

Towards Relevant and Viable Telehealth Technologies

Disruption of the healthcare system was more pronounced in low- to middle-income countries than in developed countries during the period of the COVID-19 pandemic.¹ A reduction of about a third of the patient cases was observed, especially for the mild to moderate conditions.² Considering that non-severe cases are most amenable to remote management through telehealth, the latter was a popular alternative to going to a health facility. Among its benefits include connecting patients with health providers at their convenient time and place, avoiding exposure to infection, saving time, responding early to medical emergencies, providing e-prescriptions, accessing even remote areas, among others.³

In this issue of the journal, the article by Gonzales et al., on developing and implementing mobile health technologies⁴ presents the Philippine scenario in the development of mobile health (mHealth) technologies. It is noted that the average cost to develop and roll out mHealth is around PhP 4,018,907 (US \$78,650). This figure may not be too onerous for those with the means but is challenging for most developers. Thus, the government plays an indispensable role in supporting these ventures for health especially during the pandemic. With taxpayers' money going to these technologies, it is advantageous to weigh the benefits over the investment. Cost-benefit analyses are important to undertake before plunging into specific projects.

During the pandemic, some of these telehealth services were funded by the government and the developers faced challenges inherent in public funding.⁴ When the government ceases to fund these projects, entrepreneurs have to rely on their own resources. Financial viability is linked to market success.

To make any product or service successful in the market, it should be designed from the outset, based on the needs of its intended customers. The *design thinking* principles are important to consider in the design process of mobile health technologies.⁵ At the core of these principles is that the product is co-designed with the consumers. From the very start of the project, the 'needs' of the consumers and not just their expressed 'wants', should be well delineated. This can be teased out from qualitative interviews with consumers about their experiences so that the problematic areas can be explored more deeply to bring out the real needs that even the consumers themselves may not realize. In so doing, the developer can design the technology addressing those needs, thus making the product more relevant and acceptable in the market.

For innovations emanating from the university, it is beneficial that academe-industry collaboration be established from the start. There are a number of mechanisms where this can be achieved. In the so-called "reverse-pitching", companies present their needs to the professors and researchers for them to initiate studies to address those needs. Usually, innovators are the ones pitching their technologies to companies who may potentially take on the product to be commercialized. Often, the perspective of the industry sector is not heard which is key to having a marketable product. Thus, in reverse pitching, the companies present the market needs to the creators of the technology, resulting in more relevant and useful innovations.

The academic community can co-create with the industry the relevant products and systems that the consumers will patronize. In some countries, there are laboratories and similar facilities built by the industrial companies within the university campus to facilitate the collaborative efforts between academe and industry in devising innovations. Those seminal works will then be further developed and scaled by the company, and eventually be brought to market. Such mechanisms fuse the creative minds of the academe with the pragmatic acumen of the industry sector to address the needs of the community with better products and services.

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