



**THE GAMBIA**

**FINAL DRAFT**

**STRATEGY FOR PROMOTING TECHNOLOGY-DRIVEN SOCIAL AND  
COMMUNITY SERVICES PROVISION & DELIVERY**

**STRATEGIC PLAN – 2021-2025**

**SUBMITTED BY**



IT Consulting - Computer Sales & Services - Networking - IT Training - Software Development

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## **TABLE OF CONTENTS**

<b>1) <u>ACRONYMS AND ABBREVIATIONS</u></b>	<b>5</b>
<b>2) <u>EXECUTIVE SUMMARY</u></b>	<b>6</b>
<b>3) <u>INTRODUCTION</u></b>	<b>9</b>
<b>4) <u>BACKGROUND</u></b>	<b>11</b>
2.1 THE BASIS	11
2.2 SOCIAL AND COMMUNITY SERVICES	11
2.3 THE PROCESS	12
2.4 THE GAMBIA NATIONAL HEALTH SECTOR STRATEGIC PLAN 2014-2020	12
2.5 THE PREREQUISITES FOR TECHNOLOGY DRIVEN SOCIAL AND COMMUNITY SERVICES	13
2.5.1 THE RIGHT TECHNICAL PLATFORM	13
2.5.2 COLLABORATION	13
2.5.3 TOP COMMUNITY LEADERSHIP	13
2.5.4 ENHANCING CUSTOMER EXPERIENCE	14
2.5.5 PROVEN RESULTS FOR THE COMMUNITY	14
2.6 THE EXISTING LEGAL FRAMEWORK FOR COMMUNITY HEALTH SERVICES	14
<b>3 <u>DRIVERS FOR A COMMUNITY SERVICES PROVISION</u></b>	<b>15</b>
3.1 UTILIZING THE OPPORTUNITIES	15
3.2 TREATING AND CURBING THE COMMUNITY DISADVANTAGES	15
<b>4 <u>THE STRATEGY'S PURPOSE AND RATIONALE</u></b>	<b>16</b>
<b>5 <u>LESSONS LEARNED</u></b>	<b>17</b>
<b>6 <u>THE CHALLENGES</u></b>	<b>19</b>
6.1 THE TAX BASE OF THE COMMUNITIES	19
6.2 CHALLENGE TO THE SCOPE OF COMMUNITY SERVICES	19
6.3 THE CREATION OF COMMUNITY HUBS	20
6.4 USING TECHNOLOGY IN THE RURAL AREAS	20
6.5 THE CHALLENGE OF THE FUTURE AND TECHNOLOGY IN THE COMMUNITIES	20
6.6 SOME INHERENT CHALLENGES OF MOH&SW	21
6.7 NO CLEAR ROADMAP FOR THE SERVICES	21
<b>7 <u>TECHNOLOGIES TO IMPACT ON SOCIAL AND COMMUNITY SERVICES</u></b>	<b>22</b>
<b>8 <u>VISION AND MISSION</u></b>	<b>23</b>

<b>8.1</b>	<b>THE VISION</b>	<b>23</b>
<b>8.2</b>	<b>THE MISSION</b>	<b>23</b>
<b>9</b>	<b><u>THE PRINCIPLES</u></b>	<b>23</b>
<b>9.1</b>	<b>EQUITY</b>	<b>23</b>
<b>9.2</b>	<b>INCLUSION</b>	<b>23</b>
<b>9.3</b>	<b>DIVERSITY</b>	<b>23</b>
<b>9.4</b>	<b>LEADERSHIP WITH RECOGNITION AND RESPECT</b>	<b>23</b>
<b>9.5</b>	<b>CONTINUOUS IMPROVEMENT</b>	<b>24</b>
<b>10</b>	<b><u>GOALS AND STRATEGIC OBJECTIVES</u></b>	<b>24</b>
<b>10.1</b>	<b>COORDINATED PLANNING, COLLABORATION AND COOPERATION</b>	<b>24</b>
<b>10.2</b>	<b>COMMUNITY’S WORKFORCE CAPACITY AND CAPABILITY</b>	<b>24</b>
<b>10.3</b>	<b>RESEARCH AND INNOVATION FOR CLIENT FOCUSED SERVICE DELIVERY</b>	<b>24</b>
<b>10.4</b>	<b>COMMUNITY NETWORK INFRASTRUCTURE</b>	<b>24</b>
<b>10.5</b>	<b>REVIEW OF NATIONAL HEALTH POLICY</b>	<b>24</b>
<b>10.6</b>	<b>HEALTH INFORMATION TECHNOLOGY INFRASTRUCTURE</b>	<b>24</b>
<b>11</b>	<b><u>STRATEGIC OBJECTIVES AND RELATED ACTIONS</u></b>	<b>25</b>
	<b>GOAL 1 – STRATEGIC OBJECTIVES (PLANNING, COLLABORATION &amp; COOPERATION)</b>	<b>25</b>
	<b>GOAL 2 – STRATEGIC OBJECTIVES (WORKFORCE CAPACITY &amp; CAPABILITY)</b>	<b>25</b>
	<b>GOAL 3 – STRATEGIC OBJECTIVES (RESEARCH AND INNOVATION)</b>	<b>26</b>
	<b>GOAL 4 – STRATEGIC OBJECTIVES (COMMUNITY NETWORK INFRASTRUCTURE)</b>	<b>26</b>
	<b>GOAL 5 – STRATEGIC OBJECTIVES (NATIONAL HEALTH POLICY REVIEW)</b>	<b>27</b>
	<b>GOAL 6 – STRATEGIC OBJECTIVES (INTEROPERABILITY ROADMAP)</b>	<b>28</b>
	<b>PART A – NATIONWIDE INTEROPERABILITY ROADMAP FOR HEALTH SERVICE DELIVERY</b>	<b>28</b>
	<b>PART B – PROTECT THE PRIVACY AND SECURITY OF HEALTH INFORMATION</b>	<b>28</b>
	<b>PART C – IDENTIFY, PRIORITIZE, AND ADVANCE TECHNICAL STANDARDS</b>	<b>29</b>
	<b>PART D – INCREASE USER AND MARKET CONFIDENCE IN THE USE OF HEALTH IT PRODUCTS</b>	<b>29</b>
	<b>PART E – A COMMUNICATION INFRASTRUCTURE THAT SUPPORTS HEALTH SERVICE DELIVERY</b>	<b>30</b>
<b>12</b>	<b><u>IMPLEMENTATION AND GOVERNANCE ARRANGEMENT</u></b>	<b>31</b>
<b>13</b>	<b><u>FUNDING</u></b>	<b>32</b>
<b>14</b>	<b><u>MONITORING AND EVALUATION</u></b>	<b>34</b>
<b>15</b>	<b><u>ANNEX 1 – STRATEGIC ACTIONS AND COSTS</u></b>	<b>35</b>
<b>15.1</b>	<b>PLANNING, COLLABORATION &amp; COOPERATION FOR TECHNOLOGY DRIVEN SERVICES</b>	<b>35</b>
<b>15.2</b>	<b>WORKFORCE CAPACITY AND CAPABILITY FOR SERVICE DELIVERY</b>	<b>38</b>
<b>15.3</b>	<b>THE RESEARCH AND INNOVATION FOR CLIENT-FOCUSED SERVICE DELIVERY</b>	<b>40</b>
<b>15.4</b>	<b>A COMMUNITY NETWORK INFRASTRUCTURE SYSTEM</b>	<b>42</b>
<b>15.5</b>	<b>A REVIEW OF THE NATIONAL HEALTH POLICY TO DIGITAL HEALTH POLICY</b>	<b>45</b>
<b>15.6</b>	<b>INTEROPERABILITY ROADMAP FOR HEALTH IT INFRASTRUCTURE</b>	<b>47</b>

<b>15.7</b>	<b>PROTECT THE PRIVACY AND SECURITY OF HEALTH INFORMATION</b>	<b>50</b>
<b>15.8</b>	<b>IDENTIFY, PRIORITIZE, AND ADVANCE TECHNICAL STANDARDS</b>	<b>53</b>
<b>15.9</b>	<b>INCREASE USER AND MARKET CONFIDENCE IN THE USE OF HEALTH IT PRODUCTS</b>	<b>55</b>
<b>15.10</b>	<b>A COMMUNICATION INFRASTRUCTURE THAT SUPPORTS HEALTH SERVICE DELIVERY</b>	<b>58</b>
<b>15.11</b>	<b>ESTIMATED COSTS</b>	<b>61</b>
<b>15.12</b>	<b>COST ESTIMATES</b>	<b>62</b>
<b>16</b>	<b><u>ANNEX 2 - TECHNOLOGIES IMPACTING ON SERVICES (HEALTH &amp; CARE)</u></b>	<b>63</b>
<b>17</b>	<b><u>ANNEX 3 - KEY TARGETS AND INDICATORS OF THE NHSSP – 2014-2020</u></b>	<b>66</b>

## 1) ACRONYMS AND ABBREVIATIONS

AU	<i>African Union</i>
HMIS	<i>Health Management Information System</i>
GDP	<i>Gross domestic product</i>
ICT	<i>Information and Communications Technologies</i>
ICT4D Policy	<i>Information Communications Technology for Development Policy</i>
ITIL	<i>Information Technology Infrastructure Library certification</i>
ISO	<i>International Standards Organisation</i>
LAN	<i>Local Area Network</i>
LGD Act 2002	<i>Local Government Decentralisation Act , 2002</i>
MOHERST	<i>Ministry of Higher Education Research Science and Technology</i>
MOHSW	<i>Ministry of Health and Social Welfare</i>
MOICI	<i>Ministry of Information and Communications Infrastructure</i>
MOJAGC	<i>Ministry of Justice and Attorney General's Chambers</i>
MOLRG	<i>Ministry of Local and Regional Governments</i>
NCSTI	<i>National Council for STI</i>
NDP	<i>National Development Plan</i>
NHP – 2012-2020	<i>National Health Policy 2012-2020</i>
NHSSP 2012-2020	<i>National Health Sector Strategic Plan 2012-2020</i>
PPP	<i>Public Private Partnership</i>
R&D	<i>Research and Development</i>
Q1, Q2, Q3, Q4	<i>Quarter 1, Quarter 2, Quarter 3 and Quarter 4</i>
SDGs	<i>Sustainable Development Goals</i>
SMS	<i>Short Message Service</i>
STI	<i>Science Technology &amp; Innovation</i>
WAN	<i>Wider Area Network</i>

## 2) EXECUTIVE SUMMARY

*This Strategic Plan first provides for an introduction and background to technology-driven social and community service provision and delivery. The very basis of the exercise was laid out as well as the process followed in the formulation of this strategic document. There are reflections of the objectives of the NDP as well as the relevance and motivation of technology-driven social and community service provision and delivery. It is a result of a thorough consultative process with a careful consideration of the Government's desire to move the services delivery to the communities.*

*Each objective within a goal is a given associated cost. It is as a result of the measures being taken by MOICI in the development of an ICT Master Plan for The Gambia. The recognized objectives (action plans/projects) in this Strategic Plan are intended to promote the broad goals of the NDP. As the NDP is set for "good governance and accountability, social cohesion, and national reconciliation and a revitalized and transformed economy for the wellbeing of all Gambians", the objectives and defined activities are linked to the deliverables of the NDP. In addition to the NDP and ICT4D Policies, this strategy is informed by many other strategic documents in relation to technology-driven social and community services and provision.*

*The goals and objectives identified would have positive transformative effects on service delivery at the community level. There is a consideration of the prerequisites for technology driven social and community service provision, the existing legal framework, the drivers, the challenges and lessons observed.*

*The vision is "articulating a shared vision for utilising technology driven social and community services by facilitating governance and community participation in supporting the welfare and wellbeing of individuals, families and other communities" and the mission is "Improve the social and community service provision and delivery including health through the use of technology driven innovations by making the services accessible when and where necessary through the recognised spaces and community connection.*

*The technology-driven social and community services are built on commitment to the values of equity, inclusion, diversity recognition and respect, leadership, integrated service delivery, collaboration and continuous improvement.*

*The six defined goals are supported by strategic objectives and these are:*

- 1) Having a co-ordinated planning, collaborations and cooperation that encourages partnerships, pursue, build and establish new collaborations and cooperative ways of working for social and community service delivery;*
- 2) Having a proper workforce capacity and capability for social and community service delivery by facilitating the creation of a network of services which aim to develop the capacity of people and families to enable their full participation in a strong, healthy and inclusive community.*
- 3) Carrying out research and innovation for client-focused service delivery*

*to result in a delivery system that provides integrated services to people in the communities. This includes facilitating the use of human services at different stages of people's lives with support depending on their needs at the time.*

- 4) *Having a community network infrastructure system that maximizes the use of social and community services and benefit;*
- 5) *A review of the national health policy that advances digital health, person-centered and self-managed health with impacts for transforming health care delivery and community health with emphasis on innovative health service delivery;*
- 6) *To strengthen the Gambia's Health Information Technology Infrastructure;*

*The action-oriented objectives are numerous ranging from the need for policy changes, stakeholder engagement, new investments, communications network infrastructure, platforms, workforce capacity and capability, standards, assessments, applications, innovative fund and special coverage of the health sector for social and community service delivery. The summary of the goals, objectives and identified actions for the implementation of this Strategic Plan are in Part 11 of this Strategic Plan.*

