



Assessing iHRIS using the Principles of Digital Development:

The first Principles-based
evaluation of a major digital
health solution

Wayan Vota
Digital Health Director
April 2019





iHRIS Manage: Staff List
iHRIS Manage Uganda Ministry of Health: A list of all current staff with their contact information.

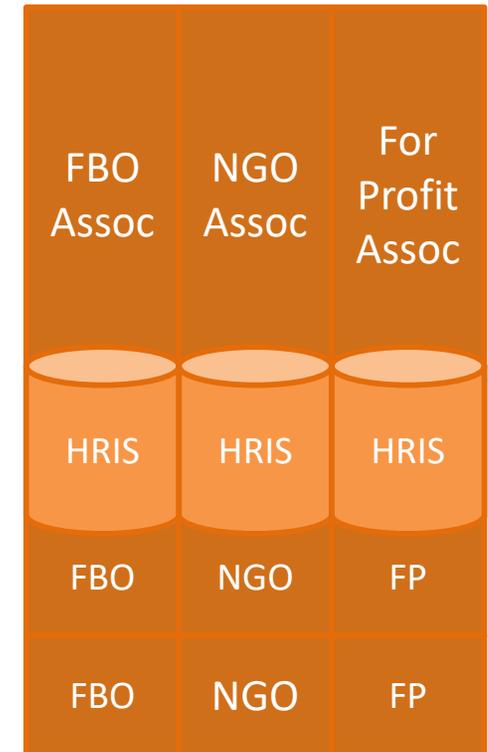
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iHRIS

