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Digital Health in Southeast Asia: Startups and Digital Technology Applications

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Abstract The purpose of this article is to provide preliminary findings on the state of digital technology applications of startups in Southeast Asia and to discuss issues related to digital health adoption in the region. This exploratory study is based on an empirical analysis of startups and digital technology applications information from various publicly available website databases. Public and private organizations would benefit from a better understanding of the current state of digital technology applications provided by startups and the challenges faced in digital health adoption. This article contributes to the existing literature by offering an overview of startups and digital technology applications in the digital health space in the fast-growing region of Southeast Asia. It offers advice to organizations intending to pursue healthtech initiatives on the types of health services provided by startups and issues that need to be addressed to increase the adoption rate.

Keywords healthtech, Internet of Things, artificial intelligence, big data analytics, diffusion of innovations

I. Introduction

Over the years, Southeast Asia has experienced significant shifts in demographic and health patterns (United Nations, 2019). At the same time, with the rapid rise and advancement of digital technology, many communities which are spread over large geographical distances have become more connected. Digital innovations have the potential to bridge healthcare gaps in these emerging markets by improving accessibility and quality of care, and reducing costs (Giansanti, 2022; Perakslis & Ginsburg, 2021). An important part of the digital health ecosystem are startups. Startups introduce new innovations to existing practices (Daruwalla et al., 2018). Their innovations are generally representative of shifts in the industry and the community (Daruwalla et al., 2018; Galen Growth Asia, 2019). They also help to create new jobs and such

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employment improves the overall economy (Fiorentino et al., 2021; Jonek-Kowalska & Wolniak, 2021). Startups are central to the digital health landscape involving public and private sector stakeholders.

The main purpose of this article is to examine the current digital health landscape and the state of digital technology applications among startups in Southeast Asia. This exploratory study covers digital health trends and opportunities across the region and provides recommendations for the various stakeholders to increase digital technology adoption leading to improved health outcomes. The rest of the article is structured as follows: demographic and health trends, applications of digital technology in the health sector, challenges in digital health adoption, methods, results, discussion, limitations and future research, and conclusion.

II. Demographic and Health Trends

Globally, human beings are living longer and there is a growing elderly population. According to the United Nations, the life expectancy of the world population has increased from 55 years in 1955 to 73 years in 2015 (United Nations, 2019). At the same time, the proportion of the aged among the population is also increasing steadily. Almost every country is expected to have a greater greying population over the next few decades (Fuster, 2017).

The aging population phenomenon is due to various factors. One reason is the declining global crude birth rate from 36.9 births per 1,000 in 1955 to 19.5 births per 1,000 in 2015. This trend is projected to continue to decline (United Nations, 2019). Another reason is disease prevention. The present day advances in medicine, technology, and research have led to a reduction in the number of deaths due to communicable diseases, which, historically, caused earlier deaths. For instance, global cases of malaria have dropped by more than half from 2000 to 2016 largely due to initiatives for vaccinations and mosquito nets (Deloitte, 2019). However, it is worth noting that the global decline in communicable diseases has been paralleled by an increase in non-communicable diseases. The most prevalent cause of death worldwide in 2016 was cardiovascular disease at 31.8% followed by cancer at 17.1% (Ritchie & Roser, 2019). These figures suggest that it is no longer acute illnesses but chronic diseases that are threats to humanity. Nonetheless, it is to be expected that post-COIVD-19, the world and digital health landscape would change significantly because people's lives and health have been adversely affected (Hiremath et al., 2020; Qiu et al., 2020).

Southeast Asia is a region that covers 10 countries with over 600 million people and has an economy of about US$2.5trillion. In general, the demographic and health trends in Southeast Asia mirror the global trends. The population in Southeast Asia is also undergoing a shift towards an elderly population. The

United Nations estimates that in 2015, 9.4% of the Southeast Asian population was over 60 years old, and it is projected to increase to 22.2% in 2050 (United Nations, 2019). Most countries in this region are experiencing zero or negative growth for the population aged zero to 14 but greater growth for those aged 65 and over, with numbers even greater than the Organization for Economic Co-operation and Development (OECD) average (Solidiance, 2018). These trends are attributed to the rising popularity of smaller family sizes, investments in medicine, health policies, and education (Mahal & McPake, 2017).

