



Technology, Innovation
& Global Health



Wilton Park
USA



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Report

Innovative financing for accelerating and strengthening the scale up of digital health systems

Tuesday 5 June 2018 | WP1629

Held at the International Student House, Washington DC

In association with:





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This event was the second in the Wilton Park series, ‘Technology, Innovation and Global Health’, which focuses on the opportunities of innovation and technology to improve the health of populations across the globe. It was held in partnership with PATH.

There is widespread acknowledgement that a robust and integrated digital health infrastructure is essential for countries to achieve the health Sustainable Development Goals (SDGs) and Universal Health Coverage (UHC) by 2030.

A strong digital health infrastructure ensures that health workers, decision-makers, and other key stakeholders can access the right health information in a timely manner to target services toward the most vulnerable and underserved populations. This is critical not only for the day to day delivery of health services, but also essential for countries responding to global health shocks and pandemics. It is widely recognized however, that most current approaches to investment in digital health systems are fragmented, siloed, and uncoordinated. Simply put, business as usual is not working. Indeed, the National Academy of Sciences, Engineering, and Medicine noted in its 2017 report that:

“The tremendous value and corresponding excitement that digital health provides has come at a cost, as the proliferation of interest and the variety of stakeholders involved has created a fragmented approach to the use of digital tools for health in many countries.” (National Academies of Sciences, Engineering and Medicine, 2017).

It is challenging for donors to align their funding and activities to support governments to develop effective health information systems that are sustainable beyond the term of any one project or program. This has led to multiple duplicative pilot interventions and efforts that have failed to scale. The results are at best inefficient, and at worst hazardous to health outcomes.

“[T]here is a clear need for a paradigm shift in digital health infrastructure investments. The global health community and U.S. global health programs need to move away from the current practice of single application solutions to a more strategic approach that acts holistically with both current country priorities and

long term goals.” (National Academies of Sciences, Engineering and Medicine, 2017).

This Wilton Park event considered these challenges, and drew on the collective expertise, insights and perspectives of the participants to explore innovative approaches to financing the development of digital health systems at a national or regional level. Participants included global health experts from the US Government, private sector (health and technology), the International Telecommunications Union, the World Bank, Foundations and others.

The purpose of the meeting was to; 1) better understand what is needed to create successful sustainable financing models for national digital health systems; 2) consider the roles of the significant players in this field in developing or adopting new models; and 3) explore potential next steps to improve coordination of investments in digital health systems.

Although participants were largely drawn from a domestic US audience, given that this was a half day event in Washington DC, the focus of the dialogue was intentionally on the role that US and global agencies and organizations have in development of digital health systems in low-and-middle-income countries.

The three drivers for the event

1. First, the National Academies of Sciences, Engineering and Medicine (NASEM) published its Consensus Report, Global Health and the Future Role of the United States in May last year. Amongst other recommendations, the report urges US funders to maximise returns on investments and achieve better health outcomes through smarter centralized funding. The report in particular recommends that funders deploy “more nimble and flexible financing mechanisms to leverage new partners and funders in global health”.
2. Second, a few months after the NASEM report was published, Wilton Park UK hosted an event on Digital Health in Africa: Leadership and Coordination. At that meeting, the participating donors collectively responded to a challenge from the African ministry participants to end the current fragmented and uncoordinated approach to funding digital health. Following the discussions at Wilton Park, and subsequent donor meetings, the principles of donor alignment for digital health emerged. These principles will be formally launched later this year at the World Health Summit in Berlin.
3. Third, the WHO resolution on mHealth was announced at the World Health Assembly in May 2018 and included the following:
“We are now at an inflection point where significant advances to enable improved health, economic and gender equity, and achievement of the SDGs will require greater coordination among donors that fund digital health systems”.
4. The message is clear, better coordination around funding for digital health systems is critical to achieve the SDGs, and there is appetite for this coordination to happen. Yet we know the challenges for organizations to adopt new practices, to align, and potentially even to co-invest in digital health systems stand in the way of moving from principles to practice. How do we:
 - a) move to more innovative ways of investing in digital health systems?
 - b) move away from investments in single application solutions to a more strategic approach that focuses on scalable, integrated systems that will deliver improved health outcomes?