*The budget considered for this strategy is determined at an estimated total of **D27,900,000 (Twenty-Seven Million Nine Hundred Thousand Dalasis)** in terms of programs to set up the environment and prepare the health sector for digital service delivery. This cost excludes the following costs;*

- a) *Service integration, the technical platform and the data centres;*
- b) *Special skills and expertise to meet the current and future needs.*
- c) *Open government data system;*
- d) *Allocated for the innovative fund;*
- e) *Allocated for addressing cyber security measures;*
- f) *The health IT personnel;*
- g) *Access to rural connectivity, broadband connectivity for health IT applications and IT national network infrastructure for health;*

*The strategic framework for the strategy's implementation is created to facilitate coordination and accountability. A Special National Taskforce would be set up with membership from MOICI, the ICT Agency, MOHSW, MOLRG (because of the Local Government Act of 2002), MOHERST and MOJAGC. The taskforce is to ensure the effective implementation of this strategy in relation to the defined objectives and with the highest degree of transparency, accountability and entrepreneurship. The taskforce can lay down conditions for the coordination and the implementation of this strategy as well as facilitate the establishment of community hubs that will assist in the implementation of objectives.*

*This Strategy adopts the traditional project financing approach where the entire initiative can be funded through Government budgetary resources (based on the AU's committed 1% of each member's GDP to be allocated for STI R&D innovation projects) and operated by an Agency for the Government. Other funding measures like full privatisation, PPP arrangement and donor support are considered.*

*A Special Committee is established for the effective monitoring and evaluation. This Special Committee (not the taskforce) will coordinate the implementation process, monitor and report on the strategy's defined activities in relation to the goals and objectives. This will be based on its conduct of quarterly assessment of this strategy using recognize approaches, the use of "technology foresight" programme. Membership of this Special Committee shall be determined by MOICI and MOHSW in consultation with other stakeholders. The framework for monitoring and evaluation will be developed by this Special Committee by taking into consideration the reporting timelines hereunder provided as well as the definition of performance indicators and the tracking of performance.*



### 3) INTRODUCTION

The consumerization of technology, and the digitalization of data are fundamentally impacting on all nation-states and what they stand for especially for social and community service provision and delivery. The massive change and disruption by technology have forever transformed the way consumers and businesses interact. The Gambia with its small size in terms of population and low level of ICT advancement in software and applications market, the global data digitalization, mobile applications and self-service consumer platforms all are partly changing the process of learning, collaboration and communication within the social and community services sector more specifically the healthcare sector.

Generally, all community services are undergoing a period of significant change. The role of technology in community development is to give power and a voice to people within the larger ecosystem. It enables citizens to create a better future for themselves. There are new models of service delivery and new ways of doing business with the key focus on achieving social and economic outcomes. This strategy will help to facilitate social and community services navigate this period of change and grow a strong and sustainable community services into the future.

There is the recognition that community services are being delivered in a rapidly changing mixed economy because of the convergence of the public, for-profit, not-for-profit, the household sectors' services and their norms. There is change that is equally happening at a time of a broader convergence of trends, including redefined roles of Government as it embraces e-Government and STI implementation. There is a shift from the concept of client to consumer and the Government, based on best practices is measuring its use of public funds based on profitability. With the increasing inequality and marketised funding arrangements for many other projects for the good of the communities, there are complete changes in appetite for risk.

This strategy acknowledges the widespread use of ICTs in transforming almost every part of the lives of the people in the various communities. This strategy broadly focuses on the state of digital literacy and the respective solutions of providing information and special services to the communities through Internet-enabled devices.

For the strategy's purposes, its scope, the key phrases are given due consideration, to wit:

- a) Technology-driven;
- b) Social and community services;
- c) Service provision and delivery;

The term "technology driven" is given the description as a;

"management philosophy that pushes for development of new goods or services based on firm's technical abilities instead of proven demand"

It runs on the principle of “making keys first to be followed by looking for locks to open”. In effect as an activity that relates to management idea, the technological good or service (software and or application) are made or provided based on existing technical capabilities and not because it is in response to any existing demand for the good or service. The primary objective is to have a breakthrough in innovation for social and community service provision and delivery which is usually based on a technology driven orientation.

The broader phrase “technology-driven social or community service”, is considered to have the following connotations and objectives of “making the social or community service efficient” based on the cooperative relationship between the providers of the technology and the consumers (stakeholders). There is the condition of continuous integration, continuous delivery, test-driven development and behaviour driven development of the innovative element of the technology in terms of the value it adds to the social or community service. Therefore, it is the process of initiating technological innovations around social and community services for enhancing community development.

The fundamental basis of this strategy is the development of new models, ideas, and processes that are enabled by new technological capabilities. The features and capabilities of ICTs are being incorporated into business and social strategies. The strategy considers the use of a number of the features and capabilities of ICTs in promoting the provision and delivery of social and community services.

This Strategy recognizes the Government’s resolve to approach technology-driven social and community service provision and delivery with entrepreneurship. This is to challenges the idea that government and innovation is somewhat of an oxymoron. The Government intends to become more entrepreneurial to invest in and promote the use of some existing technologies that can change lives at the level of the communities.

Having considered the scope of the ICT Master plan that currently have the effects of covering a number of services including social and community services and the commitment of The Gambia at the international level, this strategy is specifically catering for health sector and the creation of the environment for the provision of social and community services.

Further, the Government will complement the investment by the private sector to develop and have cost-effective technologies for the very poorest people to benefit. The first aspect of the approach is addressing the issue of digitisation as a national priority. The measures would add to enhancing digital skills development of the youth to ensure their employability in any industry. This could go to the extent of providing the youth with credit for skills development as well as the use of special Government grant programmes and tax incentives to encourage firms to invest more in low-wage workers, those most at risk from technological job displacement. This is addressed by the goal on workforce capacity and capability

## 4) BACKGROUND

Countries have started using technology innovations for social and community service provision back in 2015 when the UN adopted the 2030 Agenda for Sustainable Development which is aimed at guiding the advancement of humankind for the next 15 years. The key principle being

“leave no one behind”

Regardless of the socio-economic changes and because of the economic growth there is a rise in both income and digital inequality. Countries have since been using technology to bridge the inequality in accelerating the accomplishment of the Sustainable Development Goals. Technologies like Artificial Intelligence, robotics, 3D printing, and the Internet of Things are now reshaping the economies, societies, communities and the environment. Currently, digital trade and finance are opening economic opportunities through financial inclusion. Innovations like the the digital identification system is enabling the financial inclusion of millions of people while digital healthcare and education are providing cost-effective solutions to people in rural communities.

### 2.1 The Basis

The very basis of this strategy is to achieve the objectives of the SDGs through actions that incentivise all stakeholders to do good, to do well the good with social inclusion at the heart of every societal and community development models especially at the rural areas of The Gambia.

### 2.2 Social and Community Services

Social and community services are wider in scope. Almost all government services at the level of the community can be qualified to become social and community services. It relates to and includes the use of ICTs to the following services in the table below:

<b>Areas of Intervention for Social and Community Services</b>	
1) Community based health services (mental health, housing, child protection, financial assistance and legal services);	2) Community based educational services (adult education, civic education services);
3) Community development and infrastructure;	4) Government agencies;
5) Aged care services;	6) Women & men services;
7) Citizens voice, self-help and advocacy organisations;	8) Disability services;
9) Youth and family services;	10) Drug and alcohol services;
<i>Comment: The community health services is specifically addressed, and the environment is created by this Strategy for the others to be addressed.</i>	

The adopted measure of this strategy is within the areas of digitisation, digital health care and the having the right environment for technology-driven social and community service provision and delivery. This strategy will allow the communities and other stakeholders to take ownership of creating new opportunities for growth, including through social investment models to meet the increasing demand for community services.

### **2.3 The Process**

This strategy sets a four-year vision for social and community driven services. It is developed through a through a consultative process, including a preliminary focus group, interviews with service providers and the general consumers. There have been one-on-one interviews with industry heads and institutional heads.

### **2.4 The Gambia National Health Sector Strategic Plan 2014-2020**

The NHSSP 2014-2020 is anchored on the National Health Policy 2012-2020 which is linked to the country's development blue prints better known as VISION 2020. The key considered priorities relate to maternal, neonatal, infant and child health services, surveillance, prevention, control and management of communicable and non-communicable diseases. The improvement of knowledge and skills of health care providers at all levels as well as the building of the capacity of the Health Management Information System (HMIS) and data management system within the health sector. The urge to improve health infrastructure at primary, secondary and tertiary health care levels also fall within the key priorities.

With a vision of the “provision of quality and affordable health services for all by 2020”, the mission is to “promote and protect the health of the population through the equitable provision of quality health care”. The ultimate goal is to “reduce morbidity and mortality to contribute significantly to quality of life in the population”.

The technology-driven service part touches on the Health Management Information System (HMIS), data management system within the health sector and the improvement of knowledge and skills of health care providers at all levels for quality and affordable health service provision and delivery.

In addition to creating the right environment for technology-driven social and community services, this strategy also recognizes some of the key targets and indicators of the NHSSP – 2014-2020. These are contained in a table in an Annex to this strategy.

## **2.5 The Prerequisites for Technology Driven Social and Community Services**

This strategy prepares an environment for technology-driven social and community services with specific emphasis on health service delivery with the use of technology. The identified key priorities for action include the issue of effective and reliable connectivity, a scalable infrastructure, capable human resources with the right data and information management with recognized sustainability models. Based on the realities on the ground and the demands of social and community service provision and delivery, a number of prerequisites have been determined. They relate to the following;

### **2.5.1 The Right Technical Platform**

There is a need to have the right technical platform for strategically developing and executing successful and consistent customer experiences across all layers in service provision and delivery. The infrastructure for the technical platform is to have centralized network services with community points of presence (PoP's) and residential requirements. The supporting LAN/WAN infrastructure is to be based on the recognized standards (ITIL, and ISO). The funding model for the platform must be flexible and sustainable.

### **2.5.2 Collaboration**

The environment is to be created for embracing collaboration across people, processes and technology. The key area where the collaboration is needed is on data and information management. The data centres for the technology-driven social and community services, their security, standards, governance and sharing models are to be determined through collaboration.

To ensure their sustainability, a good number of these services require integrated processes (tripartite or public/private). The needs of internal integration as well as the operations and maintenance in relation to service provision or delivery all require a measure of collaboration.

### **2.5.3 Top Community Leadership**

There is a need for the top local and community leadership to lead the change and drive change across the service delivery chain. The leadership has to focus on managing the human resources capacity plan for the services, the career path development, the required investments and standards based equitable positions and payable salaries and or remunerations. The providers of the technology-driven services have to have the capacity to access data and leverage statistical, computational, and social science expertise necessary to manage, analyse, and interpret data.

#### **2.5.4 Enhancing Customer Experience**

There is a need for enhancing customer experiences by allowing for a deeper understanding of the service needs and personal relationship with the customers.

#### **2.5.5 Proven Results for the Community**

From the onset there is a need to identify the proven results for the technology-driven service. The baseline will be on the matter of connectivity. The requirements of the needed shared commitment and the supports for regional and community connectivity planning are to be established.

### **2.6 The Existing Legal Framework for Community Health Services**

There is the Local Government Decentralization Act, 2002 (LGD Act-2002) that gives enormous powers and autonomy to Local Area Councils and Local Services Commissions that form part of the Public Service to be responsible for public and environmental health. Section 76 (1) of the said Act made every Council to be responsible for the “promotion and preservation of health within its area of jurisdiction” subject to national policy guidelines and other regulations as may be prescribed by the Minister responsible for the administration of the Public Health Act. The councils are in fact made responsible for:

- a) Major health centres, sub-dispensaries and all primary health care services;
- b) Maternal and child health services;
- c) Distribution of pharmaceutical products and vaccines to health facilities;
- d) General hygiene and sanitation;

This legislation empowers the local Councils to deal with matters of health and its administration at the local and community levels. For this reason and under Section 77 (1) it establishes the Local Public Health Committees promoting the Local Government Decentralization Policy empowering the Councils to appoint the Local Public Health Committee in consultation with the Director of Health Services. The membership of this Local Public Health Committees comprises:

- a) A Chairperson appointed by the Council,
- b) The Area Medical Officer;
- c) The senior public health officer;
- d) The public health nurse;
- e) Two women representing women groups;
- f) Two representatives of Organisations actively involved in the health sector;
- g) Two members who hold qualifications in health-related fields;
- h) Two prominent members of the community within the Local Government Area;

Under section 78 (1) of the Act, the Councils are further empowered to establish a Department of Health Services to which shall be transferred the existing Divisional Health Teams for the purposes of performing its functions under this Act. With this shifting of authority to the local councils in the name and interest of decentralisation

the communities through the local councils are given the statutory recognition of the right to make their budget arrangements for the provision and delivery of community health services.

### **3 DRIVERS FOR A COMMUNITY SERVICES PROVISION**

#### **3.1 Utilizing the Opportunities**

There are a number of major socio-economic changes with far-reaching consequences. For success and sustainability into the future of social and community services, the building of a workforce with job roles and skill sets that are fit-for-purpose in this new operating environment and enable it to harness opportunities to innovate, build capacity and transform all become important driving force.

The transformation of the service delivery environment is one of the most prominent changes for the communities. These changes are likely to impact on other parts of the human services system, prompting industry organisations and government to review and adjust service models, and increase capacity for promoting and selling services. With the technological changes, it is becoming increasingly important for the community services sector to keep pace with new technologies and to take advantage of the many opportunities these offer for enhancing services and improving productivity.

