



Digital Square Strategy

2022

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Introduction

Digital Square is a PATH-led initiative that focuses on creating better alignment to accelerate health equity through digital health innovation. This initiative brings partners together to improve how the global community designs, uses, and pays for digital health tools and approaches. By strengthening coordination within the global community, Digital Square reorients the market to better match tools and approaches to the needs of countries and communities.

In this document, Digital Square outlines the vision, theory of change, and role of the initiative to increase understanding of both *why* Digital Square exists and *how* Digital Square works. The strategy is divided into sections addressing each of these components:

- **Digital Square’s vision.** The first section of this strategy outlines the large-scale impact that Digital Square hopes to contribute to and current barriers to creating this impact.
- **Digital Square’s theory of change.** The theory of change presented in this strategy illustrates how a more aligned and coordinated digital health sector can contribute to improving health outcomes.
- **Digital Square’s role in the digital health sector.** The final section of this strategy outlines Digital Square’s three primary workstreams: Alignment & Co-Investment, Global Goods, and Regional & Country Systems. For each of these workstreams, the strategy presents activities that are in scope and out of scope for the initiative. The strategy also includes priorities and learning questions associated with each workstream.

This strategy is for partners within the digital health community, both those who are already working with Digital Square and those who are interested in further understanding the initiative’s role within the sector. The strategy is designed to build a common framework for Digital Square and its partners and to provide transparency into the motivation and goals of the initiative.

Digital Square’s vision Building a more equitable world

DIGITAL SQUARE ENVISIONS A WORLD WHERE THE APPROPRIATE USE OF DIGITALLY ENABLED HEALTH SERVICES CLOSSES THE HEALTH EQUITY GAP.

Digital Square is working to create a world where individuals have the information they need to manage their health and know when and where to seek professional care. Health worker shortages and medical stockouts no longer plague health systems. Governments and private health care providers deliver efficient, high-quality health services, affordably extending coverage to everyone. Governments better allocate their resources, both financial and otherwise, ensuring health systems meet the needs of communities. Families are not mired in poverty from their health bills. And, importantly, health innovations no longer take 20 or more years to cascade from the earliest adopters to widespread use.

Digital health innovations are increasingly disrupting the health sector in high-resource countries by delivering services that transform the quality and length of life. In some communities today,

individuals manage their wellness via smartphones and wearables that track critical health metrics and provide insights that strengthen nutrition, mental well-being, and care-seeking decisions. Health care providers use robust, individual-level information captured in electronic health records to customize care. Groundbreaking medical innovations—like cancer treatments that are tailored to specific genetic profiles by machine learning and cloud processing—are transforming the way diseases are treated. Digital health is an amplifier, but these innovations risk widening the gap in health equity if access is not universal. It is up to us—the global community—to ensure that the power of digital health moves health equity forward.

Taking stock of where we are

While there have been extraordinary gains in health equity since the 1990s, disparities caused by social, economic, and geographic forces remain.¹ Digitally enabled health services have the potential to close this gap by overcoming these equity barriers.

While digital technology can improve health outcomes, particularly in low-resource settings, a fragmented landscape of actors and interests working to implement digital health solutions can lead to a lack of coordination, waste, and unrealized benefits.

*– National Academies of Sciences, Engineering, and Medicine:
Using Technology to Advance Global Health¹*

Country and regional leaders face barriers to the digital transformation of health systems.

In 2018, the World Health Organization (WHO) member states unanimously passed the [Resolution on Digital Health](#), demonstrating the interest in and commitment to the digital transformation of health systems. **Digital transformation** refers to the strategic architecture and integration of digital technologies and associated change management capabilities to strengthen systems, increase their efficiency, and improve the quality of and access to services.

However, countries with fewer resources face a particular set of challenges in this transformation—some have inadequate infrastructure and capacity to use and maintain digital health interventions, or they lack policies and governing bodies to protect populations from misuse of digital health interventions.

Even when these foundational building blocks are in place, providers of health services struggle to identify and pay for digital health products and services that meet local needs, are of high technical quality, and are affordable at scale. On the implementation side, many investors and service providers look for opportunities to “leapfrog” existing processes, but these opportunities tend to be risky and rarely appropriate for resource-constrained contexts. On the software side, investors have shied away from funding core software product development. Without a deep technical knowledge of computer science or the ability to rapidly evaluate early successes, traditional global health investors are uncomfortable with the high up-front expenditure and level of risk. The digital health community has struggled to articulate why software product development is a key enabler for health impact, particularly to those investors with a more

traditional health focus. Additionally, the cross-sectoral benefits of investing in digital health, from supporting economic livelihood through timely digital payments to the health workforce to generating information to inform infrastructure investments, are rarely acknowledged, much less quantified.

Digital health must be an integral part of health priorities and benefit people in a way that is ethical, safe, reliable, equitable and sustainable... with accessibility, scalability, replicability, interoperability, and security in mind.

– World Health Organization: Draft Global Strategy on Digital Health

To unlock the full value of digital technologies, increased attention to and investments in the human, institutional, and policy and regulatory enabling ecosystems are required.

– USAID: Fighting Ebola With Informationⁱⁱⁱ

Many pilots are not followed by full-scale implementation due to a lack of sustainable financing, high risks for individual stakeholders and long time-to-market for commercial solutions.

– GSMA: Scaling Digital Health in Developing Markets^{iv}

As a result, the story of digital health contains failed pilots, unscalable solutions, privacy violations, and short-lived ideas, which have created skepticism and resistance to digital health interventions.

There are many barriers to the equitable use of digitally enabled health services. From access at the individual level, to resourcing at the national level, to fragmentation and misalignment at the global level, these barriers collectively hinder efforts to improve health in marginalized communities.

DIGITAL SQUARE HAS IDENTIFIED THREE BARRIERS WHERE IT CAN HAVE THE MOST INFLUENCE:

1. Inadequate alignment of actors pursuing the digital transformation of health, which leads to large inefficiencies in digital health investments and an unclear financial model of what is affordable and sustainable for countries, populations in low-resource settings, and the global development community.
2. Insufficient investment to scale digital health innovations beyond the pilot stage and to mature them into global goods, resulting in loss of trust from countries when pilots are unable to replicate small-scale successes at scale.
3. Country health leaders' demands for information, knowledge, and skills not being met and information asymmetries, leading to misalignment around national digital health strategies.

These three challenges often prevent the long-term success of strong digital health systems and the effective use of data for national and subnational decision-making. By addressing these challenges, Digital Square contributes to global efforts to strengthen health services to achieve health equity, universal health coverage, and the Sustainable Development Goals. Specifically, Digital Square partners with WHO, UNICEF, ITU and other interested UN agencies to address key barriers identified in the Global Action Plan “Data & Digital Health” Accelerator.

Digital Square's theory of change

Digital Square has developed a theory of change (Figure 1) to explain the core activities of the initiative and how these activities contribute to improved health systems and health outcomes. The theory of change illustrates the value proposition of digitally enhanced health care and Digital Square's contribution to that value proposition.

The theory of change is structured around three stages: alignment among digital health actors, improved information production and use, and improved health access, quality, and efficiency. This section explains each of these three stages and how they lead from one to the next.

Alignment among digital health actors can catalyze digital transformation.