- c) align coordination in developing or adopting new models between digital health's significant players?
5. The purpose of this Wilton Park meeting was therefore not to talk more about why coordinated investment in digital health systems needs to happen. It was to talk about the how.

Policy and strategy perspective

6. The importance of building and sustaining political will to support coordinated investments in digital health was emphasized from the outset of the discussion. Participants reflected on the changes and milestones in the field over the last decade, and agreed that whilst few efforts have been sustainable, some progress should be noted. For example, five years ago, for the first time, a World Bank president committed to universal global health care as a key priority. As movement for universal health coverage accelerated it attracted growing support from Finance Ministers as well as from health and ICT ministries. At around the same time, the digital health community came together around new principles for good practice in digital health. Against this backdrop of progress however, over the last few years, international crises have contributed to a stagnation in broader donor focus and support. Whilst the principles of digital health and donor coordination are to be welcomed, the conversation would benefit from being more concrete and less esoteric, since the latter makes it more difficult to make the case for financing and to maintain political will. Decision-makers need to understand the importance of investments in health systems, and countries need clear frameworks for identifying and prioritizing health system investments to maximize effective financing.
7. Several participants questioned what coordination meant in different contexts, and the different incentive structures likely to facilitate it, noting that the different players in the global digital health community often struggle to inform each other about what they are investing in or supporting. The value of many specific interventions has been demonstrated, and we know from other industries that efficiencies of scale require concentrated investments in ICT, yet the digital health community struggles to build on and invest in these successes. Practical ways that allow donors to align their funding against national health priorities need to be identified further, this should be a part of a larger process for developing health system investment priorities.
8. One challenge for more effective financing for health is the lack of engagement to date with Ministers of Finance, and lack of finance models to demonstrate the cost-benefit case for digital health investments. Data is key, and it may be necessary to commission work that addresses the issue of return on investment. Other critical players are civil society and the private sector. The fragmentation around digital health mirrors that on the business side, and there have been calls from some private sector organizations for the donors to facilitate better coordination between companies and governments to foster greater understanding of country needs and priorities.

Defining digital health

9. A second challenge is lack of alignment around what 'digital health' means to different organizations and individuals. Digital health is considered by many experts working in the 'digital' field to be a fundamental part of the broader health system. Others, however, take a narrower view of digital as meaning 'data', that is, data for measurement and evaluation, reporting, and accountability. It is certainly the case that many digital investments have been driven by desire to have better data, but that has been largely about investors wanting to see impact of their specific investments. Whilst these have facilitated data entry into health programs, true possibilities are much greater. Outcomes should not be focused just on data collection but should be focused on how digital data and systems can enable and support making connections between patient and provider, provider and system, policymaker and system, and removing barriers of space and time to create a more connected and responsive systems. This approach of connecting the system back to the patient would lead to huge efficiencies.
10. One of the biggest challenges is that global health community mobilization and coordination is time intensive. One pragmatic option for accelerating the adoption of digital health systems could be to focus on a few key countries. Gabon is a good example of a country integrating digital health at a national level. Implementation here and in a few additional countries could serve as examples and could potentially have a large impact on other countries with less mature digital health systems.
11. A wider, more holistic view of the full potential of digital health will help to bring key stakeholders onboard and show multiple benefits of pulling investments together. For supply chain and commodity issues a basic starting point has been visibility. Much work has already been done laying the frameworks for donor collaboration on data use partnerships; these efforts could perhaps be leveraged but have been maturing slowly.
12. Success will require breaking down barriers that have inhibited advancement so far. Often, technical experts will focus on accessibility as the main barrier, but there are many others. For example, digital health is often not prioritized among other pressing demands, or incorporated effectively into work programs, inhibiting the integration and implementation of national level digital health systems. In addition, organizations sometimes take a parochial view about what data is needed and do not think more widely beyond their own immediate needs. This keeps partnership discussions from moving beyond verbal expressions of collaboration to genuine partnership and coordination.
13. In many cases, focusing on the lowest common denominator for collaboration could be a practical starting point, but agreement on this can also be difficult to reach. One view was that investing in each patient having a unique ID and building simple algorithms with yes or no questions was the simplest starting point. Ensuring the technology to support this in every health facility would help bring some harmonization to a space which is currently very fragmented.