Another change driver is the increasing adoption of community-driven responses to local social problems in relation to services. Population trends have an impact on social structures, the economy, the workforce and service demand. The most pressing of these trends is the very youthful population. The cost of providing services for the youth will require innovative, alternative models of youth engagement for the future.

#### **3.2 Treating and Curbing the Community Disadvantages**

Having a the right social and community services can bring about a reduction in the disadvantages within the communities and facilitate economic growth. The rural communities are at times far from the utilisation of basic services hence placing them in a disadvantage position. The general impacts of the disadvantage are manifested in the forms of poor outcomes in health, education and employment and lower levels of productivity and growth. Almost the very basic services become costly for the people in the affected communities.

The special works or programs for the social and community services are crucial. As a purpose-driven area, providing efficient and effective community services promotes social and emotional health and wellbeing by empowering individuals and communities.

The strategy is to equally ensure that people within communities experiencing disadvantage have opportunities to improve their lives and are supported to engage



as active participants in their communities. There are both social and economic benefits for enhancing and improving participation in social and community service provision and delivery. There will be further reduction in poverty and inequality, an increase in productivity thereby lowering costs.

This strategy is premised to bring the private sector and Government together as partners to harness opportunities for transforming and strengthening the social and community service provision and delivery through the creation of the environment for technology-driven service provision.

#### **4 THE STRATEGY'S PURPOSE AND RATIONALE**

The very purposes of this strategy are to:

- a) Present a shared understanding of an environment, vision and plan for the social and community services;
- b) Identify priorities for using ICTs more specifically technology-driven social and community service provision and delivery;
- c) Offer increased opportunities for the communities to plan and prepare for future technology driven innovative solutions' demand and workforce requirements by identifying emerging trends;
- d) Present a strong case for the value of technology-driven solutions as contributors to the health and wellbeing of the people in the communities and the general economy;

The rationale for strategy is embedded in the very dynamic nature of the environment in which social and community services operate. A lot of changes are taking place and the pace of change is continuously accelerating because of technology. The societal patterns of value orientation are changing significantly resulting in an increased focus on special partnerships with citizens in the communities in areas of education and health sector centring on delivering community centred care. It is recognized that there are other changes impacting more broadly including continued growth in demand for services and changes to funding and procurement processes in relation to social and community services.



## 5 LESSONS LEARNED

In the course of the consultations and a review of key background document (policies and strategies) a series of lessons learned have been identified of which the most important ones are listed below.

- a) A number of the enabling factors for technology driven social and community services provision and delivery need to be addressed. In addition to the challenges outlined by this strategy, the numerous initiatives for facilitation are impacted by funding constraints.
- b) Further, the donor support is rather dwindling as it is becoming very specific. A number of them are not based on what the community wants but based on the priority listings of the donors.
- c) There is still rural/urban implementation gap – the digital divide factor. Noting the special importance of the social media for empowerment and its usual cost-effective implementation, there are very few social media initiatives for marginalized communities. There are more activities in the urban rather than the rural communities.
- d) The common problem of capacity gap exists. There is a constraint on large-scale data collection and aggregation. It is true that some marginalized groups do not have the access or the skills to work with mobile telephony and social media but in some areas there is a “demand side” interest in using new communications pathways to receive information and give feedback. The challenge is to identify those as they may serve as a good beginning.
- e) The application of locally developed or adapted technology is rather low. This is more the reason why the attainment of sustainability for technology is always a challenge with on-going capacity building, development and maintenance needs. Several respondents stressed the importance of locally developed or adapted technologies for application.
- f) There will be a need for the application of different media platforms for impact and this must be followed by monitoring for results. This lack of structured approach for documentation of results leads not only for limited lesson learning within a given project but also to limited knowledge sharing within the wider community.
- g) The Government considers it paramount to enter into partnerships with both the private sector and local communities. For mobile telephony projects applying services such as free texting for users, it is critical to partner with mobile providers up-front to ensure sustainable cost level for full-scale project rollout. The funders of social media programs for development may need to harmonize efforts at community-level to encourage private sector stakeholders to take up some of the cost.

- h) The issue of data security, more specifically the right to privacy surfaced. This fear here was expressed based on the experience with the former regime as the government can use software tools to intercept SMS-text and emails. Information about the citizens' posted can be collected by the government and this puts those people at risk.

## **6 THE CHALLENGES**

There are a number of challenges that are established and these need to be addressed as this strategy gets implemented. They relate to the sizes of the communities in sustaining the systems for technology-driven services, the scope of social and community services and the use of technologies in the rural areas. They are specifically outlined as under.

### **6.1 The Tax Base of the Communities**

It is clear that most of the local councils in The Gambia lack the tax base to raise adequate revenue, and the management capacity to run a health service, which also have implications for the health services that can be classified as technology driven. To have a community approach to social and community service delivery especially for health services, there is a need for implementing a nation-wide decentralization programme. The current functionalities of the regional health units and the unique constraints reveal the issue of very low tax base for sustaining the regional health services without direct government support.

As a solution, the Local Government Act 2002 (LGA) ensures the decentralization of services from the central to the regional level in 2002. The financial and administrative issues were brought closer to the people aiming at providing equal opportunities to all citizens regardless of geographical location. With the health service management and delivery being decentralized to seven (7) health regions, the three-level health care administration have to ensure that quality, effective and efficient services are provided at the third level (community) which are the basic health services and village health services level.

The lower tax base of the local communities is serving as deterrent for the private sector to roll out services in the local communities.

### **6.2 Challenge to the Scope of Community Services**

In the Gambia, just like in many other countries, there is national, institutional, strategic and cultural resistance to viewing social and community services as an industry, that is a sector that produces goods or related services for economic growth. Social and community service work are seen as a voluntary vocation or a profession. The special recognition that ought to have been accorded to community service organisations is not all that strong. A number of the services are to recognise as community services and the recognition is to be followed by a special treatment especially with the aid of technology.

Currently, the distinction between profit, commercial and community services is getting blurred as the norms between the public, not-for-profit and for-profit sectors are converging. The strategy is to cater for the current transition as services which had traditionally operated within the health domain such as primary health care, health education and early intervention, mental health, palliative care, and post-

hospital support all started to transition into community services without a policy guide for their treatment with special status.

### **6.3 The Creation of Community Hubs**

More efforts are needed to strengthen stronger Government coordination for social and community service delivery. All communities have to have a baseline of some common practices to enable the setting up of the right infrastructure platform for technology driven social and community services. The methods of community funding and the programs all need some form of coordination. The community hubs are to achieve school-community partnerships, respond to local needs, improved access to services and better outcomes for people especially social return on investment.

### **6.4 Using Technology in the Rural Areas**

There is a low level of literacy in the rural communities and integrating technology into their everyday lives gets difficult. The Internet and mobile connectivity in many of these rural communities is still a major problem. This hinders the connection of the community with the rest of the country. A number of the mobile devices that are in use in a number of these areas are not smart phones or those that can facilitate the uptake of technology in the rural areas. The rural communities suffer from excessive power shortages, making it difficult to use or even keep the equipment charged.

As highlighted earlier, the finances of the community towards purchasing these technologies are a matter of concern. There is also the challenge of developing technologies that are based on the actual needs and demands of the community in relation to services.

### **6.5 The Challenge of the Future and Technology in the Communities**

There is a very high level of uncertainty in the social and community services delivery about the future, especially with regards to critical issues of regulation, funding and reform.

There are still concerns about data protection and privacy, the available resources and the level of the preparedness of the workers at the community levels for the services anticipated. Placing the service provision and delivery at the level of the community would mean that workers at the community level have to have the technological literacy necessary and stay abreast of new developments and global policies in social work.

The literacy standards would be providing a guide to social and community workers to integrate new tools with their services, improve and maintain the quality of services and allow for evaluation and monitoring of how technology tools are used.

Equally, there are aspects of social services that will never be able to be overtaken by technology. The strategy recognizes that social work remains one of the

disciplines where full automation is the least likely. There is an earlier report that social work only has a 0.3% risk of full automation, since it is one of the most difficult positions for even robots to fill. This also makes it a very promising field with great prospects for the future.

## **6.6 Some Inherent Challenges of MOH&SW**

It is an established fact that the existing infrastructure and ICT equipment for health service delivery is inadequate. There is high attrition of skilled health and social workers resulting in gaps that needs to be filled up with the competent workers. Equally there is low staff production from health training institutions. The drugs and medical supplies are insufficient, and the referral systems are weak. Above all, there is limited human, financial and material resources to meet the growing demand of social welfare and child protection services at national, regional and community levels.

The goals outlined by this strategy are to address the challenges for a better and effective social and community service provision and delivery.

## **6.7 No Clear Roadmap for the Services**

By considering the community service sector as well as the health policy and strategy there is no such clear roadmap that provides critical actions for both public and private stakeholders for advancing the country to having an articulated social and community service delivery plan or an interoperable health IT ecosystem that promotes research and a health system that efficiently and collectively improves health service delivery. Such a roadmap would be addressing the issues of technical standards and functions of the technology driven IT products for the services, the certification of the said IT products and services by the relevant authority, the issues of privacy and security protections for health information, a clear regulatory environment for health service delivery and the stakeholders rules of engagement and governance.

## **7 TECHNOLOGIES TO IMPACT ON SOCIAL AND COMMUNITY SERVICES**

There are a number of technologies that will continue to impact on the provision and delivery of community services more specifically the health sector. This begins with having a connected community with peer-to-peer support networks and a network for the communities to contribute to research relating to a typical community service or societal need and one that will hold a decentralised health records system.

The specific technologies that can offer technology driven services especially for the health sector include the following:

- a) New insights into big datasets
- b) The smartphone
- c) At-home or portable diagnostics devices
- d) Smart or implantable drug delivery mechanisms
- e) Digital therapeutics
- f) Genome sequencing
- g) Machine learning
- h) Blockchain

The details of these technologies are contained in an Annex to this strategy.

## **8 VISION AND MISSION**

### **8.1 The Vision**

Articulating a shared vision for utilising technology driven social and community services by facilitating governance and community participation in supporting the welfare and wellbeing of individuals, families and other communities.

### **8.2 The Mission**

Improve the social and community service provision and delivery including health through the use of technology driven innovations by making the services accessible when and where necessary through the recognised spaces and community connection.

## **9 THE PRINCIPLES**

The technology-driven social and community services are built on commitment to the values of equity, inclusion, diversity recognition and respect, leadership, integrated service delivery, collaboration and continuous improvement.

### **9.1 Equity**

Building an environment and ecosystem in which everyone can access and take part in the utilisation of technology driven social and community services. The creation of accessibility and affordability of quality health services at point of demand especially for women and children, for the marginalized and underserved without any form of discrimination.

### **9.2 Inclusion**

The access to and utilisation of technology-driven social and community services extends to and includes all vulnerable individuals, families and communities.

### **9.3 Diversity**

There shall be no discrimination in providing technology-driven social and community services except those based on an intelligible differentia with legal basis.

### **9.4 Leadership with Recognition and Respect**

The provision of the technology-driven social and community services shall be backed by and done with local leadership, integrity, ethical practice, accountability and with a promotion of the rights and inherent dignity of all people receiving the services.

## **9.5 Continuous Improvement**

There shall be measures for collaboration and continuous innovation and improvement in the planning and delivery of the services as well as workforce development.

## **10 GOALS AND STRATEGIC OBJECTIVES**

### **10.1 Coordinated Planning, Collaboration and Cooperation**

Having a co-ordinated planning, collaborations and cooperation. This relates to a coordinated system of planning that encourages partnerships, pursue, build and establish new collaborations and cooperative ways of working.

### **10.2 Community's Workforce Capacity and Capability**

Having a proper workforce capacity and capability for social and community service delivery. Facilitating the creation of a network of services which aim to develop the capacity of people and families to enable their full participation in a strong, healthy and inclusive community.

### **10.3 Research and Innovation for Client Focussed Service Delivery**

Carrying out research and innovation for client-focused service delivery. The research and innovation to result in a delivery system that provides integrated services to people in their communities. This includes facilitating the use of human services at different stages of people's lives with support depending on their needs at the time.

### **10.4 Community Network Infrastructure**

Having a community network infrastructure system that maximizes the use of social and community services and benefit.

### **10.5 Review of National Health Policy**

A review of the national health policy that advances person-centered and self-managed health with impacts for transforming health care delivery and community health with emphasis on innovative health service delivery.

### **10.6 Health Information Technology Infrastructure**

To strengthen the Gambia's Health Information Technology Infrastructure



## **11 STRATEGIC OBJECTIVES AND RELATED ACTIONS**

### **Goal 1 – Strategic Objectives (Planning, Collaboration & Cooperation)**

To ensure co-ordinated planning, collaborations and cooperation for technology driven social and community services provision and delivery, the following objectives are to be accomplished.

- a) Community needs assessment in relation to services;
- b) Improve the design, delivery and outcomes of services;
- c) Improve client services and outcomes through better integration of services;
- d) Increase community's access to new investments, resources, expertise and markets to achieve economies of scale;
- e) Promote innovation through sharing skills and knowledge;
- f) Give a voice to multiple stakeholders;
- g) Entering into partnerships to develop tools and mechanisms to support these new collaborations, and structures, processes and skills for managing operation in relation to community service delivery;

### **Goal 2 – Strategic Objectives (Workforce Capacity & Capability)**

The target is for proper workforce capacity and capability for social and community service delivery. The creation of network of services targets developing the capacity of people and families to enable their full participation in a strong, healthy and inclusive community.

