VIETNAM EDTECH REPORT 2021

Multi-dimentional views and insights of
Vietnam Edtech business and investment environment.

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GCD MANAGEMENT CONSULTING

EDTECH AGENCY

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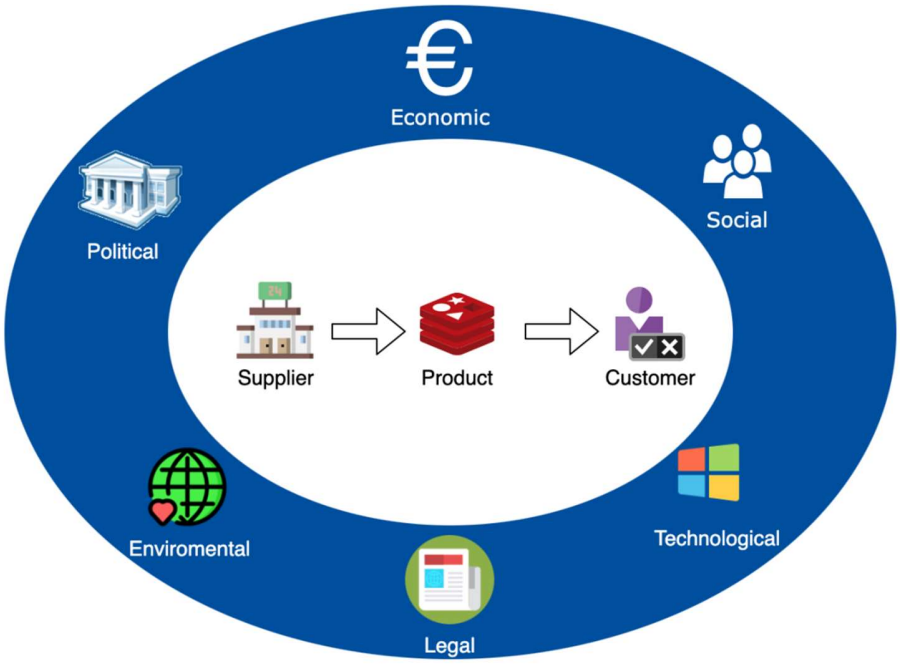
1. Report Methodology

1.1. Research model

The report is based on the PESTLE model (Political Factors - Economic Factors - Social Factors - Technological Factors - Legal Factors - Environmental Factors) – a model which analyzes the effects of the macro-environment on three of the **main objects** in Vietnam EdTech market: (i) Products, (ii) Suppliers, and (iii) Consumers.

Figure 1: Analytic Model



The PESTLE based study helps to identify the outlines of global and local Edtech market, thereby pinpoints opportunities and challenges for the potential of Vietnam Edtech market in the future. In addition, the direct effects of PESTLE on the development of the Vietnam EdTech market are analyzed through three objects: products, suppliers and consumers. Consequently, observations and recommendations are elaborated in this report.

Specifically:

- **Products:** EdTech products are categorized into different groups by the purpose of use including:

- SMS (School Management System) – technology to manage and operate education and training center;
- LMS (Learning Management System) – technology to manage and operate teaching and learning activities;
- CLS (Courseware & Learning System) – technology to manage and operate curriculum and teaching and learning application.

- **Suppliers:** Organizations/businesses that supply Edtech products and services.
- **Consumers:** Organizations/businesses and individuals that utilize technology in teaching and learning activities.

1.2. Data collection methodology

✓ *Desk research*

This report conducts research on secondary data from available and reliable sources about the education industry in general and the EdTech market in particular to synthesize, analyze and sketch the overall picture of Vietnam EdTech market.

Sources of information exploited by OCD for this research are expected to include:

- Internal sources: Gathered information and reports researched and developed by OCD;
- Sources of information officially published by organizations and authorities;
- Sources of information from the Internet.

✓ *In-depth Interview conducted by Edtech Agency & OCD*

To acquire more insights and information for recommendations for readers, the research team has conducted in-depth interviews with experts in the fields of education, education technology (EdTech) and education policy planners in Vietnam. The in-depth interview questionnaire was built on the basis of the research model outlined above to ensure completeness, richness and diversity of collected information.

2. An overview of global Edtech market

Summary

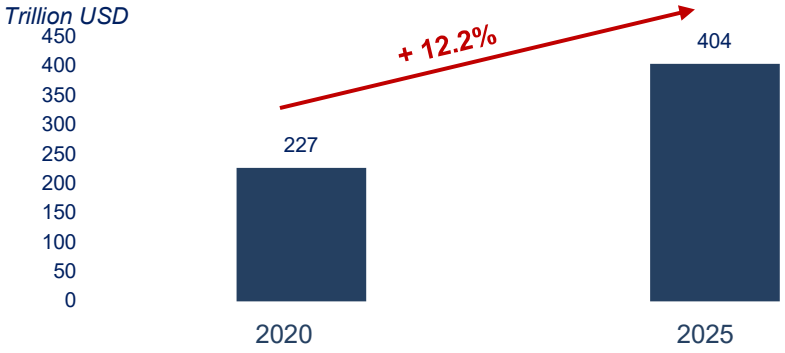
- According to HolonIQ, total investment in the Global Education Technology (EdTech) market reaches 227 billion USD in 2020 and is estimated to grow strongly at the rate of 12.2% by 2025, reaching 404 billion USD.
- The proportion of investment in EdTech is not uniform globally with the Asia Pacific region accounts for more than 54% of total investment in 2020.
- China accounts for two-thirds of venture capital worldwide.
- Many advanced technologies have been incorporated into the curriculum and learning across the globe with VR and AR (virtual reality and augmented reality) being applied most actively.
- Global mobile learning has grown strongly - Mobile learning market size has exceeded 20 billion USD in 2019 and is estimated to increase at a CAGR = 13% from 2020 to 2026.

2.1. Global EdTech market

According to HolonIQ (*a market research company in the EdTech segment*), by 2020, the total investment in the global EdTech market will reach 227 billion USD, with more than 1,250 transactions completed. In particular, the record EdTech investment in the past year amounted to 36.38 billion USD and 16.1 billion USD came from venture capitalists (2.3 times increase compared to 2019). HolonIQ estimates that, by 2025, 404 billion USD will be invested in the Edtech segment (a growth of 12.2% compared to 2020).

Although the long-term impact of the Covid-19 pandemic on traditional educational models is not yet obvious, HolonIQ maintains that investments in technology in education will grow strongly in the long run. Accordingly, many advanced educational technology models will be applied to replace traditional teaching methods around the world.

Figure 2:Global Investment for EdTech, 2020 & 2025e



Source: HolonIQ 2020 report, OCD

The proportion of global investment in EdTech is not evenly spread. According to *Tech Crunch* (an US online newspaper specialized in Technology), the amount of investment in education technology is not uniform across the world but focuses more on certain territory. Specifically, the Asia Pacific region is a "hot spot" for investments in the education technology market when it accounts for more than 54% of the 2020 global venture capital for this segment.

Figure 3: Global venture capital for EdTech, 2010 - 2020

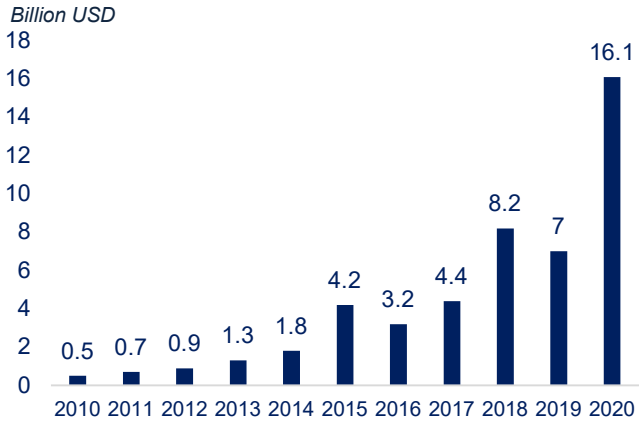
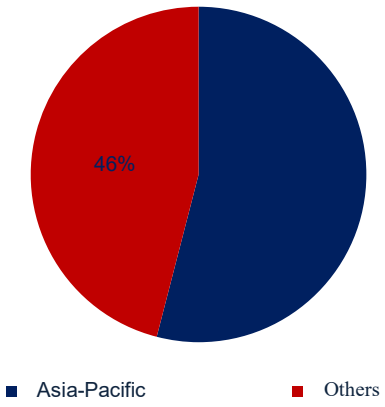


Figure 4: Global venture capital allocation for EdTech, 2020

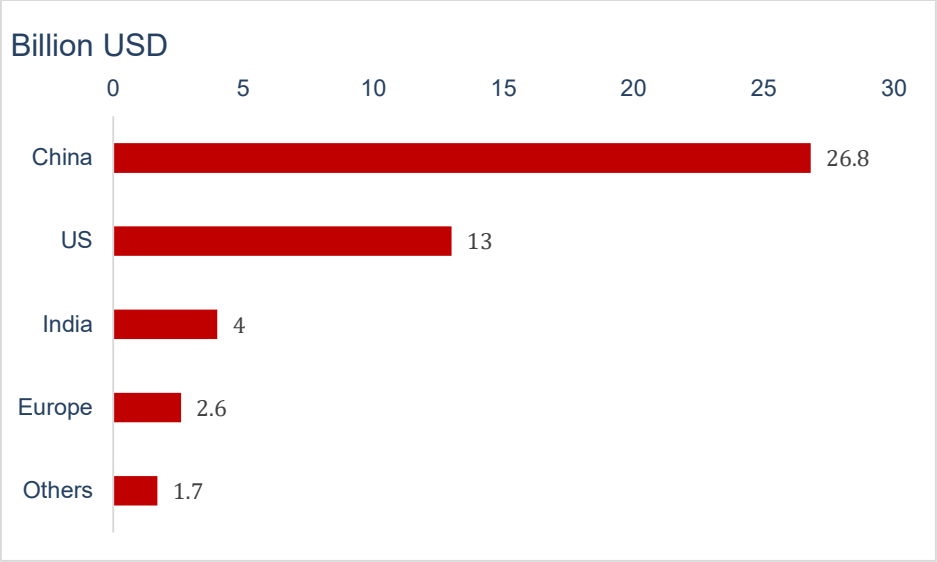


Source: HolonIQ 2020 report, OCD

China accounts for two-thirds of venture capital globally. According to a HolonIQ 2020 report, Chinese EdTech companies have received more investment money than all other countries altogether. In addition, according to a study published at the EdTech Asia Summit in Hong Kong in 2019 by *Navita Ventures, an education venture capital firm of Navitas global education organization*, Beijing is currently considered one of global

EdTech's centers of excellence with more than 3,000 EdTech companies are being headquartered here. In particular, Beijing is being centralized with the most number of EdTech startup groups compared to other cities around the world, with a ratio of 120 EdTech startups per million people, followed by New York (117), Bay Area (91) and Bangalore (77).

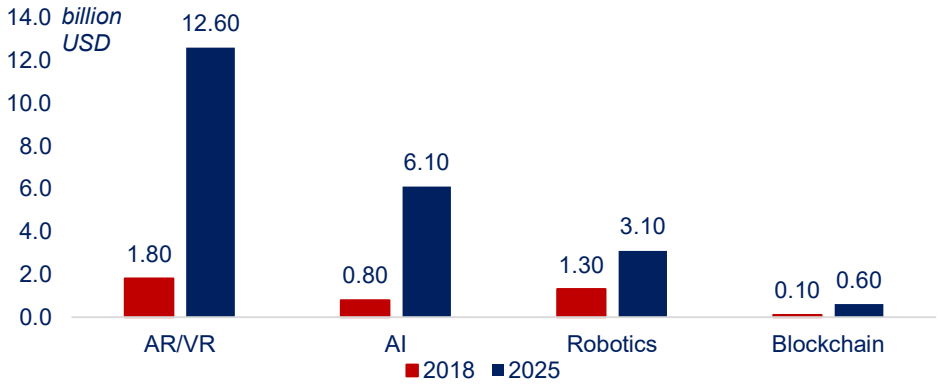
Figure 5: Global venture capital for EdTech by countries, 2020



Source: HolonIQ 2020 report, OCD

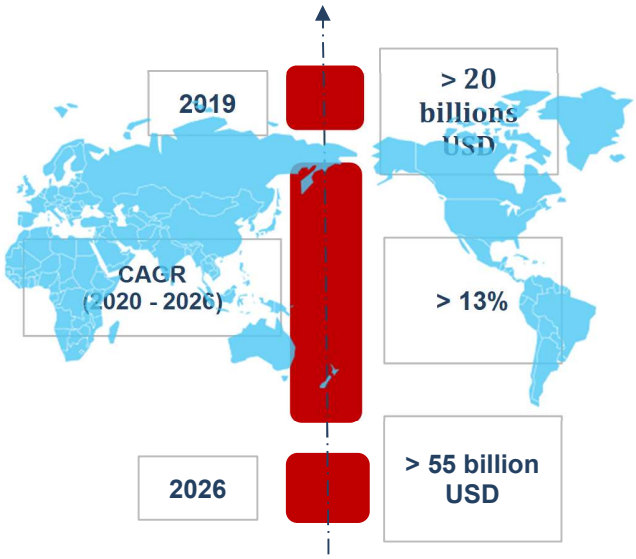
Advanced technologies have been introduced in the teaching and training programs worldwide. Advanced technology applications in education and learning are expected to have many significant progresses by 2025. According to a HolonIQ 2020 report, AR / VR and Artificial Intelligence (AI) are being increasingly integrated into core education processes, alongside with virtual training and simulation models that have become mainstream in human resources and skills enhancement training programs.

Figure 6: Educational technical products growth rates, 2018 & 2025



Source: HolonIQ 2020 report, OCD

Figure 7: Global Mobile Learning growth rates, 2020 - 2026



Source: Global Market Insights 2020, OCD

Mobile learning has grown strongly all over the world. According to a report by Global Market Insights 2020 (Global Market Research Company of India), the size of the Mobile Learning market has exceeded 20 billion USD in 2019 and estimated to grow at a CAGR of 13% between 2020 and 2026. The growth of the market comes from an increase in global smartphone usage in combination with the availability of a wide range of other more cost effective mobile devices.

Figure 8: Top 190 educational software applications worldwide

2.2. Asia EdTech market

Summary

- Asia is an extremely developed market for E-learning services - Total revenue solely for the E-learning market reached about 12.1 billion USD in 2018.
- Asia EdTech market is forecasted to grow fast - EdTech Asia Pacific market (mostly E-learning) is expected to grow at a rate of 13.7% annually with a total market capitalization of 716.5 billion USD over the period between 2020 and 2026.
- Asia is the most potential market for EdTech - Currently, Asia has more than 600 million students in general education (K-12). In the next 5 years, the continent is estimated to account for more than 17.3% of the global EdTech market share, becoming the largest EdTech market in the world.