14. Another perspective was that different 'layers' of customers across the health service leads to different interests across systems. Frontline health workers, for example, have relatively limited needs for data themselves, so systems should be designed to minimize collection burdens on them, and ensure that what is collected helps their daily work as well. It is also imperative for frontline workers to understand the data they are collecting and how it directly relates to improving health outcomes of patients. The greater interest frontline collectors have in collection, the better the data will be, and more sustainable the process. Currently, systems are designed by the top for the top, not the bottom; the value for PEPFAR isn't about patient care, for example, it's about reporting to Congress. The fact that not all data will be meaningful for care providers underscores the need to find a happy medium between different competing priorities. Sometimes data point collection is based on obsolete and capricious requirements. In fact, it's likeliest that collecting data is most successful when it's not approached as a data collection issue in the first place. One example given was a program where community health workers used their mobile devices to help solve simple problems during interactions with clients and facilitate better interactions. The health workers were not required to input the data - rather it was automatically collected onto a dashboard.
15. Another 'lowest common denominator' might be the basic building blocks necessary for improvement, such as digital health leadership and capacity development, and digital infrastructure, where coordination and collaboration are not seen as options, but requirements. If systems were designed more effectively they would naturally generate data relevant both for monitoring and evaluation and for care providers and decision makers. Other participants suggested that the best solutions for low resource environments should be to work with the infrastructure already in place, perhaps such as mobile phone providers, who could have cloud access to anonymised data. Research is ongoing into cloud-based systems currently in countries and leveraging potential capabilities for scalable digital health work. This effort also underscores the importance of working with country governments to understand data-sharing barriers.

Promoting donor coordination

16. Participants also considered how the global health community can adopt a more strategic approach to meet country and regional priorities to achieve better health outcomes. Speakers highlighted the need for donor coordination and smarter investments to minimize duplication, along with how to incentivize greater donor alignment for digital health. A similar theme emerged at the Wilton Park event on Digital Health in Africa which took place in the UK in October 2017. At this event Ministers called for an end to uncoordinated and fragmented donor investments. In response, over the last nine months, more than 20 donors have come together to create a set of donor alignment principles for digital health which will be formally announced at the World Health Summit in Berlin later this year.
17. It was acknowledged however, that despite best intentions, strategies often run aground on the differing priorities and equities of different stakeholders. Conflicts and different interest groups often work at cross purposes, even within countries. And donors don't bear all responsibility for fragmentation of strategy. National and subnational interests also contribute to this.

18. It is important to link 'coordination' discussions with practical and feasible paths for implementation. Donors are not homogenous, and different types of donors have different sets of constraints, return on investment interests, and planning and implementation mechanisms. For example some donors look specifically at 'fashionable' topics such as innovation, and others are incentivized to find niche areas that will distinguish them from others in the sector. Similarly, social entrepreneurs have incentives towards novelty rather than improving structures already in place, which also leads to fragmentation. Pooled funding could be an important mechanism to address this, but donors need to be able to report how their investments led to positive outcomes, and pooled funding mechanisms can make this complicated.
19. Participants discussed how to structure mechanisms that would build on progress rather than fracture it, whilst acknowledging that the politics of health financing are very real. It was suggested that the global health community could learn lessons from financial services and look at more distributed mechanisms, for example saving groups, and digital finance groups may be models to think about when designing digital health systems. Looking to see what other sectors have accomplished or are currently working on is also important. Government officials may already be thinking about the intersection between education, health, and agriculture sectors. The digital health community could therefore think more broadly about common ICT building blocks and how they could be used across sector boundaries, rather than solely focusing on challenges within digital health. There are likely many overlaps within the different sectors which could create a business case or value proposition for governments.
20. In addition to the challenging tendency to fund 'the new', funding is often oriented towards vertical rather than horizontal efforts, complicating the search for funding mechanisms that facilitate lateral sharing. Coordination without agreement on what we need to coordinate about, and lack of commonly agreed tools, will not be effective. There remains a crucial need first for agreement on common denominators, including common tools and frameworks, and then agreement on the funding that should follow to invest in these. In addition, countries themselves need to be better coordinated, though many governments lack the understanding and capacity to do this well. Digital Square is an example of a coordinated investment mechanism. By directing donor investments into reusable, adaptable technology solutions, Digital Square can create digital market readiness and decrease fragmentation. Also, having regional entities like the African Alliance of Digital Health Networks can further assist with coordination and comprehension of digital health systems within the governments.
21. These points underscore the need for a common vision. Simple tools such as mobile phones can be empowering for health with the necessary infrastructure, but the need for donor agreement on the vision and targets for national and even regional level digital health systems implementation remains. It was noted that there is a difference between coordination and collaboration, and a need to focus on practical few next steps. Principles are important, but practicality is crucial, since some countries are still at a very basic level with regards infrastructure development.
22. Given that the same coordination problems exist in other sectors, there is potential for lessons that could be extrapolated from other industries such as agriculture. For example, donors in other sectors have found it useful to set targets for percentages of their giving that will be towards key investments in sustainability, and impact assessment. Participants debated the merits of a 1 percent fund for digital health, situated within a flexible mechanism. The allocation of 1 percent of funds already assigned for global health efforts to a digital health fund established for the purpose of supporting governments to develop national and regional digital health systems could be a major step for data, efficiencies, and outcomes.