Southeast Asia also faces various challenges in non-communicable disease prevention. Similar to observed global patterns, the leading causes of death are non-communicable diseases. In 2017, the most prevalent causes of death in Southeast Asia were cardiovascular disease at 31.5% and cancer at 4.7%, while respiratory diseases, digestive diseases, and lower respiratory infections were 6.3%, 6.1% and 5.5%, respectively (Ritchie & Roser, 2018). Concurrently, the transition of socioeconomic classes, such as rising wages, resulted in an increasingly affluent middle class. This growing class is undergoing an epidemiological shift to Western lifestyles, which has contributed to the rise of non-communicable diseases and the shift of the burden of disease from communicable diseases (PricewaterhouseCoopers, 2018).

The political, economic, and social issues faced by individual Southeast Asian countries are very varied and diverse. However, in the context of digital health, the region is affected by a growing aging population and a rise in non-communicable diseases. This situation presents immense opportunities for the application of digital technology in the health sector.

III. Applications of Digital Technology in the Health Sector

Rogers (1995) is one of the earliest proponents of a systematic model of diffusion of innovations. A theory that seeks to explain how technological ideas are spread. Based on the framework, there are factors that influence the dissemination of innovation. These factors are the innovation itself, adopters, communication channels, time, and a social system. The innovation may be an idea, practice, or digital technology that is perceived as new by adopters, which may be individuals or organizations. Communication channels are the conduits that allow information transfer. Time refers to the duration for the innovations to be accepted. Finally, a social system denotes the external and internal influences between individuals, groups, and institutions. This innovation diffusion theory also proposes five stages for which an idea spreads, namely, knowledge, persuasion, decision, implementation, and confirmation. Applied research suggests that the theory is useful in describing the progress of

technological innovations in some organizations (Wonglimpiyarata & Yuberk, 2005).

While some people may use the words "health" and "healthcare" interchangeably, there is a subtle difference in the meaning of these terms. In general, health covers a broader scope than healthcare. Health refers to the state of well-being that covers physical, mental, and social well-being and not just the absence of diseases. Healthcare, on the other hand, relates more to primary care such as doctors and medications (Kheng, 2019). This article refers mostly to the health rather than the healthcare sector. By adopting a broader definition, the article aims to help one to see a wider range of upstream opportunities such as public and community health interventions when applying digital technology in the sector.

Modern society has increasingly used digital technology to support everyday life including health and healthcare needs. Digital health may be considered a form of cultural transformation from traditional healthcare complemented by new digital innovations and best health practices (Meskó et al., 2017). Such digital technologies cover a wide spectrum ranging from upstream tools that provide health observations such as lifestyle monitoring to physical applications supporting primary healthcare services such as robotic surgery. Categorizing such digital technologies could be a challenge because of the diversity of the types of digital technology and overlaps in their business applications. Nonetheless, some attempts have been made to group these digital technologies into broad categories for the purposes of analysis and discussion. According to the United Nations Internet Governance Forum, there is an emerging interest in the Internet of Things (IoT), artificial intelligence (AI), and big data analytics that are expected to be crucial in solving complex global challenges (Internet Governance Forum, 2018).

1. Internet of Things

In a health setting, the Internet of Things utilizes systems to connect physical objects such as sensors and stakeholders such as physicians and patients through the internet. Such setups could be as simple as a booking platform for homecare services that increases access to care or as more sophisticated applications such as in the case of telehealth, where patients' health is remotely monitored through personal devices using virtual and telecommunications technology (Shah, 2018). For example, Thailand-based Ooca is a mobile application for psychologic and psychiatric consultations in which patients could consult with their mental health care providers wherever they are (Ooca, n.d.).

Another instance of IoT application is personal devices that can collect data through sensors (Rodrigues et al., 2018). The data could be stored, processed, and accessed by users and providers through 'cloud services,' that is, via a remote cloud computing server rather than an on-site server. These digital technologies are also widely used in wearables which offer a wide variety of features such as hands-free monitoring. For example, the Apple Watch has sensors to measure the heart rate, the number of steps taken, and the number of calories burned during activities. The data collected is synchronized to a smartphone device which could be further reviewed by the user, healthcare professionals, and other secondary apps (Apple, n.d). Besides, the benefits gained by the user, the widespread adoption of wearables, and the application of big data analytics also positively influence the initiating organization's overall performance and strategy (Nayak et al., 2019). Of course, the institutionalization of controlling mechanisms is a key consideration that supports the maintenance of overall cloud security (Spanaki et al., 2019).