Asia is a highly developed market for E-learning services. According to the *University World News (a newspaper specializing in higher education news in the UK),* total revenue solely for the E-learning market in the region was about 12.1 billion USD in 2018, in which

India and China are the two leading countries accounting for 70% of venture capital and 30% of the total number of online education users worldwide.

EdTech Asia market is forecasted to grow rapidly. *Research & Markets 2020 (the world's leading market research company)* reports that EdTech market in Asia Pacific is estimated to grow 13.7% annually with total market capitalization reached 716.5 billion USD in the period 2020 - 2026. This figure is increasingly driven by the rising demand for distance teaching and online learning during the Covid-19 pandemic.

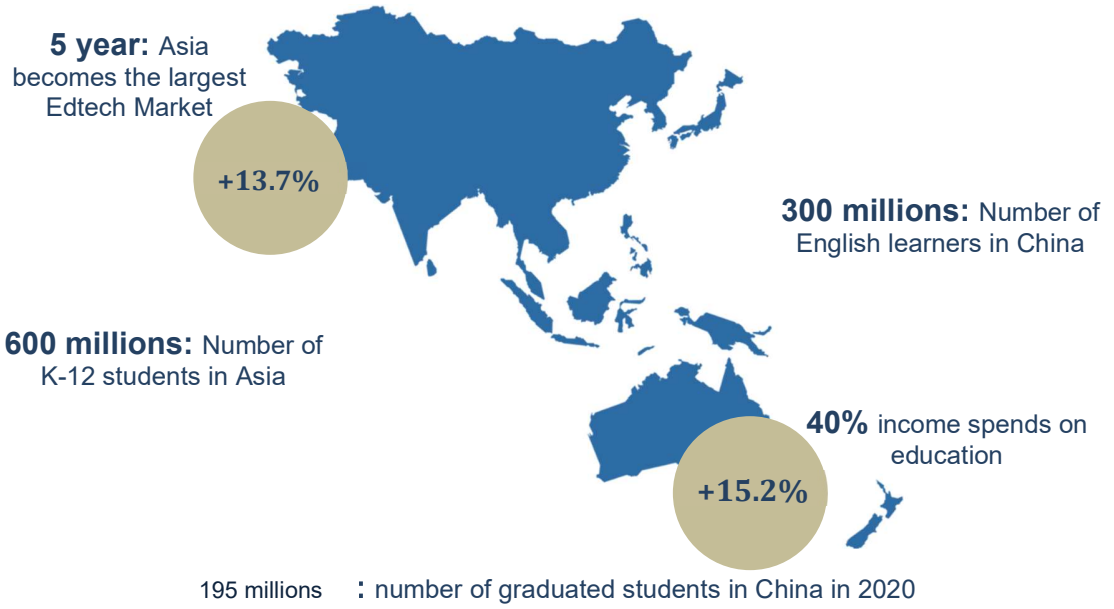
Thus far, the key players operating in the Asia Pacific EdTech market include Adobe Systems Inc., Cisco Systems, Meridian Knowledge Solutions, Citrix Education, Microsoft Corporation, Skillsoft Inc. and SAP SE.

Figure 9: Key EdTech Enterprises in Asia Pacific Region

Adobe Systems Inc.	***Cisco Systems***		***Meridian Knowledge Solutions***
Adobe	CISCO		meridian KNOWLEDGE SOLUTIONS
Citrix Education	***Microsoft Corporation***	***Skillsoft Inc.***	***SAP SE***
CITRIX Education	Microsoft	skillsoft	SAP

Asia is the most potential market for EdTech. Presently, the Asian region has more than 600 million students in general education (K-12). In the next 5 years, this continent is expected to compirse for more than 17.3% of the global EdTech market share, becoming the largest EdTech market in the world (*as reported by Fresco Capital - specializing in technology investment*). Here, education is ever more invested both in term of time and money. On average, 40% of household income goes to education.

Figure 10: Asia EdTech market size, 2020 - 2025



Source: Fresco Capital 2019 report

South East Asia region

Southeast Asia has always been one of the three regions with the highest growth rates in Asia (outside of China and India) with more than 600 million people, most of them are young, many countries with high economic growth rate, high rate of smartphone users and high internet penetration, competitive labor costs ... *(According to statistics of Association of Southeast Asian Nations - ASEAN 2019).* In particular, Vietnam is one of the most potential markets in Southeast Asia with its strength in information technology human resources and connection with Silicon Valley. This is the basis for start-ups in any field to thrive in Southeast Asia. In fact, with such a young population structure, the resources of teachers, teacher materials and equipment will need to be adequate to that great demand. This is a promising room for EdTech start-ups in the area to thrive.

3. Vietnam EdTech market

3.1. A history of Vietnam Edtech industry

Summary

Vietnam EdTech market has progressed through 5 stages of development so far:

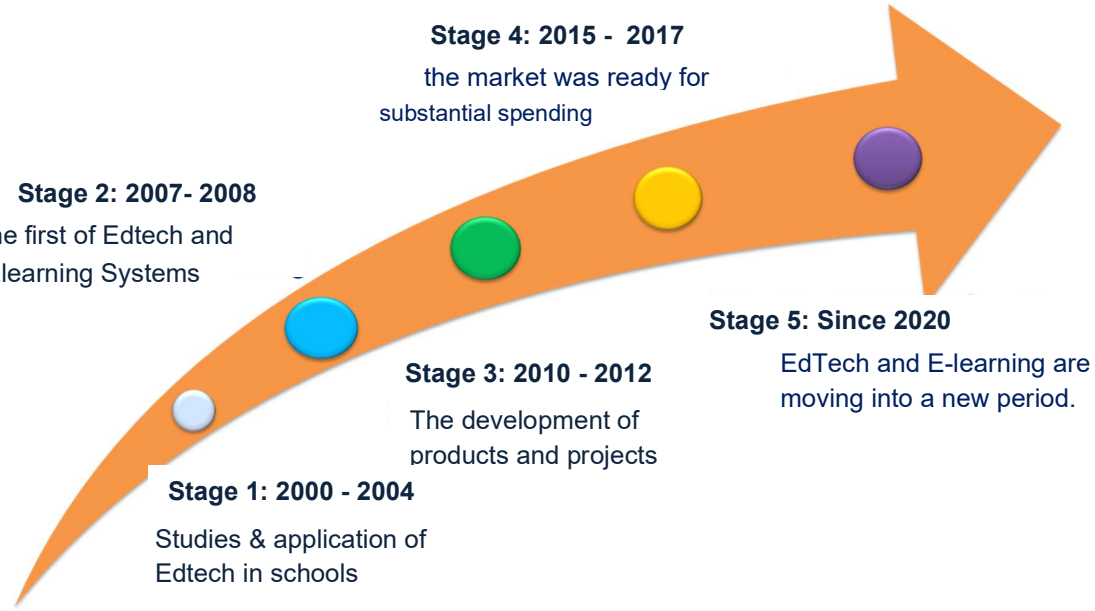
- Stage 1 (2000-2004): the emergence of EdTech studies and applications in school system.
- Stage 2 (2006-2008): the appearance of the first EdTech & E-learning products.
- Stage 3 (2010 -2012): the explosion in the number of projects and products launched.
- Stage 4 (2015 -2017): the market was ready for substantial spending.
- Stage 5 (since 2020): EdTech and E-learning are moving into a new period where everyone is getting familiar with distance learning and teaching.

The application of technology to education is not necessarily new in countries around the world. Since the early 1990s, thanks to the development of the internet, online education perspectives have formed in worldwide communities. However, it was not until the years 1995 and 1996 that the first products came out, opening the door to the world of online education.

In Vietnam, Internet services have been officially present since 1997. Since then, the Internet has penetrated and influenced all areas of life as well as education. Education is one of the highest prioritized fields and received significant financial attention with the mission of improving future Vietnamese people's quality. The Ministry of Education and Training (MOET) has made great efforts in fully opening up this field with the internet, enabling the application of IT systems in management, teaching and learning activities.

In the process of innovating teaching and learning methods, Vietnam has decided to introduce information technology to all levels of education with the ambition to improve the quality of learning in all subjects and equip young people with necessary tools and skill sets for the information age. However, it can be said that the education technology market has only begun to grow rapidly in recent years, with broadband Internet connectivity being strongly deployed to all schools.

Figure 11: 5 stage progress of Vietnam EdTech development



The history of Vietnam EdTech industry has basically gone through 5 stages as follows:

- **Stage 1 (2000-2004):** the studies and applications of EdTech in school system.
- **Stage 2 (2006-2008):** the appearance of the first EdTech & E-learning products (hocmai, Topica, etc.).
- **Stage 3 (2010 -2012):** the explosion in the number of projects and products launched.
- **Stage 4 (2015 -2017):** the market was ready for substantial spending.
- **Stage 5 (since 2020):** EdTech and E-learning are moving into a new period.

✓ ***Stage 1 (2000-2004): the emergence of EdTech studies and applications in school system.***

Around the year 2000 and earlier, there were not many research papers and documents about EdTech in Vietnam. This trend started to change since 2000 - a period when many organizations began to pay attention to applications of technology in education. During this time, number of conferences and seminars on information technology and education

have been held to discuss issues regarding EdTech and E-learning as well as the ability to apply in the training environment in Vietnam, such as:

- Seminar on improving the training quality of Vietnam National University in 2000;
- Higher Education Conference 2001;
- The first National Scientific Conference on research and developement and application of information technology and communication (ICT/rda/2/2003);
- The second National Scientific Workshop on research and developement and application of information technology and communication (ICT/rda /9/2004);
- Scientific seminar "Researching and implementing E-learning" jointly organized by the Institute of Information Technology (Vietnam National University) and Faculty of Information Technology (Hanoi University of Technology) in early March 2005 - the first scientific seminar on E-learning was held in Vietnam.

The above-mentioned seminar "Researching and implementing E-learning" has created a great impression, initiating the first wave of E-learning in Vietnam. Many educational institutions have used E-learning as an effective learning support channel for students. At this moment, most of the applications started with implementation of the Learning Management System (LMS). LMS deployment focused on student management, materials management, content exchange and grading. Apparently, the video format did not receive much attention during this time.

✓ ***Stage 2 (2006-2008): the appearance of the first EdTech & E-learning products***

EdTech business model started to noticeably emerge in Vietnam from the years of 2006 and 2007, with Delta Viet of Dream Viet Education - DVE (later renamed Kyna), hocmai.vn, violet.vn, FUNiX (FPT), etc., became the first names entering the market. Courses at that time focused mainly on soft skills and learning English for students. Products were shot with a camcorder, saved on a server and distributed via the internet platform, or through a hard disk for the use of Computer-based training (CBT). However, the development of EdTech models at this stage encountered certain challenges: the low self-learning commitment of the customer; the lack of connectivity tools; the limitation of content delivering caused by not legally recognition of formal training programs. Hence,

EdTech businesses at this time were just touring around the seed funding or pre-seed funding rounds.

Realizing the potential of the E-learning market, in 2008, many organizations had found better approaches to invest in the businesses. Students began to have extra options for revising their knowledge before entering the university exam thanks to exam preparation sites such as hocmai; thaytro; truongtructuyen; etc.

- ✓ ***Stage 3 (2010 -2012): the explosion in the number of projects and products launched***

With the fast developement of the society and the growing of learning demand, the school system, despite having been dramatically invested and developed in both quantity and quality, could not meet the diverse requirements of learners. Facing such reality, the Education & Training policy makers have built an education development strategy up to 2010, which emphasized "Developing non-formal[1] education as a utilization form of the community's capability, to build a learning society, to create opportunities for people of all levels, all ages, and places to learn for a lifetime, suitable to each individual's circumstances and conditions, contributing to improving people intellectual and quality of human resources". EdTech was considered to be one of the training methods that contributes to the above goal. Accepting this unstoppable development trend, a series of projects and products have been launched, contributing to a new tendency of training in which the learners played the key role and the lessons were professionally recorded and processed.

The E-learning market before 2010 focused mainly on two product lines: English teaching and university exam preparation. The training systems was not thoroughly built and operated, evidently from the fact that the LMS system was developed from Video Streaming projects or open source systems to the lack of quality studio system and the incompleteness of lecture publishing process and so on. In addition, the unreliable Internet connection speed made it impossible for E-learning market to take off. Since

[1] https://www.linkedin.com/pulse/ph%C3%A2n-bi%E1%BB%87t-3-h%C3%ACnh-th%E1%BB%A9c-gi%C3%A1o-d%E1%BB%A5c-formal-non-formal-v%C3%A0-informal-le/?trk=read_related_article-card_title

2010, the E-learning market has developed energetically in the context of Vietnam's education, which was now facing the challenge of equipping future citizens with sufficient intellectual capacity and self-study and self-upgrade abilities given the fierce competition of new environment when world economy integration became more extensive. Some typical products at this stage included:

- In 2010, VTC entered the E-learning market;
- In April 2011, IDJ Technology Company launched the learning portal www.hoc360.vn with exam preparation package as the first product;
- On June 29, 2011 VNPT started to apply E-learning for internal staff training;
- From June to September 2012, Military Bank successfully implemented E-learning application on moodle platform, a free and open-source learning management system[2], for integration training and capacity testing for 200 new recruits nationwide in 2 months. Since then, E-learning application has been officially deployed throughout MB's training activities.
- AI combined with Information Technology Center to build better kienthucviet.vn

✓ ***Stage 4 (2015 -2017): the market was ready for substantial spending.***

On April 22, 2016, the Ministry of Education and Training issued Circular *No. 12/2016/TT-BGDDT regulating the application of information technology in the management and organization of online training*. Consequently, some universities have linked with non-state training organizations to grant Bachelor Degrees and Training Certificates. Examples include: Hanoi Open University, National Economics University, Vinh University. In the period 2016-2017, some universities also independently built their own E-learning systems which aimed specifically for:

- Digitization of the teaching program of all subjects, investing in an E-learning system for implementation of electronic curriculum which was initially used as a support and reference tool for students besides classroom learning;

[2] https://moodle.org/

- In addition to organizing online training for the subjects in the teaching program, the school also provided paid supplementary courses on the E-learning system in the following fields: foreign languages, informatics, and soft skills.

Vietnam is considered a potential market for E-learning development due to its young population structure, high Internet usage rate, and annual education expenditure ratio of approximately 20% (equivalent to 5 per cent of GDP)[3] . Therefore, E-learning has no longer been a playfield reserved for familiar names appearing from the early days of development, but also attracted the participation of many Vietnamese start-ups and foreign investment sources, especially businesses from Singapore.