The effective use of digitally enabled health services requires the *digital transformation* of an inclusive health system. In the context of health systems, digital transformation is intended to strengthen core functions and should be supported by and aligned with overall national health strategies, specific national digital health strategies, the Principles for Digital Development,^v and the Principles of Donor Alignment for Digital Health.^{vi}

Digital transformation requires **an aligned and coordinated health community**, including:

- **Investors**—such as multilateral and bilateral institutions, family foundations, private sector companies, and others with financial resources—who influence policy; develop, advocate for, and fund solutions; and pursue aligned, coordinated investments informed by global policymakers, communities, health workers, and/or decision-makers.
- **Global goods innovators and implementers** who support digital transformation with mature digital health global goods and services in compliance with global policymaker guidance and in response to needs articulated by communities, health workers, and decision-makers.
- **Decision-makers** who identify opportunities to use global goods and innovative digital technologies in national digital transformation initiatives and support digital transformation when they have the skills, ability, motivation, and information to lead digital transformation efforts and influence global decisions.
- **Communities and health workers** who support digital transformation when they have the skills, ability, motivation, and information to inform national and global decisions and provide digitally enabled health services.
- **Global and local policymakers** who develop evidence-driven standards and policies for digital health; own, diffuse, and adapt guidance; and enforce and influence curricula that support digitally enhanced health care.
- **Connectors** (like Digital Square) who are trusted brokers—health leaders can turn to them when they need high-quality, affordable, and contextually appropriate tools and approaches for digital transformation, as well as financing. Suppliers can turn to

connectors when they need greater visibility into what is needed from health leaders as well as financing to sustain their tools and approaches. Financers can turn to them when they need greater visibility into health needs and available tools and approaches to meet those needs.

Working together, these digital health actors collectively ensure that digital interventions are aligned and responsive to the needs of communities, health workers, and decision-makers; capture the technical talent of the global goods innovators and the knowledge of global policymakers; and are affordable for investors and decision-makers.

Digital transformation strengthens the health system by improving the data use cycle and empowering people to make evidence-informed decisions.

When designed with appropriate people, processes, and culture changes, digital health transformation can enable improved data production and exchange in the following ways:

- Improving the *timeliness, accuracy, and completeness* of data collection, management, and sharing through unique identifiers, data validation checks, automation, common data standards, and maintenance of health records.
- Increasing the *plurality of actors* who can participate in timely information exchange through the development, identification, and promotion of open standards.⁸
- Increasing the *plurality of data sources* that are linked through interoperable solutions through the adoption of open standards in the digital health infrastructure and point of service systems.
- Increasing the *directionality* of information exchange (e.g., community case reporting “up” to health facilities, reporting “down” to health workers for real-time decision support, or reporting “horizontally” between health workers at neighboring facilities).⁸
- Increasing the *nodes* of information exchange (e.g., one to many, many to one, or many to many) in a scalable way through centralized services with open standards and architectures.⁸
- Improving patient and provider *access* to data through electronic health records, dashboards, and decision support tools.

The improved flow of information allows the right information to be available and accessible to the right person at the right place and time, thereby enabling information use. Communities, health care providers, or health system managers can use information to improve the way care is monitored, accessed, or delivered. Digital solutions can improve data analysis, decision-making, and evidence-based action through:

- Supporting *decision-making* through clinical decision-support tools, provider alerts, or direct-to-patient communication.

- Improving the *timeliness, affordability, and ease* of data analysis through interoperable systems, cloud-based visual analytics, and near real-time data sharing.
- Incentivizing and increasing *accountability* for evidence-based decision-making through systems that support the clinical workflow and generate actionable data for patient monitoring and provider performance management.
- Increasing *trust* in the data through adherence to data standards and quality checks.

Evidence-informed decisions accelerate outcomes at all levels of the health system to drive toward high-quality health care and health impact.

When individuals, communities, and providers use the information captured in a digitally enhanced health care system, their behavior change can deliver accountable, affordable, accessible, and reliable health care. Below are some examples.

Giving individuals and communities more control over their health. Digital platforms democratize the insights that can be gained from health data in unprecedented ways, allowing individuals and communities to play a more prominent role in their health.

Two studies in Australia demonstrated improved awareness on how to prevent sexually transmitted infections and reduced risky behavior following SMS-based outreach.^{vii,viii} Other research has revealed important opportunities to increase the agency of individuals and communities, from preventing infectious diseases to increasing healthy behaviors, in Vietnam,^{ix} South Africa and Uganda,^x Kenya,^{xi,xii} Cambodia,^{xiii} Peru,^{xiv} the United Kingdom,^{xv,xvi} the United States,^{xvii,xviii} and Ecuador.^{xix} Systematic reviews have shown the positive benefits of mHealth and SMS interventions on utilization of maternal and neonatal care in low- and middle-income countries.^{xx,xxi}

Improving quality and increasing efficiency of service delivery. In low-resource settings with health worker shortages and financing challenges, digital platforms improve health worker productivity, support efficient resource allocation, and standardize aspects of service delivery to ensure quality.

In Tanzania, digital, de-duplicated data collection and automated reporting save health workers ten hours per month on average, which is time that they can then spend on clinical care.^{xxii} Gains in service delivery efficiency and quality have also occurred in India,^{xxiii,xxiv,xxv,xxvi} Bangladesh and Mali,^{xxvii} the United States,^{xxviii} the Dominican Republic,^{xxix} China,^{xxx} Malawi,^{xxxi} Germany,^{xxxii} and Ghana.^{xxxiii} Some country governments have saved millions or even billions of dollars by implementing digital identity systems that increase efficiency and eliminate “ghost” beneficiaries or employees.^{xxxiv}

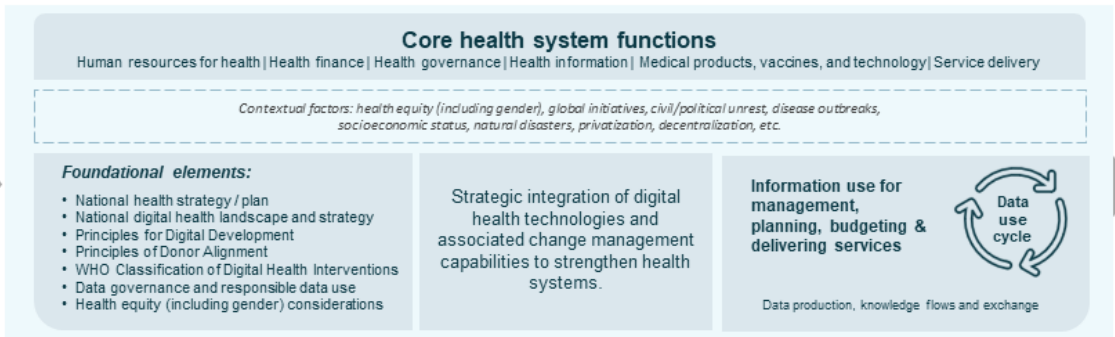
These drivers of high-quality health care are interrelated and mutually reinforcing. For example, digital tools can reduce health care worker time and associated cost spent on data entry tasks, and that time can be repurposed to provide reliable care. As the quality of care improves, citizens’ trust in the health system may improve, which can increase demand. Ultimately, as more people in low-resource countries access health care, and the health care that is provided is of high quality, Digital Square expects to see improvements in individual- and population-level health outcomes.

Alignment among digital health actors can catalyze digital transformation.



Alignment on approach to digital transformation

Digital transformation can strengthen the health system by improving the data use cycle and empowering target users...



Empowerment of target users

...which can accelerate outcomes at all levels to drive toward high-quality health care and health impact.



