The Right Direction for Smart Hospital Apps

By Teh Hon Seng, on 17th January 2022

The hospital is a special-purpose building that uses specialized health science, auxiliary healthcare staff, and medical equipment for patient treatment. When the wave of digital transformation swiped across all industries to promote the integration of digital technology from all areas in a business to improve productivity and engagement with customers, more and more hospitals followed suit and they upgraded themselves to "smart hospitals".

According to the definition of Healthcare Global Magazine, smart hospitals optimize, redesign and build new clinical processes, management systems and maybe even infrastructure. All are enabled by underlying digitized networking infrastructure of interconnected assets to provide a valuable service or insight that was not possible or available earlier to achieve better patient care, experience and operational efficiency. Smart hospitals contain three essential layers – data, insight, and access, aiming to improve care quality.

There are three major changes when hospitals add smartness to their system from the patient perspective. First, extending the on-premises medical service to include remote or virtual medical service; second, more accessible personal medical records and healthcare information; and third, improving engagement between patients and doctors. And, to congregate all the above, Smart Hospital App becoming inevitable and the most effective platform.

Sunway Medical Centre

Hospital Revenue Trend

But why do hospitals need to embrace digitalization in the first place?

Two groups of customers contributed to hospitals revenue: Inpatients and outpatients, with the ratio of approximately 1:10, or 2,337, 291 inpatients versus 20, 764, 242 outpatients to be exact in Malaysia, according to MOH report on Admissions and Outpatient Attendances, 2017 for hospitals. And don't forget, hospitals also have to serve a very high number of non-patients or visitors, including relatives, friends, and co-workers, who are related to patients who frequented the hospitals. So can non-patients turn into another major income stream for hospitals?

A study on the "Hospital Revenue Trend" by Deloitte Insights Magazine in February 2020 found that inpatient hospital services are making up less and less of health system revenue and could soon become liabilities to a health system. Gone are the days of a one-week hospital stay after surgery, when the health system only focused on making money from "heads in beds". Instead, many patients now have procedures in ambulatory centres and go home the same day. The study also shows that more care is delivered at home or through virtual, outpatient, and other settings.

Much of this past shift is due to digital transformation in clinical care delivery. Moreover, technologies like consumer-oriented Smart Hospital Apps, predictive analytics, and virtual health are accelerating it further today and are expected to continue in the next few years.

Smart Hospital Apps and Medical Platform Apps Comparison

Since Smart Hospital App was an inevitable digital path when hospitals plan for their future, I will focus mainly on this topic throughout my whole discussion.

At present, there are not many Smart Hospital Apps available. Hence, I added medical-related apps to compare. The most significant difference between the two is that the former is location-based, and the latter is not confined by physical location.

Summary:

1. Smart Hospital Apps have a relatively low download rate compared to medical-related apps.

2. Pantai Hospital App has more comprehensive features for the 5 Smart Hospital Apps listed above.

3. Medical Platform Apps offer more flexibility and variety in medical services than Smart Hospital Apps.

4. Only Pantai Hospital Penang App added inpatient features; the rest only focus on outpatient.

5. For Medical Platform Apps, standard building modules and inpatient-related features are irrelevant.

Note: The study is based on the superficial features available in the Apps without a detailed examination. Even if two apps have the same features, it doesn't mean that both are equally providing full functions or delivering the same user experience.

Grouping	Smart Hospital App					Medical Platform App				
App \Organization	Sunway Medical Centre	Pantai Hospital Penang	Columbia Asia Healthcare	Bagan Specialist Centre	Penang Adventist Hospital	Encore Med S/B	Speedoc (Startup)	Heydoc International S/B	Bookdoc Holdings S/B (Startup)	BP Healthcare Group
App Name	Sunmed Go	PantaiPg	Columbia Asia Malaysia	Bagan Specialist Centre	Penang Adventist Hospital	Encore Med	Speedoc (singapore)	Doc2US	Bookdoc	Doctor2U
App Logo										
Android Installs (as of 12ᵗʰ January 2022)	10K+	10K+	10K+	5K+	10K+	10K+	100K+	10K+	500k+	500K+
Medical										
Appointment	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Telemedicine	Yes				Yes		Yes	Yes	Yes	Yes
Med Info	Yes	Yes			Yes		Yes	Yes	Yes	
Ambulance							Yes			Yes
Webinar/Event		Yes		Yes					Yes	
Doc Listing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Medical Record	Yes	Yes					Yes	Yes		Yes
SOS Emergency		Yes								
Health Data Declaration		Yes						Yes		
Clinic listing		Yes				Yes	No	Yes	Yes	
News		Yes			Yes		Yes	Yes	Yes	
Queue		Yes								
Family link		Yes	Yes							
Survey/Feedback		Yes		Yes	Yes					
Inpatient meal order		Yes								
Bill Status & settlement (inpatient)		Yes	Yes							
Discharge status (inpatient)		Yes								
Commerce										
Online payment		Yes			Yes		Yes	Yes	Yes	Yes
Pharmacy					Yes		Yes	Yes		Yes
Health/medic Package		Yes		Yes	Yes	Yes	Yes	Yes		Yes
Promotion		Yes		Yes	Yes	Yes	Yes	Yes		Yes
Reward		Yes								Yes
Delivery								Yes		Yes
Common Building Functionalities										
Smart Parking										
Visitor Management										
Access Control										
Environment Monitoring										

Pantai Hospital Penang

Columbia Asia Hospital, Klang

Bagan Specialist

Competing the Same Marketplace

Even if Smart Hospital App is location-based, it doesn't mean that it can't compete with the non-location based medical app. However, unlike Shopping Mall Apps versus e-Commerce Platform Apps, there is no point for them to compete because the cost for Shopping Mall App to compete with e-Commerce Platform App is too huge, and they are different in terms of market perspective. For readers interested in knowing more about this topic, you may read my article on The Trend of Malaysia's Shopping Mall Apps.

https://www.timeteccloud.com/shopping-mall-apps/

As I have mentioned earlier, when the hospital revenue trend is moving towards serving outpatient rather than inpatient, the apps can virtually offer medical services to a larger outpatient group, just like the Medical Platform Apps are not out of ordinary. Besides, health concern is another trend; the apps can play a vital role in further providing digital healthcare services for the public.