The presence of domestic companies and foreign investors has stimulated the E-learning market in Vietnam strongly and put Vietnam in the top 10 fastest growing Asian countries in this field according to a report of University World News in 2017. Also in 2017, Ambient Insight rated Vietnam as the country with the highest growth rate in online learning at the rate of 44.3%.

✓ ***Stage 5 (since 2020): EdTech and E-learning are moving into a new period.***

From 2020, due to the impact of Covid-19, many countries, including Vietnam, have had to undergo periods of social distancing. Meanwhile, the learning process of students could not be postponed indefinitely and educational institutions must also find a way to survive. This has created unprecedented opportunities for EdTech businesses and forced the society as a whole to shift to accepting online training as one of the new normality.

Online training, in the context of fourth industrial revolution, has been becoming a new trend in Vietnam and other countries. With its outstanding advantages, E-learning has contributed drastically to the transformation of self-learning process towards personalizing learning activities in the modern environment. Learners can study online from mobile devices and/or from the virtual classrooms and thereby overcoming many limitations of traditional training. In the past, students had little chance to interact with lecturers. With E-learning, teachers work more than in the traditional model. E-learning,

[3] https://www.mof.gov.vn/

with its good learning resources and its natural integration in the Internet technology environment, has met the diverse needs of learners. This model provides learners with time flexibility.

Currently, considering E-learning as a blue ocean market in Vietnam, a number of professional investors have begun to make solid moves into this market. Vietnam's population is about 100 million people with high percentage of Internet users. In addition, Vietnam is one of the leading studious countries in the world. There are numerous gaps in the E-learning market such as soft skills, in-depth theoretical skills for investment, accounting, cooking skills, yoga, etc. Investors expect substantial profit from this market in the near future.

The outbreak of the Covid-19 pandemic in the beginning of 2020 was the factor that helped everyone know and use EdTech. With the current EdTech being more familiar with the population and new mechanisms and policies for EdTech being introduced, this market is anticipating to strongly attract both public and international investment sources.

3.2. Vietnam economy and investment budget for education

Summary

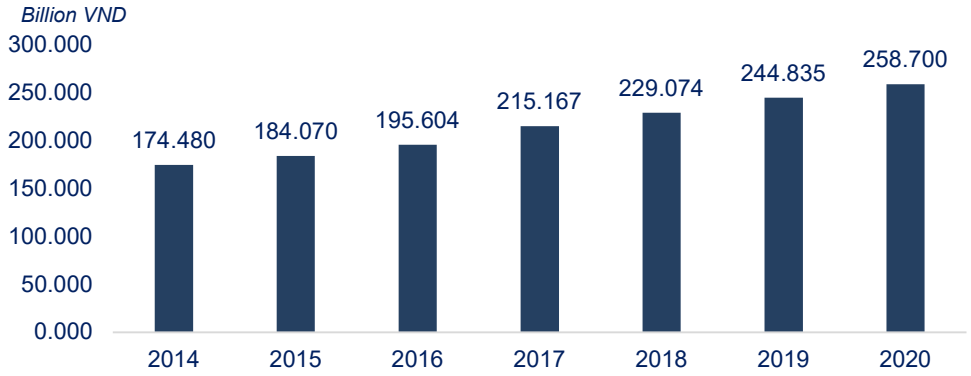
- Vietnam has a high proportion of budget allocation for education compared to other countries in the world - Vietnam's annual education expenditure ratio is approximately 20%, equivalent to 5% of GDP in recent years.
- Public expenditure for upper secondary education and preschool accounts for the highest proportion, currently representing more than 70% of the total state budget.
- Investment in higher education in Vietnam is much lower than in other countries in the region and the world, accounting for 15% of the total state budget.
- The percentage of spending on EdTech products reports at a very small part of the total budget.

Vietnam has a high proportion of budget allocation for education compared to other countries in the world: *According to the World Bank*, Vietnam has a much higher proportion of budget allocation for education and training than many other countries in the

world, including countries with more developed economic. Specifically, Vietnam's annual education expenditure ratio is approximately 20%, equivalent to 5% of GDP in recent years.

Regarding investment from the state budget for education in general: In the past 5 years, Vietnam has focused more on education and training, especially in investment policies, ensuring a high rate of expenditure on education from 20% or more of the total state budget. Along with the socio-economic growth, investment in education from the state budget next year is always higher than the previous year. In the period from 2016 to 2020, the state budget recurrent expenditure on education has increased by over 32.2%. In 2020, the recurrent budget for education and training reaches VND 258.7 trillion (central government budget: VND 30,250 billion; Local budget: VND 228,000 billion), an increase of 5.7% compared to 2019.

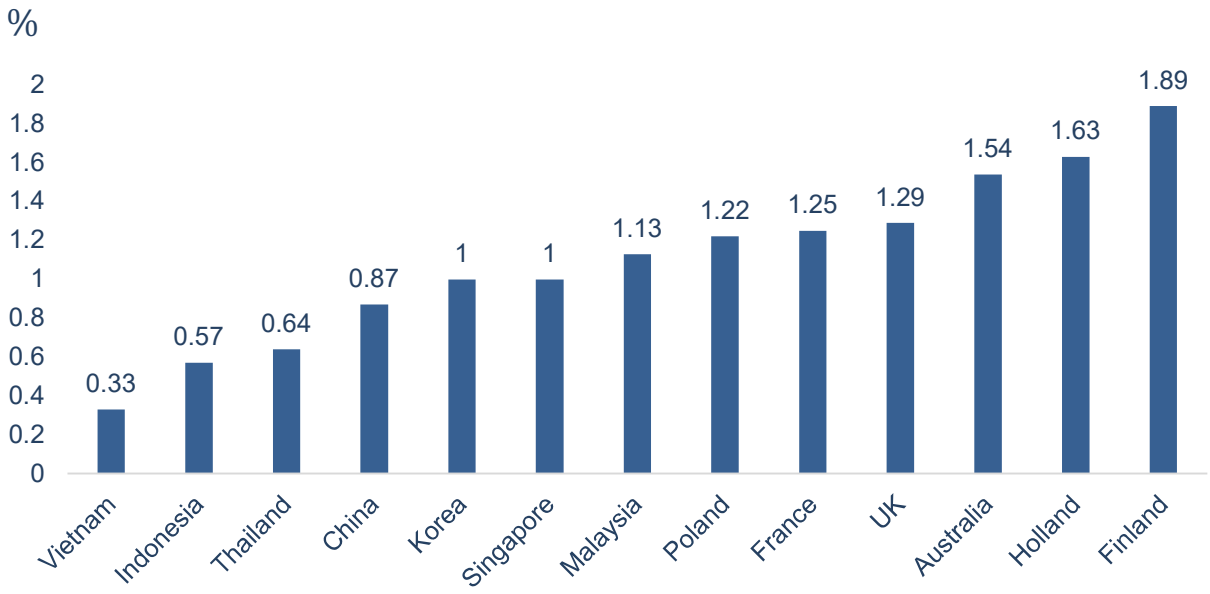
Figure 12: Recurrent funding for education and training, 2014 - 2020



Source: Ministry of Education and Training of Vietnam report, 2015 – 2020, OCD

Public spending on general education and preschool still accounts for the highest proportion, representing more than 70% of the total state budget, reaching more than 181,000 billion VND in 2020. In which, the state budget for primary education accounts for the highest proportion, nearly 30% of the total budget, reaching VND 77,610 billion (*according to the Ministry of Education and Training 2020*). On contrary, according to 2019 statistics, the state budget expenditure on higher education has tended to decrease sharply in recent years, currently at only 0.23% of GDP (a decline from 0.33% of GDP in 2016). Meanwhile, the average public investment of OECD countries in higher education is at 1.1% of GDP.

Figure 13: Public Expenditure on tertiary education as % of GDP, 2016



Source: World Bank Vietnam Public Expenditure Report 2017, OCD

In the period 2015 - 2020, the budget for higher education only accounts for about 15% of the total state budget spent on education and training (equals to only 50% of the corresponding figure for primary sector), reaching VND 199,117 billion *(according to the Ministry of Education and Training, 2020).* This amount includes expenditure on development and investment, recurrent expenditure on public universities and part of the state budget on recurrent expenditure to implement the state's policies and regimes towards students belongs to non-public universities, who mainly are children of families with meritorious services to the revolution and subject to state policies and who are in ethnic minority groups belonging to poor and near-poor households or extremely low populated ethnic minorities and so on. This is considered a fairly modest figure to be able to develop higher education towards international standards and high-tech orientation in the next stages.

Regarding state budget investment for EdTech: According to an expert from Do Ventures (a venture capital fund in Vietnam), the proportion of spending on EdTech products accounts for a very small part of the total state budget. In particular, compared with other countries with strong technology background in the world such as China, the US, or India, start-ups in Vietnam are still in their infancy in terms of both technological

capabilities and scale. Thus, experts believe that the potential for development of EdTech products in Vietnam in the future is enormous.

3.3. Significant Edtech policies in the past 5 five years

In the last 5 years, **many policies and schemes to promote the application of technology in education have been promulgated and approved by the Government**, demonstrating Vietnam's openness and urgent need for advanced teaching and learning models. The formal documents include: Resolution No. 29-NQ/TW dated November 4, 2013 of the Central Executive Committee on fundamental and comprehensive renovation of education and training; The government project "Development of a digital Vietnamese knowledge system" on building a digital foundation in the fields of humanitarian, education, health, culture, tourism, postal services, etc. In addition, programs and projects of ministries and provinces have also created a legal corridor to materialize smart education programs and digital transformation in the education sector. Moreover, number of investment policies, educational development programs and projects have been formulating to create favorable conditions for the application of educational technology in all educational levels from preschool to university.

In 2020, the Ministry of Education and Training officially issued a draft Circular on the Promulgation of Regulations on the management of online teaching for general and continuing education institutions. This document officially regulates the organization of online teaching, including the followings: organization and management of online teaching; technical infrastructure and online teaching materials; rights and duties of teachers, staff and students at continuing education centers and students of high schools (hereinafter collectively referred to as students); implementation organization.

In addition, Decree No. 135/2018/ND-CP dated October 4, 2018, which amended and supplemented a number of articles of Decree No. 46/2017/ND-CP of the Government stipulating investment conditions and operating in the field of education and Decree No. 86/2018/ND-CP regulating foreign cooperation and investment in the field of education, has created a favorable legal corridor with more benefits, establishing encouraging conditions for foreign investors to enter the field of education in Vietnam.

Table 1: Significant education policies in Vietnam

No.	Names of policies	Issue Year	Content relevant to EdTech
1	Program **"National digital transformation to 2025, orientation to 2030".**	June 2020	✓ Prime Minister approved: Education is one of the eight key areas that need to be prioritized for digital transformation: o Implement and apply an educational model that integrates science, technology, engineering, mathematics and the arts, business, and enterprise (STEAM/STEAM). o Offer Massive Open Online Courses (MOOCs) to all citizens. o Popularizing online examination; recognizing the value of online learning certificates; building a platform for sharing teaching and learning resources; etc.
2	Decree 86/2018/ND-CP stipulating **foreign cooperation and investment in the field of education.**	August 2018	Revised Decree 86, issued in May 2018, regulating foreign cooperation and investment in the education sector has created impetus and conditions for online and blended learning in associate programs (twinning) at the university level. Since then, the Ministry of Education and Training has made specific regulations on the associate training programs conducted both online and in cooperation.
3	The project "**Strengthening the technology application in management and support for teaching - learning activities and scientific research** contributing to the improvement of	May 2017	✓ Prime Minister approved until 2020: o Striving for 100% of state management agencies in education and training, education and training institutions to perform administrative management online. o 70% of meetings between state management agencies and education and training institutions are conducted online;

No.	Names of policies	Issue Year	Content relevant to EdTech
	education and training quality in the 2016-2020 period, with a vision to 2025".		○ 70% of professional training courses for teachers and educational administrators are conducted online by blended learning method.
4	Directive No. 666/CT-BGDĐT on **Tasks and solutions for the academic year 2020 - 2021 of the Education sector.**	August 2020	✓ Promote the application of information technology in teaching, learning and educational management, implementing digital transformation in education and training. ○ Stimulate digital transformation, promote the application of information technology in education and training. ○ Strengthen the application of information technology in teaching, testing, assessment and educational management, school administration; promote online teaching; develop the sector's digital data warehouse.
5	Official Dispatch No. 4003/BGDĐT-IT 2020 on **Information technology tasks for the school year 2020 – 2021.**	July 2020	✓ Apply IT in educational administration and management activities and support innovation in content, teaching, learning, examination and assessment methods: ○ Direct schools and teachers to actively build online teaching materials, focusing on building E-learning lectures, online question banks, 3D materials, virtual experiments, simulation software, interactive e-books, etc. ○ Select online teaching software solutions (synchronous online teaching, asynchronous online teaching), testing and evaluation software, digital curriculum software, digital library software followed overall direction, etc.

No.	Names of policies	Issue Year	Content relevant to EdTech
			○ Continue to deploy IT applications in educational institutions; deploy e-school and e-classes (smart education solutions).
6	Circular No. 32/2020/TT – BGDĐT on **Promulgating the Charter of junior high schools, high schools and high schools with different levels of education**.	September 2020	✓ From November 1, 2020, middle school and high school students have been allowed to use mobile phones during school hours for learning purposes and must be allowed by their teachers.

3.4. Vietnam EdTech market overview

Summary

- Vietnam EdTech market is considered extremely potential with total investment capital in start-ups ranked third among other technology fields with 20.2 million USD, reaching the top 10 world fastest growing EdTech markets with growth rate at about 44.3%.
- Vietnam E-learning market has a strong growth rate. In 2019, total revenue reached 1.44 billion USD (33.3% growth rate from 2013 to 2019).
- The most popular EdTech product market segments in Vietnam include: SMS, LMS and CLS. All three of these product groups have wide applicability at all levels of education in Vietnam.
- The educational technology market in Vietnam is still relatively young, the diversification of product quality and the distribution among segments are not uniform.
- Application of technology in teaching and teaching management in Vietnam is not significant, traditional learning methods still account for a very large proportion.
- Businesses and schools do not prepare large investment budgets for EdTech.

3.4.1. Vietnam EdTech outlines

Vietnam's EdTech market is evaluated as extremely potential in terms of high-quality human resources, better information technology level than other countries in the region and good connection with Silicon Valley.