High-quality health care that is:

Accountable | Affordable
 Accessible | Reliable

HEALTH IMPACT
 Achievement of UHC and SDG Targets

Digital Square is a digital health marketplace—or “square”—where supply and demand come together to accelerate health equity through the development, adoption, scale, and delivery of digital health innovations and the advancement of globally recognized performance, implementation, and policy standards for use in low-resource settings.

Digital Square’s role in the digital health sector

Vision

A world where the appropriate use of digitally enabled health services closes the health equity gap

Mission

Connect health leaders with the resources necessary for digital transformation

Digital Square plays a unique role: creating a platform where *all* voices in the digital health sector can be heard and where investment, innovation, and impact can be better aligned. The initiative helps investors, decision-makers, and innovators learn about high-quality, trustworthy digital health global goods that are appropriate for low-resource settings. Decision-makers can access opportunities to grow their digital skills and strengthen their digital procurement processes through professional networks, workshops, and certification programs. Innovators can design solutions using open standards and clearly documented business and technical requirements specific to low-resource settings, ensuring the adoption and use of globally recognized standards for policy data privacy and security, and secure the financing needed to meet those requirements. Finally, Digital Square’s investors achieve a double bottom line on their investment—they give communities faster access to digitally enhanced health care and open new markets for existing software solutions.

The following sections explore Digital Square’s three primary workstreams—Alignment & Co-Investment, Global Goods, and Regional & Country Systems—including what success looks like for each; activities Digital Square does; activities Digital Square does not carry out directly; priorities of the initiative for 2021; and learning questions that will continue to shape these priorities.

Alignment & Co-Investment

DIGITAL SQUARE HELPS TO IDENTIFY PROMISING INVESTMENT OPPORTUNITIES AND PROVIDES OPERATIONAL SUPPORT TO STREAMLINE PROCUREMENT.

Successful alignment includes:

- Partners working toward a shared digital health vision and a shared approach to developing technical scopes of work.

- Investors using coordination and pooling mechanisms to defragment investments intended to scale digital health interventions.
- Investors supporting national digital health strategies, as stated in the [Principles of Donor Alignment for Digital Health](#).

To achieve this alignment, Digital Square:

- **Generates a common evidence base.** The initiative leverages our more than 140 active stakeholder relationships to identify information asymmetries that prevent alignment or erode trust. Digital Square partners with our donors, the Digital Square Board, and PATH's Executive Team to connect to new people and organizations that are interested in this sector and explore with them what evidence would help them decide whether to invest in this space. Digital Square advocates for investment to close gaps and diffuse information across the ecosystem to strengthen trust and deepen alignment.
- **Aligns funding.** Digital Square tracks and aligns our work with global policies, guidance, and other documents, and advocates for our investors and the broader community to do the same. Digital Square works with non-traditional partners, including the private sector, to increase the available digital technologies and approaches in low-resource contexts. Digital Square engages in targeted advocacy efforts to encourage new investors to support digital health.
- **Co-creates investments.** Digital Square has invested in a strong technical team and the infrastructure within our initiative to facilitate robust procurement processes that yield high-quality investment opportunities. In particular, the [Open Application Process](#) has incorporated significant transparency, technical expert review, and agility in both the application and implementation phases. The initiative balances this approach with the rules, regulations, and requirements of a variety of investors, using more than 42 years of operational experience and infrastructure from our host organization, PATH. Digital Square offers multiple ways of coordinating investments to make coordination easier for investors—spanning from pooled procurements to discrete investments against a common work plan.
- **Governs with an ethos of inclusion and transparency.** Digital Square's governing processes are transparent. Its governing bodies are representative of the ecosystem's diverse stakeholders. And, every year, it progresses toward decision transparency. Digital Square serves as the Secretariat for multi-stakeholder coalitions, supporting a neutral, trusted marketplace with no vested interest in a specific aspect of the market.
- **Provide technical assistance and advocacy support to community-supported standards and policies.** Digital Square works with normative bodies, such as the World Health Organization, that create policies, principles, guidance, and technical and data standards. We provide technical assistance to support the development and adoption of these important resources, from technical reviews to providing templates on standard and internationally recognized policies for Digital Health, to supporting costed roadmaps to enable adoption. For resources that have community support, Digital Square advocates for aligning and adopting these resources across actors in the ecosystem.

Understanding what Digital Square does not do is just as important as understanding what Digital Square does. Digital Square does not:

- **Ratify policies, guidance, or principles.** Digital Square may support normative agencies, serve as the secretariat, participate in multi-stakeholder coalitions, or develop content, but *Digital Square is not a normative agency and we do not ratify policies, guidance or principles.*
- **Conduct issue- or organization-specific fundraising.** Digital Square does not exclusively or inequitably fundraise for a specific partner or topic, as that would compromise the initiative’s neutrality, which is one of its core tenets. Digital Square *will* work with our partners to identify the closest “match” between investor strategies and funding needs within the Digital Square portfolio, as well as advocate for investments that have been approved by the Digital Square Board.
- **Engage in misaligned work.** Digital Square does not engage in work that is misaligned with global principles, strategies, and approaches, such as the Principles for Digital Development and the Principles of Donor Alignment for Digital Health, or with national strategies and priorities.

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Digital Square priorities

Digital Square has identified measurements that indicate progress toward increased alignment and co-investment in the digital health sector, as outlined below.

Alignment around high-priority themes

High-priority themes for improved alignment and coordination in the digital health community via evidence generation and dissemination.

<p>2018 (achieved)</p> <ul style="list-style-type: none"> Principles for Digital Development. Principles of Donor Alignment for Digital Health. 	<p>2019–2020 (achieved)</p> <ul style="list-style-type: none"> SDG3 Global Action Plan—digital and data accelerator. UN report on digital cooperation. Value of Co-Financing. Value of global goods, interoperability, standardized data models in the COVID-19 response. Digital Square Strategy. Industry-level market analysis for digital health. 	<p>2021 (achieved/in progress)</p> <ul style="list-style-type: none"> Coordination with WHO Clearinghouse and DPGA on global good "vetting." Expansion of market analytics: Return on investment and total cost of ownership. Technical roadmap for global goods investments. Success stories/impact narratives. Digital investments in COVID-19 response. 	<p>2022 (target)</p> <ul style="list-style-type: none"> Alignment of global goods and digital public goods language. Total cost of ownership tool to support country digital health planning. Expanded cost outcome research evidence to support go/no-go investment decisions. Communications to connect our work more explicitly with insights and impact. Digital Square theory of change more directly linked to our learning agenda. Unique Digital Square mechanism for co-investment elevated among donors focusing on global goods, regional/country support, and/or capacity building activities (i.e., Digital Health Applied Leadership Program, or DHALP) for countries and regions. <p>2022 (stretch target)</p> <ul style="list-style-type: none"> More geographically dispersed investors targeted and engaged to bring new perspectives and align initiatives funded through Digital Square. Digital Square's role in digital financial services for health expanded, building off of existing studies and implementations in the ecosystem.
<p>Long-term target</p> <ul style="list-style-type: none"> Alignment on how to create a self-sustaining market for digital health products in low-resource settings. 			