Health Workforce Information Ecosystem

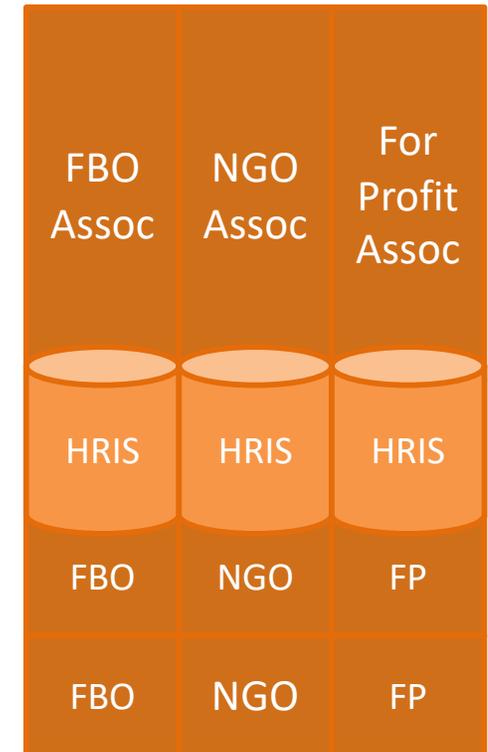
Professional Councils



Facilities & Service Providers

Health Workforce Information Ecosystem

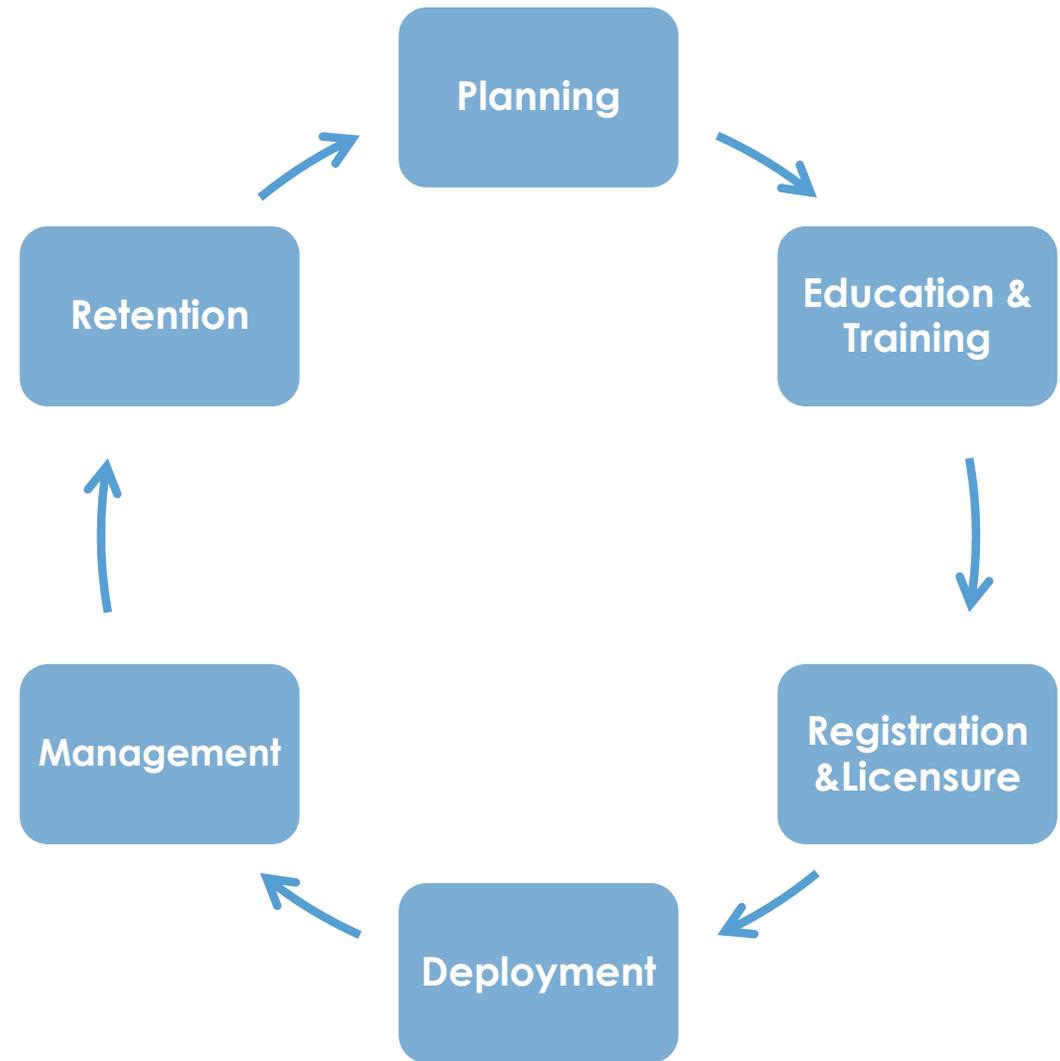
Professional Councils



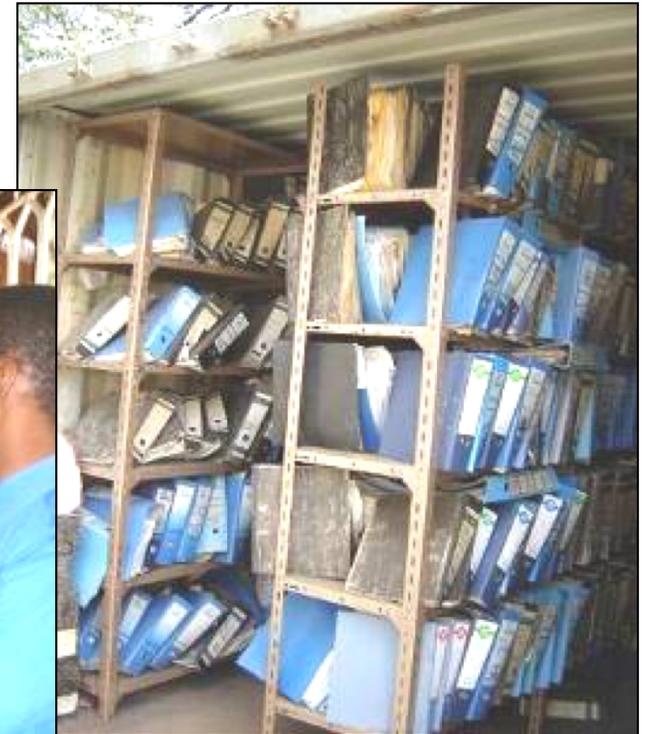
Facilities & Service Providers

Good Health Worker Data Needed for...

