Navigating the Digital Health Ecosystem: a Review of Key Guidelines, Frameworks and Tools **Part 1:** *The Digital Health System*

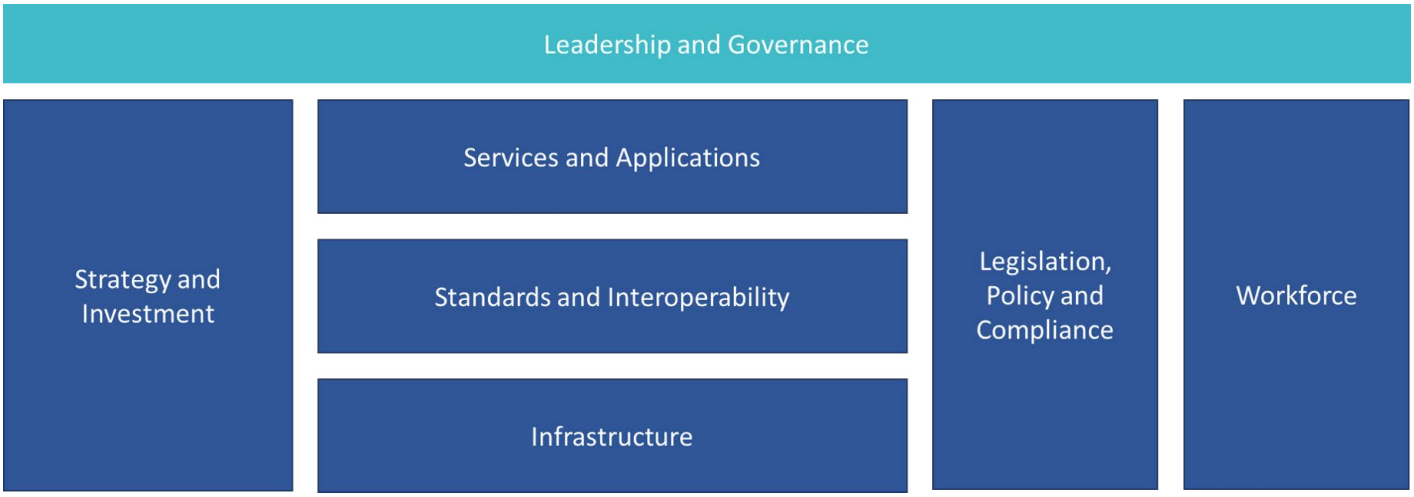
DIPC

State of the art digital health projects build on existing evidence, and normative guidelines, frameworks, and tools in various areas, ranging from software development to financing and equitable programing. In the context of the GIZ Digital Innovation in Pandemic Control (DIPC) Initiative, the Robert Koch Institute, Germany, has conducted a comprehensive analysis on key digital public health definitions and concepts, and on 75 normative resources for digital health programing across 11 digital health topics, published between 2012 and early 2024 [link]. Findings from the report have been summarized in form of 20 easy to use Factsheets.

The current factsheet (02/20) summarizes the findings on the topic of the **Seven Building Blocks of the eHealth System** and outlines the foundational components of eHealth systems and their critical role in driving effective digital health strategies.

Factsheet 02

Seven Building Blocks of the eHealth System



Framework of the seven components of an eHealth System (Source: WHO & ITU, 2012)

A national eHealth system comprises seven components or building blocks, which should be strengthened through a national eHealth strategy. These seven components can be grouped into the "ICT environment" and the "enabling environment", whereby 1) leadership & governance, 2) strategy & investment, 3) legislation, policy & compliance, 4) the workforce and 5) standards & interoperability fall within the "enabling environment", whilst 6) infrastructure and 7) services and applications (where DHIs are situated) fall within the "ICT environment" (WHO, 2019) . The figure below (adopted from WHO & ITU, 2012) describes in more detail the individual components and strategies for strengthening them.

Component	Role	Description
Leadership, governance and multi-sector engagement	Enabling environment	• Direct and coordinate eHealth at the national level; ensure alignment with health goals and political support; promote awareness and engage stakeholders. • Use mechanisms, expertise, coordination and partnerships to develop or adopt eHealth components (e.g. standards). • Support and empower required change, implementation of recommendations and monitoring results for delivery of expected benefits.
Strategy and investment	Enabling environment	• Ensure a responsive strategy and plan for the national eHealth environment. Lead planning, with involvement of major stakeholders and sectors. • Align financing with priorities; donor, government and private-sector funding identifies for medium term.

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Legislation, policy and compliance	Enabling environment	• Adopt national policies and legislation in priority areas; review sectoral policies for alignment and comprehensiveness; establish regular policy reviews. • Create a legal and enforcement environment to establish trust and protection for consumers and industry in eHealth practice and systems.
Workforce	Enabling environment	• Make eHealth knowledge and skills available through internal expertise, technical cooperation or the private sector. • Build national, regional and specialized networks for eHealth implementation. • Establish eHealth education and training programs for health workforce capacity building.
Standards and interoperability	Enabling environment	• Introduce standards that enable consistent and accurate collection and exchange of health information across health systems and services.
Infrastructure	ICT environment	• Form the foundations for electronic information exchange across geographical and health-sector boundaries. This includes the physical infrastructure (e.g. networks), core services and applications that underpin a national eHealth environment.
Services and applications	ICT environment	• Provide tangible means for enabling services and systems; access to, and exchange and management of information and content. Users include the general public, patients, providers, insurance, and others. This means may be supplied by government or commercially.

Description of the seven components of an eHealth System (Source: WHO & ITU, 2012)

The WHO-ITU eHealth Strategy highlights the critical roles of data use and change management in transforming health systems. The Data Use Acceleration and Learning (DUAL) (Cooper/Smith, 2022) initiative added two components: change management and data use ecosystems. These components focus on improving data access and utilization, adjusting operations, and supporting health workers in adopting new technologies. The aim is to foster a data-centric culture and ensure smooth, sustainable digital transformation.

References:
- Recommendations on digital interventions for health system strengthening. Geneva: WHO,2019
- National eHealth Strategy Toolkit. WHO & ITU,2012
- Cooper/Smith. Digital Transformation to Accelerate Data Use-A Model for Success. Seattle, Washington, D.C.: PATH, 2022.

This is based on *"Navigating the Digital Health Ecosystem: A Review of Key Guidelines, Frameworks, and Tools"*

Read the full report here or scan the QR code

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