Outgoing investment disbursements for Alignment and Co-Investment in US dollars

Funds disbursed to partners for *Alignment & Co-Investment* since 2016

Since 2016 (achieved)

\$1,341,289 disbursed out of
\$1,571,643 committed

Increased investment

Amount of direct investment into digital health for low-resource countries that align at least two investors (measured within Digital Square mechanism)

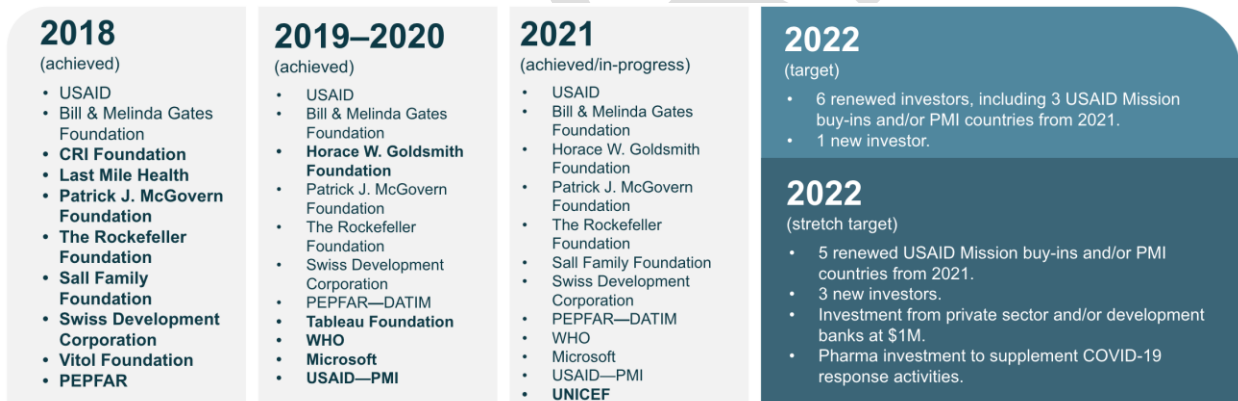


Long-term targets *(pending further learning; see learning questions)*

- \$2B per year for global, regional, and country initiatives for digital transformation of health systems.
- At least \$200M per year invested through Digital Square to support specific aspects of digital transformation where the mechanism adds value.

Active investors

Active investors in Digital Square (new investors in bold)

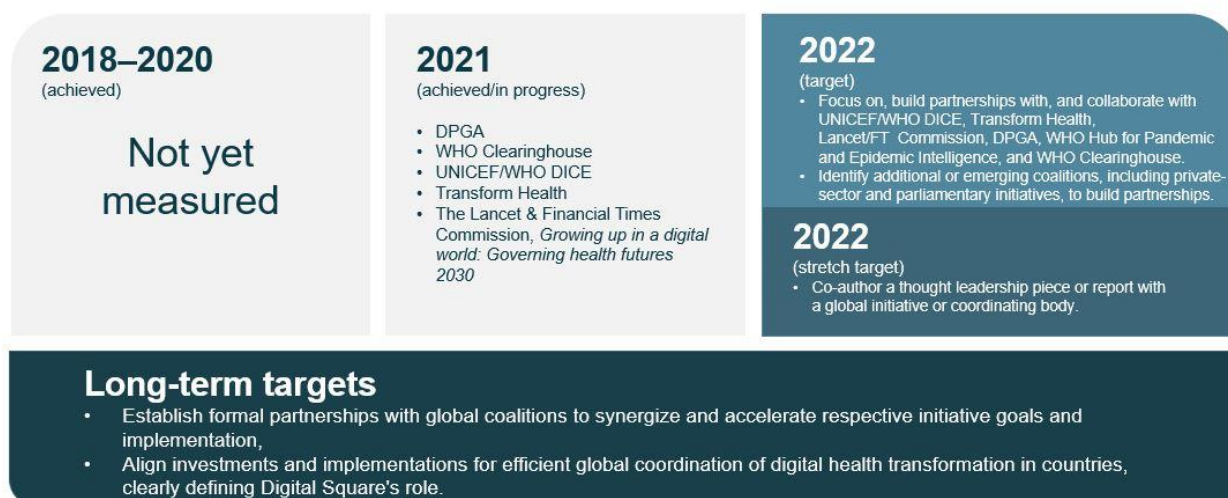


Long-term targets

- 75% of signatories (~25 donors) of the Principles of Donor Alignment for Digital Health invest in Digital Square, *assuming Digital Square continues to add value to specific aspects (but not all aspects) of digital transformation efforts.*
- 100% of Digital Square investors actively coordinate together on digital transformation investments and continue routing funding through a shared mechanism.

Alignment with global initiatives/coordinating bodies

Global initiatives/coordinating bodies that Digital Square engages with to promote coordination and alignment



2022 learning questions

Digital Square has identified outstanding questions that may shift our priorities or strategy for *alignment and co-investment*.

1. How can we measure and communicate the impact/added value of digital health (particularly to investor skeptics, public health audiences, etc.)?
2. How can we effectively reach both a wider and more targeted audience through highlighting the expertise and diversity of our team while conveying technical leadership, insights, and impact?
3. What successfully incents coordination and alignment? How does engagement with global initiatives support coordination and elevate the Digital Square brand?
4. How can we "demystify the market" with our market analytics work? And what is the value of the market analytics work to investors, global goods innovators, and other stakeholders?
5. What about Digital Square makes us most/least attractive to investors and other partners?
6. Where does financing to support a healthy market come from? Does the private sector contribute at all?

Completed 2021 learning question

Do pandemics play a role in accelerating coordination and alignment?

Digital Square's work with digital health tools to support the COVID-19 response found that pandemics did spur coordination and alignment across stakeholders at the global level. For example, through our work to landscape digital health tools for COVID-19 brought together 11 global partners to coordinate a way of classifying digital health tools for pandemics, creating a common language around pandemic related use cases. The Digital Center of Excellence (DICE) provides another valuable example of the global community coalescing to support the pandemic response. Though the progress has not kept up with the pace of the pandemic, global coordination seems to have occurred more quickly than with other health areas.

In-progress 2021 learning question

How can we "demystify the market" with our market analytics work? And what is the value of the market analytics work to investors, global goods innovators, and other stakeholders?

Our market analytics work revealed several market inefficiencies that impede progress towards digital transformation.

- First, a lack of authoritative, transparent market information on digital health costs leads to information asymmetries across stakeholders, ultimately reducing trust.
- Second, a lack of equitable access to learning opportunities leads to talent gaps within governments and local organizations, resulting in a long-term inability to scale and maintain systems.
- Third, financing is erratic and unreliable for global proprietary solution providers to design to solutions for low-digital-health maturity markets, and for global goods to expand their market penetration and scale. Product requirements vary by countries digital health maturity levels.
- Finally, global health financing is structured to reward disease siloed, time-bound investments, which frequently fail to capture the efficiencies of cross-cutting digital platforms and can alienate the end users trying to reconcile many siloed deployments.

To address some of these challenges, Digital Square will build on our existing total cost of ownership work to generate practical tools for countries. This work will focus on drawing attention to hidden costs such as maintenance and scaling which are often not budgeted for. In addition, we will quantify the health impact for select digital health tools to provide evidence to financiers on the value of digital transformation. Lastly, we will work on providing additional market intelligence to global good developers to ensure that product requirements are understood and to discuss business models that lead to sustainable digital health solutions.

Global Goods

DIGITAL SQUARE PROMOTES THE DEVELOPMENT, ADOPTION, AND REUSE OF GLOBAL GOODS, AND HELPS INCREASE THEIR AVAILABILITY, ADAPTABILITY, AND MATURITY.

A global good is a digital health tool that is adaptable to different countries and contexts. Digital Square categorizes global goods into three types: [software, services, and content](#). Digital Square supports investments and creates a market for these global goods.

In a thriving global goods market:

- Digital health global goods are available at a high level of maturity to low-resource countries, providing an affordable foundation that in-country entrepreneurs and/or governments can adapt and use.
- More country governments are adopting localized versions of the global goods and more local entrepreneurs are using global goods to build thriving businesses.