Smart Hospital Apps with physical hospitals as their backbone have a more competitive edge over the pure Medical Platform Apps because the extensive virtual medical services to reach a larger customer base can easily be backed up by the actual hospital ecosystem when extensive medical care is required. In short, it means that whatever the hospitals want to do to enrich their Smart Hospital App, they can, but not the other way round for pure Medical Platform Apps. Unfortunately, we saw the Smart Hospital Apps shy away from many possibilities, not as agile and nimble as pure Medical Platform Apps.

In my opinion, digital transformation leads to business transformation. When digital technology offers such an opportunity, Smart Hospital Apps shouldn't just treat as a supplementary tool to furnish the hospital ecosystem. Instead, it should be given more weightage and run by a separate business unit or business entity for greater explora-

Hospital as a Special Purpose Building

When I examine most of the Smart Hospital Apps in Malaysia, I can conclude that all Smart Hospital Apps face a common dilemma; they may fulfil the professional requirements by integrating their Hospital Management System (HMS) but commonly fail to address the essential requirements of a building.
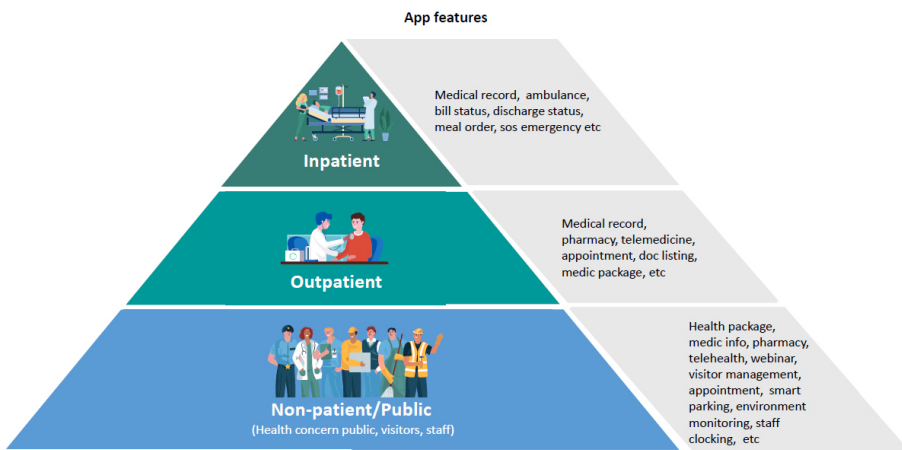
We can't deny the hospital as a special purpose building full of activities that resemble typical commercial buildings. However, the lack of standard essential modules for the Smart Hospital App would deter the download rate.

For example, when a person drives to a hospital, the first activity they have to do is parking. How well is the parking experience? Does it have the feature to check on the parking lot before the visit? Does it have a cashless and touchless payment facility? If for non-patient, do they need to register or pre-register and make a health declaration, especially when the pandemic is still rampant? How about near field commerce? Can they order some fruits or gifts at the hospital's grocery store from home to be delivered to the inpatient? How about patients order prescribed medicine from home? All these everyday essentials but non-medical functionalities are amiss from all the Smart Hospital Apps.

Another example, IoT environment station can be installed within the hospital compound to provide more accurate environmental data such as air quality monitoring, light intensity, noise level, temperature and humidity and weather forecast, and make available and accessible in Smart Hospital Apps. In addition, the data will benefit patients and the surrounding public to boost app downloads.

Smart Hospital App Design ties with Hospital Revenue Trend
(Ratio 1: 10 : α for Inpatient vs Outpatient vs Public)

App features

Inpatient
Medical record, ambulance, bill status, discharge status, meal order, sos emergency etc

Outpatient
Medical record, pharmacy, telemedicine, appointment, doc listing, medic package, etc

Non-patient/Public
(Health concern public, visitors, staff)
Health package, medic info, pharmacy, telehealth, webinar, visitor management, appointment, smart parking, environment monitoring, staff clocking, etc

In summary, there are two major areas to improve for the existing Smart Hospital Apps or for the hospitals to consider when they plan to launch their new Apps. The first is to enhance the virtual medical and healthcare services; they can use pure medical platform apps as their reference. The second is to add standard building features or even staff workforce management module to increase the download and improve their apps' stickiness.

The App journey has just begun, and the possibilities are endless in the digital transformation era.

Watch TimeTec Digital Building Ecosystem video and Smart Township Solution on this link https://www.timeteccloud.com/solutions/smart-township for more ideas.

About Author

Teh Hon Seng, Group CEO of TimeTec Group of Companies. Prior to forming TimeTec, Teh led a tech start-up to be listed on the MESDAQ (ACE) market of Bursa Malaysia in 2002. Teh initiated the R&D in fingerprint technology in 2000, which later developed into a renowned global brand for commercial fingerprint products known as FingerTec. In 2008, he foresaw the trend of cloud computing and mobile technology, and over the years, he had strategically diversified and transformed its biometric-focused products into a suite of cloud solutions that aimed at workforce management and security industries including smart communities and digital building systems that centred around the cloud ecosystem. Teh has more than 20 patents to his name, and he is also a columnist in a local newspaper and a writer of several books.

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