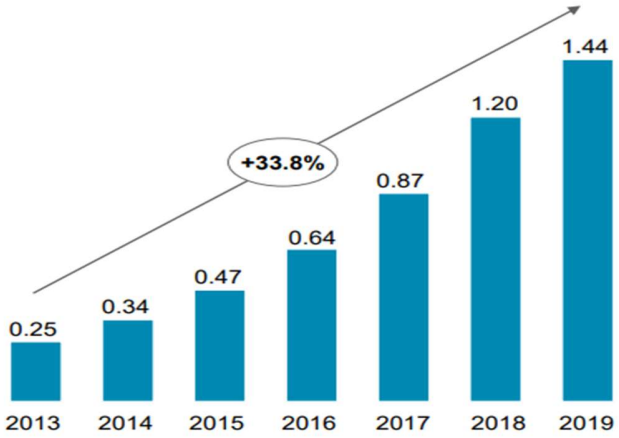
The Vietnamese EdTech market, among other technological fields, received the third largest investment capital for start-ups with 20.2 million USD (after only to Fintech with 129.1 million USD and E-commerce with 34.7 million USD) *(according to the Topica Founder Research Institute in 2020).* Besides, according to Ambient Insight's research in 2019, Vietnam is also ranked in the top 10 world fastest growing EdTech markets with a rate of about 44.3%.

Vietnam's E-learning market has a strong growth rate. In 2019, total revenue reached 1.44 billion USD, an increase from 0.25 billion USD in 2013, making the growth rate of the whole period to reach 33.8% (according to Ken Research 2020 report).

Also according to Ken Research, Vietnam's E-learning market has to potential to grow at a rate of about 20.2% in the period of 2019 - 2023. Consequently, the market size can reach 3 billion USD by 2023.

Figure 14: Vietnam E-learning market size by revenue, 2013 - 2019

billion USD



Source: Ken Research 2020

In particular, in the period of 2019 - 2020, due to the impact of the Covid-19 pandemic, traditional classes had to be converted to online form, leading to the rapid growth of the E-learning market in Vietnam. Specifically, according to TopDev's statistics, during the Covid-19 period, nearly 80% of Vietnamese students utilized different online learning methods. Notably, some E-learning platforms of large technology corporations in Vietnam have attracted a large number of users during the period of social distancing. For example, the VNPT E-learning platform of VNPT Group has 4 times more visits compared

to the previous period, reaching a total of 5 million visits with a peak of 100,000 visits in an hour; ViettelStudy platform of Viettel group reached 41 million hits in a month and was used in 26,000 schools across the country, incorporating 29,000 lessons at all education levels *(According to TopDev).*

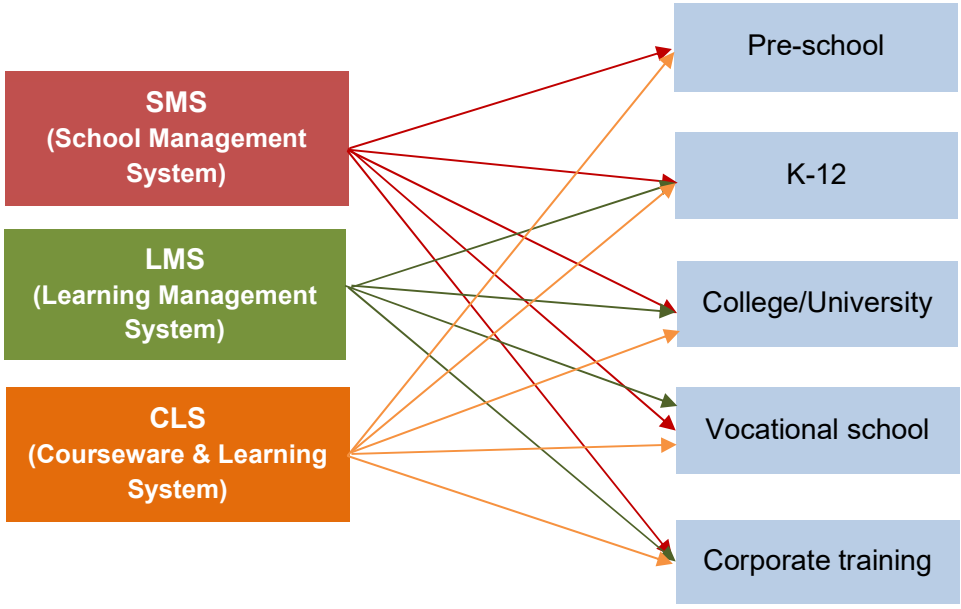
In addition, learning through mobile devices in Vietnam has become popular - as of the end of 2019, more than 90% of students in Vietnam used mobile phones, personal computers or laptops to study, equivalent to nearly 22 million people (according to TopDev statistics in 2020). This is considered the most potential user group of the Vietnamese EdTech market. Therefore, with the trend of digital transformation in education and young people's habit of using technology, the online learning market is expecting to be more popular and accessible in the near future.

3.4.2. Current situation of Vietnam EdTech products

✓ Types of EdTech products in Vietnam

The most commonly used EdTech products in Vietnam include: SMS (School Management System), LMS (Learning Management System) and CLS (Courseware & Learning System). All 3 EdTech products are widely applicable at all levels of education in Vietnam.

Figure 15: Degree of application of EdTech in relation with Vietnam school level system



❖ **School Management System - SMS**

The school management system has the role of assisting schools to complete the work of documenting regulations, policies and administrative activities in the school, helping teachers and staff perform professional duties in school management, implementing the application of information technology in schools, supporting students' parents in accessing their children's learning conditions as quickly as possible.

Figure 16: Popular school management systems in Vietnam

❖ **Learning Management Systems - LMS**

– LMS can be used in schools and businesses.

– LMS is an effective solution in managing courses, classes, distributing documents and supporting managers to easily manage, accurately track, make timely adjustments, or perform comprehensive and effective quality evaluation. Through that, the training process is completed and improved, saving redundant costs.

– Currently, there are plenty of different LMS providers in Vietnam, but in general, they are divided into 2 types: LMS systems using open source code and commercial LMS.

Classification	Open source LMS	Commercial LMS
Properties	– Built on the use of open source code. – There is a community of users that contribute to improving the technology and application elements that meet the requirements.	– Use proprietary closed source code. – Deployed according to each vendor's application development model. – 2 implementation options: **Cloud-base (SaaS):** enterprises use software through the server system and infrastructure of the provider. **On-premise:** direct installation of software on the server system and

Classification	Open source LMS	Commercial LMS
		technology infrastructure that businesses own.
Benefits	– Allow to use source code for free, save initial investment cost. – High flexibility, allowing the software to be customized according to demand because of less dependency on the unique application model of vendors. – High reliability thanks to the strong development of the developer community who regularly contributes to the improvement of open source code.	– Easily control security issues. – Very high user support response speed due to concentration at one provider. – Allow customization of the system and software according to needs and desires within a relative limit.
Limitations	– Risk of information security due to being developed in an open environment.	– Large investment and implementation costs. – Unreliable due to dependence on supplier capacity. – Limited flexibility due to dependence on commercial conditions in the contract between the two parties. – Limitations of each option: **Cloud-base (SaaS):** businesses cannot customize the system at will, have to go through a service provider. **On-premise:** businesses need to have an IT team to manage the system, cost to pay and manage hardware, software, servers and related equipment.
Popular systems in Vietnam	moodle CANVAS Chamilo Blackboard	talentlms MONA eLMS Adobe Captivate Prime Cloud Learning System Lotus LMS

❖ Courseware & Learning System - CLS

In Vietnam, courseware management software and teaching and learning applications are being applied in a variety of ways in different forms of education: language, knowledge and skill training, exam preparation (K-12), skills and personality test, etc. Among those, exam preparation and foreign language learning platforms are the two most applied.

➢ Test Preparation

The market for exam preparation is expansive and diverse in Vietnam with a large number of users. These models provide college and university exam preparation courses, revise and problem solving for high school students, especially for those of grade 12.

Figure 17: Popular online test preparation platforms in Vietnam

➢ Language Learning

Support users in learning and improving foreign language skills, target users include both children and adults.

In Vietnam, many modern technologies have been used to apply in foreign language learning platforms: online learning platform, AI (Artificial Intelligence) technology to personalize learning programs for each student, AR technology (for English speaking practice - speech training), etc. Besides, there are also a number of foreign language centers that combine traditional teaching and foreign language background such as Wall Street English, etc.

Figure 18: Popular online language training platforms in Vietnam

- **Online knowledge and skills course delivery platform**

Offering a wide variety of courses in many fields spanning from 13 official school subjects, vocational courses, life skills, soft skills, and more.

Figure 19: Popular knowledge and skill training platforms in Vietnam

- **Some types of courseware management and other teaching & learning applications**

Types	Popular platforms/applications in Vietnam
Game-like application to support learning Tools and games that support the learning of diverse language and skill content.	Edu2Review CHOOSE THE BEST EDUCATION EduNet STUDY ABROAD lumosity
Information technology learning platform Support the learning of programming and technology skills from basic to advanced.	Code4Startup CoderSchool mclass Lớp học livestream coursera
Education Platform for Business Support educational institutions in designing teaching content for organizations and businesses.	DES Digital Education Solution OMT online management training Nexedu

Types	Popular platforms/applications in Vietnam
Virtual reality (VR), augmented reality (AR), artificial intelligence (AI), Robotics, 3D simulations creating teaching and learning content These are apps used in training and vocational training to practice complex skills such as driving a car or flying an airplane, or to provide visual and motion-based learning environments for subjects such as history, geography, safety training on rigs or complex remote areas. Robotics is especially popular in mechanical engineering schools.	KOFAX, molex, SICLO, Hyperlink InfoSystem, CO·WELL Behind your success, SAVVYCOM, amaris
Online interactive applications for large-scale training classrooms Applications that feature two-way interaction, which can simultaneously utilize pictures, sounds and file sharing, or type characters, are widely used in large-scale training events. These applications are particularly useful when there are features to control participants, share documents along with the lecture notes. They are often combined with exam and document sharing apps to form an ecosystem of training apps.	zoom, Meet, Microsoft Teams, TeamViewer, Trello, YouTube

Types	Popular platforms/applications in Vietnam
Exam applications Applications that create, assign and grade assignments. These apps aim to streamline the process of sharing documents (assignments) and grading results between teachers and students. Exam applications are commonly used in schools and businesses.	Google Classroom, iTest, KHẢO THÍ ONLINE, TestPRO Software Testing Services, cungthi.online, ED Quiz 2.1, AZTEST, McMIX, Kahoot!

In addition, in Vietnam, there are also a number of products such as Course/Curriculum Design (Curriculum Production) and Support users to find more information (Review) about courses, schools, strengths and weaknesses comparisons of those courses and schools. However, these products are far from being developed. Specifically, for the type of course/curriculum design, there are only a few small businesses such as Addie, Arkki, and for the type of course review, only Edu2review seems to be outstanding.

✓ **The distribution among product types is not uniform**

The educational technology market in Vietnam is still relatively young, current EdTech products only meet a small part of customers' demand. Although there is great potential for development and the product types are quite diverse, it can be said that quality and distribution among different types of product are not uniform.

- In general, Vietnam's EdTech market focuses on scaling of existing products and features, such as thematic exam preparation model (test-solving support services, tutors, practice tests, university entrance exam), school management system (electronic contact book, school management software), teaching and learning management system, etc.
- Educational technology platforms developed for schools and businesses are basically new and have not been strongly promoted.

- More than 80% of EdTech businesses in Vietnam are focusing on the K12 and Foreign Language markets. In each segment, the products are somewhat similar with not too many differences. This market is mainly for technology organizations trying to make a move to education industry, so their experience is not abundant, lacking of depth in terms of features and content (according to Mr. Nguyen Tri Hien – President of Edtech Agency, Co-Head of TECHFEST 2020 Education Technology Village).

✓ **EdTech application in Vietnam has not been fully exploited yet**

In Vietnam, **traditional learning methods still account for a very large proportion**, so EdTech products have to take a long time and go through many testing processes before they can be applied. In addition, since EdTech is a two-sided model in which its products serve both students and educational institutions, the problem the EdTech market has to face comes from both sides of the customers.

Businesses and schools in Vietnam do not have a fixed budget for investment in educational technology. Experts believe that in 2021, organizations with the greatest demand and application of EdTech will continue to be large enterprises (for enterprise training segment), general education sector (K-12), public and private colleges/universities in big cities (according to Mr. Pham Thai Binh - General Director of Intelligent Education Technology Company - VietED). However, in reality, for K-12, almost no school, including large private and international schools, has a fixed budget for investment in educational technologies (according to Mr. Anh – Founder of Education Administrators Network Without Borders). Le Phuong Lan, Chairman of the Board of Directors of Dream House Education & Training Joint Stock Company, said in agreement that the teachers at the school mainly self-study and apply free teaching software available online to help increasing the interactivity and interestingness of the lessons. The school does not specifically or regularly invest in any software or technology for the teaching activities. Thus, it can be seen that, despite the demand for the application of technology in learning, especially in K-12, most schools have not paid special attention to investment. **Under the pressure of competition, currently the most dynamic in the**

application of EdTech are still private educational institutions and LMS platforms are mainly prioritized for investment first.

The application of EdTech to conduct training in all spaces and times has become indispensable after the Covid-19 pandemic. The Covid-19 pandemic has created natural pressures for the application of EdTech to the regular training of educational institutions, businesses and training service providers. Free or low-cost applications are combined into a package of application tools for teaching and learning, typically using Zoom, Skype, TeamViewer, GoogleMeet, Microsoft Teams for two-way interaction by pictures and voice, or benefiting Facebook's livestream feature to interact one way with pictures and sounds and the other way by typing. Especially these interactive technologies are particularly useful with large scale online training because they do not restrain the number of participants and surpass the limitations of space and time.

The transformation in teaching and learning methods during the pandemic has also changed the views on learning and self-study of the majority of Vietnamese people. Standalone applications are now paired into a bundle of teaching and learning technologies, creating a more open learning environment for the masses, promoting self-learning ability and motivation of learners and technology usability of teachers. Learners' sense of self-study and teachers' skills in applying technology are prerequisites for EdTech to be able to deploy strongly.

Comprehensive educational reform in Vietnam requires a complex process. Perhaps it is time for EdTech startups in Vietnam to step out of their comfort zone by not only developing teaching and learning technologies but also changing the teaching and learning habits of its users. Shaping learners' habits is never going to be easy, but providing them with motivation, accessibilities and the freedom to learn to achieve their goals is certainly doable.

3.5. Investment in Vietnam EdTech market

3.5.1. Investment Structure

- ✓ **Public/private sector allocation**

In the past, the majority of investments in EdTech Vietnam came mainly from the private sector. According to experts, private investment accounted for more than 70% of total

investment in EdTech. Meanwhile, public investment in EdTech has not been significant, largely came from state-owned corporations such as Viettel, VNPT, etc. There has been no private entities receiving investment capital from the state due to complicated procedures and other barriers.