...getting the **right health worker** with the **right skills** to the **right place** at the **right time** to provide quality services.



The Problem in 2004



Our Solution in 2005



-  **iHRIS Manage** is for health service delivery
-  **iHRIS Qualify** is for health professional councils
-  **iHRIS Plan** is for workforce planning and modeling
-  **iHRIS Retain** helps plan and cost retention interventions
-  **iHRIS Train** tracks pre-service and in-service training

iHRIS Global Community

- Over **300** active participants in open source community
- Over **600** issues raised, addressed and resolved in 4 years
- **Seven** donors:
 - USAID
 - CDC
 - Canada
 - DFID
 - Johnson & Johnson
 - WHO
 - World Bank
- **Eight** implementers
 - IntraHealth
 - Abt - *Malawi*
 - Baylor - *Uganda*
 - FSD - *Chad, Togo*
 - IMA - *Tanzania*
 - JSI - *Liberia*
 - MSH - *Rwanda*
 - Jhpiego - *Ethiopia*

All supporting
1,255,956
workforce records

iHRIS Impact

- **Cost Savings**
 - \$232 million saved by using iHRIS, plus \$51 million in annual license fees
 - Millions saved around the world, identifying and eliminating ghost workers and redundant staff and positions
- **Advocacy**
 - Uganda used iHRIS data in 2013 to advocate for a \$20 million recruitment fund, filling more than 7,000 identified vacancies
- **Workforce Planning**
 - Uganda uses iHRIS Train to better manage the training of nearly 30,000 health students
- **Regulation**
 - Uganda Medical Council used iHRIS Qualify to increase re-licensure compliance from less than 100 to more than 2,700 doctors – increasing revenue from USD \$100,000 to more than \$500,000 per year
- **Deployment for better services and efficiency**
 - The state of Jharkhand, India used iHRIS to identify & address staffing shortages in OB/GYN & clinical officers in 60% of their facilities providing services to 900,000 additional people
 - Malawi MOH found only 4 mechanics serving 700 drivers in their motor fleet. Increased recruitment to avoid moving people and tools throughout country



Principles *for* Digital Development



Design with the User



Understand the Existing
Ecosystem



Design For Scale



Build For Sustainability



Be Data Driven



Use Open Standards, Open Data,
Open Source and Open Innovation



Reuse and Improve



Address Privacy and Security



Be Collaborative

Stewarded by **dial** Digital
Impact
Alliance

digitalprinciples.org

[#DigitalPrinciples](https://twitter.com/DigitalPrinciples)



Endorsing Organizations



Evaluation Considerations

- Can the PDD be used as a scorecard to evaluate a software application?
- Can the PDD be used to evaluate if a software development project should be funded?
- Do the PDD ask the right questions?
- Is there any area not addressed by the PDD that should be included?