- a) A policy to attract and retain workers across the communities in rural and remote areas;
- b) Special skills and expertise to meet the communities' current and future needs;
- c) Attracting, training and retaining a strong body of volunteers as part of workforce planning and development;
- d) Work with the communities and other stakeholders to identify opportunities for building a diverse, skilled and culturally capable workforce;
- e) Work with the business and education sectors and other stakeholders to improve access to training and volunteering;
- f) Supporting business that facilitate or provide skills development, training and employment opportunities;

### **Goal 3 – Strategic Objectives (Research and Innovation)**

**The research and innovation for client-focused service delivery** is to have a delivery system that provides integrated services to people in their communities. This includes facilitating the use of community services at different stages of people's lives with support depending on their needs at the time.

- a) Expand research and development to strengthen practice and improve effectiveness;
- b) Foster new approaches to service delivery to improve user outcomes in the face of increasing complexity
- c) Develop and mature service delivery operations to improve productivity and diversify revenue sources.
- d) To encourage industry and government partnership to grow and diffuse innovation and leverage opportunities for innovation;
- e) The private sector and government will partner to identify ways to increase productivity in service delivery, the workforce and the workplace by reducing overhead costs, improving efficiency, deploying technology, and removing barriers to productivity;

### **Goal 4 – Strategic Objectives (Community Network infrastructure)**

A community network infrastructure system to be built is to facilitate and maximizes the use of social and community services and their related benefits.

- a) Government Open Data for transparency (to contain Government expenditures, reduces graft and creates new opportunities for data- driven planning information services on citizen rights, electoral process, judicial system, crime reporting and listings of official prices for government services);
- b) Citizens and Entrepreneurs help build open data (real-time data collection);
- c) Catering for access that is widespread, easy, and inexpensive (public service delivery. Applications of "m-governance" include patient care management in clinics; SMS-Text school registration and school fee payment; registering to vote; paying taxes, fees and fines electronically);
- d) Social media for empowerment through mobile telephony;
- e) Networked communication among individuals, groups and society;
- f) New approaches to influencing opinion;
- g) New avenues for political mobilization;
- h) Direct participation in democratic dialogue, erasing divides of distance and geography (collecting citizen views on topics ranging from budget proposals to government performance);

- i) Information networks for marginalized groups (real-time market information for farmers);
- j) Hybrid media for community empowerment;
- k) Social media accountability;
- l) Information as a tool for accountability (transparency and accountability in government expenditures);
- m) Information Partnerships;
- n) Rights-based information campaigns;
- o) Citizen auditing (anti-corruption, budget tracking and networked systems connect citizen complaints with improved government capacity for response);

### **Goal 5 – Strategic Objectives (National Health Policy Review)**

A review of the national health policy to advance person-centered and self-managed health with impacts for transforming health care delivery and community health with emphasis on innovative health service delivery.

- a) Creation of innovative fund;
- b) Empower individual, family, and caregiver health management and engagement;
- c) Foster individual, provider, and community partnerships through frameworks;
- d) Improve health care quality, access, and experience through safe, timely, effective, efficient, equitable, and person-centered care;
- e) Support the delivery of high-value health care;
- f) Protect and promote public health and healthy, resilient communities;
- g) Increase access to and usability of high-quality electronic health information and services;
- h) Accelerate the development and commercialization of innovative technologies and solutions;
- i) Invest, disseminate, and translate research on how health IT can improve health and care delivery

## **Goal 6 – Strategic Objectives (Interoperability Roadmap)**

To strengthen The Gambia’s Health Information Technology Infrastructure

### **Part A – Nationwide Interoperability Roadmap for Health Service Delivery**

To put in place a nationwide interoperability roadmap for health service delivery, the following is needed;

- a) Collaborate with industry and public stakeholders to advance core technical standards for terminology and vocabulary, content and format, transport, and security;
- b) Initiate certification programs to ensure that a broad spectrum of health IT conforms to the technical standards necessary for capturing and exchanging information;
- c) Aim towards privacy and security-related policies, practices, and technology that keep pace with the expanded electronic exchange of information;
- d) Foster a supportive business, clinical, cultural, and regulatory environment that encourages interoperability;
- e) Publish guidance that defines high-level principles for policies and business practices that advance trust and interoperability

### **Part B – Protect the Privacy and Security of Health Information**

The following actions would be initiated for protecting the privacy and security of health information;

- a) Putting in place privacy and security legislation and regulations for compliance by health service delivery entities and agents;
- b) Clarify requirements and expectations for secure and trusted exchange of electronic health information, consistent with applicable legal privacy protections and individuals’ preferences, across states, networks and entities;
- c) Testing certified health IT products to ensure they incorporate privacy and security safeguards required for certification;
- d) Develop and implement policies, practices, and educational tools that advance interoperability while giving stakeholders confidence that privacy and security are maintained;

- e) Address cybersecurity risks in developing technologies and their use;
- f) Support, promote, and enhance information sharing capabilities within the health and public health sector for bi-directional information sharing about cyber threats and vulnerabilities between the private health care industry and the government;
- g) Put in place a uniform policy in relation to electronic document covering privacy choices.

### **Part C –Identify, Prioritize, and Advance Technical Standards**

Under this part there is a need to identify, prioritize, and advance technical standards to support secure and interoperable health information and health IT to promote technology driven service provision and delivery.

- a) Increase use of common standards in the country
- b) Improve the capability of health IT to securely manage information from varied sources in both structured and unstructured formats
- c) Encourage consistent standards implementation, reduce implementation variability, and improve modularity in health data standards for terminology and vocabulary, coding, data content and format, transport, and security
- d) Advance standards for common data elements to enable capture and use for clinical decision support, clinical quality measures, research, and reporting
- e) Encourage the adoption and use of prioritized sets of common standards through health IT certification, regulations and programs, and funding mechanisms

### **Part D –Increase User and Market Confidence in the Use of Health IT Products**

The objective is to increase user and market confidence in the safety and safe use of health IT products, systems, and services.

- a) Increase the quantity and quality of data and knowledge on the safe use of health IT, and integrate this evidence into health IT certification;
- b) Support the identification, monitoring, and reporting of complete, precise, and accurate challenges and hazards of health IT design and use;
- c) Encourage use of certified health IT technology and qualified clinical data registries for reporting quality measures;
- d) Implement a balanced, transparent, and risk-based approach to health IT oversight;
- e) Develop, select, promote, and implement health IT standards in transparent ways that promote competition, foster innovation, and minimize barriers to market entry for developers and users;

- f) Advance standards that support interoperability between medical devices and certified health IT products and systems, including standards for documentation of medical device use by unique device identifier and methods for adverse event reporting;
- g) Assess and identify methods, best practices, and partnerships to improve data management, quality, and utility;

### **Part E – A Communication Infrastructure that Supports Health Service Delivery**

This objective is to advance a national communications infrastructure that supports health, safety, and care delivery.

- a) Expand access to and choice of broadly available networks with comparable upload and download speeds for individuals and providers in rural and other underserved communities;
- b) Increase access to broadband connectivity for health IT applications, such as high-resolution imaging, telehealth, and mobile health;
- c) Ensure health IT networks and communication infrastructure can manage future growth in health data volume and velocity to promote advanced analytics and information sharing;
- d) Ensure that the national health IT and telecommunications infrastructure are secure, resilient, and operational during disasters and public health emergencies;
- e) Collaborate with industry and other public stakeholders to promote the ability of consumers to fully access broadband-enabled health resources when and where needed

## 12 IMPLEMENTATION AND GOVERNANCE ARRANGEMENT

Given the fast-changing nature of the social and community services and the social and economic contexts in which it operates, an agile approach is being taken to implementing the strategy.

Under this approach, the strategy will be implemented in stages via short-term action plans. These plans will outline specific actions to address priorities in each of the focus areas. The strategy also considers the other strategic pillars of the ICT Master Plan and more specifically the National Broadband Strategy, e-Government strategy, the STI strategy and Human Capital development strategy.

The intent is to focus on a realistic and defined set of actions for each goal and balancing the same with the other pillars mentioned. There may not be actions across all focus areas, and it is intended that a comprehensive range of activities be undertaken across all focus areas and priorities.

Some actions are likely to be substantial in size and scope and may require a longer period for implementation than the action plan timeframe. These actions will roll over to the next action plan. Other actions will be completed within the action plan timeframe.

For the implementation of this strategy, MOICI, MOHSW, MOHERST, MOLRG and MOJAGC are ministries that would be key. MOHSW and MOICI would agree on a number of coordination issues. The ICT Agency and the National Council for STI (NCSTI) relating to the component of research and innovation are relevant institutions that have critical stakes in technology driven social and community services delivery and provision.

A Special National Taskforce should be set up with membership from MOICI, the ICT Agency, MOHSW, MOLRG (because of the Local Government Act of 2002), MOHERST and MOJAGC. The taskforce is to ensure the effective implementation of this strategy in relation to the defined objectives and with the highest degree of transparency, accountability and entrepreneurship.

The taskforce can lay down conditions for the coordination and the implementation of this strategy as well as facilitate the establishment of community hubs that will assist in the implementation of objectives.

The research and policy analysis support mechanism for the National Assembly may be part of the implementation of the research and innovation goal under this strategy.

The governance framework would have to come up with some form of adjustment as the implementation is partly dependent on proper funding resources, the relevant tools (laws, regulations and standards), the addressing of the identified prerequisites. This is to be followed by effective monitoring, evaluation and reporting of the implementation process.

## 13 FUNDING

A critical success factor for the implementation of this strategy is the availability of funding. Accordingly, the following activities are considered for the funding of this Strategic Plan:

- a) A part of the goals on research and innovation can be funded from the allocation of 1% of the GDP by the Government for research and development. This can be catered for from the STI R&D budget.
- b) Once it is set up the universal service fund under the IC Act of 2009 can serve and facilitate access to ICTs in underserved areas. There could be other fiscal and other incentives through mentoring and business development services support to high-tech start-ups and high growth firms.
- c) Having a central funding vote will ensure that focus is maintained on all the key technological building blocks that all need to be unified, consistent, coherent, standardized and inter-connected.
- d) The ICT Agency would have to consider funding decisions for some of these projects in consultation with other concerned Government ministries so as to mitigate the risks of strategic error in preventing loss of interventions in the respective communities.
- e) Other options like full privatisation or out-sourcing of specific social an community service delivery services to the private sector remains to be an option for consideration by the concerned ministries. Such a move can help in getting full project funding from the private sector service providers although the conditions for the control over the services provided, the tariff charged, and the ownership of the assets will be determined by the public interest criteria.
- f) The use of public private partnership (PPP) model will also be entertained through long-term contract between a private party and ICT Agency, for providing a specific public asset or service for purposes of technology driven social and community service provision and delivery, in which the private party bears significant risk and management responsibility. The remuneration package for any such initiative shall be linked to performance. It will be further subject to the current policy on PPPs especially on issues of accountability, security, and privacy issues within an e-Government service.



- g) The Special Committee for monitoring and evaluation can also look out for donor support as an important source of funding for a range of e-Government initiatives.

## **14 MONITORING AND EVALUATION**

This strategy's successful implementation is will be partly determined by an efficient monitoring and evaluation exercise. There is a need to have a framework to assess and establish the progress in relation to the carved-out objectives. Ultimately the target is to be able to proceed with new initiatives in relation to the strategy.

Having considered the defined goals and objectives, there is hereby established a Special Committee for the effective monitoring and evaluation.

This Special Committee (not the taskforce) will coordinate the implementation process, monitor and report on the strategy's defined activities in relation to the goals and objectives. This will be based on its conduct of quarterly assessment of this strategy using recognize approaches, the use of "technology foresight" programme. Membership of this Special Committee shall be determined by MOICI and MOHSW in consultation with other stakeholders.

The framework for monitoring and evaluation will be developed by this Special Committee by taking into consideration the reporting timelines hereunder provided as well as the definition of performance indicators and the tracking of performance.

It will be reporting the progress of implementation on quarterly and annual basis to the other stakeholders. There shall be performance review annually, mid-term and at the end of the term of the strategy, i.e. in the month of December of the fourth year of implementation.

A mid-term review shall take place in the last month of the strategy's second year and this shall be followed by an end term review that is to take place before the end of the final quarter of the last year of the strategy.

The framework for monitoring and evaluation to be developed shall have the objective of facilitating technology driven social and community service provision and delivery with a degree of certitude, transparency and accountability. It should also enhance the consideration of the measures for the implementation and review of the current health policy to have digital health policy (as recommended) and its related programs.

## 15 ANNEX 1 – STRATEGIC ACTIONS AND COSTS

The Annexes provide details for the implementation of objectives outlined by this Strategic Plan. With the details of the strategic actions, and the related targets and costs, risks have been identified with measures for their mitigation.