In general, there are not many start-ups in the field of education in Vietnam that receive investment from foreign investment funds because of their quite modest scales. Most of the EdTech companies are relying on the founders' own money and angel investors or domestic investment funds.

- ✓ **Investment capital structure**

Ken Research suggested that Vietnamese EdTech market could grow at a rate of about 20.2% in the period 2019-2023. This is also the reason why Vietnam has become a "delicious piece of cake" for foreign investors and start-ups.

The Foreign Investment Agency (Ministry of Planning and Investment) said that in the first nine months of 2020, the total registered foreign investment capital in the field of education and training reached US$78.89 million, an increase of nearly 58% over the same period the year before. Specifically, capital contribution and share purchase were the main flow of foreign investment in education, reaching US$51.41 million, nearly double the same time last year. In 2019, the education start-up sector recorded a number of completed agreements including Navis Capital Partners Limited fund acquiring education platform Thanh Cong Education, or Kaizen Private Equity pouring 10 million USD into Yola, and Topica investing $3.5 million in education start-up Kidtopi.

According to the Do Ventures' Vietnam Tech Investment Report of 2019 – H1/2020, EdTech has been the third most invested field in Vietnam in the past 8 years. The total venture capital investment in this field has been 103 million USD, second only to the payment ($462 million) and retail ($416 million) sectors.

Table 2: Deals done in capital funding by sectors, 2013-2020H1 (Unit: $M)

Sectors	2013	2014	2015	2016	2017	2018	2019	6T/2020	Tổng
Payments	12	10	1	29	10	100	300	-	462
Retail	1	15	1	18	15	105	196	64	416
Education	**0**	**3**	**6**	**1**	**5**	**53**	**32**	**3**	**103**
Financial Services	-	0	1	2	1	8	40	22	73
Advertising & Marketing Technology	6	7	30	1	6	3	15	2	70
Logistics	-	-	0	1	-	5	58	-	64
Business Automation	-	-	0	-	0	1	60	2	63
Real Estate and Infrastructure	1	-	0	-	7	6	16	26	56
Employments	-	0	0	0	0	1	3	36	40
Travel and Hospitality	-	1	0	4	1	4	23	3	36
Multi-vertical	-	-	-	-	-	-	29	-	29
Local Services	0	0	4	2	0	4	5	3	18
Entertainment/ Gaming	-	-	-	-	-	0	9	6	15
Healthcare	-	-	0	-	0	0	10	3	13
Entertainment/Non-Gaming	-	-	0	-	-	-	1	2	3
Communications and Communities	-	0	-	-	-	0	-	-	0
Other	-	-	0	-	-	-	-	-	0

Source: Do Ventures' Vietnam Tech Investment Report 2019 – H1/2020

✓ **Plenty of room for development**

EdTech and education digital transformation in Vietnam in general are said to be at the beginning and still have a lot of room for expansion in the future. In the coming days, EdTech Vietnam is predicted to rapidly accelerate resulted from the common development trajectory of the Asian and Southeast Asian markets. For investors in the world, the Asian EdTech is currently one of the potential investment markets, developing with a strong growth rate. In addition, Southeast Asia is also a region that amasses necessary and sufficient conditions for favorable EdTech development such as: a large

proportion of young population, a high percentage of smartphone users, and a high rising economic.

In addition, Vietnam possesses a series of positive supporting factors for the development of this market, including: (i) the market's capacity remains significant; (ii) The outbreak of Covid-19 causes the education sector more dependent on technology; (iii) the Government's ability to cope with Covid-19 ensures a stable economy growth; (iv) the Government's interest in promoting and facilitating innovation. All of the above reasons could generate robust growth engine for Vietnam's EdTech market.

Specifically, the Government has taken numerous measures to promote researching, transferring, applying and developing of science and technology, focusing on promoting innovation. The period 2016 - 2020 can be considered as the first stage of development of the national innovation startup ecosystem, with the presence of the **Project "Supporting the national innovation startup ecosystem until 2025"** (Project 844). During this period, with the presiding role of the Ministry of Science and Technology and the active participation of ministries, branches, localities, socio-political organizations, the innovation startup ecosystem has basically been formed. Entities in the ecosystem have fully and comprehensively participated. The legal system to support and promote innovative start-ups has relatively been completed, timely supporting start-ups on the basis of research and application of new and advanced technologies, and exploitation of intellectual property and new business model[4].

According to Mr. Pham Hong Quat - Director of the Department of Market Development, Science and Technology Enterprise, many startup communities have gradually formed and operated effectively, such as: Starthub.vn, Twenty.vn, Startup.vn and Launch, the National Center for Innovative Startup Support established in 2021, a number of incubators and start-up support organizations formed in the private sector such as Topica Founder Institute, 5 Desire, Hatch!Program, public organizations such as incubators established in Hanoi University of Science and Technology and Hoa Lac Hi-Tech Park, Hanoi Food Processing Enterprise Incubator, Ho Chi Minh City University of Technology, and High-Tech Agriculture Park in Ho Chi Minh City. .Ho Chi Minh City, Software

[4] http://sokhoahoccongnghe.phutho.gov.vn/ket-noi-nguon-luc-ho-tro-khoi-nghiep-doi-moi-sang-tao-n6434

Technology Park, Vietnam National University Ho Chi Minh City, Quang Trung Software Technology Park (QTSC)[5].

The National Center for Creative Startup Support is a public entity that, in addition to supporting start-up activities, also hosts the National Innovative Startup Day (TECHFEST) event and arranges assigned tasks under the Project "Supporting the national innovation startup ecosystem until 2025" which attracts the attention of investors.

3.5.2. Case-study analysis

Case-study: Topica Education Technology Group (Topica EdTech Group)

- ✓ ***Realized the ideas***

In 2002, returning to Vietnam after studying abroad, Mr. Pham Minh Tuan - Chairman of and CEO of Topica thought of starting an e-commerce platform or doing an online business. Topica was born in 2009 and has realized the above idea. Topica focuses on 3 areas: Topica Native (English teaching services for adults), Edumall (a marketplace for short online courses) and Topica Uni (partnering with universities to implement online bachelor's degree programs).
Topica currently owns the Edumall online learning platform with thousands of diverse, practical video lessons from reputable instructors. Edumall has attracted millions of Vietnamese as well as Thai students, and a one on one online premium English learning program called Kidtopi uses AI technology to track students' interest and progress.

- ✓ ***Received funding of 50 million USD***

At the end of 2018, Topica announced a raise of 50 million USD from Northstar Group in a series D funding round. In previous rounds, Topica received investment from many well-known investment funds such as Openspace Ventures, Patamar Capital, CyberAgent Ventures, EduLab Group or IDG Ventures Vietnam. It is known that this was the largest

[5] https://laodong.vn/lao-dong-cuoi-tuan/ho-tro-doanh-nghiep-doi-moi-cong-nghe-khoi-nghiep-va-doi-moi-sang-tao-812162.ldo

capital investment from investment funds for an online education start-up in Southeast Asia at the moment.

The above investment has continued to affirm the leading position of a Vietnamese start-up in Southeast Asia, and promoted the mission of delivering high-quality online education to millions of learners inside and outside the region.

This acquisition marked the largest investment yet in an online training business in Southeast Asia, and confirmed Topica's leading position in the region. Topica offers a diverse platform of high-quality online courses, and has enabled more than 1 million professionals to acquire the skills they need to succeed in a dynamic market with technological and globalization impacts.

Dr. Pham Minh Tuan, Chairman and CEO of Topica, said: "Working with partners like Northstar and other investors has been a great opportunity for us. They are all very passionate about our mission and commitment in long-term investments to bring high-quality training to millions of learners inside and outside Southeast Asia."

On the internet as well as on app marketplaces, it is not difficult to find a wide range of applications from Topica's platform and system. Evidently, people can also see that Topica's model is mostly based on technology which is applied to education.

Immediately after receiving an investment of USD 50 million in this series, Topica had entered the top 5 largest invested educational technology companies of the year on a global scale.

Details in Topica EdTech's investment filing showed that the company was providing online courses in English, which was the foundation for 12 Southeast Asian universities offering online teaching programs and online degrees

Topica's initial success has proved one thing: Vietnamese people in particular have the ability in effectively applying technology to education and create success through a technology start-up that was able to reach the regional level and step out to the world.

✓ ***Hard reality***

After receiving large capital from foreign investors, Topica's number of employees at one point increased to 1,700 people, starting a hot and fast development period. And since that time, this EdTech has continuously had significant changes in terms of personnel. First, in January 2020, Mr. Pham Minh Tuan left the CEO position. His replacement was Nguyen Huy Duc, the then chief financial officer. Mr. Huy Duc said that he would "simplify" the operation and invest heavily in artificial intelligence (AI) products for children and young learners.

However, at the end of 2020, Mr. Duc announced that he would leave Topica for personal reasons. According to information from DealStreetAsia, the ineffective management of investment capital forced Topica to change the leadership team under pressure of Northstar. Presently, Northstar is the largest shareholder of this Vietnamese educational technology start-up. Topica's troubles show that it's not easy for startups to get a strong foothold even when the market potential is obvious.

3.5.3. Investment Policies

Education is Vietnam's top priority field with the goal of developing and keeping up with advanced education systems in the world. In particular, the Ministry of Education and Training highlighted the ambition of Vietnam to become one of the leading countries in digital transformation in education and training. To achieve this goal, Vietnam needs investment as well as cooperation and development with foreign education investors, prestigious international schools/training organizations around the world. Accordingly, in recent years, many policies on education investment have been issued to further promote and encourage the interest of foreign investors in Vietnam. In detail, a number of policies have a direct impact on promoting international education investors to Vietnam such as: *Education Law 2019; Decree 99/2019/ND-CP guiding the implementation of the revised Law on Higher Education; Circular 38/2020/TT-BGDĐT stipulating joint training with foreign organizations for bachelor, masters and doctoral degrees in online format and in combination of offline and online format; and Decree 86/2018/NĐ-CP stipulates foreign cooperation and investment in the field of education.*

Table 3: Reforms in policies to promote investment in education in Vietnam

Policies	Reformation	Effects
Decree 86/2018/ND-CP provided clear regulations, creating favorable conditions for investment cooperation in education.	- Allow to increase the number of Vietnamese students studying foreign programs in foreign-invested educational institutions from 10% (for primary school level) and 20% (for high school level) to 50%. - Allow schools and kindergartens to link up with accredited foreign educational institutions with the approval and specific guidance of the Government of Vietnam and the Government will issue specific guidelines on the integration of domestic and foreign courses and graduates of such integrated courses must be granted a valid certificate, recognized both in Vietnam and abroad…	- International schools have taken advantage of opportunities and promoted enrollment activities for Vietnamese students. This move has certainly had an impact on attracting foreign investors considering the attractive opportunity of the international education market in Vietnam. - The level of interest of foreign investors in the education sector in Vietnam has increased significantly recently. Foreign direct investment (FDI) in education from August 2018 - the time when Decree 86/2018/ND-CP took effect - to October 2019 reached 97 million USD, of which mergers and acquisitions (M&A) activities, specifically buying shares in the education sector, accounted for 37%.
Decree No. 135/2018/ND-CP dated October 4, 2018 amending and supplementing a number of articles of the Government's Decree No. 46/2017/ND-CP	- Simplify legal requirements, operation and administrative procedures. - Specifically, simplifying 121/212 business conditions, accounting for 57.1% of the total number of business conditions in the field of education and training, cutting down 5.2% more than the rate of	- From 2018 to 2019, foreign investment in education and training has sharply improved from 12th place to 9th place in terms of registered capital among foreign-invested industries in Vietnam. - As of the end of the 2018-2019 school year alone, there have

Policies	Reformation	Effects
stipulating conditions for investment and operation in education field.	business conditions expected to be reduced.	been more than 3.9 thousand centers, an increase of over 1.1 thousand centers compared to the previous school year, especially non-public centers and centers. with foreign investment has served nearly 2 million of learners.
Decree 99/2019/ND-CP guiding the implementation of the revised Higher Education Law.	- To have the right to promulgate and organize the implementation of internal regulations on enrollment, training, science and technology, domestic and international cooperation in accordance with the provisions of law. - Universities are entitled to autonomously decide to open departments, associate training with foreign countries for member universities and training units of universities when meeting the prescribed conditions for opening departments.	- Thus, with these changes, Vietnamese universities will be autonomous and are encouraged to associate and cooperate with appropriate foreign investors and educational organizations to help expand training methods. - In particular, this also removes the restriction on foreign educational institutions investing in equipment and technology in teaching at Vietnamese universities.

3.6. Global EdTech influence to Vietnam market

✓ **Positive impact from the development of the international EdTech market**

In the context of an abrupt increase in internet and technology usage in the past 10 years, especially with the impediment caused by the Covid-19 pandemic, the deployment of technology to serve life in general and education in particular becomes "the golden land" for investment. Therefore, EdTech is a potential solution for teachers and students as this

approach could save time and effort and is optimal for specific and exact needs for both sides.

According to World Economic Forum statistics, EdTech is an exceedingly hot market worldwide, just behind Fintech (financial technology) and eCommerce (e-commerce). With investors' rising interests in the potential of educational technology, private investment in EdTech for all age groups globally had grown at an average rate of 32% annually, from $1.5 billion in 2011 to $4.5 billion in 2015. By the end of 2018, this figure had increased to $16.3 billion.

A report from the KPMG network, Google evaluates that the EdTech sector is expected to serve 9.6 million users, valued at $1.96 billion by 2021. Educators assert that EdTech will continue to influence the transformation of education on a global scale.

In addition, according to a report by EdTech UK, London & Partners (2015), the global investment for EdTech was at 45 billion GBP in 2015 and 129 billion GBP in 2020. Compared to the world, Asia is currently the most potential market in the field of EdTech with an impressive growth rate. Explicitly, according to Tech Crunch, in 2020 the Asia-Pacific region will account for 54% of the global EdTech market. Besides China and India, Southeast Asia is also a region with remarkable rates of growth and has many favorable factors to promote the development of the EdTech field: young population, high economic growth rate, great internet connectivity, etc.

Besides the said region's encouraging elements, Vietnam is also a potential market with advantages such as competitive human resources, a better level of information technology than many countries in the region and connection with Silicon Valley. In particular, Vietnam has also made significant marks on the E-learning map when it officially joined the Asia E-learning Network (AEN) with the participation of the Ministry of Education and Training and Ministry of Science & Technology.

These numbers are clear evidence for the development and spread of the current global development of educational technology application. Technology applied in education is no longer an option but will become an essential and future trend of many countries in 2021, including Vietnam. It is the development of global EdTech in general, and the Asian

and Southeast Asia in particular that makes it undeniable to recognize the positive impact of global EdTech on development of the EdTech market in Vietnam.

