatics is probably best defined in the context of e-health, which is generally accepted as an umbrella term composed of 2 elements[1]:

1. Health Informatics (related to the collection, analysis and movement of health information and data to support health care), and

2. Telehealth (related to direct e.g. videoconferencing or indirect e.g. website delivery of health information or health care to a recipient.)

The area of e-health encompasses products, systems and services, including tools for health authorities and professionals as well as personalised health systems for patients and citizens [2]. The scope of eHealth includes bench-top to bedside to population health activities, which present complex information management challenges to support individualised patient care.

Health Informatics has also been defined by WHO as "an umbrella term used to encompass the rapidly evolving discipline of using computing, networking and communications – methodology and technology – to support the health related fields, such as medicine, nursing, pharmacy and dentistry" [3].

ICT 4 Health

ICT, or information and communications technology (or technologies), is the infrastructure and components that enable modern computing.
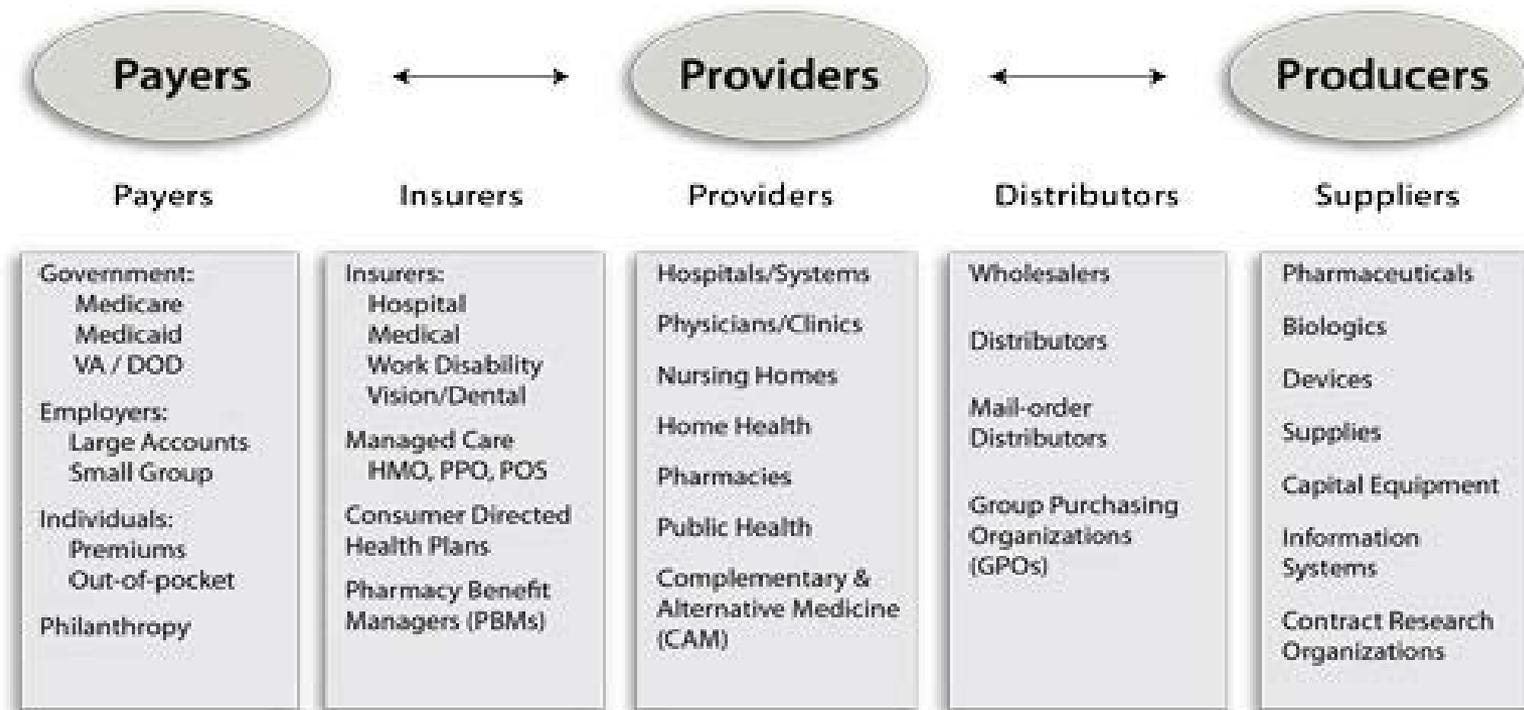
Although there is no single, universal definition of ICT, the term is generally accepted to mean all devices, networking components, applications and systems that combined allow people and organizations (i.e., businesses, nonprofit agencies, governments and criminal enterprises) to interact in the digital world. ICT 4 Health then refers to the application of ICT to healthcare delivery just as we have in telecommunications; finance and aviation just to mention a few.