2. Artificial Intelligence

The ability of computer systems to perform tasks normally requiring human intelligence is called artificial intelligence (Hassani, 2020). This capability is a result of applying algorithms, rules, and deep learning to independently study from the data collected and recommend solutions to humans. In the health sector, applications of AI include natural language processing to generate structured output from patient reports and examining medical publications to identify specific papers to support clinical decision-making.

Such AI systems can identify patterns through the analysis of multiple clinical reports, trials, and academic publications. One such example that is used worldwide and in Southeast Asia is IBM Watson. This question-answering computer system has been used in the specialty field of oncology to assist in clinical decision-making regarding the 'best treatments' for individual patients (IBM Watson Health, n.d.). Other examples include KroniKare, a Singaporean startup that helps nurses with the preliminary assessment of wounds in hospitals (KroniKare, n.d.). By using a smartphone combined with machine learning, thermal cameras, and image processing, infections could be detected early and effective wound healing maximized. The shorter assessment time leads to more productivity in the clinic, and the immediate and accurate documentation of patients' conditions, thus, preventing clinical errors.

3. Big Data Analytics

The process of collecting an immense volume of data and running analyses to

gain more knowledge on the subject matter to allow for evidence-based decision-making is known as big data analytics (Wang et al., 2018). By integrating many sources of data into a large ecosystem capable of interpreting complex patterns, big data analytics supports decision-making on a wide range of issues from individual treatment plans to government spending policies (Harerimana et al., 2018).

Advancements in technology have led to the digitalization of healthcare, especially with patient data collection and storage (Mehta & Pandit, 2018). For example, electronic medical record (EMR) systems have been built specifically to collect a large amount and wide variety of data from people allowing for growth in research and best practices in the field (Holmusk, n.d.). In Malaysia, a government-supported initiative has been compiling hospital patient data into a central database enabling a more integrated approach to health research. The database is designed for stakeholders to be able to conduct analysis and generate insights even with unstructured data (Bhunia, 2019).

IV. Challenges in Digital Health Adoption

The rate of adoption of digital health technology in the Southeast Asian region has been encouraging in recent years. The reasons are due to government initiatives in promoting digital connectivity and the emergence of digital health startups (PricewaterhouseCoopers, 2018). Despite such positive factors, there exist many underlying issues that hinder digital health adoption. Such issues include privacy and security concerns, potential overreliance on digital technology, unclear return on investment (ROI), and a steep learning curve. It is pertinent to develop a deeper appreciation of such issues to be able to maximize the benefits of the implementation of digital health technology.

1. Privacy and Security Concerns

Concerns over the privacy of health information is a key barrier for user adoption. Perceived privacy risks play an important role in privacy concerns among users (Wang et al., 2019). The fears associated with continuous data collection, unauthorized secondary use, improper access, and errors are top areas of concern for users (Becker, 2018). At the moment, the standard mechanisms for personal health data protection include anonymization, notice, and consent. However, these methods risk losing their effectiveness if they are overused and if there are insufficient resources deployed for security measures (Vayena et al., 2018).

Furthermore, data security may be threatened by cyber-attacks, hacking, and data kidnapping. In May 2017, the WannaCry cyber-attack affected healthcare databases in over 100 countries. In the United Kingdom, it led to the cancellation of about 7,000 National Health Service appointments (Drury et al., 2018). There is a growing concern for data privacy because of past breaches. Thus, it is critical to ensure safe, secure, and error-free data systems to inspire trust in digital health for consumers and service providers (Vayena et al., 2018). Only by addressing such issues head-on could barriers leading to the adoption of digital health technology be removed.

2. Overreliance on Digital Technology

An overreliance on health technology systems could potentially lead to inappropriate use of such resources causing harm to the patients. In the foreseeable future, digital health technologies are likely to play a more important and progressive role in medical practices such as diagnosis and surgery. In some scenarios, the roles may involve transitioning from being mere assistants to becoming autonomous decision-makers that are totally free from human supervision (Vayena et al., 2018). Such situations may pose an ethical dilemma on responsibility and accountability in the event of errors committed due to AI-assisted medical decision-making (Meskó et al., 2018). Another fear is that there may be hidden biases in the system that could potentially deliver dangerous recommendations that are insensitive to local care practices. (Macrae, 2019; Ross & Swetlitz, 2017).