Evaluation Process

Information Audit

23 People in 3 Groups

1. End Users, Administrators, Trainers
2. Development Team
3. Industry Experts

Evaluation Process

Information Audit

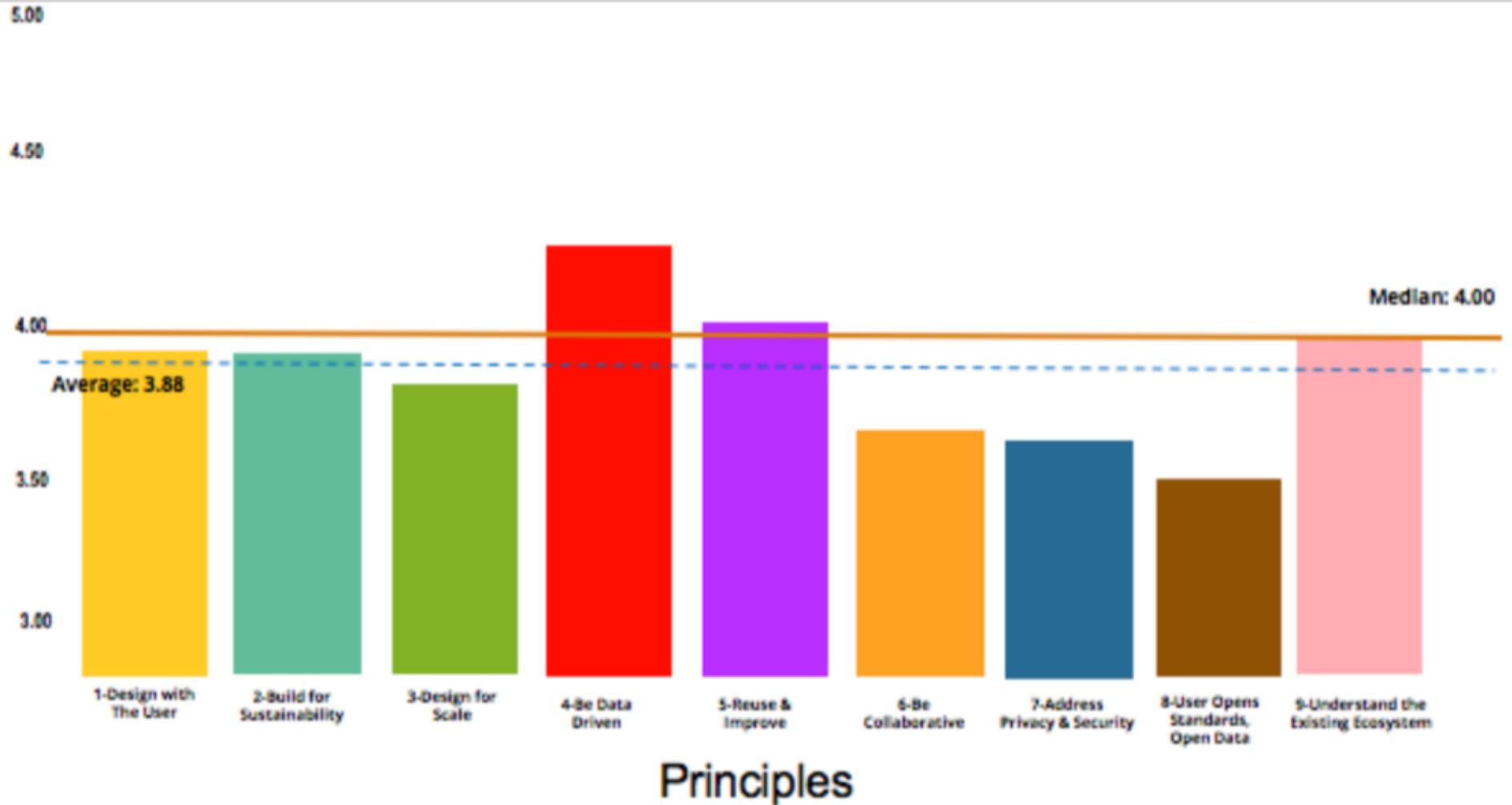
23 People in 3 Groups

1. End Users, Administrators, Trainers
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Likert Scale



Overall Score: 3.88 or B+



Principle 4: Be Data Driven



Principle #4 – Be Data Driven

When an initiative is data driven, quality information is available to the right people when they need it, and they are using those data to take action.

Average Score = 4.28



Data is the engine of iHRIS, and this is reflected in the **highest average score** in this study. Operating with a data standard, clarity into data storage and use, and responsible, hygienic data management are noted among the best in class. More tools for data de-duping, validation and a published path to compliance with newer data privacy standards will keep this score moving in the right direction.

Principle 8: Use and Be Open



Principle #8 – Use Open Standards, Open Data, Open Source, and Open Innovation

An open approach to digital development can help to increase collaboration in the digital development community and avoid duplicating work that has already been done.

