



#### The Situation...



## Solution mindset

- Solution/experimentation to narrowscope problem
- High-level of fragmentation and small pilots
- Duplication of efforts
- Inability to scale
- Inability to show results
- Not interoperable
- Limited impact
- Vertical investments

#### **Digital Health sector Transformation**

## System approach

- Sector digitalisation and digital Transformation
- Sector Digital Information Infrastructure (Infostructure)
- Re-usability & maximizing ROI
- System Integration
- Enterprise Architecture
- Interoperability
- Population/System level impact
- Horizontal and Vertical investments

# The Problem: Current approach to digital investments to achieve the SDGs is fragmented and high-cost



#### **Digital systems can mirror physical systems**

#### Example physical supply chain for public health across disease areas.





#### **ITU-WHO National eHealth Strategy Toolkit**

	Part 1 National eHealth vision	Part 2 National eHealth action plan	Part 3 National eHealth monitoring and evaluation				National eHealth Strategy Toolkit		
	<ul> <li>Manage the process</li> <li>Engage with stakeholders</li> <li>Establish the strategic context</li> <li>Learn from trends and experience</li> <li>Draft an initial vision</li> <li>Identify required components</li> </ul>	<ul> <li>Manage the process</li> <li>Engage with stakeholders</li> <li>Develop eHealth action lines</li> <li>Develop an integrated action plan</li> <li>Determine high-level resource requirements</li> <li>Apply funding constraints</li> </ul>	<ul> <li>Define indicators for monitoring and evaluation</li> <li>Define baseline and target measures</li> <li>Define supporting governance and processes</li> </ul>						
	eHealth environment	<ul><li>to refine plan</li><li>Define implementation phases</li></ul>	Leadership and governance						
	<ul> <li>Assess opportunities and gaps</li> <li>Refine vision and develop</li> </ul>					1	World Health Organization		
			Strategy and Investment	Services and applications	Legislation, policy and compliance	Workforce		<b>W</b>	
	recommendations			Standards & Interoperability					
				Infrastructure					



Be He@lthy, Be Mobile: Expanding access to health

www.who.int • mhealth4ncd.itu.int

Promote health | Keep the world safe | Serve the vulnerable



A collaborative initiative between





### **Country programs**









Number of countries/programs 11 programs in 8 countries



Number of beneficiaries 3,723,000

#### Health outcomes 🔁



India (mTobaccoCessation): 19% quit rate amongst program users



**Zambia** (mCervicalCancer): 6% increase in cervical cancer screenings attributable to the program



**Senegal** (mDiabetes): "The program's SMS sending was associated with improved glycaemic control"

## mHealth Knowledge and Innovation Hub – EU Project

- Four year project funded by the Horizon 2020 Program (2016-2017 Work Programme)
  - 1<sup>st</sup> March 2017 28<sup>th</sup> February 2021
- ITU and WHO are Partners
- Objectives:
  - Establish an EU mHealth Hub for collecting and disseminating research and experience relating to large-scale implementations of mHealth programs
  - Build capacity for the Hub to be able to support Member States in implementing national mHealth programs



### New publication coming soon....

Handbook

#### Digital Health Platform: Building a Digital Information Infrastructure (Infostructure) for Health









## **E-agriculture Strategy**







#### **E-agriculture and ICT: Technical insight**



Figure 2 – Reference model of Smart Farming based on networks



#### Smart SDG Villages Model

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Empowering rural dwellers using ICT to address citizen's needs for SDG

A hoslistic, cross-sectoral approach to digital investments for SDGs to deliver integrated suite of scalable and sustainable services in rural areas



- Smart Village is a hoslistic, cross-sectoral approach to use digital technologies for SDGs in rural areas.
- A Whole-of-government, Whole-of-society approach to SDG digital investments
- Consider various citizens' needs in an integrated manner.
- An initiative to reinforce national unity and inclusiveness so no one is left behind.
- Concrete approach to mutualize digital investments to achieve cost effeciencies through economies of scale.
- Facilitate linkages and integration between different development efforts and programmes.
- Set appropriate digital infrastructure to scale up quickly more services by adding new modules on top of the infrastructure in the future.

#### Life in the Smart Village: User centric approach

Children



Access to numeracy and digital literacy courses

Girls education

Access to Edutainment content

Registration of new birth

Digital identification & Better Vaccination Tracking

#### Village 1

#### Local Village Server

Local server sync daily with main server

Low-cost Broadband connectivity

Each village will have a local server to cache content daily from the main server and from Local wifi access point

#### Mobile Multimedia Unit

Mobile School unit with a Micro-server, 20-40 tablets and a pico-projector running on battery to be used in schools or community centers. Students connect on the local webserver of the unit.

Sync weekly wirelessly with local server

Community members can access Local village Portal or web directly Community members receive SMS and voice messages related to topics of their interest

## Smart SDG village Model

Mobile Agriculture Extension (Specialized tablet)

Sync daily with main server

Mobile Clinic (Specialized tablet)

Sync daily with main server



# SDG Digital Investment Framework

A Whole-of-Government Approach to Investing in Digital Technologies to Achieve the SDGs

https://www.itu.int/en/ITU-D/ICT-Applications/Pages/ICT4SDG.aspx https://digitalimpactalliance.org/contact-us/ict4sdg/





## Coordinate digital systems to support multiple physical systems

Each SDG target may have different supporting actors and business processes, but can share digital systems





# Coordinate your digital investment around reusable building blocks to deliver many use cases.





# ICT Building Blocks

Building blocks will continue to be refined and defined over time.





## Whole-of-Government approach – Applications Architecture: Example from India

**Application Reference Model** 



Important to have Common ICT digital infrastructure for:

- Scalability: due to cost effeciency and economies of scale gained through sharing and re-use
   Built once - but used for all
- Integration and Interoperability

#### Both are critical for achieving SDG:

- Scalability: to leave no one behind
- Integration: to reflect the interdependency and
   interrelation of SDG targets and the need to consider comprehensive citizen needs.

Source: Example extracted from IndEA: India Enterprise Architecture Framework, 2018

#### BUILDING COMMON DIGITAL AND DATA PLATFORMS

The Singapore Government Technology Stack (SGTS) is a collection of common digital services and infrastructure available to all Government agencies to build their digital applications. This reduces the time and effort needed to introduce new digital services, and allows digital services to be enhanced in a more agile manner.

The layers of the SGTS include:

- 1) Data (e.g. data hubs);
- 2) Infrastructure (e.g. data centres and common hosting infrastructure);
- 3) Application Infrastructure (e.g. platformsas-a-service); and
- 4) Library of Micro-Services (e.g. common authentication, payment services).

SGTS will allow agencies to focus on designing solutions that best meet the citizens' needs. With SGTS, citizens can expect to experience a seamless, consistent and connected user experience across the spectrum of government digital services.

The MyInfo initiative was one of the first projects using the SGTS. The pilot was developed and delivered in four months, instead of what would typically take a year. Other notable digital services hosted on SGTS include myCareersFuture.sg and the Moments of Life initiative.

Source: Singapore Digital Government Blueprint

https://www.smartnation.sg/docs/default-source/default-document-library/dgb\_booklet\_june2018.pdf



- A joint project that aims to support the digital transformation of developing countries for sustainable development, with a particular focus on the Least Developed Countries (LDCs).
- The project will leverage the experience Estonia gained in its evolution into a digital Republic, lessons learned from other countries, as well as the combined expertise of ITU, UNOHRLLS and UNDP to develop an approach specific to vulnerable countries,

#### **Priority needs for Digital investments**



Reference [mplementation]