While the role of the human physician continues to be critical in medical decision-making, the appropriate application of digital technology is also a very powerful option to augment the way care is provided to patients. Thus, digital health technology should be used to complement human judgment to evaluate the benefits and costs of potential treatment options for proper clinical decision-making (Li et al., 2019). By taking a 'hybrid approach,' it will open up even more opportunities to advance the medical field to save lives and improve the quality of care.

3. Unclear Return on Investment

Very often, healthcare providers have raised concerns regarding the high upfront and maintenance costs associated with implementing the infrastructure and licensure for digital health solutions (Fejit et al., 2018). It is estimated that for a five-physician practice, implementing an EMR system costs an average of US$162,000 plus US$85,000 a year in maintenance fees. For a hospital system, this figure could surge into the millions (Palabindala et al., 2016).

Along with the lack of consensus on how to measure the ROI, such concerns have led to slower adoption of digital solutions in the health industry as compared to the other sectors (McKeering et al., 2017). Traditionally, ROI has been assessed using economic measures. However, in the health setting, there are certain complexities in defining non-financial indicators such as clinical outcomes and indirect gains such as workflow improvement and reduction in adverse events. Some studies have examined ROI in the healthcare industry by measuring clinical endpoints, patient engagement, quality of care, and costs saved from avoiding additional expenditures due to improved health outcomes (McKeering et al., 2017).

4. Steep Learning Curve

A lack of time and resources is often cited as a key contextual factor among health professionals that impede the adoption of health technology. Furthermore, the demanding working conditions in the health environment have created time pressures and a zero-tolerance policy for mistakes (Siau et al., 2018). Healthcare providers generally feel a strong sense of obligation to clients to be an expert in any service they provide before applying it in their daily practice (Fejit et al., 2018). Consequently, there is a steep learning curve in learning some of the more complex and sophisticated digital technology solutions.

To minimize the potential risks associated with human errors, it is essential to deploy appropriate and timely training and education to create a ready and adaptable digital workforce (Massoudi et al., 2016). Training may include encoding, collecting, and storing data to create information; interpretation and use of quantitative or qualitative data; use of statistical or analytical software; designing and interpreting information from digital systems; and systems management (Wholey et al., 2018).

V. Methods

An online search was conducted to identify central databases with information regarding digital health startups based in Southeast Asia. Specifically, the databases should include startup information from the following 10 countries, namely, Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam. The rationale for the selection of startups is that they contribute significantly to new innovations in the digital healthcare ecosystem (Daruwalla et al., 2018; Galen Growth Asia, 2019). In addition, they also help to improve the overall economy by creating employment (Fiorentino et al., 2021; Jonek-Kowalska & Wolniak, 2021). Unfortunately, the

initial search did not yield a formal and validated central depository that covers the entire region. Consequently, the scan was narrowed to databases from websites that list startup information in Southeast Asia. Five websites that offer publicly available information on such startups were shortlisted. However, due to various limitations such as the lack of filters for location and type of companies, some of the databases were found to be not suitable for this study.

The final dataset obtained was based on the lists of startups from Website A (not the real name) and Website B (not the real name). Website A offers a comprehensive database that could be easily filtered by criteria such as country and type of business. It is also reputed to be one of the biggest English-language platforms focusing on technology news in Asia. To verify and validate this dataset, a second dataset from Website B was used as a supplement to the data derived from Website A. Website B is also a platform that provides resources regarding the Asian technology ecosystem. It has a database that connects technology startups and investors to support growth in the region's industry.

After filtering both databases, 575 and 255 companies were identified in Website A and Website B, respectively. Both datasets were screened for duplicates, and the companies that have the following attributes - no online activity after 2017, running brick-and-mortar clinics, offering services without direct health impact, selling non-immediate health products, and engaging in biotechnology business - were excluded. These criteria further reduced the number in the list to the final sample of 260 companies. These startups were then categorized into IoT, AI, and Big Data Analytics-related companies.