- ✓ **Influence from educational technology trends in the world**

Student centered is the educational trend of the fourth industrial revolution. Therefore, personalized learning is the golden key to 21st century education. The important factor to creating an integrated learning environment is to generate supporting tools to more effectively teach students with special needs. All types of educational technology help bridge the gap when it comes to teaching students of different abilities. Online platforms are deployed in the context of providing a flexible learning environment, helping students acquire knowledge according to their own receptivity.

With the development of global technology, a series of new technologies are being applied in the field of EdTech. In particular, artificial intelligence technology-AI, Big data, cloud computing, etc. have been changing the education industry. With these technologies, in the coming era, both learners, teachers, organizations, and businesses that want to invest in educational technology can have better and more creative experiences. Without be left behind from the global educational technology trend, those new technologies are also being applied in the field of EdTech in Vietnam.

In addition, one of the EdTech trends that are expected to be most popular in 2021 across the globe is the focus on the user experience on mobile first. Training via smartphone (or tablet) provides users with flexibility and convenience. In Vietnam, the trend of mobile learning applications (M-Learning) has opened up a new learning method that brings many outstanding benefits. Learners are facilitated to be able to study and acquire knowledge flexibly and conveniently regardless of place and time. This promotes an open education, enable people to access multi-dimensional information, diminish spaces, saves time optimally, and thereby developing rapidly in knowledge, perception and thinking.

4. Market Potential

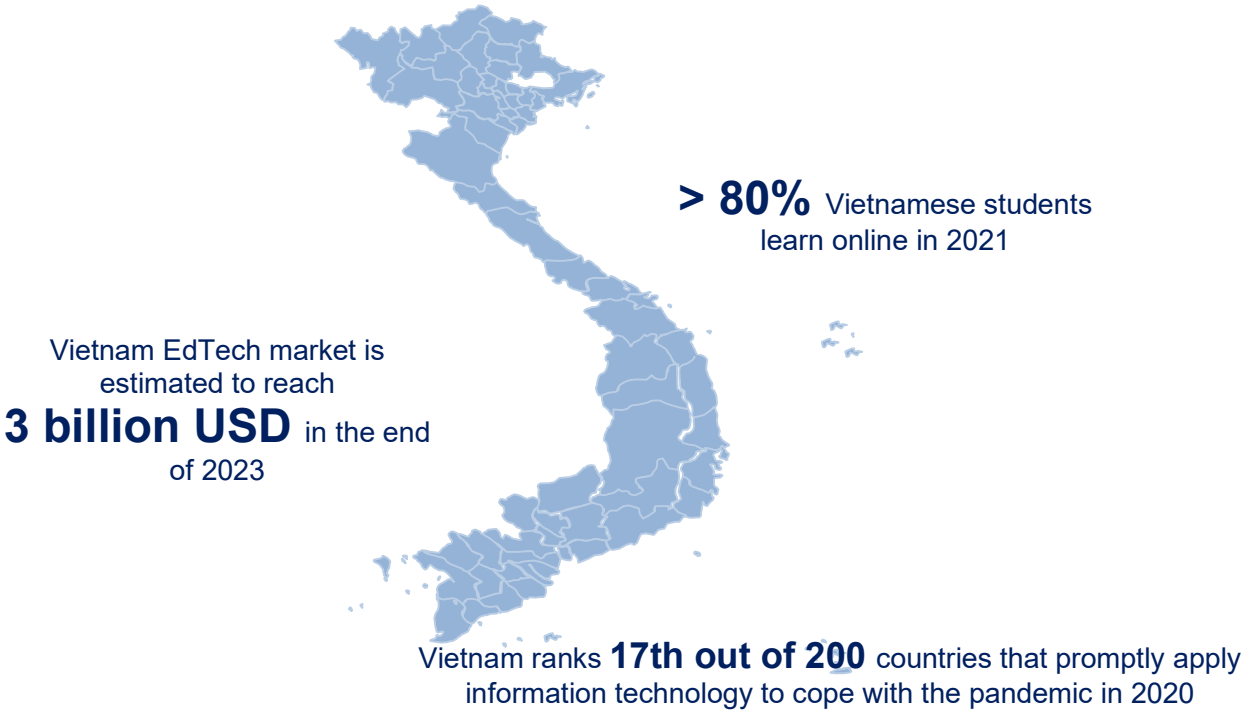
4.1. Vietnam EdTech market forecast

Summary

- Vietnam EdTech market will continue to be vibrant and developed in 2021 due to the complication of the Covid-19 pandemic.
- Ken Research forecasts that the size of Vietnam's online education market will reach 3 billion USD by 2023 with a CAGR of 20.2%.
- In terms of technology products, according to an expert of Teky Holdings *(Technology Innovation Center*), in the period of 2021 - 2025, the EdTech market in Vietnam will continue to develop in three main phases:
  - Continue to witness the expansion of businesses providing online learning content (online) - B2C (business to consumer).
  - Diversifying digital transformation solutions for businesses and educational institutions - B2B (business to business)
  - Exploiting the most advanced technologies like AI, AR, VR, Robot, etc. in teaching and learning.

With the complicated situation of the Covid-19 pandemic, the application of technology in education in general and online learning in particular is still considered an effective solution in 2021. According to experts from Fulbright University In Vietnam and EdTech Asia, the Covid-19 pandemic has forced relatively old-fashioned and passive education systems like the one in Vietnam to change and adapt to new circumstances. In addition, the disturbances caused by the pandemic also create great opportunities for EdTech suppliers in Vietnam to gain more attention. This promises that the Vietnamese EdTech market will continue to be vibrant and developed in 2021.

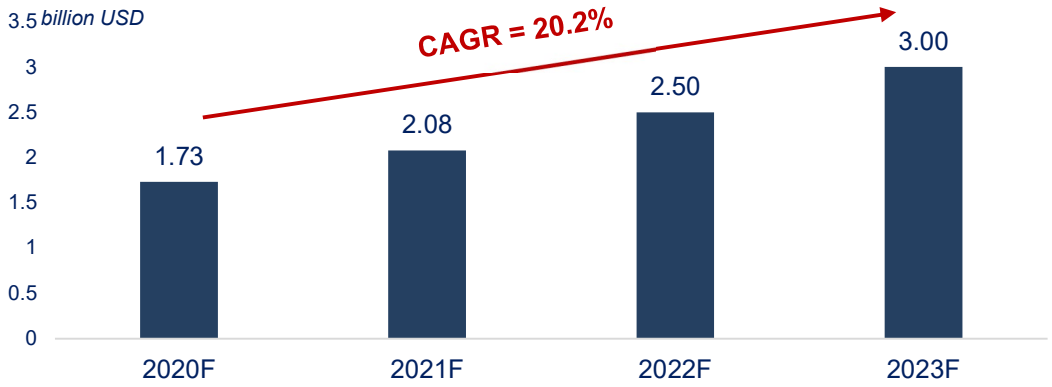
Figure 20: Vietnam E-learning market size 2020 forecast



Source: Ken Research, PISA.

According to the report of PISA (Programme for International Student Assessment), in 2020, more than 80% of students in Vietnam have participated in online classes/courses (including regular, supplementary, foreign languages and soft skills, etc.). This figure is higher than the average of countries in Asia, which is only 67.5%. Moreover, at the peak of the Covid-19 pandemic in 2020, Vietnam ranked 17th out of 200 countries that have promptly applied information technology to respond to the global disaster.

Figure 21: Vietnam E-learning market size by revenue, 2020F - 2023F



Source: Ken Research, OCD

In addition, Ken Research (*India's global market research company*) forecasts that the size of Vietnam's online education market will reach $3 billion by 2023 at a compound annual growth rate (CAGR) 20.2%. According to many experts, this is the highest growth rate in Southeast Asia in particular and in the world in general. Factors driving the rapid progress of the online education market and educational technology in general in Vietnam include:

- The explosion of Internet and smart phones in Vietnam in recent years. According to Appota's report *"Vietnamese phone and mobile application market in 6 months of 2020",* the rate of mobile phone usage reports at 70% of the total population of Vietnam, equivalent to 150 million devices. In which, the percentage of smartphone users accounts for more than 45% of the population and ranks 15th in the world. The number of 3G and 4G subscribers amounts to 53% of smartphone users.
- The proliferation of private universities in recent years in Vietnam such as Fullbright Vietnam, RMIT Vietnam, VinUni, etc. with the total number of students in the academic year 2017 – 2018 taking 18.2% of the total number of students and is estimated to reach 22.5% in 2025 (According to the Ministry of Education & Training). With large budgets and openness in applying advanced teaching and learning methods, this is a positive sign for EdTech companies in Vietnam.
- The increase in quantity of labor resources and fiercer competition lead to the demand for vocational training with a much higher standard than previous generations.
- The rising need of high-quality human resources of enterprises leads to the increase of employee training.
- The raise in demand for content in video, audio and text formats (digitization services) has led to the enhancement and expansion of a variety of courses on online platforms, thereby promoting the online learning market.
- Schools will apply more advanced teaching and learning methods with the power of information technology such as Smart Classroom and Learning Management System (LMS), helping to meet the diverse learning needs of students.

- The government promulgates many policies to enrich and improve the quality of education in Vietnam by applying online education systems and educational technology in teaching and learning.

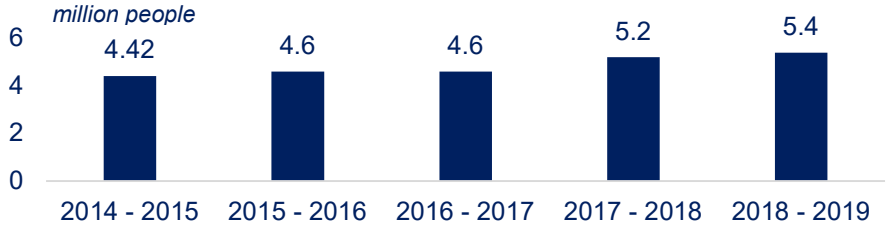
In terms of technology products, according to an expert of Teky Holdings (Technology Innovation Center), in the period of 2021 - 2025, the EdTech market in Vietnam will continue to develop in three main stages. Firstly, the market continues to flourish with number of companies providing online learning content for end consumers (B2C market) and diversifying in many segments such as preschool education (pre-school), general education (K-12), university students and workers. These products have also differentiated in sub-markets such as foreign languages, skills, occupations, etc. Second, the market has a variety of digital transformation solutions for businesses and educational institutions (B2B market) with SIS - School Information Systems; educational enterprise resource management products (ERP, CRM, HRM, etc.); content digitization solutions; learning management systems (LMS); teaching aids for teachers, etc. Third, the market develops and utilizes the most advanced technologies such as AI, AR, VR, Robot, etc. in teaching and learning. *(According to Ms. Dao Lan Huong – Chairman and Founder of Teky Holdings).*

4.2. Main issues by education segments

The Education Technology industry in Vietnam can be divided into 5 segments based on user classification, including: (i) Pre-school education; (ii) General Education (K-12); (iii) College/University; (iv) Vocational school; (v) Corporate training.

4.2.1. Pre-School sector

Figure 22: Number of pre-school children in Vietnam, 2014-2019



Source: Vietnam Ministry of Education and Training, OCD.

Pre-school education is a very potential segment: With more than 5.4 million children in the Early Education sector and nearly 15.5 thousand kindergartens, nursery schools, and preschools (of which more than 3,000 are non-public) in the 2018-2019 school year, this segment is considered to be extremely potential for Vietnam's EdTech market - second only to the General Education segment (K-12). EdTech products in this segment mostly focus on learning foreign languages (English), games that help develop intellectual skills, soft skills for each age group, and School Management Software (SMS). Many kindergartens, especially private groups, have actively changed the traditional learning method by integrating the STEAM methodology into the learning content for children. Some schools have invested to build STEAM rooms with smart interactive boards, appropriate educational software, and a system of modern toys and gadgets for children to comprehensively develop skills and knowledge.

However, according to many experts, this segment still faces plenty of difficulties. Firstly, most preschools and kindergartens do not have a fixed budget to invest in the application of EdTech products (especially those of advanced technologies such as VR/AR, Robot, AI, etc.) . Currently, most schools only use School Management software (SMS) to help connect schools and parents. Secondly, schools have great demand for some technology products such as ELT (English Language Teaching) content design to support children in learning foreign languages and basic (soft) skills, digital platform solutions for teacher training, software to share lectures and teaching content for each level between teachers, etc., are not yet fully met by the market.

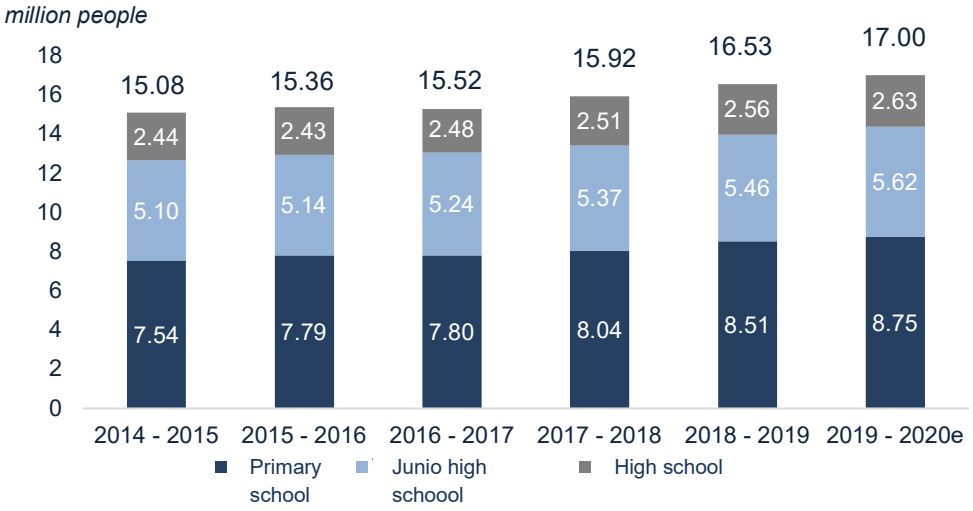
Some of the most typical EdTech products in the pre-school segment include: KidsOnline (a preschool management platform that provides a comprehensive solution for both schools, teachers and parents) – currently accounts for 60% market share of non-public school management; the Korean SK Telecom's E-robot Coding program deployed by E-group in Vietnam (E-Robot Coding is a program for children to become familiar with programming, integrating programming and language teaching to develop creative thinking skills for children from 3 to 12 years old); Kidtopi – One-to-one online English learning software for children, using face recognition AI technology to adjust lessons based on children's emotions.