<b>15.1 Planning, Collaboration &amp; Cooperation for Technology Driven Services</b>		
<b>No</b>	<b>Parameter</b>	<b>Remark/Comment</b>
1	<i>Planned Action Type</i>	<i>Policy</i>
2	<i>Background to Planned action</i>	The increasingly sophisticated electronic technologies offer promising ways to more effectively engage in social and community service provision and delivery. This engagement process requires developing not only newer technologies but also planning, collaboration and cooperation between community leaders and service providers including health care providers to bring unconnected individuals into formal community service delivery systems. It is therefore essential to understand a community's service needs and to identify entities that will form the infrastructure to facilitate and coordinate the use of data from extant systems for that community to use in the service delivery. The collaboration must be backed by a plan.
3	<i>Description of Planned Action</i>	To put in place measures relating to planning needs, cooperation and coordination for having an effective and efficient technology driven social and community services.
4	<i>Planned Action Implementation Rationale</i>	Having an ecosystem for successful and cost effective social and community services through the use of technology without compromising privacy or security.
5	<i>Planned Action Specific Goals/Objective</i>	<ul style="list-style-type: none"> <li>a) Community needs assessment in relation to services;</li> <li>b) Improve the design, delivery and outcomes of services;</li> <li>c) Improve client services and outcomes through better integration of services;</li> <li>d) Increase community's access to new investments, resources, expertise and markets to achieve economies of scale;</li> <li>e) Promote innovation through sharing skills and knowledge;</li> <li>f) Give a voice to multiple stakeholders;</li> <li>g) Entering into partnerships to develop tools and mechanisms to support these new collaborations, and structures, processes and skills for managing operation in relation to community service delivery;</li> </ul>
6	<i>Planned Action</i>	a) A scalable infrastructure and capable

	<i>Implementation Prerequisites</i>	<ul style="list-style-type: none"> <li>human resources;</li> <li>b) The availability of the right technical platform;</li> <li>c) An environment for collaboration across people, processes and technology;</li> <li>d) A data center for successful data and information management;</li> <li>e) Integrated service for operations and maintenance;</li> <li>f) The need for the top local and community leadership;</li> <li>g) There is a need for enhancing customer experiences;</li> <li>h) The presence of effective, reliable and available connectivity;</li> </ul>
7	<i>Planned Action Time Frame</i>	<i>1<sup>st</sup> Year of Implementation – by Q4 of 2021</i>
8	<i>Planned Action Deliverables</i>	A baseline foundation for co-ordinated planning, collaborations and cooperation for technology driven social and community services provision and delivery.
9	<i>Time Bound Measurable Targets</i>	<ul style="list-style-type: none"> <li>a) An assessment report on community service needs;</li> <li>b) QoS parameters for social and community service delivery;</li> <li>c) Improved service delivery with better service integration;</li> <li>d) Increased levels of investments;</li> <li>e) Recognised and identified expertise for community service delivery;</li> <li>f) A framework for skills and knowledge sharing;</li> <li>g) An engagement plan of multiple stakeholders;</li> <li>h) Standardised executed partnership tools for all forms of collaboration at the community level;</li> </ul>
10	<i>Implementing Agency</i>	<i>ICT Agency and Special Committee</i>
11	<i>Planned Action Outputs</i>	<i>A solid foundation for technology driven social and community service provision and delivery.</i>
12	<i>Anticipated Beneficiaries</i>	<i>Central and local Government and communities.</i>
13	<i>Resource Mobilisation and Costing</i>	<i>Government allocation and universal service funding as well as having 1% of GDP as per AU Target in Innovation through R&amp;D</i>
14	<i>Planned Action Critical Success Factors</i>	<ul style="list-style-type: none"> <li>a) Clear community leadership;</li> <li>b) A solid and efficient network and applications;</li> <li>c) Trustworthy and accurate data;</li> <li>d) Ease of use, simplicity and design of the network infrastructure;</li> </ul>

		e) Guarantee of data security;
15	<i>Planned Action Implementation Risks</i>	a) Change of policy or Government focus; b) Inadequate coverage of all communities; c) Insufficient funding; d) Possibility of ignoring the value of the human factor and service experience in the service delivery; e) Creating a distance to customers f) Turning the service into commodity and possibility that it can be copied; Rural-urban migration;
16	<i>Planned Action Monitoring and Evaluation Indicators</i>	a) A running efficient framework for technology driven social and community services; b) 100% of all health posts at the community levels using technology driven service applications; c) An effective digital health policy guiding the implementation of e-health projects at the community levels;
17	<i>Planned Action Implementation monitoring and Evaluation Responsibility</i>	<i>MOICI, MOHSW, MOLRG, MOHERST, MOJAGC, ICT Agency and Special Committee</i>

<b>15.2 Workforce Capacity and Capability for Service Delivery</b>		
<b>No</b>	<b>Parameter</b>	<b>Remark/Comment</b>
1	<i>Planned Action Type</i>	<i>Policy</i>
2	<i>Background to Planned action</i>	The increasingly sophisticated electronic technologies offer promising ways to more effectively engage in social and community service provision and delivery. This engagement process requires a specific workforce with the right capacity and capability to enhance social and community service delivery systems. It is therefore essential to understand a community's workforce needs in terms of capacity and capability.
3	<i>Description of Planned Action</i>	To put in place measures relating to workforce planning and capacity development for having an effective and efficient technology driven social and community services.
4	<i>Planned Action Implementation Rationale</i>	A social and community service delivery ecosystem for successful and cost effective social and community services through the use of technology without compromising privacy or security.
5	<i>Planned Action Specific Goals/Objective</i>	<ul style="list-style-type: none"> <li>a) A policy to attract and retain workers across the communities in rural and remote areas;</li> <li>b) Special skills and expertise to meet the communities' current and future needs;</li> <li>c) Attracting, training and retaining a strong body of volunteers as part of workforce planning and development;</li> <li>d) Work with the communities and other stakeholders to identify opportunities for building a diverse, skilled and culturally capable workforce;</li> <li>e) Work with the business and education sectors and other stakeholders to improve access to training and volunteering;</li> <li>f) Supporting business that facilitate or provide skills development, training and employment opportunities;</li> </ul>
6	<i>Planned Action Implementation Prerequisites</i>	<ul style="list-style-type: none"> <li>a) The right and adequate funding for the capacity building;</li> <li>b) Having the right type of candidates for the capacity building;</li> <li>c) An environment for collaboration across people, processes and technology in relation to workforce development;</li> <li>d) The need for the top local and community leadership;</li> </ul>

7	<i>Planned Action Time Frame</i>	2 <sup>nd</sup> Year of Implementation – by Q2 of 2022
8	<i>Planned Action Deliverables</i>	An efficient workforce for technology driven social and community service provision and delivery.
9	<i>Time Bound Measurable Targets</i>	<ul style="list-style-type: none"> <li>a) A policy on workforce training;</li> <li>b) Skilled personal with expertise to meet the communities' current and future needs;</li> <li>c) Trainable candidates</li> <li>d) Framework for community engagement for training;</li> <li>e) Clear raining terms and conditions;</li> </ul>
10	<i>Implementing Agency</i>	ICT Agency and Special Committee
11	<i>Planned Action Outputs</i>	The target is for proper workforce capacity and capability for social and community service delivery. The creation of network of services targets developing the capacity of people and families to enable their full participation in a strong, healthy and inclusive community.
12	<i>Anticipated Beneficiaries</i>	Central and local Government and communities.
13	<i>Resource Mobilisation and Costing</i>	<i>Government allocation and universal service funding as well as having 1% of GDP as per AU Target in Innovation through R&amp;D</i>
14	<i>Planned Action Critical Success Factors</i>	<ul style="list-style-type: none"> <li>a) An approved plan for workforce capacity building at the community levels;</li> <li>b) Beneficiaries for training being identified by clear community leadership;</li> <li>c) Availability of funding;</li> </ul>
15	<i>Planned Action Implementation Risks</i>	<ul style="list-style-type: none"> <li>a) Change of policy or Government focus;</li> <li>b) Insufficient funding;</li> <li>c) Lack of the right and adequate candidate for the workforce development;</li> <li>d) Rural-urban migration;</li> </ul>
16	<i>Planned Action Monitoring and Evaluation Indicators</i>	<ul style="list-style-type: none"> <li>a) A skilled workforce for running efficient framework for technology driven social and community services;</li> <li>b) An effective digital health policy with adequate provisions for capacity building and retention;</li> </ul>
17	<i>Planned Action Implementation monitoring and Evaluation Responsibility</i>	<i>MOICI, MOHSW, MOLRG, MOHERST, MOJAGC, ICT Agency and Special Committee</i>

<b>15.3 The Research and Innovation for Client-Focused Service Delivery</b>		
<b>No</b>	<b>Parameter</b>	<b>Remark/Comment</b>
1	<i>Planned Action Type</i>	<i>R&amp;D</i>
2	<i>Background to Planned action</i>	The adoption of R&D is enhancing the impact of the increasingly sophisticated electronic technologies on social and community service provision and delivery. This engagement process requires developing not only newer technologies but also a careful planned R&D measures. It is therefore essential to understand through R&D the further needs of the community and the new ways of service delivery.
3	<i>Description of Planned Action</i>	To put in place measures relating to R&D for having an effective and efficient technology driven social and community services.
4	<i>Planned Action Implementation Rationale</i>	Having clear R&D pattern to ensure sustainability of a framework for social and community services through the use of technology without compromising privacy or security.
5	<i>Planned Action Specific Goals/Objective</i>	<ul style="list-style-type: none"> <li>a) Expand research and development to strengthen practice and improve effectiveness;</li> <li>b) Foster new approaches to service delivery to improve user outcomes in the face of increasing complexity;</li> <li>c) Develop and mature service delivery operations to improve productivity and diversify revenue sources.</li> <li>d) To encourage industry and government partnership to grow and diffuse innovation and leverage opportunities for innovation;</li> <li>e) The private sector and government will partner to identify ways to increase productivity in service delivery, the workforce and the workplace by reducing overhead costs, improving efficiency, deploying technology, and removing barriers to productivity;</li> </ul>
6	<i>Planned Action Implementation Prerequisites</i>	<ul style="list-style-type: none"> <li>a) A partnership framework for the Government, the community and the private sector;</li> <li>b) The availability of the right technical platform;</li> <li>c) An environment for collaboration across people, processes and technology;</li> <li>d) The need for the top local and community leadership;</li> </ul>
7	<i>Planned Action Time Frame</i>	<i>3<sup>rd</sup> Year of Implementation – by Q2 of 2023</i>
8	<i>Planned Action</i>	a) Research report on technology driven social



	<i>Deliverables</i>	and community services; b) Identified approaches for service delivery; c) Developed business cases for social and community service provision; d) Partnership agreements by stakeholders on R&D;
9	<i>Time Bound Measurable Targets</i>	<i>An approved research targets for the strategy.</i>
10	<i>Implementing Agency</i>	<i>ICT Agency and Special Committee</i>
11	<i>Planned Action Outputs</i>	A social and community service delivery system that provides integrated services to people in their communities. This includes facilitating the use of community services at different stages of people's lives with support depending on their needs at the time.
12	<i>Anticipated Beneficiaries</i>	Central and local Government and communities.
13	<i>Resource Mobilisation and Costing</i>	Government allocation and universal service funding as well as having 1% of GDP as per AU Target in Innovation through R&D.
14	<i>Planned Action Critical Success Factors</i>	a) Clear community leadership; b) An adopted research agenda; c) Efficient collaboration and cooperation;
15	<i>Planned Action Implementation Risks</i>	a) Change of policy or Government focus; b) Insufficient funding; c) Conflict of interest of the stakeholders;
16	<i>Planned Action Monitoring and Evaluation Indicators</i>	d) A research and innovation report on the services to be further adopted at the community levels; e) An effective digital health policy guiding research and;
17	<i>Planned Action Implementation monitoring and Evaluation Responsibility</i>	MOICI, MOHSW, MOLRG, MOHERST, MOJAGC, ICT Agency and Special Committee

<b>15.4 A Community Network Infrastructure System</b>		
<b>No</b>	<b>Parameter</b>	<b>Remark/Comment</b>
1	<i>Planned Action Type</i>	<i>Policy and Infrastructure</i>
2	<i>Background to Planned action</i>	The required infrastructure element is a key part for ICTs in social and community service provision and delivery. There is a need for a smart infrastructure platform with smart functionalities. It is therefore essential to understand the infrastructure needs and the functionalities.
3	<i>Description of Planned Action</i>	To put in place measures relating to the building of the infrastructure platform with smart functionalities for having an effective and efficient technology driven social and community services.
4	<i>Planned Action Implementation Rationale</i>	A stronger network infrastructure for a successful and cost effective social and community services through the use of technology without compromising privacy or security.
5	<i>Planned Action Specific Goals/Objective</i>	<ul style="list-style-type: none"> <li>a) Government Open Data for transparency (to contain Government expenditures, reduces graft and creates new opportunities for data- driven planning information services ont citizen rights, electoral process, judicial system, crime reporting and listings of official prices for government services);</li> <li>b) Citizens and Entrepreneurs help build open data (real-time data collection);</li> <li>c) Catering for access that is widespread, easy, and inexpensive (public service delivery. Applications of “m-governance” include patient care management in clinics; SMS-Text school registration and school fee payment; registering to vote; paying taxes, fees and fines electronically);</li> <li>d) Social media for empowerment through mobile telephony;</li> <li>e) Networked communication among individuals, groups and society;</li> <li>f) New approaches to influencing opinion;</li> <li>g) New avenues for political mobilization;</li> <li>h) Direct participation in democratic dialogue, erasing divides of distance and geography (collecting citizen views on topics ranging</li> </ul>