Average Score = 3.51 

With a split between the two surveyed groups iHRIS received the **lowest average** score on this principle. Clear definitions of what “open” translates to for standards, data, source and innovation in iHRIS, and plans for collaboration are noted. A perceived lack of comprehensive documentation on the limits of sharing, evaluation and data leverage kept this score low. But **high scores were achieved in two categories:** iHRIS meeting the definition of “open” and in planning for open source. A community governance group tasked with benchmarking “openness” would help this score.

Principle 1: Design with the User



Principle #1 – Design with the User

User-centered design starts with getting to know the people you are designing for through conversation, observation and co-creation.

Average Score = 3.97



iHRIS **aligns well** with this first principle with most respondents noting regular, systematic user feedback is considered and that users know how to engage developers. Formal performance indicators and an organized testing system were found lacking. A roadmap reflecting user-influenced indicators, video training, and recruiting beta-test users will help increase this score.

Principle 7: Privacy and Security



Principle #7 – Address Privacy & Security

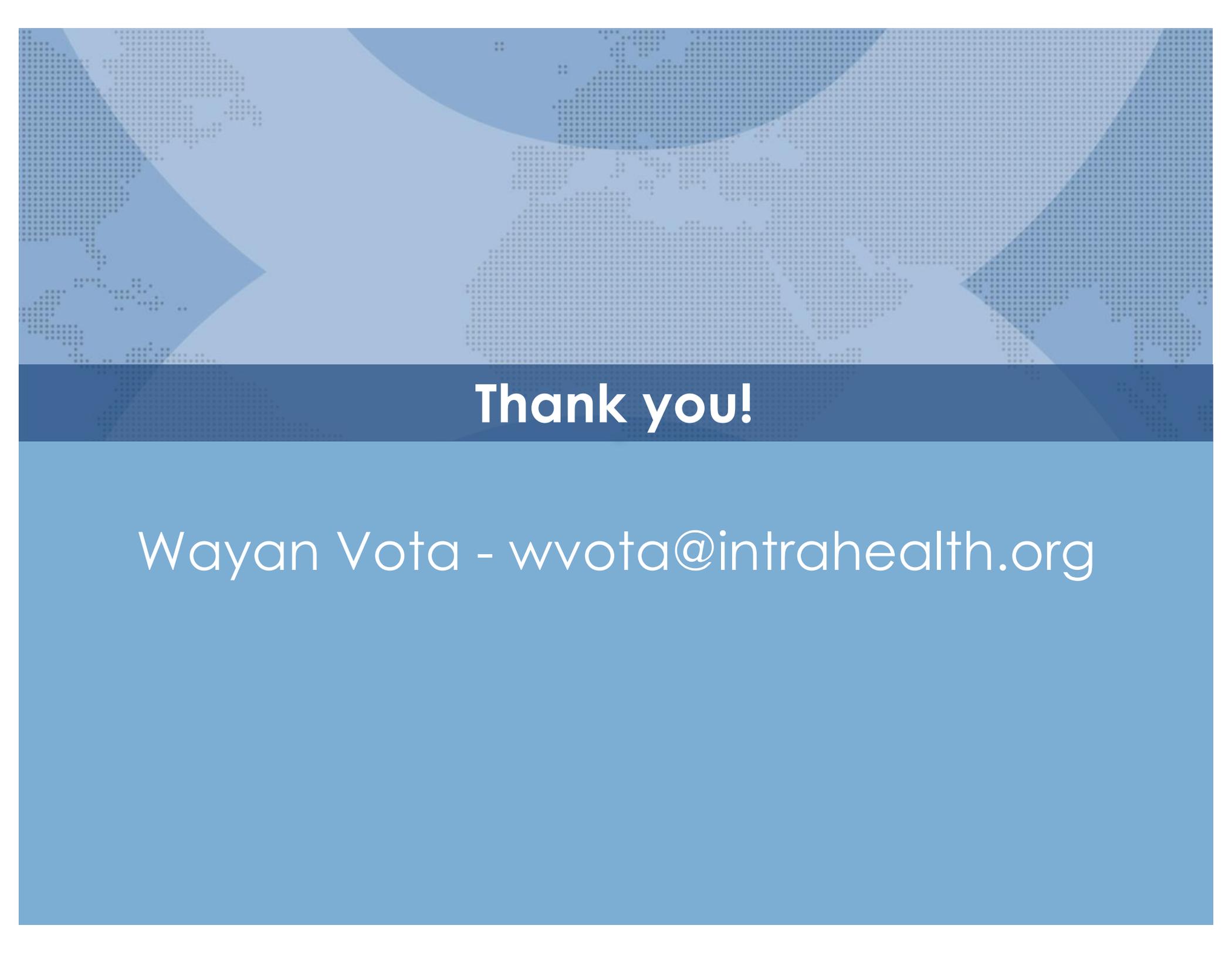
Addressing privacy and security in digital development involves careful consideration of which data are collected and how data are acquired, used, stored and shared.