To strengthen this marketplace, Digital Square:

- **Administers a transparent, inclusive digital health procurement process by allocating global goods investments transparently and with community input.** Digital Square makes investments into global goods through three mechanisms: (i) a request for application process, (ii) an open application process (OAP), and (iii) an open request for application process utilizing the OAP platform. The [Open Application Process](#) is an innovative procurement solution that fosters collaboration and agility. Digital Square supports the pairing of complementary concepts and identifies synergies between global goods. Proposals are evaluated by a peer review committee with members whose names are public. This approach allows the global digital health community an opportunity to understand and comment on global goods investments.
- **Provides rigorous yet pragmatic technical oversight on investments.** Digital Square's global goods awards are overseen by a team whose combined expertise includes more than 50 years in the global digital health sector, more than 20 years of hands-on development of global goods housed at four different organizations, and implementation experience in more than 30 countries. Since inception, Digital Square has made 90 subawards to support the maturation of global goods, improved the interoperability of more than 15 products, and supported the advancement of more than 16 product's maturity, as indicated by the [global goods maturity model](#). The team has active participation and leadership in communities such as OpenHIE and HL7. The initiative prioritizes the recruitment of a diverse team, so Digital Square's technical team is housed across eight different countries, is gender-balanced, includes professionals aged from their mid-20s to their mid-50s, and comprises functional backgrounds in public health, informatics, computer science engineering, mathematics, and technical program management.
- **Serves as a community manager by connecting the global goods community to each other and to country efforts.** Digital Square has an active global goods

community that participates in monthly webinars, contributes to quarterly newsletters, co-creates web articles and other publications, and participates in our annual Global Good Innovators meeting in December. Digital Square's community-building efforts are overseen by a community engagement manager who ensures that country needs shape global goods conversations, and that global goods products and services are visible and available to country stakeholders who want to use them. Digital Square facilitates connection and learning among partners, in turn improving interoperability of software and support to global goods communities. Global goods are currently in use in more than 90 countries, with 71 countries using two or more global goods.

- **Advises on standards development and technical ecosystem design.** Norms and standards provide global goods with the guidance needed to strengthen their maturity and improve harmonization around interoperability, adaptability, and scalability to better support implementations of these technologies. Digital Square has supported WHO in adapting health guidelines into computable form, chaired the OpenHIE COVID-19 task force, and advocated for widespread adoption of the HL7 FHIR standard in partnership with WHO and USAID. Digital Square further advocates for investment through its theory of change, which articulates a progression from digital health interventions to health impact, as well as its theory of adoptability, which articulates a set of “minimum requirements” for at-scale adoptability. These materials help bring visibility to *why* certain investments are important to achieving scale and, ultimately, impact.
- **Coordinates with stakeholders on digital public goods alignment.** There are ongoing efforts to coordinate approval and vetting of digital public goods through the Digital Public Goods Alliance (DPGA) and use of global goods for specific health vertical use cases through the WHO Clearinghouse. Digital Square is closely coordinating with the DPGA (UNICEF serves as the Secretariat) and WHO to streamline approval for digital public goods for health. These efforts will enable countries and investors to increase confidence in the specific digital tools to be prioritized for scale and adaptation in countries. Through this engagement, Digital Square will refresh its prioritization framework and OAP to align more closely with tools formally vetted through the DPGA.

Understanding what Digital Square does not do is just as important as understanding what Digital Square does. Digital Square does not:

- **Resource global goods that focus outside the health sector.** Unless part of a well-defined business model that benefits low-resource health systems, Digital Square generally refers cross-sectoral investments to the [Digital Impact Alliance](#) and other partners, as appropriate.
- **Resource global goods that focus on higher-resource settings.** For global goods that target higher-resource settings, Digital Square does not believe it is needed as a financial intermediary; in these contexts, the initiative encourages market-based approaches to scaling global goods. Digital Square may choose to make targeted investments in existing global goods that have a strong community in cases where they meet a high-priority need in a low-resource context.

Digital Square priorities

In late 2019, Digital Square identified metrics that indicate progress toward increased development, adoption, and reuse of digital health global goods, as outlined below.

Increased breadth of global good utility

Percentage of WHO intervention categories with at least one global good



Increased country adoption

Number of countries using at least two global goods by country market maturity level



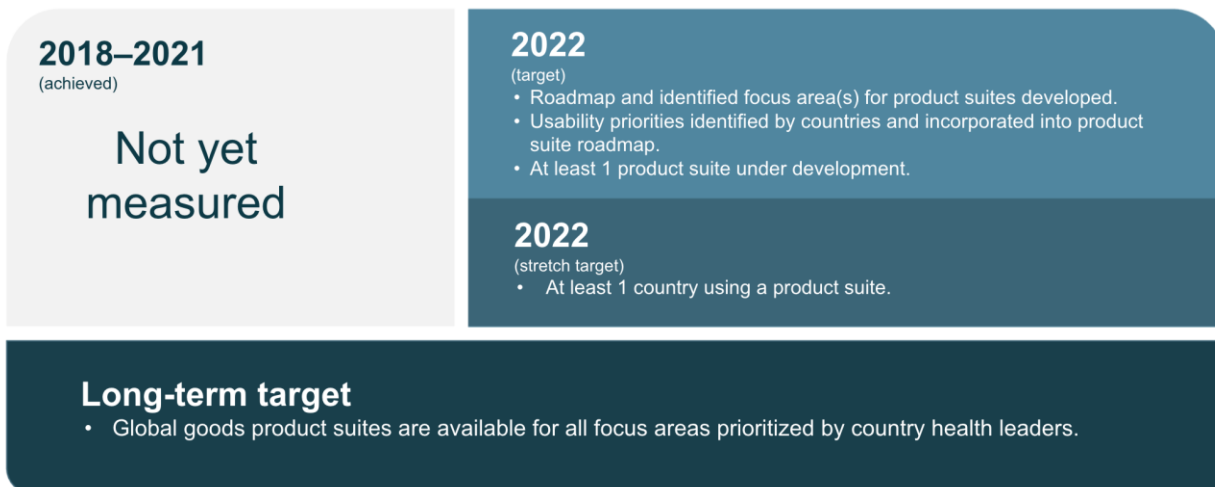
Increased maturity of global goods

Percentage of Digital Square-invested global goods that are shelf ready for country adoption



Increased utility of global goods

Number of suites of global goods developed for use*



**This is a new KPI in 2022. Going forward, Digital Square is focusing on packaging interoperable global goods together into functional product suites to increase the utility of global goods. Product suites will be designed to provide secure, readily deployable, functional solutions that can add value for country leaders, accelerate global goods adoption, and allow countries to rapidly adapt digital tools to meet their needs.*

Outgoing investment disbursements for Global Goods in USD

Funds disbursed to partners for *Global Goods* since 2016

Since 2016 (*achieved*)

\$21,942,192 disbursed out of
\$26,436,669 committed

2022 learning questions

Digital Square has identified outstanding questions that may shift our priorities or strategy for *global goods*.

1. What factors increase the adoption of global goods? Including:
 - a. Does shelf readiness increase the adoption of global goods?
 - b. Does integrating DAK/guideline-based care into global goods support adoption?
 - c. How do suites of global goods accelerate adoption?
2. How do global goods and longer-term digital systems investments strengthen the health system response to COVID-19?
3. How does Digital Square successfully and appropriately signal promising private-sector products?
4. What cornerstones of health information system infrastructure require investment for country adoption (e.g., registries)?
5. Are we seeing more global goods adopt health information exchange and interoperability standards? Why and how?
6. How do global goods and global goods ecosystem developments strengthen primary health care?