➢ **Case-study: *Analysis of KidsOnline***

Kidsonline	Background	Business Model/Technology Platform
	• KidsOnline – preschool management platform, providing comprehensive solutions to help take care of customers, attract enrollment and manage in preschool. • A member company of OMT, established in 2016. • KidsOnline accounts for about 60% market share of non-public school management software. Among them are large and prestigious school chains such as Vinschool, Olympia, Sakura, Little Sol Montessori, etc.	• KidsOnline is integrated on Internet and Mobile platforms compatible with all digital devices. - Website/App administration (for School) - Mobile App (for Teachers and Parents) - Website administration (for Extracurricular Centers) • Use Amazon Web Services (AWS) cloud services such as S3 hosting, management, deployment, and release services of CodeBuild, CodeDeploy, Codepipeline, VPN security services, VPCs, tracking services monitoring (CloudWatch), load balancing (ALB, ELB), autoscaling.
Elements to success	• Provide the most comprehensive solution for all 3 subjects: School - Teacher - Parents: a tool to professionalize preschool management; Update information, multi-dimensional interaction between the school - parents - teachers and also a tool for parents to accompany their children's activities at school. • KidsOnline team is knowledgeable about the preschool education system in Vietnam – creating KidsOnline products that are completely suitable for the Vietnamese market compared to other foreign products or foreign models on the market = > many smart features in the app have won the hearts of users. - KidsOnline has cooperates and consults with many reputable experts on children at home and abroad: UNICEF, Central Children's Hospital, University of Education (National University), University of Education, etc. during application development. - Provide formal knowledge about physical and mental education for children from pediatric and education experts directly on the app. • Using the most effective Amazon Web Services (AWS) technology platform today – helping to optimize costs, offer flexible use and ensure high stability to respond well in times of sudden increase in system load.	

4.2.2. K-12 sector

Figure 23: Number of K-12 students in Vietnam, 2014-202e



Source: Vietnam Ministry of Education and Training, OCD.

Vietnam's general education system (K-12) is massive with 17 million students in the 2019-2020 school year and more than 26,000 schools in 2018-2019. The proportion of investment in education in the budget Vietnamese household spending is relatively high - more than 40% in 2019. This presents promising opportunities for educational technology products and services in Vietnam. Currently, many public and private schools have actively innovated their curricula, put efforts to integrate STEM/STEAM into the teaching materials, and focused on building a variety of creative learning content.

EdTech products are most popular at the Middle and High School levels. As for the application of educational technology, according to many industry experts, middle school and high school are the two focused points of advanced technology learning methods thanks to the attention and excitement of students as well as strong support from parents. Meanwhile, the primary level has certain limitations with online learning as well as applying technology in lectures. The reason for that is most parents think that this age is too young to be exposed to computers and technology for too long. For example, Ms. Le Phuong Lan, Chairman of the Board of Directors of Dream House Education & Training Joint Stock Company, said that primary school parents only allow students to study online or have contact with technology in learning from one to two hours per day.

K-12 is the most potential segment of EdTech Vietnam: Besides, according to *Mr. Nguyen Tri Hien (President of Edtech Agency, Co-Head of TECHFEST 2020 Education Technology Village),* the general education segment (K-12) is the most promising market for EdTech organizations (especially in the Foreign Language segment). In fact, more than 80% of EdTech companies in Vietnam are currently focusing on this K-12 segment. These companies mostly offer online learning and exam preparation, provide access to e-books, and tutoring searching. However, educational technology products in this segment are relatively similar without distinctive difference and lack of competitiveness compared to free products available on the market. In this market, the dominant trend is that technology companies trying to penetrate into education sector with their strong side focusing on the technology but not in the depth of features and content. Meanwhile, schools specifically demand for educational technology products with rich content and diverse teaching features *(according to Ms. Le Phuong Lan, Chairman of the Board of Directors of Dream House Education & Training JSC).).*

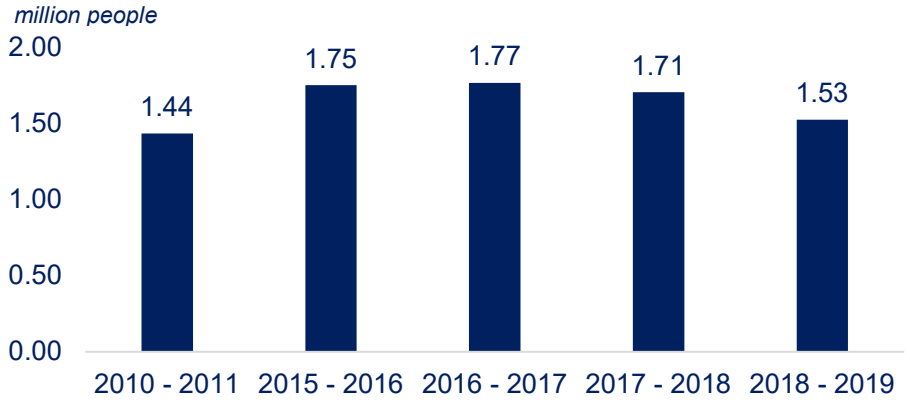
Some typical EdTech products in the general education (K-12) segment on the market in Vietnam include HOCMAI - specializing in providing online courses, lectures and exam preparation for students from primary to high school levels, huge library of lectures and learning materials, and knowledge sharing forum for students; EduMedia – the world's largest interactive 2D STEM platform about Vietnam; Edmicro (Onluyen.vn) - a personalized learning and competency assessment platform for high school students, optimally using Machine Learning, Big Data, and AI to tailor the appropriate learning journey for each student; UBTECH - the Chinese unicorn in the field of Educational robotics entered Vietnam through cooperation with the Trans-Pacific Group of Jonathan Hanh Nguyen, etc.

➢ **Case-study**: ***Analysis – Hocmai.vn***

HOCMAI – Hocmai.vn	Background
	• HOCMAI was established in 2007 - the first private investment online learning service provider in Vietnam. • HOCMAI had quickly succeeded when attracting more than 150,000 students to register in the first year. • Currently HOCMAI has more than 4 million users, with more than 200 excellent teachers across the country.
Business Model/Technology Platform	• HOCMAI's main business model is relatively simple: Students register for online courses on the system with a diverse list of teachers by subject and level. • HOCMAI focuses on the general education segment (K-12), especially on test preparation exercises (mid/end exam, graduation exam, university exam, etc.) - Includes a huge library with a variety of books and learning tools. - A forum for students to exchange and share knowledge and books. • Currently, HOCMAI has expanded into many other fields: - Speakup 1-1: Learn English online with native teachers. - XiSo: The first online coding school in Vietnam for students from grades 6 to 12. This is a HOCMAI program in conjunction with FUNix (FPT Corporation's online university).
Elements to success	• Pioneer in the field of online learning, with transparent learning: Students can participate in free trial sessions; Students can view resumes, ratings and comments for each teacher, and more. • Focus on high quality education, with a system of highly qualified and experienced teachers and experts. The teacher evaluation system allows students to choose the most suitable teacher for their learning needs. • Focus on developing educational content: While many start-ups prioritize investment in technology, HOCMAI focuses on investing in educational products. The essence of education is human-to-human interaction, and technology is just a way to deliver content to students. 2/3 of HOCMAI's team work in the content department. • Sustainable development model: Maintain healthy development with little outside investment capital, avoid rapid expansion at all costs.

4.2.3. College/ University sector

Figure 24: Number of college/university students in Vietnam



Source: Vietnam Ministry of Education and Training, OCD.

Renovation in College/University education method is urgent: The need to train high-quality human resources for society is increasingly critical, encouraging many Colleges/Universities in Vietnam to promote the renewal of the curriculum and the integration of technology in education. Vietnam has more than 1.53 million students and more than 460 colleges/universities both public and private in the academic year 2018-2019, which is also considered an attractive segment for EdTech providers.

The College/University segment has recognized the importance of applying technology in education, and is ready to invest with large budgets. In fact, many universities in Vietnam have applied education technology (EdTech) to training 10 - 20 years ago. For example, Vietnam had a virtual university model (Cyber University) which was a major project of the Ministry of Education and Training of Vietnam in collaboration with representatives of Cambodia, Laos, Myanmar, Korea and other institute/university members of ASEAN network in 2012 (according to Mr. Nguyen Thanh Nam - Rector of FUNiX Online University).

Online learning is the most popular educational technology model in this segment thanks to its convenience and usefulness. Since 2007, Vietnam's public universities have been developing and offering Online Education courses and programs. There are a total of 237 universities in Vietnam, of which 22 are currently providing distance learning programs, of which E-learning is one of the methods of delivery.

However, **with limited budget, very few colleges/universities, especially public schools, can invest in developing and applying EdTech in training programs.** For those who cannot afford to set up their own Learning Management System (LMS), they often choose to cooperate with companies specializing in technology in education

such as Topica Group. This group often partners with Universities to provide online courses & programs for students, with a team dedicated to technical and academic support for learners.

The College/University segment faces many challenges in the process of applying technology to education, especially E-learning. In particular, the number of public and private providers for online or virtual training programs is still limited, less than 10% of the total number of institutions in Vietnam. Overall, this segment is relatively smaller in size compared to the K-12 segment. In addition, Vietnamese students have not yet appreciated the intrinsic value of online learning due to the society's general perception of the online method, lack of understanding of the value of online degrees and accreditation of online education by the Ministry of Education & Training. The online education degrees currently offered are known as "distance learning" and are seen as a lower-level, informal alternative to learners with poor academic performance or economic conditions. On the other hand, the dropout rate of E-learning courses remains high with about 30-40% of registered learners not completing their program. Last but not least, low English proficiency is also a big obstacle for Vietnamese students to participate in high-tech learning programs.

Besides traditional universities, Online Higher Education also offers potential opportunities in the coming period, despite its nascent history.

Online University	Although the Vietnamese government is still developing legislation on Online Education and accreditation, there are already two pioneers in this emerging field of online education: - FUNiX (owned by the largest information technology service company in Vietnam - FPT Corporation). FUNiX is an IT online learning program, 100% Internet-based, providing basic courses such as “Introduction to IoT”, “Digital Citizenship”, etc. to specialized in Information Technology such as “Blockchain”, “Automotive Programming”, etc. FUNiX grants credits, certificates, diplomas, and more. which are recognized by prestigious technology corporations. - Topica University (owned by Topica EdTech group) These two units began to attract the acknowledgement of young Vietnamese people.
FUNiX GLOBAL TOPICA LEARN ONLINE, GO GLOBAL	
Cyber University	The ASEAN Cyber University (ACU) project was funded by the Korean Government in 2011. The project aimed to assist the four ASEAN member countries (Cambodia, Laos, Myanmar and Vietnam) to acquire technology and knowledge related to Online Education system and to help students in remote areas access higher education. Hanoi University of Science and Technology (HUST) was the university of choice in Vietnam.
ACU PROJECT	

	Although the ACU project was strongly supported by South Korea, a country with extensive experience in operating cyber universities, there is currently not a completed online bachelor's program offered by the e-learning center (called BKE) of Hanoi University of Science and Technology. Presently, all courses of this program are short-term only.
Postgraduate online course	The provision of online study for graduate research training is not currently permitted in Vietnam, except for the Master of Business Administration program offered by Columbia Southern University of the United States, supported by Vietnam Education Administration Association.

Some EdTech models in the college/university education segment in Vietnam include FPT University's cooperation with Coursera to use its online courses for student training, Topica Uni (belonging to Topica EdTech group) - the first online university in Vietnam to enable students getting university degrees online by partnering with domestic and foreign universities, Pearson's Learning Management System (LMS) providing rich online resources for popular books and international university books (Content, Assignment) to encourage students to use original books; Cengage's digital learning materials applying to Vietnam universities.

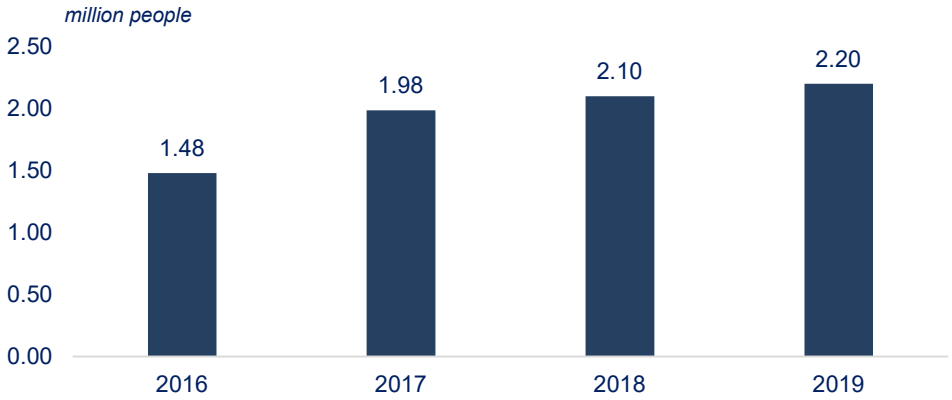
- **Case-study: *Topica EdTech Group***

TOPICA EdTech Group	Background
	• Topica was founded in 2008, with the original purpose of helping learners get their university degrees online, by collaborating with universities at home and abroad. • Over the years, Topica has expanded and grown into the leading online education provider in Southeast Asia, being the first organization in Vietnam to successfully export EdTech products abroad.
	Business Model/Technology Platform

TOPICA EdTech Group	Background
Topica Native – The world's first application to use AR for speaking English (speech training) through Google Glass.    ***Edumall*** - An e-commerce platform where you can buy and sell self-developed courses.	• Wide range of products and services, with extensive use of advanced technologies such as 3D 'second life', AR/VR, AI, Big Data, etc.: - Topica Uni: the first online university in Vietnam, partnering with 16 universities, including leading educational institutions in the US, Philippines and Vietnam. - Topica Native: offers online English teaching through voice tutoring courses in Thailand, Indonesia and Vietnam using Augmented Reality technology via Google Glass. - Topica Edumall: the largest short-term skills courses platform in Thailand and Vietnam, providing video learning content on popular topics: Excel, guitar, parenting, and more. • Topica Founder Institute: Early-stage startup accelerator.
Elements to success	• Technology is key: Topica has invested extensively in advanced technology to attract mass users inside and outside Vietnam. • Pioneering in innovative business models: Combining E-learning with eCommerce through Edumall, where thousands of short courses are sold in all fields: cooking, health, beauty, programming, etc. • Received large investments for long-term growth: Topica EdTech Group received a Series D investment of USD 50 million from the Northstar Group investment fund in 2018. • Topica has extensive and profound relationships with Universities, education centers, education experts, etc. all around the world which creates user confidence in their products and the value of certificates issued by Topica is also highly appreciated.