Average Score = 3.65 

Showing **inconsistent alignment** in our survey, data security and privacy need to be enumerated and addressed explicitly in the iHRIS roadmap. Bright spots include clear personnel roles, access control lists and sensitive data categorization. Reflecting the fraught data privacy and compliance climate in 2019, a data security manual with incident response, risk matrix and secure data repository will help boost this important score.

Next Steps

Recommendation	Priority	Complexity	Timing
Create interoperability API	OpenInfoMan & mCSD		
Promote iHRIS Support Community	Already Ongoing		
Diversify iHRIS funding, ownership	Already Ongoing		
Clarify feedback mechanisms	High	Low	Q2 19
Update iHRIS Toolkit	High	Low	Q2 19
Expand iHRIS use cases	Medium	High	Q4 19
Create iHRIS Academies	Low	High	NA
Evaluate iHRIS with CHAOSS	Low	Medium	NA



Thank you!

Wayan Vota - wwota@intrahealth.org



USAID
FROM THE AMERICAN PEOPLE

Maternal and Child
Survival Program

Digital Health Investment Review Tool

16 April 2019

Merrick Schaefer, USAID

Agenda

- What is the challenge?
- What is the tool?
- Development of the DHIRT
- Overview of DHIRT

Doing Digital Well is Hard but Demand is Growing

1. Increased proliferation and penetration of mobile devices
2. Improved infrastructure and appetite for governments to use technology to address health systems challenges
3. Increasing focus on going to scale and using global goods
4. Increasingly health programs are being asked to make technology related decisions without being fully versed on the latest tools and frameworks. This is an issue for MOHs, donors and implementing partners

Principles for Digital Development





Donor Investment Principles



1. Collaborate

Collaborate to align investments with national digital health strategies.



2. Invest in national plans

Prioritise investments in **national plans that incorporate “digital global goods”** and avoid bespoke systems.



3. Enable sustainable investment

Engage early to **determine and quantify long-term costs** of operating, maintaining, and supporting digital health systems for sustainable country ownership.



4. Track & measure

Track investments, progress, learnings and successes in digital health systems in a transparent manner.



5. Strengthen skills

Strengthen donor technical skills and core capacities, including awareness of the Principles for Digital Development.



6. Creation and evolution

The **creation and evolution** of a country's national digital health strategy, policies and regulatory framework. Strategies include components such as architecture, standards, investment frameworks, privacy protection, and detailed operational and monitoring plans.



7. Maturity continuum

Systems at a level appropriate to the country's progress along the **digital health maturity continuum**.



8. Country capacity

Sustainable country capacity for digital health leadership, governance, implementation, oversight, global good adoption, and donor coordination.



9. Global goods

Scalable, sustainable, accessible, interoperable, and evidence-based **digital health global goods** that meet country priorities.



10. Information and peer-learning

Diverse stakeholder **information-sharing and peer-learning networks** at country and regional levels to foster coordination and alignment of implementation activities.

What is the challenge?

We have best practices in Digital Health (and Digital Development) but how do non-specialists know if a proposed activity embodies them or not?

What is the tool?

- **Scoring tool** embodying the Principles for Digital Development to assist funders in evaluating health technology investments and their adherence to best practices
- **Audience is decision makers** without an information technology background
- **Lightweight tool** with 12 questions and scoring

What is the tool for?

