



# A tablet for healthcare



**Dr Kanav Kahol**, a US-returned Indian biomedical engineer, talks about a technology that allows Android tablets and phones to conduct 33 diagnostic tests

Imagine a tablet that can monitor one's ECG, measure heart rate, besides offering various other medical facilities. It includes specialised applications that help users perform a variety of screenings and health analysis protocols, thus, enabling them to deliver fast and accurate care at home, in clinics and just about anywhere. It contains decision support tools to enable users to deliver quality recommendations for achieving better health. This medical device stores electronic medical records locally and pushes the data onto the cloud, allowing

online/offline operations and doctor on call services.

■ **The idea**

The first seed of Swasthya Slate was sown when we formed the division of affordable health technologies in Public Health Foundation of India (PHFI). We wanted to create a division within a public health institution, which would allow technology developers to be deeply embedded into the public health system and work in a problem-centric manner rather than a technology-centered way. This allowed me and my team to interact in length with public

health experts, understand the issues and then propose solutions.

As part of my endeavours to fully understand the issues, I would go on long bus rides from Delhi to villages. It is during these visits that I discovered the central role that frontline health workers play in the public health system. I came from a background of technology and, as a PhD in computer science and professor in USA, I strongly believed that affordable health technologies drive innovations that are defining future approaches to information, education and knowledge management in public health.

A functioning public health system has several functions that include delivery of diagnostics, care, reporting, administration, HR management and research conduct and management. All these functions can be ably supported by use of technology. In fact, the need for health technology infrastructure, personal health technologies and e-enabled health delivery and financing is well recognised in the healthcare arena, but often lacks coherent health technology policy, well-designed technologies and a technology-proficient workforce.

As India strives to achieve access to healthcare to billions, a key element would be to focus on good and effective use of affordable health technologies. It was hence clear to me that we needed to develop technology to empower frontline health workers to make the dream of universal health coverage a reality.

■ **Execution and scale**

I was able to seek funding of ₹12 lakh from PHFI. To my surprise I was not only able to complete the first prototype, but also had money left for field testing. This is the beauty of India that allows frugal innovations!

While we did encounter minor obstacles, overall, making this inno-

vation has been smooth due to two big factors. First is the Indian appetite for innovations and the fact that the time is ripe for innovations that can allow personalised healthcare delivery and accessible system. Second, innovations in the Indian system are driven by a strong core of small businesses that are adept at innovating, but finding them is not as easy as in other developed countries. This is one of the areas where we can work as a country to improve access to good businesses.

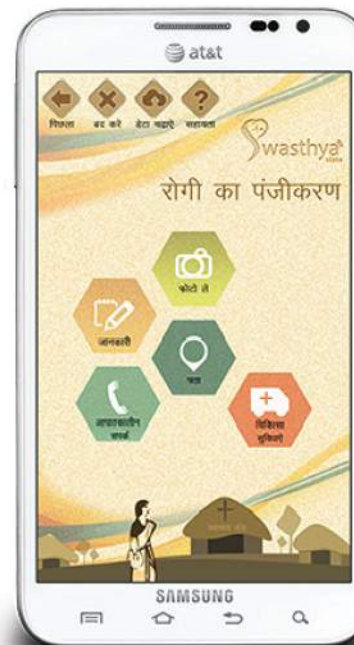
We began with four tests, then moved to nine and now include a battery of 33 diagnostic tests. We are currently in the process of finishing off another seven tests in the next few months. Today, the system is being used in 80 locations worldwide, which include 55 locations in India and the remaining in Africa, Europe, South America, North America and Asia.

■ **Accolades and plans**

We have just received our first large



(Top) A training session on Swasthya Slate and (above) a health worker using the device



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pilot from National Rural Health Mission (NRHM) to deploy Swasthya Slate in six districts of Jammu and Kashmir, namely Rajouri, Poonch, Leh, Doda, Ramban and Kishtwar. In all of these, the ANMS and ASHAs will get a Swasthya Slate kit. This is a large-scale deployment based on which the government will

expand the project to other districts if the initiative succeeds.

We are looking for funding to support the scale-up that will be required and also expand into other countries. Our key partners are governments across the world, as we work closely with them to develop a customised system.

Overall, the (innovation) scenario is very encouraging in India, as the population wants better health and trusts technologies. I simply hope funding bodies realise the value of long-term investments and are able to support new innovations. I also hope we improve our regulatory set-up, as the current system leaves a lot for innovators to do and does not encourage innovations as much as people want it. ■