Completed 2021 learning questions

How do pandemics affect the adoption and use of global goods?

Digital Square observed that countries were faced with immense pressure to provide solutions to better facilitate management and planning around COVID-19 response. Countries tended to either scale existing solutions or adopt/adapt local systems, or systems that can be supported locally and are closely aligned to country needs. Countries recognized the value of scaling well proven local implementations as well as looking for local capacities to support these needs. This tied back to global goods in that those tools that existed in countries with active implementations and that were closely aligned to country needs, had the opportunity to rapidly adapt and or scale to meet the ask. In other situations where local teams were looking for a solution, the opportunity to turn to existing well known health tools provided a strong starting point.

A key takeaway is that active implementations are looked to first to help support interventions and, as such, a well-designed solution that is adaptable within the broader health system architecture is a valuable and important advantage. In addition, the availability of technology that is aligned to country needs, or rapidly adaptable to meet the needs, is a key aspect to adoption within the space of a pandemic—as is pairing this with trusted local innovators and implementers.

What are the cornerstones of health information system infrastructure that require investment for country adoption (e.g., registries)?

As the global trend of patient centric care continues to grow, the advantages of shared health data in coordination of care and treatment have become more evident. The lack thereof has also been highlighted as health systems have needed to support large scale care and treatment programs as well as vaccination efforts during the COVID-19 pandemic. Care coordination challenges run beyond just the technology; however, when reviewing the technology gaps, it is evident that there are key cornerstone technologies, including global goods, that are not readily available for LMIC settings. In following the OpenHIE architecture as the blueprint and guide, one of the key cornerstones required is a client registry. Commercial tools for this exist and have been adopted in some countries, but a focused open tool that meets the emerging exchange standards was lacking. To meet this need, Digital Square has been excited to facilitate funding to mitigate this gap through supporting the development and advancement of the SanteMPI technology.

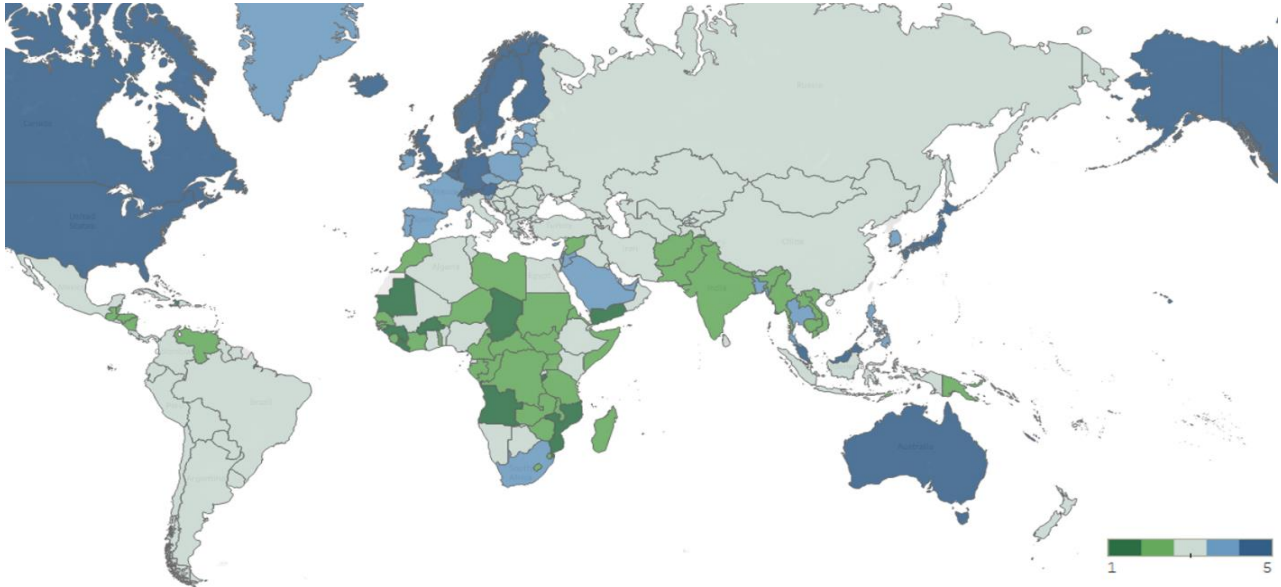


Figure 2: Market segmentation map

This map represents [how countries have been segmented and classified based on maturity](#). 1 represents the least mature markets, cascading to 5, which represents the most mature markets.

Source: Data contributed by 25 countries to the Global Digital Health Index. For the remaining 127 countries, Digital Square [developed an extension to the Global Digital Health Index](#) that infers digital health maturity from 17 World Economic Forum Networked Readiness Indicators.