- The tool can be used as an addition to a procurement process to score proposals against adherence to the Principles of Digital Development.
- The questions and answers were designed to be understood by non technology specialists.

What does the tool cover:

- Includes details on:
 - Deliverables
 - Budget
 - Staffing
 - Definitions

The tool links to other resources

- Includes links to other resources and tools
 - MAPS toolkit,
 - WHO Digital Health Atlas,
 - PDD how to guides and examples,
 - CRVS toolkit,
 - MEASURE and WHO lists of HIS strategies,
 - Etc.

Tool Development

- Review of existing tools
- Review of Principles for Digital Development
- Development of Cadillac and Skateboard models
- May 24 2017 Advisory Board meeting
- Nov 2017 online consultation with Advisory Board
- Dec 2017 consultation at GDHF
- 2018 Updated to align with Donor Investment Principles
- December 2018 Shared on [MCSP website](#)
- February 2019 minor updates released on [MCSP website](#)
- Late March 2019 launch through coordinated social media campaign

Overview of Tool



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Digital Health Investment Review Tool

Publish Date: December 2018

Author: MCSP and Partners

Too often digital health investments are made without the time or resources to develop a deep technical knowledge of the information and communications technologies behind them, or the ecosystem in which these technologies are used. The goal of the **Digital Health Investment Review Tool** is to provide high-level guidance based on widely-accepted best practices such as the Principles for Digital Development and the Donor Investment Principles that can be used to support strategic investments in the use of digital technologies to support public and global health.

The Digital Health Investment Review Tool includes (a):

- [How to Use the Tool Resource](#)
- [Resources Handout](#)
- [Electronically Fillable Handout](#)
- [Printable Handout](#)

<https://www.mcsprogram.org/resource/digital-health-investment-review-tool/>

BACKGROUND

Too often, digital health investments are made without the time or resources to develop a deep technical knowledge of the information and communications technologies (ICTs) behind them, or the ecosystem in which these technologies are used.

We use the term digital health to refer to all concepts and activities at the intersection of health and ICTs, including mobile health (mHealth), health information technology, electronic health records (EHRs), and telehealth, and encompassing three main functions:

- the delivery of health information, for health professionals and health consumers, through the Internet and telecommunications media,
- using ICTs to improve public health services (e.g., through the education and training of health workers), and
- using health information systems (HIS) to capture, store, manage or transmit information on patient health or health facility activities.

Digital technologies may be applied in one or more ways to address Health Systems Challenges, as described in the [WHO Classification of Digital Health Interventions](#).

AUDIENCE

The primary audience for this tool is individuals involved with **designing, creating** proposals for, **evaluating**, and making **purchasing** decisions regarding the development of digital health systems. This spans a number of actor groups including:

- **National governments**, including health and IT ministries, that are issuing calls for proposals for and/or reviewing potential digital health investments.
- **Regional bodies**, such as those at the sub-regional or region-wide levels, who are making recommendations on and providing guidance on digital health investments.
- **Donors**, who are funding or considering funding digital health activities.
- **Implementers**, who may use the criteria to ensure they are putting forward sound proposals.

GOAL & OBJECTIVES

The **goal** of the Digital Health Investment Review Tool is to **provide high-level guidance based on widely-accepted best practice** such as the Principles for Digital Development and the Donor Investment Principles that can be used to support strategic investments in the use of digital technologies to support public and global health.

Specific **objectives** include developing language and tools that can help:

- **structure** requests for proposals (or other donor procurement mechanisms),
- **inform** grants and contracts language, and
- **support** informed advice / decision-making by procurement officers considering digital health proposals.

The **intent** is for this work to be undertaken in an **agile and iterative manner**, with frequent focus groups and product testing with the intended users, described in the audience section below. The desired final products are intended to serve as global goods – tools that can be adapted and reused by a variety of audience segments for their own internal purposes.

