'Succinctly highlights the power of digital technologies in managing complex consumer markets in a developing country like India.'
SANJIV MEHTA, chairman and managing director, Hindustan Unilever Limited

Digital Leapfrogs

How technology is reshaping consumer markets in India

Vijay Mahajan

Author of *Africa Rising*

workers who currently risk their lives in the sewers—it also threatens their livelihoods. Govind estimated that roughly 4.5 million people scavenge and clean sewers across the country. (The official number is 2 million, he said, but people underreport it because it's technically illegal if you're not officially employed.) Of the 6,000 scavengers in Kerala, many would lose their jobs to Bandicoot, Govind accepted. Only half might be employed to run the robots, but at scale the company would need training and maintenance staff as well. The idea, he explains, is to give these workers viable options to find employment outside of scavenging, whether that's by providing them with the skills to run the robots or by developing dormant talents and interests to find safer and cleaner work elsewhere.

'Manhole cleaning is one of the most challenging and dangerous jobs you can imagine, where on an average people have to dive into ten meters of faeces and other hazardous waste matter,' Govind said in an October 2018 Indiatimes article. He further stated, 'And there are even deeper manholes, which sanitation workers dare not go into, because they know they can never come back from it.'[10]

Extending Digital Access to New Areas

When the Digital Empowerment Foundation (DEF) and Nokia joined forces in 2018 to create 'smart villages' across rural India, they hoped that their joint Smartpur project would help extend Internet access and digital services to the less affluent and not-so-well-connected areas. When I spoke with DEF officials in July of that year, they described a holistic approach that would enable six key development pillars: education, health, livelihood, finance, governance and entertainment. We could not have imagined then that, just two years later, the foundation's broader network of more than 750 Community Information Resource Centres in

130 districts across twenty-five states would provide a frontline response to a pandemic that would sweep across the globe.

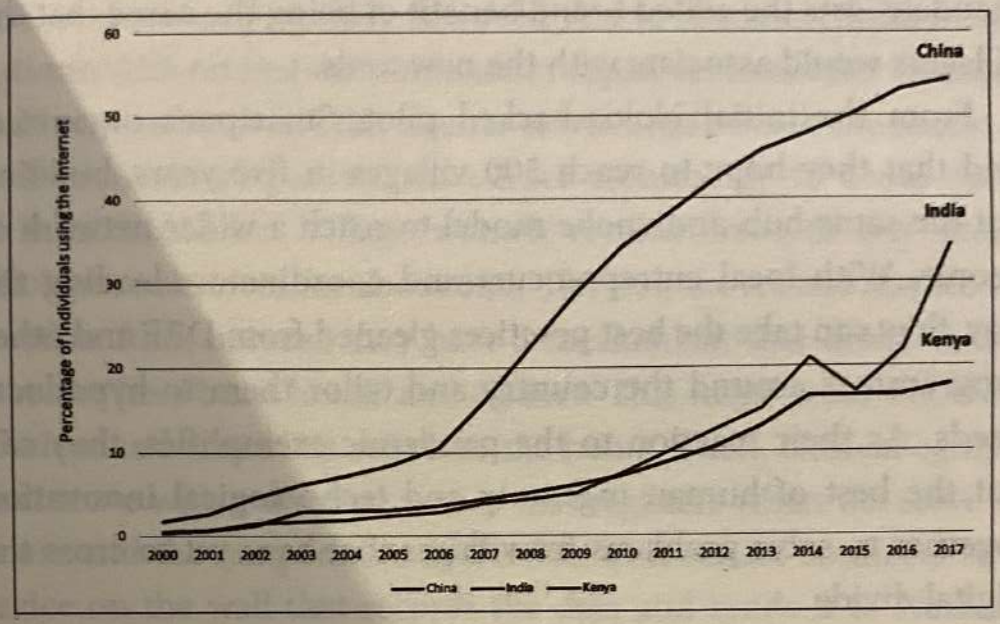
The volunteers who operate the digitally connected outposts, along with the many people who tap into their services, had shifted into high gear by April 2020, according to a report from the Association for Progressive Communications, of which the non-profit DEF is a member.[11] The foundation quickly developed an array of community services and outreach efforts to support telehealth, career and crisis counselling, and connections to public welfare and other government programmes. Some of the most clever ideas came from local workers and clients who took on new relief initiatives as they saw problems arise. The Internet Saathis (see Chapter 2) heard the call for healthcare resources and began stitching masks for frontline relief workers. One woman and her team from Madhya Pradesh began to produce and deliver 300 masks a day to community members and local hospitals. All told, groups connected with DEF produced tens of thousands of masks in 2020.[12]