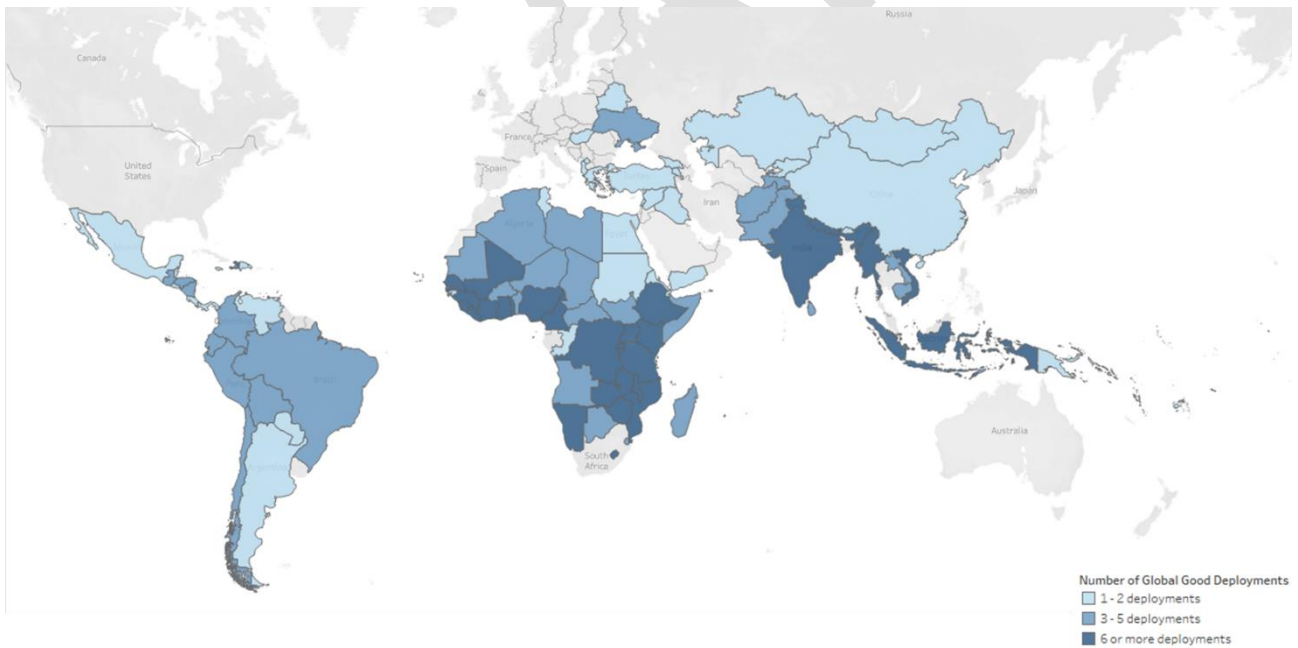
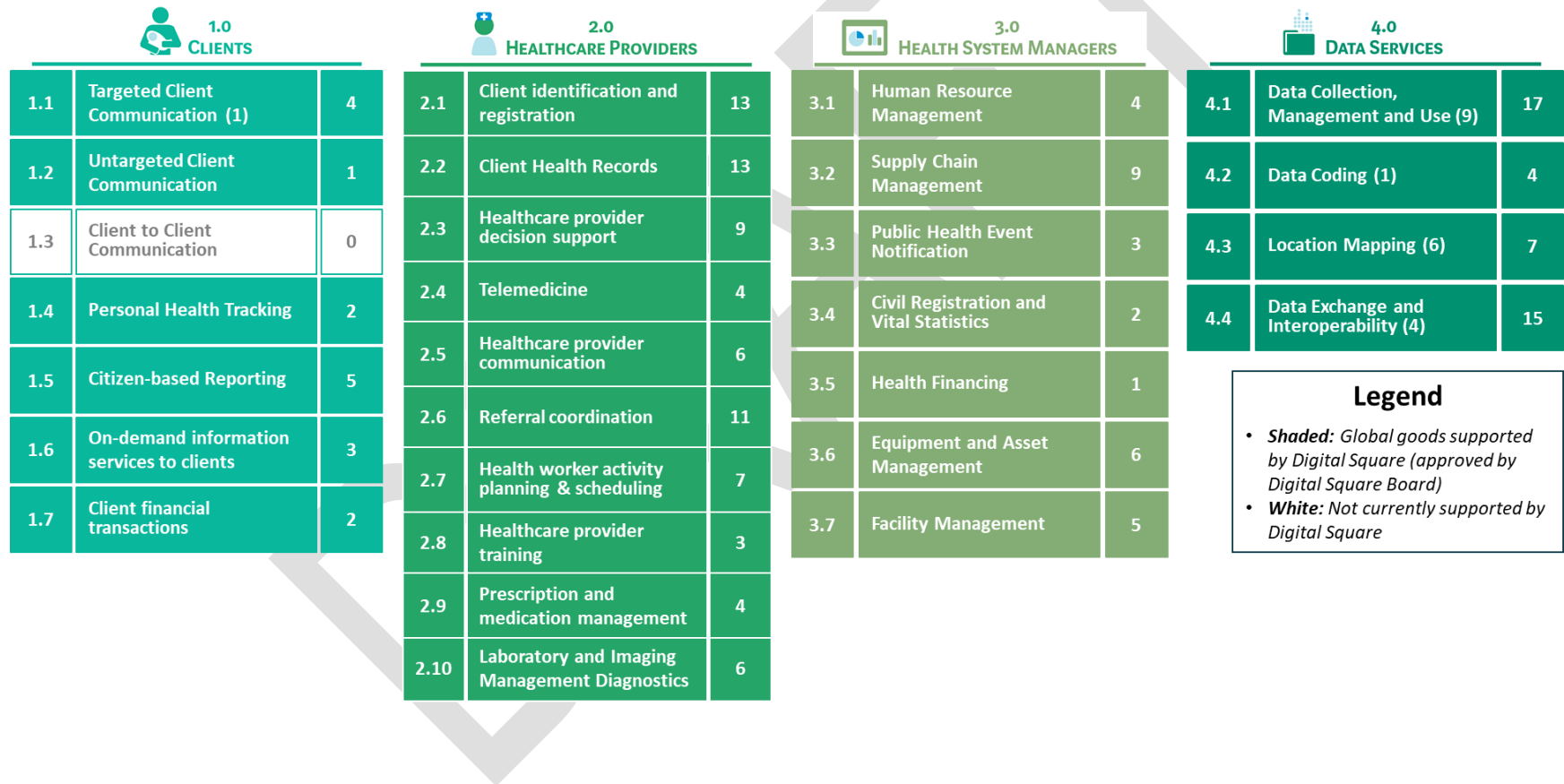


Figure 3: Global good deployment in bottom three market segments

Source: Digital Health Atlas and self-reporting from ten Digital Square global goods. A more thorough, complete analysis will be initiated following community input on the strategy and its metrics. Digital Square is working with the Digital Health Atlas to ensure that data are captured including specific interoperability capabilities between systems that are deployed in a country.

Figure 4: Global goods by WHO digital intervention category

Source: Self-reporting of Digital Square global goods via the open application process. A more thorough, complete analysis will be initiated following community input on the strategy and its metrics.



Regional & Country Systems

DIGITAL SQUARE HELPS ELEVATE COUNTRY PRIORITIES AND STRENGTHEN REGIONAL AND NATIONAL CAPACITY.

National and subnational digital health systems rely on partnerships and capacity strengthening that allow:

- More countries to have coordinated resources to support digital health transformation.
- Country leaders to have easier access to learning, sharing, and capacity strengthening opportunities.

To meet the demand for partnership from regional and country systems, Digital Square:

- **Provides regional and country digital health leaders with technical assistance to successfully lead and execute digital health transformation initiatives to strengthen the health system through policies, standards, and governance.** While there are multiple reference guides on the use and selection of appropriate tools for country digital health needs ([Global Goods Guide Book](#), the [Digital Health Implementation Investment Guide](#), the [Digital Health Atlas](#), etc.), the wealth of information in these resources and selection of the appropriate tool can be daunting for both country leaders and donors. Knowing this, Digital Square supports country leaders with end-to-end digital health implementation strategy development. This includes providing advice on everything from a landscaping of current digital health tools that are viable for country adoption; supporting the improvement, design, or uptake of a digital health policy and digital health costed road map; to contextualizing a country-specific “ideal state” framework in which the system flows through an interoperable enterprise architecture with decision support mechanisms built in. An area of particular expertise for Digital Square is providing technical assistance to develop enterprise architecture (“blueprint”) design processes to ensure that selected tools align with the overall design of the digital health system and support the national digital health strategy.
- **Supports the maturation of local markets and health systems to understand, identify, and sustain global goods for localized adoption and use with operational support and technical advisory services.** The digital health marketplace is filled with knowledge asymmetries, making it challenging for decision-makers to effectively evaluate existing digital health tools and systems. This can lead to a mismatch between needs and tools deployed to meet those needs, making it more difficult to deploy tools at scale. Digital Square supports decision-makers in evaluating digital health tools and adapting them for their context. Digital Square supports country leaders as they undertake requirements gathering processes, document referral flows and decision-making access points at each level of the health care management system, and evaluate those requirements and business processes to clearly define needs and match tools appropriately.
- **Mobilizes local software development organizations to partner with existing global goods developers for software deployment that suits the local context.** Current global goods implementers tend to be centered in the U.S. and Europe, with few

implementers based locally. To allow for more nimble adaptation and the tailored use of global goods, Digital Square facilitates partnerships between existing global goods implementers and in-country implementers—expanding the network of global goods providers.