23. Given the growing consensus around the issue of donor coordination, and calls for pooled or co-invested funds, the timing may be ripe for moving the conversation forward tangibly by working towards a common vision, common denominators, frameworks, and flexible mechanisms. The dialogue around this is already underway, and sector leaders can draw from what has already happened within this ecosystem to create greater harmonization of effort.

Financing mechanisms for scalable, interoperable health systems

24. Effective advocacy for improved digital health solutions will benefit from the articulation of sound investment cases to countries and donors to show the value and power of digital health.
25. Often the most ownership and progress have been made when countries who have had success have shared their experiences with other countries, often generating substantial interest. Government driven, owned, and led initiatives will be much more sustainable. Of those projects that have successfully gone to scale, their success has been predicated on the ownership and leadership of governments. Another key ingredient of success has been when stakeholders connected digital investment to their bottom line, and appreciated the financial case for sound investment.
26. To the extent that there is a set of ICT building blocks that are interoperable across sectors, these could also provide enormous efficiencies for scalable infrastructure. Convincing ICT vendors to create these blocks would likely require identifying the most widely applicable building blocks, defining a set of minimum requirements, and then demonstrating demand for them. It is clear that governments are spending money on ICTs towards the SDGs, but their approach is usually siloed by sector, limiting reuse and scalability. So far 20 common building blocks have been identified across health and agriculture, such as messaging and registration services. The same technology should be reusable for lots of things, birth, school enrollment, health, and financing. While some of these ICT building blocks are new, most already exist for specific use cases and can guide the development of more generic platforms and applications that can potentially meet SDG needs.
27. There may also be useful parallels in the development of a vaccine market that could apply to digital markets. For example, would it be possible to establish a global pooled procurement mechanism similar to GAVI that aggregates demand and negotiates or at least provides the evidence base to negotiate lower prices from vendors of software, connectivity, mobile services or data?
28. Participants debated the relevance of the vaccine example to the ICT challenge, suggesting that there were a number of key similarities in the problems, including the lack of QA mechanisms, information asymmetries, disaggregation of procurement, and prohibitive development costs. Despite these, the vaccine challenge was effectively addressed and ultimately became a success story. In 2009, for the first time, the same vaccine was delivered to developed and developing world in same year. The change was donor driven, did not require each government to come to agreement, and simply required focus from a handful of donors. Interventions were methodical, including phases of building evidence and then taking the next step. Ultimately a lot of assumptions held in vaccine space were dispelled by rigorous economic analysis.
29. Research into the relevance of this case study for the digital health and ICT space found several key conclusions about the software market:
- a) In software, the total cost of operations is still opaque to many stakeholders, no one knows what a good price is, this leads to trust issues.
 - b) No pre-qualification process in software. Demand is unclear for digital products, which leads to long lag in products coming online in developing countries.

c) M&O datasets, data from phones, if or when layered with census, leads to very accurate maps of what's going on, but this data isn't well priced in development market.