The pandemic brought a whole new urgency to India's national programme of 'roti, kapda, makan'—food, clothing, shelter.[13] However, many of the critical government services that support the country's drive for social and economic development rely on digital technologies and Internet access, especially during the Covid-19 lockdown. A DEF survey found that 53 per cent of respondents rely on mobile phones to get information on the pandemic, with WhatsApp being the most popular source.[14] In addition to information, access to financial services and government systems had become especially difficult without regular Internet access, so the foundation started to fill in the gaps. Across the Smartpur network, a DEF sub-programme that includes about 100 digital-access centres, workers made access to digital government and financial services easier.[15]

Meanwhile, local workers and offices improvised solutions for individual problems they faced. When one disabled person couldn't withdraw his pension because of the bank's limited hours, a DEF worker in Rajasthan went to his home so that he could use online banking services. The same workers started going door to door so people could access digital services without leaving their homes. A DEF coordinator in Alwar, Rajasthan, worked with local government officials to coordinate the delivery of ration kits, including 500 grams of cooking oil, 500 grams of lentils, 5 kilograms of wheat and 1 kilogram of rice. A separate DEF project team in Haryana created the Smartpur Digital Service Delivery Van to raise awareness about Covid-19 and deliver masks and rations.

While I couldn't imagine it during my exchange with Smartpur managers in 2018, the pandemic brought the power of DEF's initiatives into sharp relief. Back then, they described how the foundation and Nokia planned to turn the 'smart cities' idea on its head by amending and then implementing the same kinds of strategies, technologies and concepts in the small and rural communities that missed out on the digital revolution of recent decades. Just 44.4 per cent of the individuals in developing countries used the Internet in 2019, despite the fact that 91.8 per cent of them lived within range of at least a 3G cellular signal, according to data from the International Telecommunication Union (ITU).[16] According to the ITU's most recent estimate, about 35 per cent of India's population used the Internet in 2019. Despite its sharp increase from just 10 per cent in 2011, India's access and growth rates remain well below that of China, which began a remarkable run of digital expansion in the mid-2000s (see Figure 3.1).

Figure 3.1: India and Kenya Have Expanded Internet Access, but China Leapt Forward in the Mid-2000s



Source: International Telecommunication Union (most recent complete data available at https://data.worldbank.org/indicator/IT.NET.USER.ZS)

Smartpur, which began with twenty villages in the states of Haryana and Tamil Nadu, has turned local government centres into digital labs for residents. In addition to establishing video connections with doctors and nurses, whom residents might not otherwise have connected to, Smartpur hosts classes on how to surf the web and helps students understand what mobile apps are, in order to boost digital literacy. This helps villagers access public welfare benefits and apply for passports and other identifications (IDs), and it gives them the skills to use newly installed micro ATMs to receive those funds. According to a DEF report,[17] sixty-two residents in Sudaka village transacted about $1,700 in one day, saving them from losing a day's wages and travelling in the hot weather to a more urban community to send and receive

'The rapid expansion of affordable smartphones and access to data network in developing countries like India are reshaping consumer markets. *Digital Leapfrogs* provides a powerful analysis of the opportunities offered by digital technologies to improve the everyday lives of rural and urban populations.' **SANJAY MASHRUWALA, managing director, Reliance Jio**

'Vijay Mahajan's book documents how entrepreneurs and an increasing number of unicorns in a developing country like India are developing cutting-edge solutions in various sectors.' **RAJAN ANANDAN, managing director, India, Sequoia Capital**

'The data and case studies from a developing country like India presented in this book are a must-read to understand the leapfrog impact of digital technologies on the hearts and minds of consumers.' **C.V.L. SRINIVAS, country manager, India, WPP**

'[This book] highlights how digital technologies are helping countries like India to simultaneously navigate the opportunities and issues of the twentieth and twenty-first centuries.' **AJIT MOHAN, vice president and managing director, India, Meta**

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