National Health IT Ecosystem

Where do you fit in?
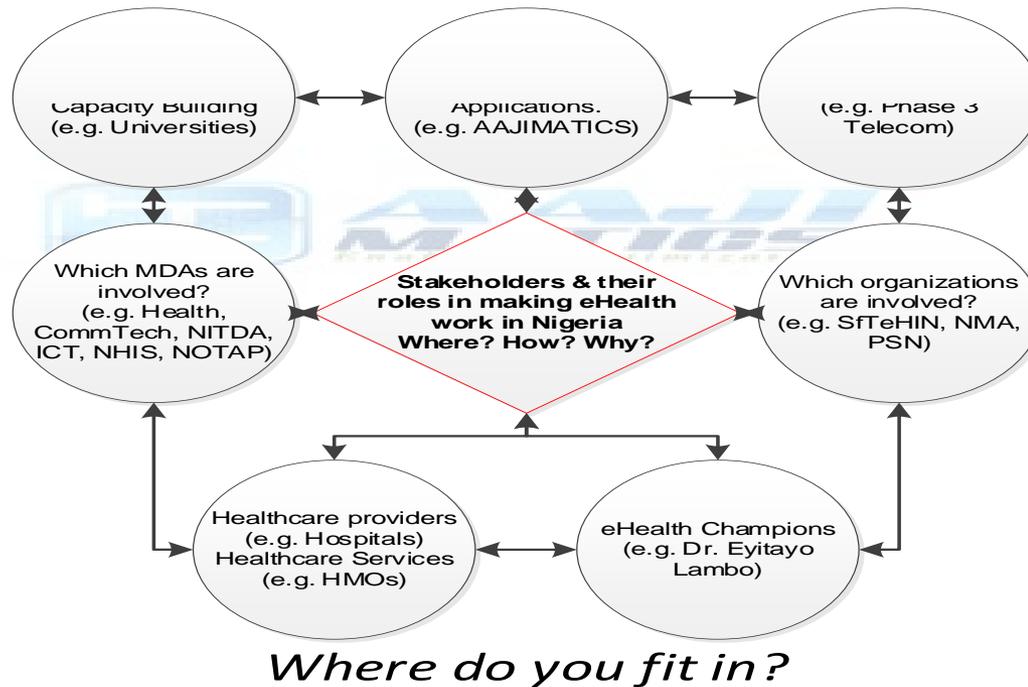
Health IT Value Chain

Figure 1. The U.S. Health Care Value Chain

The Roadmap

The Roadmap

Item	Timeline
A Digital Advanced Nigeria?	Ongoing
>5% National Budget for Healthcare	2019 Fiscal Year
>5% Healthcare budget for Health IT	2019 Fiscal Year
Capacity Building • From Primary School • eHealth in Medical Education Curricula • Workshops/ Seminars for healthcare workers	Deliberate Actions-Steps 2019 2020 Immediate
National Coordinator for Health IT	4th Quarter 2018
Synergy: FMoH-CommTech-NITDA-NHIS-NHPCDA	Immediate
Practical & Scalable eHealth Applications • mHealth in NGR	Immediate
Legislation, Acts & Bills	Ongoing
Financing & Funding • Insured vs Uninsured • NHIS, SHIS & PHIS • National Healthcare Act	Immediate Immediate Immediate
Made in Nigeria Innovation Program-MiNIP	2019 Fiscal Year

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Preamble..

COMPONENT	DESCRIPTION	Notes	
Leadership and Governance	Focuses on the oversight and coordination of Health ICT activities at the federal, state and local levels, ensuring alignment with national health goals and priorities		
Strategy and Investment	Describes the planning for, engagement of and alignment with all stakeholders involved in Health ICT activities and procurement of financing for Health ICT. It also outlines strategies to mobilize ICT in positioning health as an investment with good return to Nigeria economy.		
Legislation, Policy and Compliance	Covers national policies and legislation for Health ICT in terms of development, alignment and regular review		
Architecture, Standards and Interoperability	Describes the development and use of enterprise architecture and standards for enhanced interoperability, integration and health information exchange		
Capacity Building	Details the empowerment of the health and ICT workforce to develop, use and maintain Health ICT through education and training programs		
Infrastructure	Refers to the physical facilities and related assets that forms the foundation for Health ICT implementations		
Solutions (Services and Applications)	Reports on devices and tools utilized by end users to collect, transmit, access and maintain health information		

Healthcare 2.0-4IR

- **Why & How the Healthcare Industry is Rapidly Changing**
  - **Technological Shifts**
    - **Providers can extend interaction with patients beyond the office/hospital/clinic tracking progress and making adjustments in real time**
  - **Government & Regulatory Changes**
  - **New Economic Models**
    - **Healthcare is pivoting to the Patient!**
  - **Disruption**
    - **Kodak|Polaroid, NOKIA|BLACKBERRY, Landlines|Mobile Lines**
- **Africa Strategic Pivoting: From Reactive to Proactive**
  - **Why wait for the outbreak of communicable diseases?**
    - **Meningitis ?**
  - **Why wait for the devastating effects of lifestyle changes?**
- **Healthcare is Changing-African Healthcare Should ALSO!**