VI. Results

The main aim of the study is to investigate the digital health startup landscape in the region as a whole and not by individual countries. Nonetheless, a breakdown by country is included for reference: Singapore – 122, Indonesia – 67, Malaysia – 35, Thailand – 11, Vietnam – 11, Philippines – 10, Cambodia – 2 and Myanmar – 2. The digital health landscape in Southeast Asia seemed to be dominated by IoT-related type of companies which has the largest number at 196. There were 30 AI-related and 13 Big Data Analytics-related companies (See Table 1).

Table 1 Number of Startups

	Internet of Things (IoT)	Artificial Intelligence (AI)	Big Data Analytics	Medical Devices	Total
eHealth	79	4	1	0	84
mHealth	61	9	2	1	73
Telehealth	31	1	1	0	33
EMR	18	0	1	0	19
Operations	4	1	0	0	5
Detection	0	9	5	4	18
Treatment	3	6	3	16	28
Total	196	30	13	21	260

Source: The author, based on publicly available website databases

An interesting point from the data analysis revealed an unanticipated fourth type of company. There were 21 companies that did not fit the IoT, AI, and big data analytics classifications. As a result, a new category of companies on "Medical Devices" was created. Medical devices are, essentially, health-related hardware that could range from simple and disposable tools such as plasters and syringes to complex devices such as imaging machines and robotic devices (Taylor et al., 2018).

A deeper analysis of the data also suggests that the 260 companies could be further categorized into seven business focus areas within a "spectrum" from health to healthcare solutions. The spectrum reflects the areas of business focus, which cover eHeath (electronic health), mHealth (mobile health), Telehealth, Electronic medical record (EMR), Operations, Detection, and Treatment. In this study, the seven business focus areas are defined as follows:

1. eHealth: the company provides broad types of health services through the internet without the use of mobile applications including health education platforms, lifestyle management services, and healthcare professional booking services.
2. mHealth: the company specifically provides healthcare services through the internet while using a mobile application including wearables that connect to the application.
3. Telehealth: the company uses virtual communication technology to enable healthcare professionals to remotely monitor and care for the health of patients including tele-pharmacy services.
4. EMR: the company designs solutions for improved storage and organization of electronic medical records for a healthcare setting.

5. Operations: the company creates solutions that improve efficiency and ease of workflow processes in healthcare settings.
6. Detection: the company focuses on methods of detecting the presence and diagnosing the risk of health conditions from quicker methods, e.g., AI-powered software, to more time-consuming methods, e.g., genomics analysis.
7. Treatment: the company focuses on creating treatments to heal or improve a health condition including drug discovery, precision medicine, and rehabilitation technology.

The eHealth and mHealth were the top two most prevalent business focus in Southeast Asia with 84 and 73 companies, respectively. Startups with an Operations focus had the least number at 5. Those IoT-related type companies with a focus on eHealth had the largest number at 79. There were also some specific types of digital technologies and focuses that did not turn up in the search such as IoT companies with a Detection focus, AI companies with an EMR focus, and Big Data Analytics companies with an Operations focus.

VII. Discussion

The application of IoT in the digital health domain was the most dominant company type. This is not surprising given that IoT itself covers a relatively broad scope and has general applicability in many areas that affect people's daily lives such as community health platforms and wearables. In comparison, the other categories of AI, Big Data Analytics and Medical Devices would require more specialized knowledge on how to create, operate, and manage these types of digital technologies.

In retrospect, the emergence of Medical Device as a 'new' category in the study is also not unexpected because new digital technology developments in hardware have existed for many years in other industries, and they are now transitioning into the health industry. For example, improved homecare for people with renal disorders is now possible with a portable dialysis machine that is also designed to minimize the dialysate used (AWAK Technologies, n.d.). This reduces overcrowding in hospitals as patients no longer need to be treated using large dialysis machines and wait in hospitals. Medical devices are an integral type of technology that improves the provision of health and healthcare.

One possible explanation for the popularity of eHealth as a business focus area is the high internet penetration rate in Southeast Asia. There are numerous possibilities for health services that could be offered through the internet. Similarly, the attractiveness of mHealth as a business focus area is attributed to mobile phone penetration among the population in the region (ASEAN UP,

2017). The relatively smaller number of companies with an Operations business focus may be due to the perceived resistance from businesses to adopt a digital approach to operations. Employees and managers may fear that digitalization could affect their jobs (Bollard et al., 2016). Other external factors such as response speed and voice service that have a positive effect on users' perceived service quality should also be considered (Tan & Yan, 2020).