		<p>from budget proposals to government performance);</p> <p>i) Information networks for marginalized groups (real-time market information for farmers);</p> <p>j) Hybrid media for community empowerment;</p> <p>k) Social media accountability;</p> <p>l) Information as a tool for accountability (transparency and accountability in government expenditures);</p> <p>m) Information Partnerships;</p> <p>n) Rights-based information campaigns;</p> <p>o) Citizen auditing (anti-corruption, budget tracking and networked systems connect citizen complaints with improved government capacity for response);</p>
6	<i>Planned Action Implementation Prerequisites</i>	<p>a) An approved budget and funding for the activity;</p> <p>b) A scalable infrastructure and capable human resources;</p> <p>c) The availability of the right technical platform;</p> <p>d) An environment for collaboration across people, processes and technology;</p> <p>e) A data center for successful data and information management;</p> <p>f) Integrated service for operations and maintenance;</p> <p>g) The need for the top local and community leadership;</p> <p>h) There is a need for enhancing customer experiences;</p> <p>i) The presence of effective, reliable and available connectivity;</p>
7	<i>Planned Action Time Frame</i>	<i>1<sup>st</sup> Year of Implementation – by Q4 of 2021</i>
8	<i>Planned Action Deliverables</i>	An efficient infrastructure / platform with all the smart functionalities for connectivity technology driven social and community service provision and delivery.
9	<i>Time Bound Measurable Targets</i>	<p>a) Government Open Data system with real-time functionality;</p> <p>b) Approved public service delivery applications;</p> <p>c) Identified social media units;</p> <p>d) A public opinion platform on the network;</p>

		<ul style="list-style-type: none"> <li>e) Information networks for marginalized groups;</li> <li>f) Hybrid media for community empowerment;</li> <li>g) Measures for social media accountability;</li> <li>h) Partnership frameworks for information;</li> <li>i) Framework for citizen auditing;</li> <li>j) QoS parameters for social and community service delivery;</li> <li>k) Standardised executed partnership tools for all forms of collaboration at the community level;</li> </ul>
10	<i>Implementing Agency</i>	ICT Agency and Special Committee
11	<i>Planned Action Outputs</i>	A community network infrastructure system that facilitates and maximizes the use of social and community services and their related benefits.
12	<i>Anticipated Beneficiaries</i>	Central and local Government and communities.
13	<i>Resource Mobilisation and Costing</i>	Government allocation and universal service funding as well as having 1% of GDP as per AU Target in Innovation through R&D.
14	<i>Planned Action Critical Success Factors</i>	<ul style="list-style-type: none"> <li>a) Clear community leadership;</li> <li>b) A solid and efficient network and applications;</li> <li>c) Trustworthy and accurate data;</li> <li>d) Ease of use and simplicity and design of the network infrastructure;</li> <li>e) Guarantee of data security;</li> </ul>
15	<i>Planned Action Implementation Risks</i>	<ul style="list-style-type: none"> <li>a) Change of policy or Government focus;</li> <li>b) An ineffective platform;</li> <li>c) Insufficient funding;</li> <li>d) No cooperation for the community leadership;</li> </ul>
16	<i>Planned Action Monitoring and Evaluation Indicators</i>	<ul style="list-style-type: none"> <li>a) A serving open data system;</li> <li>b) All communities connected to the open data system;</li> <li>c) 95% of the hospitals and health centers in the communities using the open data platform;</li> <li>d) 100% of community awareness about the system for technology driven social and community service provision and delivery;</li> </ul>
17	<i>Planned Action Implementation monitoring and Evaluation Responsibility</i>	MOICI, MOHSW, MOLRG, MOHERST, MOJAGC, ICT Agency and Special Committee

<b>15.5 A Review of the National Health Policy to Digital Health Policy</b>		
<b>No</b>	<b>Parameter</b>	<b>Remark/Comment</b>
1	<i>Planned Action Type</i>	<i>Policy</i>
2	<i>Background to Planned action</i>	The changes in ICTs is impacting on the number of policies for social and community service provision. There is a need for a review of the current health policy the implementation period of which ends this year. This review is to incorporate clear measures on digital health.
3	<i>Description of Planned Action</i>	To put in place policy measures relating to digital health for having an effective and efficient technology driven social and community services.
4	<i>Planned Action Implementation Rationale</i>	Having an adopted modern approach to health service management at the community levels for successful and cost effective provision and delivery of health services.
5	<i>Planned Action Specific Goals/Objective</i>	<ul style="list-style-type: none"> <li>a) Creation of innovative fund;</li> <li>b) Empower individual, family, and caregiver health management and engagement;</li> <li>c) Foster individual, provider, and community partnerships through frameworks;</li> <li>d) Improve health care quality, access, and experience through safe, timely, effective, efficient, equitable, and person-centered care;</li> <li>e) Support the delivery of high-value health care;</li> <li>f) Protect and promote public health and healthy, resilient communities;</li> <li>g) Increase access to and usability of high-quality electronic health information and services;</li> <li>h) Accelerate the development and commercialization of innovative technologies and solutions;</li> <li>i) Invest, disseminate, and translate research on how health IT can improve health and care delivery</li> </ul>
6	<i>Planned Action Implementation Prerequisites</i>	<ul style="list-style-type: none"> <li>a) A revised health policy with recommendations for incorporating digital health;</li> <li>b) An environment for collaboration across people, processes and technology;</li> </ul>

		c) The need for the top local and community leadership for policy change;
7	<i>Planned Action Time Frame</i>	<i>1<sup>st</sup> Year of Implementation – by Q1 of 2021</i>
8	<i>Planned Action Deliverables</i>	A digital health policy promoting technology driven social and community services;
9	<i>Time Bound Measurable Targets</i>	<ul style="list-style-type: none"> <li>a) An innovative fund;</li> <li>b) Empowered workforce for health management and engagement;</li> <li>c) Executed community partnerships frameworks for health service;</li> <li>d) Person-centered care measures;</li> <li>e) Easy access to high-quality electronic health information and services;</li> <li>f) Approved innovative technologies and solutions for health service;</li> <li>g) A clear research agenda on health and IT for service improvement</li> </ul>
10	<i>Implementing Agency</i>	<i>ICT Agency and Special Committee</i>
11	<i>Planned Action Outputs</i>	Having an advance person-centered and self-managed health with impacts for transforming health care delivery and community health with emphasis on innovative health service delivery.
12	<i>Anticipated Beneficiaries</i>	Central and local Government and communities.
13	<i>Resource Mobilisation and Costing</i>	Government allocation and universal service funding as well as having 1% of GDP as per AU Target in Innovation through R&D.
14	<i>Planned Action Critical Success Factors</i>	<ul style="list-style-type: none"> <li>a) Top Government leadership;</li> <li>b) Clear community leadership;</li> </ul>
15	<i>Planned Action Implementation Risks</i>	<ul style="list-style-type: none"> <li>a) Change of policy or Government priority;</li> <li>b) Insufficient funding;</li> <li>c) Lack of community support;</li> </ul>
16	<i>Planned Action Monitoring and Evaluation Indicators</i>	<ul style="list-style-type: none"> <li>a) An effective digital health policy guiding the implementation of e-health projects at the community levels;</li> <li>b) A new way of running efficient framework for technology driven social and community services;</li> <li>c) 100% adoption of the digital health policy by all stakeholders;</li> </ul>
17	<i>Planned Action Implementation monitoring and Evaluation Responsibility</i>	MOICI, MOHSW, MOLRG, MOHERST, MOJAGC, ICT Agency and Special Committee

<b>15.6 Interoperability Roadmap for Health IT Infrastructure</b>		
<b>No</b>	<b>Parameter</b>	<b>Remark/Comment</b>
1	<i>Planned Action Type</i>	<i>Policy &amp; Infrastructure</i>
2	<i>Background to Planned action</i>	To adopt and implement digital health through newer technologies the issue of interoperability roadmap for health information technology infrastructure.
3	<i>Description of Planned Action</i>	To determine measures relating to what is needed for interoperability in relation to health information technology infrastructure.
4	<i>Planned Action Implementation Rationale</i>	To increase the productivity of medical staff by having better public health data management, the integration of digital programs and applications for flow of information, the reduction of errors, and an improvement of patient privacy and experience.
5	<i>Planned Action Specific Goals/Objective</i>	<ul style="list-style-type: none"> <li>a) Collaborate with industry and public stakeholders to advance core technical standards for terminology and vocabulary, content and format, transport, and security;</li> <li>b) Initiate certification programs to ensure that a broad spectrum of health IT conforms to the technical standards necessary for capturing and exchanging information;</li> <li>c) Aim toward privacy and security-related policies, practices, and technology that keep pace with the expanded electronic exchange of information;</li> <li>d) Foster a supportive business, clinical, cultural, and regulatory environment that encourages interoperability;</li> <li>e) Publish guidance that defines high-level principles for policies and business practices that advance trust and interoperability.</li> </ul>
6	<i>Planned Action Implementation Prerequisites</i>	<ul style="list-style-type: none"> <li>a) An agreed path to standardisation and certification;</li> <li>b) A scalable infrastructure and capable human resources;</li> <li>c) The availability of the right technical platform;</li> <li>d) An environment for collaboration across people, processes and technology;</li> <li>e) A data center for successful data and information management;</li> <li>f) Integrated service for operations and maintenance;</li> <li>g) The presence of effective, reliable and available connectivity;</li> </ul>

7	<i>Planned Action Time Frame</i>	<i>1<sup>st</sup> Year of Implementation – by Q3 of 2021</i>
8	<i>Planned Action Deliverables</i>	The adoption of efficient interoperability standards for technology driven social and community service provision and delivery.
9	<i>Time Bound Measurable Targets</i>	<ul style="list-style-type: none"> <li>a) Established core technical standards for terminology and vocabulary, content and format, transport, and security;</li> <li>b) Certification programs for capturing and exchanging information;</li> <li>c) Regulations on privacy and security-related and advance technology;</li> <li>d) A supportive regulatory environment for interoperability;</li> <li>e) Guideline on trust and interoperability;</li> </ul>
10	<i>Implementing Agency</i>	ICT Agency and Special Committee
11	<i>Planned Action Outputs</i>	A strengthen Health Information Technology Infrastructure with a nationwide interoperability roadmap for health service provision and delivery
12	<i>Anticipated Beneficiaries</i>	Central and local Government and communities.
13	<i>Resource Mobilisation and Costing</i>	Government allocation and universal service funding as well as having 1% of GDP as per AU Target in Innovation through R&D.
14	<i>Planned Action Critical Success Factors</i>	<ul style="list-style-type: none"> <li>a) Regulations for interoperability;</li> <li>b) Clear community leadership;</li> <li>c) A solid and efficient network and applications;</li> <li>d) Trustworthy and accurate data;</li> <li>e) Ease of use, simplicity and design of the network infrastructure;</li> <li>f) Guarantee of data security;</li> </ul>
15	<i>Planned Action Implementation Risks</i>	<ul style="list-style-type: none"> <li>a) Change of policy or Government focus;</li> <li>b) Change in technologies;</li> <li>c) Insufficient funding;</li> <li>d) Lack of policy clarity on the regulatory environment;</li> </ul>
16	<i>Planned Action Monitoring and Evaluation Indicators</i>	<ul style="list-style-type: none"> <li>a) A interoperability framework for running efficient technology driven social and community services;</li> <li>b) 100% adoption and trust of the system by all stakeholders;</li> <li>c) An effective digital health policy guiding the implementation of interoperability measures;</li> <li>d) 100% of community awareness about the system for technology driven social and community service provision and delivery;</li> </ul>
17	<i>Planned Action Implementation monitoring and</i>	MOICI, MOHSW, MOLRG, MOHERST, MOJAGC, ICT Agency and Special Committee



