From siloed applications to Digital Health Ecosystems – strengthening health system transformation and UHC in African countries

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Health policy goals – or why transform health systems?

- Good health & wellbeing is a human right: 1978 Declaration of Alma-Ata
- UHC: Mitigate the lack of access to quality healthcare, especially in low- and middle-income countries
- SDG 3: “Ensure healthy lives and promote well-being for all at all ages”
- African Agenda 2063 - Goal 3: “Healthy and well-nourished citizens”
- Better health provides for greater wealth, and more wealth leads to better health

Health policy must guide transformation, digital health is “only” an enabler – but a fundamental one

The “Why” and “How” of Digital Health

Why:
- Improvement of health & care
- Increase in patient safety
- Reduction in cost / efficiency gains
- Facilitation of secondary usage of health data (Public Health, Big Data, AI…)

How:
- Improvement of data gathering, exchange, access, analysis
- Support for collaboration (work flow/integrated care)
- Knowledge generation, decision support

Creation of a Learning Health System
What are the challenges?

- **Pilotitis**
  - Numerous, mostly isolated pilot projects
  - Very few scale up into sustainable enterprises

- **Infrastructure and connectivity**
  - ICT & electricity infrastructure, mobile phone connectivity remain challenging, especially in rural areas

- **Governance and legal basis**
  - Digital Health Ecosystems involve sensitive data
  - Trust between patients and health professionals/workers is essential

- **Human resources and absorption capacity**
  - Need for health professionals with IT knowledge, IT support and infrastructure providers
  - Increase absorption capacity

- **Silos, not integration (next slide)**

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Silos versus integration

- "The deployed systems are in silos and there is no system that is integrated with another
- There is no timely information for easy and quick decision making
- Due to the silos of systems patient records are only limited to the health facility visited
- Multiple reporting systems make it difficult to access data for evidence-based decision-making
- There is no proper interoperability framework in place for all these systems. They were developed on different platforms and data stored in legacy systems
- This has resulted in considerable duplication of effort and difficulty to access and consolidate data"


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The Solution Approach: Implement a Digital Health Ecosystem (DHE)

A ‘Digital Health Ecosystem’ is the holistic application of information and communications technologies to support and improve healthcare delivery, its coordination and integration across providers in a given domain (local, district, national)


From policy to sustainable services – Four fundamental building blocks for a DHE

Health policy priorities and needs of citizen must guide Digital Health:

4 Building blocks
1) Agreement on an operational digital health strategy
2) Development of a comprehensive roadmap, translating the strategy into an action plan for long-term sustainability
3) Implementation of the Digital Health Ecosystem
4) Monitoring and evaluation of outcomes and results achieved to guide further progress
Six implementation domains

1) Open digital health platform
   Apps and services from multiple vendors work together via open standards

2) Core starting services and applications
   Focus for early benefits: small set of priority services and application

3) Interoperability domains
   Clarify who needs which data/information in what format for which purpose

4) Leveraging the “open” approach
   Opt for openSource software, openData access, openStandards at national level

5) Change management
   Core success factor for transformation

6) Governance and legal framework
   Indispensable for trust, cooperation of stakeholders

Key solution approach: Digital Health Ecosystem based on a simple, open platform architecture:
Separate applications from platform tools and services, integrate via enterprise service bus - integration engine (and agreed-upon standards & data models)
Conclusions

- A successful Digital Health Ecosystem must be build on a well-founded health policy, setting clear priorities for healthcare transformation
- Digital Health is a key enabler for health system transformation and meeting African goals and ambitions
- However, isolated digital applications do not meet the needs of tomorrow's health systems
- Better coordinated, integrated and sustained healthcare requires an “open” approach for full interoperability & connectivity
- Only interoperable, fully integrated infrastructures and applications – and not silos – will allow for the secondary usage of health data and thereby support public health surveillance, Big Data, Artificial Intelligence applications

Vision for Africa

- To respect African culture, diversity and needs also in the transformation of healthcare systems
- To meet the goals of the African Agenda 2063, UHC and SDG
- To facilitate African innovativeness, start-ups, Public-Private Partnerships (PPP) and investments in the health sector,

- Move from siloed applications to Digital Health Ecosystems based on the “open” approach, thereby
- Establishing Learning Health Systems meeting the diverse needs of African countries
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