COMPETITIVE ADVANTAGE USING A RESOURCE-BASED VIEW STARTUP EDUCATION TECHNOLOGY IN INDONESIA

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Abstract

Education Technology (Edtech) is a slice combination of education and technology that has changed the existing traditional education system. With the development of technology and digital society, the growth of Edtech startups has increased in Indonesia in recent years. The edtech industry has not only developed global education in general but has also contributed to the growth of a fairly new sector of the state's economy. Edtech presents not only development and learning possibilities but also the elimination of global inequality and the inability to have equal rights for Indonesians. This study will look at how the interaction between resources and capabilities creates core competencies to lead to competitive advantage using the concept of Resource Based View at Startup Edtech. This research is a descriptive research which used an exploratory qualitative approach to describe and building an understanding the phenomenon. Data collection was carried out through several stages, starting with documents, case studies and observations. Moreover, the analyzed through data collection, reduction, presentation, and conclusion. Developing and enhancing skills through education and impactful employment are key drivers of the economy, individual and societal well-being. This can be a moment for startups to engage in the Edtech sector, to build a process, approach, and strategy for teaching and learning activities to produce human resources with the skills needed in future jobs. With its advantages, Startup Edtech can play more of a role as an organization that is able to provide value and competitive advantage in today's digital era, especially in the development of education in Indonesia.

Keywords: Education Technology, Resource-Based View, Competitive Advantage, Startup

Introduction

Indonesia is one of the countries with the most prominent internet users in the world. Currently, in Indonesia, at the beginning of 2022, there were around 204.7 million internet users (73.7% of the total population), where the number of internet users increased by 2% compared to the previous year (Kemp, 2022). There was a significant increase during the Covid-19 pandemic, which was around 40% (CNN, 2020), and this made dependence on the internet even greater. Internet users in Indonesia always want to be connected to information and have an interest in digital content (Das et al., 2016). Internet users in Indonesia spend more time on the internet than the global average. Indonesia is ranked eighth in the world, with the longest access time of 8 hours and 36 minutes (Kemp, 2022). Internet users in Indonesia belong to a group of people who are very familiar with information and communication technology. They are very active in using the internet as a business tool (Das et al., 2016).

With the increasing internet penetration, it has indirectly led to various applications in the field of education, especially those related to increasing teaching and learning activities (DSResearch & DailySocial, 2020) by providing better, cheaper, and of course, more complete access (UNICEF, 2021). Information technology has spread shared knowledge and is the main driving force behind education reform (Haleem et al., 2022). One of the fundamental components of the 2030 sustainable development agenda (SDGs) is quality education. Digital technology has emerged as an essential tool to achieve this goal so that education using the digital internet will become increasingly relevant and open up more significant opportunities for continued development in Indonesia. In addition to reform, one of the keys in the education system, primarily related to improving the quality of teaching and learning activities, is the use of ICT (Information, Technology, and Communication) to improve the quality of the education process, which is better known as Education Technology (Edtech).

Education Technology (EdTech) is a sector that is currently developing and is the intersection or combination between education and technology (DSResearch & DailySocial, 2020). Edtech is one of the most important sectors in the economy, with the most potential to affect billions of lives (Credit Suisse, 2020). Where existing technology solutions and services change the existing traditional way and system of
education, the presence of EdTech changes the way of teaching and learning, where students become more independent and have the initiative to learn. At the same time, for teachers, innovation is needed in the delivery of creative and interactive teaching materials to be given to their students. EdTech is a systematic and organized technological process to improve the quality of education (Stošić, 2015). From the perspective of technology used in education, Edtech can be understood as the use of technology to improve learning experiences in various learning processes, be it formal learning, informal learning, non-formal learning, lifelong learning, or learning as needed (Garnar, 2018).

The definition of Education Technology based on AECT (Association for Educational Communications and Technology) is a study of learning and practice that facilitates the learning process and performance improvement by creating, using, and managing appropriate technological processes and resources (Januszewski & Molenda, 2013). Based on AECT, it is emphasized that practice has two basic meanings, namely as a skill and an emphasis on using technology effectively to support or facilitate the learning process, performance, and instruction (Huang et al., 2019). Education Technology itself involves the analysis, design, production, evaluation, implementation, and management of education systems and learning environments that lead to learning and development of mind, body, and spirit (Song & Kidd, 2009).

In general, it can be concluded that Education Technology is the use of technology, tools, techniques, resources, and processes to support and facilitate the learning process, performance, and instruction to improve the quality of the educational process. In its implementation process, EdTech has three main domains of use, namely (1) technology as a tutor (technology provides instructions and user guides), (2) technology as a teaching tool, and (3) technology as a learning tool (Stošić, 2015). Education Technology emerged as a representation of new technological developments that have caused radical changes as a solution to solving problems that occur in education (Hartley et al., 2010), using tools, technology, processes, procedures, resources, and also strategies to improve the experience. Learning in various forms of education, ranging from formal education, and non-formal to informal education (Huang et al., 2019).

The growth of startups in the EdTech sector in Indonesia has increased in the last six years, in line with the growth of EdTech globally (World Bank, 2020) and the level of internet penetration in Indonesia (World Bank, 2018). This opportunity is expected to continue to increase, given that the current education system in Indonesia is comprehensive and diverse. The government and the private sector work together to support the growth of ICT and internet-based learning itself. The government focuses on developing infrastructure and access to devices, developing platforms to make educational content freely and widely available. In contrast, the private sector develops applications and platforms based on EdTech in Indonesia (UNICEF, 2021) (UNICEF, 2021).