- **Provides training and guidance to equip health leaders with the necessary skills and knowledge to drive digital transformation of health systems.** Strengthening digital health capacity across all levels of the health workforce is key to the effective implementation, scale-up, and long-term sustainability of digital health systems. Without this strong capacity, the impact of and return on investment in digital health systems will be limited. Digital Square provides educational, peer networking, and digital health expertise to support health leaders and decision-making governing bodies in their journey to establish and lead regional and country efforts that leverage the power and promise of digital health. Digital Square will provide leadership development and capacity strengthening programs that are specialized for digital health leaders at every stage of the global health human resource continuum through programs like the Digital Health Applied Leadership Program. Digital Square will also support organizational development through conducting assessments, developing additional learning frameworks, and providing training plans to support capacity development at all levels—from community health workers to national health leaders and policy makers.
- **Coordinates resources and expertise from multiple investors to support country and regional digital health initiatives.** The Digital Square operations team has developed a series of processes and protocols to enable the coordination of more than five donor investments into a single country- or regional-level initiative. Coordination includes in-depth knowledge of requirements for each donor, alignment of requirements to minimize administrative costs, and aggregation of funds into a single award so that Digital Square does not burden country and regional initiatives with unnecessary administration. The Digital Square technical team provides oversight of these initiatives. This team has a diverse set of experiences in providing capacity strengthening and technical support to country governments that helps them partner effectively with country and regional initiatives.

Understanding what Digital Square does not do is just as important as understanding what Digital Square does. Digital Square does not:

- **Provide incubation services to start-ups.** Many organizations provide incubation services; there are over 200 innovation and incubation hubs in Nairobi alone. Digital Square is happy to refer interested groups to existing incubation and innovation hubs while it focuses efforts on supporting the scale of proven interventions.
- **Develop and deploy global goods or other technology products.** Digital Square is a connector. We do not do software development ourselves, but rather work with users and software developers to ensure that needs are met with appropriate global goods product.

Digital Square priorities

Digital Square has identified metrics that indicate progress toward improved regional and country capacity for digital transformation, as outlined below.

Support for regional and country initiatives

Initiatives and country governments that receive direct support from Digital Square

<p>2018 (achieved)</p> <ul style="list-style-type: none"> Digital REACH African Alliance of Digital Health Networks Government of South Africa Government of Bangladesh Government of Angola 	<p>2019 (achieved)</p> <ul style="list-style-type: none"> Digital REACH African Alliance of Digital Health Networks AeHIN Government of South Africa Government of Liberia 	<p>2020 (achieved)</p> <ul style="list-style-type: none"> AeHIN 28 country buy-ins Launch of DHALP Exits: <ul style="list-style-type: none"> Digital REACH African Alliance of Digital Health Networks 	<p>2021 (achieved/in progress)</p> <ul style="list-style-type: none"> 30 active country buy-ins (including a new award in South Africa) RECAINSA DHALP AeHIN 	<p>2022 (target)</p> <ul style="list-style-type: none"> Renewed investments in up to 5 countries. New investments in up to 10 additional countries. Current investments in networks sustained.
				<p>2022 (stretch target)</p> <ul style="list-style-type: none"> New or renewed investments in up to 20 countries. Increased investments in networks to make them cost neutral for Digital Square to support.

Long-term targets

- A thriving digital and data leadership program for health leaders and technocrats that is driven by country governance agendas.
- A network of local entrepreneurs using global goods to build thriving local businesses.

Strengthened country digital health performance

Percentage of Digital Square partner countries that show progress toward improved digital health performance

<p>2018–2021</p> <p>Not yet measured</p>	<p>2022 (target)</p> <ul style="list-style-type: none"> 75% of Digital Square partner countries show progress.
	<p>2022 (stretch target)</p> <ul style="list-style-type: none"> 100% of Digital Square partner countries show progress.

Long-term target

- Country health leaders are motivated to document progress against global digital health standards and actively seeking to strengthen their country's digital health performance.

Strengthened country digital health processes

Percentage of Digital Square partner countries where Digital Square supports the process to advance country-led digital health governance*

2018–2021

Not yet measured

2022

(target)

- 75% of Digital Square partner countries have processes supported.

2022

(stretch target)

- 100% of Digital Square partner countries have processes supported.

Long-term target

- Country health leaders are supported (with resources and technically) to own and lead digital health governance processes, drawing on Digital Square technical support as needed.

**These are new KPIs for 2022 to measure strengthened country digital health processes and performance, aligned with our regional and country systems strategy. These KPIs measure how country digital health agendas are advancing and track Digital Square's contribution to country digital health processes.*

Outgoing investment disbursements for Regional and Country Systems in USD

Funds disbursed to partners for *Regional & Country Systems* since 2016

Since 2016 (*achieved*)

\$8,903,533 disbursed out of
\$11,400,578 committed

2022 learning questions

Digital Square has identified questions that may shift our priorities or strategy for *regional and country systems*.

1. As we continue to get country interest, how do we best frame our partnerships with countries to stay true to the vision of Digital Square?
2. How does/should country and donor interest shape our country involvement strategies?
3. How can we strengthen capacity at scale to further country digital health agendas? How do capacity strengthening programs that focus on training individuals and/or teams of individuals influence country-level change?

Diversity, equity, and inclusion

Digital Square has identified opportunities to right-size our interventions and refocus our implementation efforts with attention to diversity, equity, and inclusion (DEI)—both in our external facing work and in our internal processes, through the following interventions:

- **Diversifying governance structures to redistribute decision-making power.** In our external implementation efforts, we are actively promoting country government leaders to represent PATH in our global communications efforts to highlight the work and refocus discussions at the global level to include local leaders. In our internal governance practices, our board and executive team is now gender balanced and includes individuals who bring diverse perspectives from lived experience outside of the North American/Europe.
- **Creating more inclusive processes.** Externally, our OAP now includes an open RFA process which allows for donors to benefit from the OAP while also allowing for their own grants and contracts regulations and standards to be adhered to in the selection process. This allows access to non-traditional grantees and for organizations that are newer to more strident procurement processes to “watch” the process as commenters and reviewers from the community. Internally, we have worked to bring further clarity to human resource challenges, diversify our hiring pools, and allowing for more flexible work environments.

2022 learning question

Digital Square has identified a cross-cutting learning question that applies across our strategies for alignment and co-investment, global goods, and regional and country systems.

What programmatic and operational changes can meaningfully increase diversity, equity, and inclusion in our work?

Conclusion

True digital health transformation at a global level requires a paradigm shift. In all aspects of its current work, Digital Square is committed to building momentum for this shift. The initiative creates and shares evidence, works with digital health leaders to enhance their skills and knowledge for digital transformation, and establishes frameworks for interoperability and coordination.

But Digital Square cannot make a paradigm shift without the partnership of transformative thinkers and doers. Transformative thinkers and doers will help the digital health sector go beyond existing market structures to change the way digital health technologies and innovations are financed and scaled. They will help better match the pace of digital health funding and implementation to the pace of technological evolution. They will inspire renewed creativity to improve the accessibility, quality, and effectiveness of digitally enabled health services—catalyzing a large-scale transformation of how digital health interventions support health systems in low- and middle-income countries and reach billions of people to help close the health equity gap.

Glossary

Digital transformation refers to the strategic integration of digital technologies and associated change management capabilities to strengthen systems, increase their efficiency, and improve the quality of and access to services.

Global good. A digital health tool that is adaptable to different countries and contexts. There are three types of global goods:

- **Software:** A tool that is frequently free and open source; is used to manage, analyze, or transmit health-related data; and has proven utility in several settings.
- **Services:** A software tool that is used to manage, transmit, or analyze health-related data; can be freely accessed as a software service; and adheres to open data principles.
- **Content:** A resource, toolkit, or data standard that is available under an open license and that is used to improve or analyze health data management processes.

Open Application Process refers to the competitive procurement process run by Digital Square where bids are submitted in a fair and transparent process for a peer review committee to evaluate and select successful applicants.

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