30. Efforts are underway to understand the demand for core mobile services in a number of countries across sectors, in order to be able to estimate numbers of text messages that will be required. Evidence of significant likely use could help to negotiate lower prices with core mobile service providers. Researchers are also investigating requirements for standard data packages. Some suggested that electronic records be bought directly from mobile providers, obviating the need for market research. Many countries will not have the capacity to host and contain this data, however. One main hurdle is that some countries have reservations around privacy issues in the cloud, and data security issues are concerning for many countries, making cloud-based solutions difficult to sell in some cases. Where technological infrastructure is already in place, it may make sense to build off of these systems, rather than increase fragmentation by duplicating them. Overall, participants emphasized the importance of strategy leading technology, rather than vice versa. Inventing and developing technology is relatively simple, but it is necessary to have intended outcomes in mind first, bearing in mind that the biggest problems are fragmentation and managing systems to scale, and that demonstrating return on investment is the holy grail of success.

31. Ultimately, digital health discussions encompass both the broader systemic problems, and specific tools focused on particular issues. The tools are important but don't address systemic issues, and even broader solutions often only address particular problems, which can change over time. Many problems are also circular in their evolution, and it is important to focus on the analytic process necessary to determine when and where digital is the appropriate solution. New initiatives should be anchored at the country level, which should inform the approach to the problem and shape the way countries are included and set their own priorities. Country leaders will need to be the ultimate owners of effective solutions, although working with digital governance bodies, if they exist in a country, will also be important. Strong governance structures, from which strategy, plans, architecture, and implementation can be developed, are key to successful digital health infrastructure development. Aligning on priorities and timelines in a more coordinated, cohesive way that synchronizes country leadership with donor principles is a crucial early step, allowing for further coordination down the line. Ongoing conversations could also take place in a more coordinated manner through a centralized donor mechanism.

Conclusion

Despite the large investment in digital health applications, funding mainly directed into parallel structures which cannot be used for other diseases or health priorities. Evidence suggests that multiple donors and organizations may be funding and operating multiple surveillance systems for different diseases in the same country, instead of aligning themselves into one interoperable system, integrated with existing national health system infrastructure.

This is inefficient, produces duplication, and wastes millions of dollars. Donors and countries need to move from an apps and disease programmes-based approach to a systems thinking approach. Systems thinking will ensure the products are interoperable and do not duplicate existing in-country systems. This will reduce inefficiencies and help to ensure that what is developed will integrate smoothly into the national health system.

“The committee envisions ... connected systems that ensure the data can be aggregated and shared (when appropriate), instantly analyzed and intuitively visualized so that health professionals and policy decision makers at all levels—community, district, country and global—can take action ...By building a digital health platform that is modular, countries can attract and engage third parties (including the private sector) to develop useful applications that can be customized to their unique context and then integrated sustainably.”

NASEM, May 2017.

For this to happen, a common framework is needed to help countries move towards the systems approach, with supporting tools to guide government and partner dialogue. Creating a common IT architecture across the health service enables a clear way for data to be shared across systems, avoids duplicative software development and redundant data collection, and provides a blueprint around which a Ministry of Health can plan its future investments and donors can align.

Standard elements of a common platform would include a high level co-ordination mechanism and buy-in across ministries; common objectives and agreed standards and definitions of data collection; a common vision and generalized digital health framework; a common data platform; and integrated platforms. Cost benefits need to be identified and communicated to advocate for and attract the necessary domestic and external investment.

There is an important role in this for the private sector investor, and there is a need to understand the different drivers of private sector investment. The value proposition for digital health must be appropriately packaged for a specific type of private sector investor in order to attract effective, sustainable partnerships with lasting results. Part of this requires being able to describe outcomes in clear language to demonstrate returns on investment.

By coordinating effort and investment, not only will donors see better returns on their investments, improved alignment with country priorities will facilitate better transition to country ownership and long term sustainability.

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