4.2.4. Vocational school sector

Figure 25: Number of students in vocational schools in Vietnam



Source: Vietnam Ministry of Education and Training, OCD.

Innovation in education methods Vocational training is urgent: According to data from the Ministry of Education and Training, in 2019, Vietnam had 2.2 million vocational students at more than 3,000 vocational education institutions (both public and private). Faced with increasing requirements for human resources and the trend of human resource mobility in the international labor market, **vocational education development is one of the most important tasks contributing to the improvement of the quality of human resources, increase labor productivity and national competitiveness in the new age**. In order to support the fundamental innovation of vocational education, the Government has approved the target program of Vocational Education - Employment and Occupational Safety for the period 2016 - 2020, which emphasized "Innovation and enhancement of quality of vocational training", in order to realize the goal of supporting vocational training at college and intermediate levels for about 1.35 million people (of which about 5% could accomplish international and ASEAN regional levels) to meet the requirements of high-quality human resources for socio-economic development and integration.

Besides, the application of technology in vocational education is also considered a goal that the Government is aiming for. Specifically, the project "Application of information technology in management, teaching and vocational training activities up to 2020" approved by the Government in October 2014 stated that it was necessary to train and foster skills in information technology application in management and vocational training activities; promote online training; invest in specialized equipment and application

software in vocational skills training; focus on infrastructure, application software, digitization and simulation technology equipment, data storage and management system, central management and administration center for vocational education etc., The project also promoted the purchase, transfer, receipt and use of equipment, learning materials, and simulation software that follows advanced technology for key occupations at the ASEAN regional and international levels. **Therefore, vocational education is also considered an attractive segment for EdTech providers in Vietnam.**

Currently, a number of vocational schools have applied information technology in management, teaching and learning; implementing digitization and simulation of training programs according to advanced software in the world (such as Hanoi High-Tech Vocational College; Bac Giang Vietnam - Han Technology Vocational College, etc.). Thanks to the application of information technology in teaching and learning, it has made lectures more vivid and realistic, thereby creating excitement for learners to absorb knowledge faster by exploiting visual images and new information updated via information technology, etc.

In particular, **a number of specialized vocational training schools, with high technical and safety requirements, such as pilots (aviation industry), driving, Electrical engineering (Electricity), engineering on drilling rigs (petroleum), has put strong investments in high-tech devices such as VR/AR, Robotics, etc**. For example, the training center of Vietnam Airlines in cooperation with the Canadian CAE Inc. (CAE) to invest in deploying the first flight simulator (SIM) complex in Vietnam in 2018. The system simulates the most advanced and popular aircrafts in the world today such as Airbus A321, A350 or Boeing 787.

Virtual reality driving learning model has also been gradually applying by driver training schools to improve the quality of practice for students. In 2018, Sao Bac Viet Driving School (SBV) introduced virtual reality driving technology into the driving practice program for B2 class (small cars). This was the first center in the country to apply this technology which can be seen as a great effort of the SBV center in catching up with the world's trendy 4.0 revolution. In addition, there are now many vocational schools that are applying

robotics and 3D simulation technologies to help students practice skills in the mechanical profession.

Figure 26: Inflight simulation system

Figure 27: Virtual driving system

In general, in the context of global integration, the application of technology in the field of vocational education is seen as the core solution to increase adaptability in the rapidly changing world of occupation. To catch up with this trend, vocational education needs to implement synchronous solutions, for example: building a big data system in the system of vocational training institutions; create technology platforms; prepare human resources for digital transformation, etc.

4.2.5. Corporate Training sector

EdTech application in the corporate segment is still in its infancy - According to expert – *Mr. Duong Trong Tan (General Director of Agilead Global),* EdTech Vietnam's Corporate Training segment still in its infancy and has the smallest market share compared to other segments. In fact, the application of technology in personnel training is not popular within businesses. EdTech products under the Corporate Training branch are mainly online training (E-learning), LMS (Learning management system), video lectures, etc. However, similar to the above segments, these technology products are relatively similar and have little value differentiation from the free products on the market.

The reason why the application of EdTech in corporate training is still quite limited is that the vast majority of Vietnamese businesses are only small and medium enterprises (SMEs) - accounting for 98%. These companies have little need to invest in learning and training personnel due to their limited capacity and not be able to provide

adequate training equipment for employees. Besides, they are also afraid of some risks in training employees by applying technology. The most common in the SME group are managers, directors and above who take courses in business and administration. In general, SMEs in Vietnam have not yet formed a learning and development mindset for their personnel *(according to Mr. Duong Trong Tan - General Director of Agilead Global).*

Only a few large enterprises in Vietnam (accounting for about 2%) really focus on investing in personnel training because they have an serious need for high-quality resources for long-term development. Some large enterprises that invest heavily in personnel training include Vingroup, FPT, Viettel, the banking sector, Vietnam Electricity (EVN), etc. They all have training centers/schools for internal personnel or send their staffs to study at centers specializing in corporate training. Officers and employees are entitled to participate in regular and frequent capacity training courses. For example, Electricity of Vietnam (EVN) and Vietcombank have established E-learning centers and achieved good results in developing high-quality human resources.

According to experts, some potential areas for EdTech in the field of corporate training in Vietnam today include banking, tourism and hotel industries. The oil and gas industry has applied a lot of VR and AR to safety and complex skills training activities for mechanical construction and installation at training centers.

Although the commitment to spend on EdTech is currently limited, the corporate training segment is still considered to be extremely potential in the next 3-5 years by experts, especially in the field of online training and teaching tools. According to experts of FALMI, in 2021, the labor market will continue to develop positively towards high quality. New skills that require receptiveness in the digital age will be the direction of development for both the employee and the business itself. EdTech application to increase density, duration and quality in training is an inevitable movement of Vietnamese enterprises.

- **Case-study: *Kyna - KynaBiz***

Kyna – KynaBiz	Background
KYNA BIZ One-stop E-learning Solutions  Learning Management System (LMS) platform for businesses developed by KynaBiz	• Established in 2013 - the first online B2C skills training platform in Vietnam. • Over 25,000 video lectures, 600 courses and 200 experts on diverse topics for learners of all ages. • Formerly a part of Dream Viet Education, received strategic investment from Navigos Group in 2019 and has since developed according to Navigos' business strategy.
Business Model/ Technology Platform	• Towards the goal of becoming a comprehensive online education ecosystem in Vietnam with a variety of services: - Kyna.vn: an online B2C learning platform for adults - KynaBiz.vn: a one-stop e-learning solution for companies and businesses. - Kynaforkids.vn: The leading online school for children, focusing on early childhood education. • By integrating into Navigos Group and taking advantage of their rich experience in the field of human resources, Kyna.vn and KynaBiz.vn are expected to become the leading online learning platforms for professionals and businesses. • Dream Viet Education meanwhile will continue to focus its efforts on development of Kynaforkids.vn.
Elements to success	• Focus on a diverse range of learning topics, meeting the needs of users of all ages. • Impressive growth of 3 to 5 times a year, through receiving a series of foreign investments from CyberAgent Ventures and Navigos Group and cooperation with prestigious organizations such as the International Business Training Association (IBTA).

5. Conclusion and recommendation

5.1. Conclusion

5.1.1. Identifying opportunities for policy planning.

In general, the Ministry of Education and Training will focus on implementing 4 basic solutions:

- Developing a national data system on Education & Training;
- Developing and exploiting the system of learning materials and digital learning environment;
- Develop and implement a digital competency framework for high school students;
- Developing highly qualified human resources in the field of information technology and digital transformation.

This will be an impressive opportunity for EdTech providers and investors in the period 2021-2025.

5.1.2. Product potential and market size

- **The potential for development of the EdTech market is enormous.** The long-term demand for EdTech application in Vietnam is great when education is always an investment priority not only of the Government but also of the Vietnamese people themselves. In the short term, when the post-Covid-19 education situation considers the use of technology for teaching and learning inevitable, this need is greater and the willingness to invest in EdTech becomes more apparent.
- **In the product groups** of SMS (School Management System), LMS (Learning Management System), CLS (Courseware & Learning System), SMS & CLS still have a lot of room for development. SMS requires considerations appropriated with the scale of development of an organization's service/operations, while LMS and CLS will likely ascend frequently with the growth of educational content and users. With the general trend that Vietnamese organizations/enterprises are very flexible in

expanding and narrowing their operation scale according to the post-Covid-19 situation, it is a wise consideration to gradually invest in LMS and/or CLS.

- For schools, the SMS system is seen as an ERP software, which creates a reluctance to invest, because it requires three factors: (i) financial capability for a large system, (ii) standardized workflow in operational activities and (iii) improvement in users' digital skills and data awareness.
- **The amount of investment in EdTech by users (educational institutions, businesses) is not great**, due to the lack of awareness of comprehensive digital transformation in education, the inadequate of teaching and learning activities, along with the availability of so many free tools and platforms. Therefore, it is often highly effective to deploy each free platform or tool individual needs. All EdTech products and services will have to compete intensely with free platforms and tools being provided by technology giants such as Google, Facebook, Youtube, Tiktok, LinkedIn, and Microsoft. The capability of these suppliers is immense, plus the speed of development/feature change of the tools is tremendously fast, allowing these free products to have the immeasurable ability to meet user demands and even create new user needs. In order to generate revenue from users, product and service providers must create much greater value than those free products.

✓ **Technological characteristics of products and services**

- **The up-to-date ability and technological advancement of EdTech products and services applied in Vietnam is not inferior** to those of other countries in the region. These products are both imported from abroad and self-developed in Vietnam. Automation technology, big data application, artificial intelligence on the platform of things connected (IOT), robotics, virtual reality and augmented reality have been widely developed and applied by Vietnamese enterprises.

- **The availability of open source code**[6] makes it easier and cheaper to build training management platforms and teaching and learning platforms/tools. The community of users of these open source codes is growing, their active and continuous sharing of knowledge and experience in product design has created a great global intellectual power, helping to build useful products, meet diverse needs at low cost. For EdTech product and service providers, this is both a challenge, when open source can be an alternative product that requires the supplier's high competitiveness, as well as an opportunity when they can leverage these low-cost resources to optimize costs for its products and services.
- **Lack of systematicity and connectivity of tools and application platforms** in educational institutions to create an educational technology and educational management ecosystem. Although relatively widely communicated about digitalization orientations and plans to deploy EdTech in teaching and learning, organizations and businesses have not really established a systematic plan and roadmap for investment and application. These depend on the vision and technological capacity of the head of the organizations, the legal corridors and the support of the state as well as the consulting ability of the management consultants.

✓ **Characteristics of EdTech Providers**

- **Providers of EdTech products and services are not** plentiful compared to the needs of users and have not received decent recognition in the Vietnamese market. Moreover, international brand names still dominate Vietnamese brands. The marketing activities of Vietnamese EdTech enterprises are still relatively weak. Potential customers such as international schools, educational administrators' networks still do not know most names of suppliers, and do not have much access to the applications they may be interested in.

[6] 10 mã nguồn mở cho E-learning tốt nhất: Moodle, Chamilo, Open edX, Totara Learn, Canvas, Forma, Effectus, Ilias, OpenOLAT, Opigno) https://elearningindustry.com/top-open-source-learning-management-systems

- **EdTech startups are on the rise in the Vietnamese market**, where technology is skillfully and creatively mastered by generation Z. However, young people doing engineering are often confused in implementing ideas into sellable products. EdTech start-ups are receiving a lot of support from the startup ecosystem, including the Ministry of Science and Technology, high-tech parks, startup "hatches" and personal-startup support. Nevertheless, EdTech start-ups need to be properly invested by venture capitalists and technology sharks for both their financial capabilities and corporate governance system in order to prosper.
- **Policies to support investment in digital transformation and digital technology** of the Vietnamese government in the period 2020-2030, especially after the new government has stabilized its personnel, are being effectively implemented. With remarkable achievements in the fight against Covid-19 in the period of 2019-2020 and being one of the three countries with the highest positive growth index in 2020, Vietnam is a reliable investment destination for foreign investors. Investing in EdTech businesses, or developing EdTech products and services, offers similar opportunities compared to other areas of investment.
- Vietnam has established a relatively effective startup ecosystem, including government agencies (Ministry of Science and Technology and local state departments), public start-up support organizations (National Startup Support Center, high-tech parks and high-tech centers of universities) and the private (hatches and personal-startup support), the community of entrepreneurs.

5.2. Recommendation

5.2.1. For investors in Vietnam Edtech market

- Invest in EdTech businesses, especially start-ups, with product concepts that match demand trends for SMS, LMS or CLS and ensure high competitiveness with free presentable products. EdTech businesses will normally need from investors, apart from large capital investment, the

market access direction, the brand strategy implementation, the communication and sale strategy.

- The portfolio of EdTech products and services that can be invested is extremely diverse. Considering the national target programs on digital transformation in education, investors can grasp investment opportunities for specific products and services aimed at educational administrators, teachers and students.
- Consider niche products that are part of a comprehensive EdTech development strategy, and develop services that leverage open source and/or low-cost technologies to add value to customers. EdTech services need to be designed as an innovative total solution that can be customized according to the specific needs of customers.

5.2.2. For organizations deploying Edtech

- Plan the SMS / LMS / CLS technology system for the organization, clearly scheming the application roadmap and investment resources (human, finance, material) corresponding to the scale and value of the EdTech system.
- Train and develop teachers to meet the requirements of applying EdTech in schools/enterprises to catch up with the trend of digital transformation in the fields of education, training and development.
- Research to digitize the process and results of assessment of teaching and learning to help teachers focus on teaching and be freed from administrative and paperwork tasks such as keeping book, recording grades, keeping report cards, and manage student learning records.
- Research on the application of teaching and learning technology in a synchronous manner in all subjects instead of the spontaneous, fragmented and small-scale tendency which have been the current situation in most schools.
- Develop the capacity to adapt and deploy modern technology in the school management team and leaders.

- Create, apply, and use technology devices and features flexibly to deliver desired training results.
- Invest in the National Electronic Library, the National Electronic Textbook according to the national standard program, research the advancement from print book to e-book.

5.2.3. For EdTech businesses

- Consider working with educators to develop digital content (CLS) instead of just concentrating on the technical platform.
- Create differentiation and core values in comparison to other enterprises in the same industry in the context of increasingly fierce competition. There are variety of free educational technology applications on the market, and if EdTech businesses want to collect user fees, they need to show their superiority in features compared to free software.
- Consider harnessing flexible business models: sell, rent, lease for a certain period of time and then sell it back to the clients to optimize business opportunities.
- Cooperate with other businesses to join hands in supporting schools, teachers and students with conditions for implementing digital transformation such as Internet connection, management software, online teaching software.

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