	<i>Evaluation Responsibility</i>	
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<b>15.7 Protect the Privacy and Security of Health Information</b>		
<b>No</b>	<b>Parameter</b>	<b>Remark/Comment</b>
1	<i>Planned Action Type</i>	
2	<i>Background to Planned action</i>	An important measure for health information is its privacy and security. To ensure and enforce digital health for technology driven social and community services would require measures for protecting privacy and security of the health information.
3	<i>Description of Planned Action</i>	To put in place measures relating to the protection of both the privacy and security of the health information and the system running it.
4	<i>Planned Action Implementation Rationale</i>	Having a clear regime for privacy and security for successful and cost effective social and community services through the use of technology without compromising privacy or security.
5	<i>Planned Action Specific Goals/Objective</i>	<ul style="list-style-type: none"> <li>a) Putting in place privacy and security legislation and regulations for compliance by health service delivery entities and agents;</li> <li>b) Clarify requirements and expectations for secure and trusted exchange of electronic health information, consistent with applicable legal privacy protections and individuals' preferences, across states, networks and entities;</li> <li>c) Testing certified health IT products to ensure they incorporate privacy and security safeguards required for certification;</li> <li>d) Develop and implement policies, practices, and educational tools that advance interoperability while giving stakeholders confidence that privacy and security are maintained;</li> <li>e) Address cybersecurity risks in developing technologies and their use;</li> <li>f) Support, promote, and enhance information sharing capabilities within the health and public health sector for bi-directional information sharing about cyber threats and vulnerabilities between the private health care industry, the government local communities;</li> <li>g) Put in place a uniform policy in relation to</li> </ul>

		electronic document covering privacy choices.
6	<i>Planned Action Implementation Prerequisites</i>	<ul style="list-style-type: none"> <li>a) A clear policy, legislation and regulation;</li> <li>b) A scalable infrastructure and capable human resources to ensure privacy and security;</li> <li>c) The availability of the right technical platform with interoperable standards;</li> <li>d) A data center for successful data and information management;</li> <li>e) Integrated service for operations and maintenance;</li> <li>f) The presence of effective, reliable and available connectivity;</li> </ul>
7	<i>Planned Action Time Frame</i>	<i>1<sup>st</sup> Year of Implementation – by Q4 of 2021</i>
8	<i>Planned Action Deliverables</i>	<i>An efficient framework for privacy and secured health information;</i>
9	<i>Time Bound Measurable Targets</i>	<ul style="list-style-type: none"> <li>a) Digital policy as uniform policy in relation to electronic document's privacy;</li> <li>b) Regulations for privacy and security;</li> <li>c) Framework for exchange of electronic health information</li> <li>d) Testing framework for certified health IT products;</li> <li>e) Standards for interoperability;</li> <li>f) A clear cybersecurity framework for privacy and security;</li> </ul>
10	<i>Implementing Agency</i>	<i>ICT Agency and Special Committee</i>
11	<i>Planned Action Outputs</i>	A strengthen Health Information Technology Infrastructure that has a clear regime for protecting the privacy and security of health information.
12	<i>Anticipated Beneficiaries</i>	Central and local Government and communities.
13	<i>Resource Mobilisation and Costing</i>	Government allocation and universal service funding as well as having 1% of GDP as per AU Target in Innovation through R&D.
14	<i>Planned Action Critical Success Factors</i>	<ul style="list-style-type: none"> <li>a) A clear regime for cyber security</li> <li>b) A highly protected solid and efficient network and applications;</li> <li>c) Clear standards and adopted measures for data management;</li> <li>d) A standardised network design;</li> <li>e) Clear community leadership to ensure security;</li> </ul>
15	<i>Planned Action Implementation Risks</i>	<ul style="list-style-type: none"> <li>a) A compromised cyber security measure;</li> <li>b) Poor standard certification measures</li> <li>c) Change of policy priority;</li> <li>d) Insufficient funding;</li> </ul>
16	<i>Planned Action Monitoring and</i>	<i>A clear legislative and regulatory framework for privacy and security of</i>

	<i>Evaluation Indicators</i>	<i>health information.</i>
17	<i>Planned Action Implementation monitoring and Evaluation Responsibility</i>	MOICI, MOHSW, MOLRG, MOHERST, MOJAGC, ICT Agency and Special Committee

**15.8 Identify, Prioritize, and Advance Technical Standards**

No	Parameter	Remark/Comment
1	<i>Planned Action Type</i>	<i>Regulation</i>
2	<i>Background to Planned action</i>	For ensuring technology driven social and community services, there is a need to identify, prioritize, and advance technical standards to support and secure health information and health IT in promoting technology driven service provision and delivery.
3	<i>Description of Planned Action</i>	To put in place further policy, legal and regulatory measures relating to technical standards for an effective and efficient technology driven social and community services.
4	<i>Planned Action Implementation Rationale</i>	Having the right advanced technical standards for successful and cost effective social and community services through the use of technology without compromising health information.
5	<i>Planned Action Specific Goals/Objective</i>	<ul style="list-style-type: none"> <li>a) Increase use of common standards in the country;</li> <li>b) Improve the capability of health IT to securely manage information from varied sources in both structured and unstructured formats;</li> <li>c) Encourage consistent standards implementation, reduce implementation variability, and improve modularity in health data standards for terminology and vocabulary, coding, data content and format, transport, and security;</li> <li>d) Advance standards for common data elements to enable capture and use for clinical decision support, clinical quality measures, research, and reporting;</li> <li>e) Encourage the adoption and use of prioritized sets of common standards through health IT certification, regulations and programs, and funding mechanisms;</li> </ul>
6	<i>Planned Action Implementation Prerequisites</i>	<ul style="list-style-type: none"> <li>a) The right policy, legal and regulatory framework for standards and their adoption;</li> <li>b) A scalable infrastructure and capable human resources for ensuring compliance with the standards;</li> <li>c) The availability of the right technical platform;</li> <li>d) A data center for successful data and</li> </ul>

		information management; The presence of effective, reliable and available connectivity;
7	<i>Planned Action Time Frame</i>	<i>1<sup>st</sup> Year of Implementation – by Q2 of 2021</i>
8	<i>Planned Action Deliverables</i>	A service sector with the recognized working standards for information privacy and security.
9	<i>Time Bound Measurable Targets</i>	a) Adopted common standards for consistent implementation in the country; b) Enhanced and capable health IT for information management; c) Advance standards for common data elements; d) The use of prioritized sets of common standards;
10	<i>Implementing Agency</i>	ICT Agency and Special Committee
11	<i>Planned Action Outputs</i>	An advanced Health Information Technology Infrastructure with identified technical standards for information privacy and security.
12	<i>Anticipated Beneficiaries</i>	Central and local Government and communities.
13	<i>Resource Mobilisation and Costing</i>	Government allocation and universal service funding as well as having 1% of GDP as per AU Target in Innovation through R&D.
14	<i>Planned Action Critical Success Factors</i>	a) Proper legal and regulatory regime for standards; b) A solid and efficient network and applications based on the internationally recognized standards; c) Guidelines for health network and data standards; d) Clear community leadership for compliance;
15	<i>Planned Action Implementation Risks</i>	a) Change of policy on standards; b) Insufficient funding for the right standards; c) The lack of the capable workforce to ensure and enforce standards;
16	<i>Planned Action Monitoring and Evaluation Indicators</i>	The network system's standards is 100 compliant with the international recognised standards.
17	<i>Planned Action Implementation monitoring and Evaluation Responsibility</i>	MOICI, MOHSW, MOLRG, MOHERST, MOJAGC, ICT Agency and Special Committee

<b>15.9 Increase User and Market Confidence in the Use of Health IT Products</b>		
<b>No</b>	<b>Parameter</b>	<b>Remark/Comment</b>
1	<i>Planned Action Type</i>	<i>Policy and infrastructure</i>
2	<i>Background to Planned action</i>	The very best platform for technology driven social and community service provision and delivery will remain useless if there is no user and market confidence in the use of the platform and the related health IT products.
3	<i>Description of Planned Action</i>	This involves the consideration of measures and standards for ensuring that there is user and market confidence in the use of the health IT products including the applications.
4	<i>Planned Action Implementation Rationale</i>	To ensure certitude and growth in the implementation of digital health policy and the realisation of the benefits of technology driven innovations to social and community service provision and delivery.
5	<i>Planned Action Specific Goals/Objective</i>	<ul style="list-style-type: none"> <li>a) Increase the quantity and quality of data and knowledge on the safe use of health IT, and integrate this evidence into health IT certification;</li> <li>b) Support the identification, monitoring, and reporting of complete, precise, and accurate challenges and hazards of health IT design and use;</li> <li>c) Encourage use of certified health IT technology and qualified clinical data registries for reporting quality measures;</li> <li>d) Implement a balanced, transparent, and risk-based approach to health IT oversight;</li> <li>e) Develop, select, promote, and implement health IT standards in transparent ways that promote competition, foster innovation, and minimize barriers to market entry for developers and users;</li> <li>f) Advance standards that support interoperability between medical devices and certified health IT products and systems, including standards for documentation of medical device use by unique device identifier and methods for adverse event reporting;</li> <li>g) Assess and identify methods, best practices, and partnerships to improve data management, quality, and utility;</li> </ul>
6	<i>Planned Action</i>	a) The need for the top local and community

	<i>Implementation Prerequisites</i>	<p>leadership;</p> <p>b) Certitude in the use of the technology driven applications for social and community service provision and delivery;</p> <p>c) The availability of the right technical platform;</p> <p>d) An environment for collaboration across people, processes and technology;</p> <p>e) Integrated service for operations and maintenance;</p> <p>f) There is a need for enhancing customer experiences;</p> <p>g) The presence of effective, reliable and available connectivity;</p>
7	<i>Planned Action Time Frame</i>	<i>2<sup>nd</sup> Year of Implementation – by Q4 of 2022</i>
8	<i>Planned Action Deliverables</i>	An environment with a built confidence in the efficient use of health IT products for technology driven social and community service provision and delivery.
9	<i>Time Bound Measurable Targets</i>	<p>a) Increase in the safe use of health IT with health IT certification;</p> <p>b) Addressing the challenges and hazards of health IT design and use;</p> <p>c) Encourage use of certified health IT technology;</p> <p>d) Having in place qualified clinical data registries for reporting quality measures;</p> <p>e) A framework for a risk-based approach to health IT oversight;</p> <p>f) Adopted health IT standards;</p> <p>g) Advance standards that support interoperability between medical devices and certified health IT products and systems;</p> <p>h) Adopted partnerships for data management, quality, and utility;</p>
10	<i>Implementing Agency</i>	ICT Agency and Special Committee
11	<i>Planned Action Outputs</i>	A strengthen Health Information Technology Infrastructure with unquestionable user and market confidence in the safety and safe use of health IT products, systems, and services.
12	<i>Anticipated Beneficiaries</i>	Central and local Government and communities.
13	<i>Resource Mobilisation and Costing</i>	Government allocation and universal service funding as well as having 1% of GDP as per AU Target in Innovation through R&D.
14	<i>Planned Action Critical Success Factors</i>	<p>a) Clear community leadership;</p> <p>b) Ease of use, simplicity and design of the network infrastructure or the IT product;</p> <p>c) Guarantee of data security and personal health in the use of the IT tool;</p>



15	<i>Planned Action Implementation Risks</i>	<ul style="list-style-type: none"> <li>a) Lack of clear community leadership with efficient sensitisation;</li> <li>b) A poor network and applications;</li> <li>c) Difficulty in the use of the network infrastructure or the products;</li> <li>d) Guarantee of data security;</li> </ul>
16	<i>Planned Action Monitoring and Evaluation Indicators</i>	<i>Achieving 95% user and market confidence in the use of health IT products.</i>
17	<i>Planned Action Implementation monitoring and Evaluation Responsibility</i>	MOICI, MOHSW, MOLRG, MOHERST, MOJAGC, ICT Agency and Special Committee

<b>15.10 A Communication Infrastructure that Supports Health Service Delivery</b>		
<b>No</b>	<b>Parameter</b>	<b>Remark/Comment</b>
1	<i>Planned Action Type</i>	<i>Infrastructure</i>
2	<i>Background to Planned action</i>	The increasingly sophisticated electronic technologies offer promising ways to more effectively engage in health service provision and delivery. There is specific communication network infrastructure that is necessary for the benefit of the health service delivery. It is therefore essential to have this infrastructure built to facilitate and support health service delivery.
3	<i>Description of Planned Action</i>	This involves put up communication network infrastructure for having an effective and efficient health service delivery.
4	<i>Planned Action Implementation Rationale</i>	Having an ecosystem for successful and cost effective health service with impacts in the forms of increase in the productivity of medical staff by having better public health data management, the integration of digital programs and applications for flow of information, the reduction of errors, and an improvement of patient privacy and experience.
5	<i>Planned Action Specific Goals/Objective</i>	<ul style="list-style-type: none"> <li>a) Expand access to and choice of broadly available networks with comparable upload and download speeds for individuals and providers in rural and other underserved communities;</li> <li>b) Increase access to broadband connectivity for health IT applications, such as high-resolution imaging, telehealth, and mobile health;</li> <li>c) Ensure health IT networks and communication infrastructure can manage future growth in health data volume and velocity to promote advanced analytics and information sharing;</li> <li>d) Ensure that the national health IT and telecommunications infrastructure are secure, resilient, and operational during disasters and public health emergencies;</li> <li>e) Collaborate with industry and other public stakeholders to promote the ability of consumers to fully access broadband-enabled health resources when and where needed</li> </ul>
6	<i>Planned Action Implementation Prerequisites</i>	<ul style="list-style-type: none"> <li>a) A scalable infrastructure and capable human resources;</li> <li>b) The availability of the right technical</li> </ul>

		<p>platform;</p> <p>c) An environment for collaboration across people, processes and technology;</p> <p>d) A data center for successful data and information management;</p> <p>e) Integrated service for operations and maintenance;</p> <p>f) The need for the top local and community leadership;</p> <p>g) There is a need for enhancing customer experiences;</p> <p>h) The presence of effective, reliable and available connectivity;</p>
7	<i>Planned Action Time Frame</i>	<i>2<sup>nd</sup> Year of Implementation – by Q3 of 2022</i>
8	<i>Planned Action Deliverables</i>	An efficient communication and network infrastructure for health service delivery determined by technology driven applications.
9	<i>Time Bound Measurable Targets</i>	<p>a) Expanded access to broadly available networks for the rural communities;</p> <p>b) Increase access to broadband connectivity for health IT applications;</p> <p>c) Flexible health IT networks infrastructure for managing future growth in health data;</p> <p>d) A secure and operational national health IT and telecommunications infrastructure;</p> <p>e) A framework for collaborate for full access to broadband-enabled health resources;</p>
10	<i>Implementing Agency</i>	ICT Agency and Special Committee
11	<i>Planned Action Outputs</i>	An advance national communications infrastructure that supports health, safety, and care delivery.
12	<i>Anticipated Beneficiaries</i>	Central and local Government and communities.
13	<i>Resource Mobilisation and Costing</i>	Government allocation and universal service funding as well as having 1% of GDP as per AU Target in Innovation through R&D.
14	<i>Planned Action Critical Success Factors</i>	<p>a) Clear community leadership;</p> <p>b) A solid and efficient network and applications;</p> <p>c) Trustworthy and accurate data;</p> <p>d) Ease of use, simplicity and design of the network infrastructure;</p> <p>e) Guarantee of data security;</p>
15	<i>Planned Action Implementation Risks</i>	<p>a) Change of policy or Government interest;</p> <p>b) Inadequate coverage of all communities;</p> <p>c) Insufficient funding;</p> <p>d) Possibility of ignoring the value of the human factor and service experience in the service delivery;</p> <p>e) Creating a distance to customers;</p> <p>f) Turning the service into commodity and possibility that it can be copied;</p> <p>g) Rural-urban migration;</p>

16	<i>Planned Monitoring and Evaluation Indicators</i>	<i>Action and</i>	A communication and network infrastructure that is 100% operational for the delivery of digital health services.
17	<i>Planned Implementation monitoring Evaluation Responsibility</i>	<i>Action and</i>	MOICI, MOHSW, MOLRG, MOHERST, MOJAGC, ICT Agency and Special Committee

### 15.11 Estimated Costs

Although not wholly exhaustive, the following cost is assigned to each activity as in the estimates in the table below:

<b>NO</b>	<b>ITEM</b>	<b>ASSIGNED COSTS IN DALASI</b>
<b>a)</b>	Legislation	750,000
<b>b)</b>	Regulation	250,000
<b>c)</b>	Review process	250,000
<b>d)</b>	Standards (related)	600,000
<b>e)</b>	Guidelines	250,000
<b>f)</b>	Planning and evaluation (related)	400,000
<b>g)</b>	Simple framework (including chart)	250,000
<b>h)</b>	Ecosystem (related)	600,000
<b>i)</b>	Surveys	1,500,000

In some cases and depending on the issue and its scope, the specific assigned cost is slightly altered.