HOW TO USE THIS TOOL

There are 12 elements of Digital Health Investment Review Tool included and for each there is a self-assessment worksheet:

1. Policy Landscape	2. HIS Ecosystem	3. Key Stakeholders	4. System Issues	5. Relevant Groups	6. Scale
7. Cost of Ownership	8. MEL Plan	9. Open vs. Proprietary	10. Privacy & Security	11. Assess & Improve	12. Change Management

6 Scale, implementation and maintenance

QUESTION Describe the system's intended scale and how implementation and maintenance support may vary at different levels of scale.

WHY IS THIS IMPORTANT? The strategies for support and maintenance of systems may vary at different levels of scale. Technological components may need to be changed as usage, numbers of clients, users and connections increase. Systems can scale both vertically and horizontally. Capacity building exercises and support may need to be built into the budget and schedule as the scale changes. Supervision and help desk strategies may need to change as scale increases and all of these have potential budget and schedule implications.

PRINCIPLES FOR DIGITAL DEVELOPMENT Design for Scale; Build for Sustainability

DIGITAL INVESTMENT PRINCIPLES Global Goods; Quantify Costs

DELIVERABLE Budget

REFERENCE MATERIALS [MAPS Toolkit](#); Axis 1 - Domain 1; Axis 5 - Domain 11
[WHO: Beginning with the end in mind](#)
[PATH: Journey to Scale](#)

NOTES:

SCORE:

1 - Does not define intended scale.

2 - Defines intended scale.

3 - Defines intended scale and articulates changes that may need to be made as scale increases.

4 - Defines intended scale and articulates changes that may need to be made as scale increases and provides clear budget figures to support.

5 - Defines intended scale and articulates changes that may need to be made as scale increases and provides clear budget figures to support, as well as changes to roles and responsibilities of all stakeholders.

Quick reference for the element you are in.

The scoring gives five stage descriptions for the element from **None or Nascent** to **Optimized**. Find the score that describes the level of planning or execution described.

Record the score here.

The element name and main question for consideration.

An explanation of why it is important to address this element.

Alignment with guiding digital principles.

Recommended deliverable and useful resources to help determine the score.

Space for notes, including evidence/examples for why the score was selected.

1. Policy Landscape	2. HIS Ecosystem	3. Key Stakeholders	4. System Users	5. Relevant Groups	6. Scale
7. Cost of Ownership	8. MEL Plan	9. Open vs. Proprietary	10. Privacy & Security	11. Reuse & Improve	12. Change Management

1 Local eHealth policy landscape

QUESTION

Detail the relevant local eHealth policy and guidelines (could be national, state or district level depending on context of project), health sector strategic plans, health area specific plans (e.g., maternal health strategy), and how the proposed system(s) align(s) with these documents.

WHY IS THIS IMPORTANT?

Interventions designed without an understanding of local policies will be limited in their ability to scale beyond small pilots and may be in violation of existing national government standards or policies. When taking into consideration the digital investment principles, it is important to align investments with national digital health strategies. In addition, it is key to prioritize investments in national plans that incorporate digital global goods and avoid bespoke systems.

PRINCIPLES FOR DIGITAL DEVELOPMENT

Design with the User; Understand the Ecosystem; Reuse and Improve; Be Collaborative

DIGITAL INVESTMENT PRINCIPLES

Collaborate; Prioritise National Plans; Maturity Continuum

DELIVERABLE

Landscape Analysis

REFERENCE MATERIALS

[WHO eHealth Observatory](#)
 MOH eHealth Strategy (can request from relevant MOH)
[Global Digital Health Index](#)
[MEASURE list of HIS Policies](#)
[HIS Maturity Framework](#)



- No or scant mention of local policies or guidelines.



- Mentions relevant policies and guidelines.



- Includes a plan to review existing guidelines and policies.



- Details relevant policies and guidelines and how they will influence the system design and implementation.
- Provides plan to strengthen the necessary country policies and governance structures (if needed).



- Details current and planned revisions to policies/guidelines and how this may influence system in the future.
- Provides plan to strengthen the necessary country policies and governance structures (if needed).

NOTES:

SCORE:



Thank you

- Merrick Schaefer,
 - mschaefer@usaid.gov