In order to increase the adoption rate of digital health technology amongst users and providers, key stakeholders should consider adopting some policy measures and interventions. These actions could include various stakeholders playing an enabling role in digital health transformation, prioritizing consumer protection, and incentivizing providers to adopt digital health technologies.

The public sector also plays a critical role in setting a clear path towards digital innovation and enabling the adoption of digital health technologies. Enacting policies that encourage open innovation and usage of technology would provide the strategic context for organizations and companies to make investments in digital health applications (Drury et al., 2018). Governments should engage and collaborate with both users and experts to address digital health challenges. For example, they could provide funding to advance research and development in digital health and identify the best practices.

As new digital health technologies and innovations emerge, new regulations and tools are needed to ensure public health safety (Daruwalla et al., 2018). For example, governments and organizations should focus on strengthening cyber security by adopting a systematic approach to collecting, sharing, using, and storing health data. Tools such as real-time monitoring, threat mitigation and remediation, and cyber modelling and analysis could help to protect health data against cyber-attacks (Deloitte, 2019). As part of risk management, training, and education on the appropriate use of digital technology could be considered. A culture of public trust in the safety of health data is an important aspect of digital health adoption as it allows all stakeholders to feel safe using digital technology. There would be a need to differentiate the population's perception of trust and risk on the type of internet channel used (Kaleta & Mahadevan, 2020).

As healthcare demands increase, governments could better meet citizens' needs and decrease the strain on the health systems by incentivizing healthcare providers to adopt digital health solutions. For example, Vietnam has introduced financial incentives to attract foreign companies to the healthcare sector. These companies are provided with a 10% exemption in corporate tax in the first four years and 50% subsequent tax breaks in the following five to nine years. Incentivizing private healthcare providers are important because they help to improve accessibility and reduce the burden on local health systems (Economist Intelligence Unit, 2016; Safavi et al., 2019).

VIII. Limitations and Future Research

There are some limitations associated with this exploratory study. Firstly, the source data was limited to publicly available databases from various websites. These datasets were not updated regularly and validated officially by the formal authorities in the respective countries. Consequently, the population and sample may not necessarily represent all the startups that exist in Southeast Asia. Secondly, there is an element of subjectivity in the categorization of the companies. A major challenge is the lack of standard definitions for various digital technology and business focus categories and overlaps in the application of these digital technologies in real life.

Therefore, future research could focus on the digital health landscape and the state of technology applications among different entities such as small and medium enterprises and multi-national companies in the region. The datasets could be obtained from government databases in each of the country to present a more complete and accurate picture of the state of startups and digital technology applications in the region. Also, to standardize the different definitions of digital technology used by the different countries in the region. Finally, the effect of the recent COVID-19 pandemic on the application of technology in the digital health space across the Southeast Asian region should be determined (George et al., 2020). It would be interesting to ascertain how widespread infections could result in the more innovative use of digital technology with a focus on their applications in some domains or business areas (Tavakoli et al., 2020).

The main aim of this study was to provide preliminary findings on the state of digital technology applications of startups in Southeast Asia. Also, to identify issues related to digital health adoption in the region. It is the first trial to better understand the digital health technology landscape. The intended audience is professionals and practicing managers. As a part of conceptual model testing, Roger's (1995) theory of innovation diffusion could be applied to test the various factors which affect the spread of digital health technology. In addition, to empirically examine the various stages for which a digital health technology spreads, namely, knowledge, persuasion, decision, implementation, and confirmation.

IX. Conclusion

Southeast Asia is experiencing major shifts in demographic and health trends. Digital health technology has the potential to address some of the problems that arise as a result. Governments and organizations should collaborate and

implement initiatives to improve the adoption rate of digital health technology. The initial list of suggested issues includes privacy and security concerns, potential overreliance on digital technology, unclear return on investment, and a steep learning curve. It is pertinent to develop a deeper appreciation of these issues to be able to maximize the benefits in the implementation of digital health technologies. As a next step, the article proposes more detailed research of the digital health landscape and the state of technology applications among different entities such as small and medium enterprises and multi-national companies in the region.

This article contributes to the existing literature by offering an overview of startups and digital technology applications in the digital health space in the fast-growing region of Southeast Asia. It offers advice to organizations intending to pursue healthtech initiatives on the types of health services provided by startups and issues that need to be addressed to increase the adoption rate.

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