## 15.12 Cost Estimates

NO	OBJECTIVE	ESTIMATED COST
1)	Goal 1 – Strategic Objectives (Planning, Collaboration & Cooperation)	D2,850,000 <sup>A</sup>
2)	Goal 2 – Strategic Objectives (Workforce Capacity & Capability Development)	D2, 050,000 <sup>B</sup>
3)	Goal 3 – Strategic Objectives (Research and Innovation for Service Delivery)	D1, 400,000 <sup>C</sup>
4)	Goal 4 – Strategic Objectives (Community Network infrastructure)	D7,950,000 <sup>D</sup>
5)	Goal 5 – Strategic Objectives (National Health Policy Review)	D1,400,000 <sup>E</sup>
6)	Goal 6 – Strategic Objectives (Interoperability Roadmap)	
7)	Part A – Nationwide Interoperability Roadmap for Health Service Delivery	D2,900,000
8)	Part B – Protect the Privacy and Security of Health Information	D3,600,000 <sup>F</sup>
9)	Part C –Identify, Prioritize, and Advance Technical Standards	D2,050,000 <sup>G</sup>
10)	Part D –Increase User and Market Confidence in the Use of Health IT Products	D3,200,000
11)	Part E – A Communication Infrastructure that Supports Health Service Delivery	D500,000 <sup>H</sup>
	<b>MAIN TOTAL ESTIMATE</b>	<b>D27,900,000</b>
COMMENTS	<i>“A” – This excludes the cost for service integration, the technical platform and the data centres</i>	
	<i>“B” - This excludes the cost for special skills and expertise to meet the current and future needs.</i>	
	<i>“C” This excludes the cost for the platform.</i>	
	<i>“D” This excludes the cost for the open government data system.</i>	
	<i>“E” This excludes the money to be allocated for the innovative fund.</i>	
	<i>“F” This excludes the money to be allocated for addressing cyber security measures.</i>	
	<i>“G” This excludes the cost for the health IT Personnel.</i>	
	<i>“H” This excludes the money to be allocated for access to rural connectivity, broadband connectivity for health IT applications and IT national network infrastructure for health</i>	

The above excluded are either cross cutting or are to be treated as part of other pillars that would complement this particular pillar. They include cybersecurity, e-Government, R&D under innovation, Human capital development and or broadband.

## 16 ANNEX 2 - TECHNOLOGIES IMPACTING ON SERVICES (HEALTH & CARE)

<b>Examples of Technologies That Impact on Social and Community Services</b>	
<b>The connected community</b>	Behind all technologies, there are people. The internet, the devices and technology have facilitated the development of many communities, bringing together people around a common interest, a shared identity, a social movement, or even just hashtags.
<b>Peer-to-peer support networks</b>	There will be connected communities for health. Several platforms bring together people with interests in health and care to support each other, share learning and even provide a platform for tracking their health data or helping them manage their condition.
<b>Communities contributing to research</b>	Some online communities are already contributing to research about their health conditions, offering people the chance to be 'data donors' and providing a simple way to share their data with researchers.
<b>The smartphone</b>	A connection to the internet, a host of sensors for health-relevant data movement and location tracking through a touch-screen interface.
<b>Apps</b>	Application stores already feature thousands of health applications, though their uptake for health and care has been patchy. Efforts to curate the best quality apps, for example in any public application library.
<b>Hubs</b>	Smartphones can serve as the hub for sophisticated new diagnostic and treatment technologies. So, for example, people with type 1 diabetes dissatisfied with the progress of medical technology companies are driving the development of an artificial pancreas. This links continuous glucose monitoring and insulin-delivery systems that are all controlled by the smartphone
<b>Large-scale research</b>	Smartphones are highly effective data collection devices and they can record a lot of detail about people's lives. As well as tracking their own health status, people can also help researchers gather large amounts of data on health problems and their determinants using their smartphones.
<b>At-home or portable diagnostics</b>	Devices cheap enough or portable enough to be transported to people's homes to provide diagnostic information are not new – think of a doctor doing home visits armed with a stethoscope. But recent innovations mean that devices previously only kept in a hospital or in a doctor's surgery room are now portable or cheap enough to be located in people's homes, and used by patients themselves.
<b>Hospital-level diagnostics in the home</b>	The portable x-ray machines, blood-testing kits and other technology are providing more and more of the diagnostics required to support health care, with profound consequences for the way we configure our health care system.
	An innovation in this area is the AliveCOR ECG embedded in a smartphone case that helps interpret test results via an application and facilitates secure sharing with clinicians.
<b>Smart assistive technology</b>	Many people with disabilities or long-term conditions use assistive devices to help them perform tasks or activities made harder for them by their disability or their condition. These could be made available. The prospect of using these to gather information in addition to achieving a specific task is motivating several new developments. E.g. the tremor spoon is already on the market for use by people with Parkinson's disease, for example. By

	incorporating sensors and deploying its data analytic expertise, the aim is to provide people or health professionals with information about how someone's tremor characteristics and severity change over time – and to understand more about the disease across a population.
<b>Smart or implantable drug delivery mechanisms</b>	Several technologies in development could enable patients and care professionals to monitor and improve adherence to a prescribed drug regime either through automation or providing better information about medication usage.
<b>Smart pills</b>	One company has developed sensor technology so small it can be swallowed and combined with drugs in pill form. When the pill dissolves in the stomach, the sensor is activated and transmits data to a wearable patch on the outside of the body and on to a smartphone app. This enables patients and their clinicians to see how well they are adhering to their prescription.
<b>Implantable drug delivery</b>	New automated drug delivery technology is under development, an implantable device with hundreds of tiny, sealable reservoirs that open when a small electric current controlled by an embedded microchip is applied. This device could provide a way to automatically release doses for more than 10 years from a single chip. They technology for long-term condition medication as well as for contraception is being developed.
<b>Digital therapeutics</b>	Digital therapeutics are health or social care interventions delivered either wholly or significantly through a smartphone or a laptop. They effectively embed clinical practice and therapy into a digital form. At a minimum, these interventions combine provision of clinically curated information on a health condition with advice and techniques for dealing with that condition.
<b>Computerised cognitive behavioural therapy</b>	The use of computerised cognitive behavioural therapy is important. Recently, a new generation of automated digital therapies are being developed and some are there to help alleviate anxiety and depression.
<b>New preventive digital therapies</b>	Another class of digital therapies are in development to help people make changes to reduce the risk of developing long-term conditions. Interventions to change lifestyles through regular coaching and group sessions can reduce the risk of developing diabetes.
<b>Genome sequencing</b>	Advances in genome sequencing and the associated field of genomics will give us better understanding of how diseases affect different individuals. With the genetic profile of a person's disease and knowledge of their response to treatment, it should be possible to find out more about the likely effectiveness of medical interventions such as prescribing drugs to treat a disease (pharmacogenomics).
<b>Falling sequencing costs</b>	Twenty years have passed since the first complete genome sequence of a living organism was produced and twelve since the first human genome was sequenced. In that time, the economics of genome sequencing has changed significantly.
<b>Population-level studies</b>	There are large databases of genomes and analyse them to find relationships between genetic make-up, people's disease risk and experience, their physical characteristics and their behaviour.
<b>Machine learning</b>	Until recently, computers weren't especially good at recognising patterns in messy data. Or rather, the way they are programmed meant they weren't very good. New techniques have now been developed in the applied mathematics and computer science fields



	that have allowed more effective use of computers for tasks like this. Machine learning is one such field. It is a type of artificial intelligence that enables computers to learn without being explicitly programmed, meaning they can teach themselves to change when exposed to new data.
<b>New insights into big datasets</b>	Several new businesses hope to use these techniques to provide diagnostic support. There are tools for radiologists that uses previous findings and other data associated with existing images in its databases to spot patterns in images and the data to help spot likely mistakes and rule out extremely unlikely options.
<b>Blockchain</b>	<p>Blockchains were conceived in 2008 and the most well-known application is the digital currency Bitcoin. The technology has potential uses in a wide range of other fields, particularly financial services and government functions, where it is already being deployed.</p> <p>Their key feature is they can be trusted as authoritative records even when there is not a single, central, respected authority updating them and guaranteeing their accuracy and security. This derives from the mathematical properties of the way the data is recorded and the difficulty it would take to break the rules and successfully alter the record.</p>
<b>Decentralised health records</b>	Electronic records for health care are now widely used, but they are to be stored on centralised databases, secured and provided by a small number of suppliers. The system is be more resilient as no single organisation houses the data and that switching to or incorporating blockchains into existing systems could help to speed up the transition to interoperable patient records. The technology could be applied to create accurate records of health interventions and eventually verified outcomes, which could be used as the basis for reimbursing providers for the health outcomes they achieve for their local population.

## 17 ANNEX 3 - KEY TARGETS AND INDICATORS OF THE NHSSP – 2014-2020

KEY TARGETS AND INDICATORS OF THE NHSSP – 2014-2020		
	TARGET	INDICATOR
1)	To fully incorporate E-Health in the health system	By 2020
2)	Increase the contraceptive prevalence rate	From 9% to 25% by 2020
3)	Increase case detection rate of new smear positive cases	From 64% in 2012 (MOH&SW 2012) to 70% by 2017
4)	Increase government allocation to health	From 10.5% in 2013 to meet the Abuja declaration target of 15% by 2018
5)	Provide sustainable infrastructure and logistics conducive for the delivery of health services at all levels of the health care system	By 2020
6)	Ensure availability of relevant, accurate, accessible and timely health care data for planning, coordination, monitoring and evaluation of the health care services	By 2020
7)	Percentage of vacancies filled annually	By 2020
8)	Presence of staff appraisal system	By 2020
9)	Presence of comprehensive incentive package for all health workers	By 2020
10)	Availability of human resource data system	By 2020
11)	Reduce neonatal mortality rate	From 22/1000 live births in 2013 to 15/1000 live births by 2020
12)	Redefine and implement the basic health care package for all levels	by 2016
13)	Infant mortality rate reduced	From 34/1000 in 2013 to 24/1000 by 2020,
14)	Under five mortality rate reduced	From 54/1000 in 2013 to 44/1000 by 2020,
15)	Maternal mortality ratio reduced	From 433/100000 in 2013 to 315/100000 by 2020,
16)	Provide cervical cancer screening and management	To 50% of women of reproductive age by 2020
17)	Malaria incidence reduced	By 50% by 2015
18)	To reduce HIV new infections	From 1165 cases in 2014 to 579 by 2019 (i.e. by 50%)
19)	Increase the percentage of TB patients who had a HIV test	From 83% in 2012 to 95% in 2017
20)	Reduce the burden of NCD risk factors	From 24% in 2010 (MOH&SW 2010) to 20% by 2020
21)	Reduce morbidity due to other communicable diseases	By 50% by 2020
22)	To improve the ratio of critical health care workforce (nurses, midwives, doctors, public health officers and nurse anaesthetics, pharmacists, lab technicians) to the	By 2020

	population	
23)	The ensure equitable distribution of health care professionals in urban and rural areas	By 2020
24)	Availability of well-functioning laboratory services in all hospitals and all major health centres	By 2020
25)	Availability of functional radiology services in all hospitals and all major health centres	By 2020
26)	Expand and strengthen blood transfusion services to all hospitals and major health facilities	By 2020
27)	Increase availability of essential medicines	From 65% in 2014 to 85% by 2020
28)	Life expectancy nationally increase	From 63.4 years to 69 years by 2020
29)	Total fertility rate reduced	From 5.6% in 2013 (GDHS, 2013) to 4.6% by 2020

The first ten targets could be achieved by using technology-driven innovative approaches.