The growth of EdTech Startups in Indonesia actually started a long time ago, but the point of growth was in 2013 (World Bank, 2020) when there was a rapid increase in its establishment coinciding with the growing internet penetration rate in Indonesia. The focus of EdTech Startups in Indonesia is diverse, but the topics that are the most focused are those related to Technology and Career Development-Life Skills, which are mainly aimed at students and professionals. The reason for targeting higher education levels is that the barriers to reaching consumers are slightly lower than trying to target more students at lower levels (World Bank, 2020).

The Covid-19 pandemic and the global recession in 2020 have created an uncertain labor market and accelerated the arrival of new jobs (the future of work), so it is expected to create deeper inequalities than the previous crisis (Forum, 2020). According to research by McKinsey & Company, the COVID-19 pandemic has also changed consumer behavior and created digital acceleration in all areas of life – including online learning in its development. The digital shift required in learning and learning activities has drastically increased the use of online education services (Kohli et al., 2020). Developing and enhancing skills through education and impactful employment are key drivers of the economy and individual and societal well-being. This can be a moment for startups engaged in the EdTech sector to build a process, approach, and strategy for teaching and learning activities to be able to produce someone with the skills needed in future jobs. So it is necessary how to encourage EdTech startup activities to be able to make it an organization that is able to provide value and competitive advantage in today's digital era. To get a deeper understanding of how the interaction between resources and capabilities creates core competencies that drive company activities that lead to competitive advantage, the concept of the Resource-Based View can be used.

Methods

This research is a descriptive research which used an exploratory qualitative approach to describe and building an understanding the phenomenon. Researchers use descriptive analysis methods, namely data collection, identification, classification and interpretation of the data obtained by researchers. The data collection carried out is secondary data, where the data does not originate or is not collected directly but comes from the results of analyzes and published reports or other research.

Data collection was carried out through several stages, starting from website content, documented secondary data and case studies. The first method of data collection is website content, where sites from
edtech startups in Indonesia are related and relevant to the research theme of this study. The secondary data for this research is obtained from analyzing the growth of EdTech startups issued by various local and global organizations. The documents are collected and analyzed against the results of the report. Case studies were carried out on several edtech startups relevant to this research's theme. Moreover, the analyzed through data collection, reduction, presentation, and conclusion.

Results and Discussion

Resource-Based View (RBV) is an approach to achieving competitive advantage in a company by viewing resources as the key to superior company performance (Handrian & Mansoor, 2021). This Resource-Based View model systematically helps in identifying core competencies in an organization. First, it is essential to define what is meant by the RBV approach. The RBV approach was created to explain the most important differences between companies in productivity and strategic planning. In addition, to assess the extent to which an organization can maintain a competitive advantage, the Resource-Based View offers to evaluate the company's resources, making it a unit of analysis (Lockett et al., 2009).

Based on the concept of the Resource Based View diagram, resources are divided into two parts, namely tangible and intangible resources (Rothenaeml, 2017). Tangible resources have physical and visible attributes. Intangible resources have no physical attributes and are, therefore, invisible.

In its operational activities, Startup Edutech uses a mobile application platform as well as a website in its activities. The platform he uses is indirectly the backbone and operating strength of the EduTech startup. The presence of Web 2.0 technology makes EduTech startups adopt Web 2.0 technology, such as blogs, social networks, internet forums, calendars, wikis, podcasts, ordering applications, file sharing, and tagging services. This has led to an increasing need for organizations to communicate with each other and collaboration with their market (Hvass & Munar, 2012; Zeng, 2013). Social media refers to interactive services from Web 2.0 that allow users to contribute to the development, rating, collaboration, and distribution of internet content and to customize internet applications according to their needs (OECD, 2007).

Based on data from the World Bank in 2020 regarding EdTech in Indonesia, almost 88% use Web platforms, and 65% use mobile applications (Bhardwaj et al., 2020). So it can be said that websites and social media can be used as the strength of Edutech Startup in supporting competitive advantage.

Then related to the intangible resources that are the strength of EdTech Startups are intellectual resources. They include corporate brands, intellectual property, proprietary developments, partnerships, patents, copyrights, knowledge, experience, competence, and so on. For EdTech startups, these resources can be helpful when entering emerging markets, as new market knowledge and experience can help these companies build successful strategies. Developing a concept and curriculum of learning technology related to understanding the knowledge, skills, and competencies needed in Educational Technologies (Huang et al., 2019) is a strength for startups to support their competitive advantage.

Two critical assumptions in the resource-based model: (1) resource heterogeneity and (2) resource immobility. In the resource-based view, a company is assumed to be a unique collection of resources, capabilities, and competencies (Rothenaeml, 2017). The first critical assumption—resource heterogeneity—derives from the insight that the pool of resources, capabilities, and competencies differs across firms. This insight ensures that analysts look more critically at the resource pool of competing firms in the same industry (or even the same strategic group) because each value is unique. The second critical assumption—resource immobility—reflects the insight that resources tend to be “sticky” and do not move quickly from one company to another. Because of that stickiness, the resource differences between companies are difficult to imitate and, therefore, can last long (Rothenaeml, 2017).

EdTech startups in Indonesia offer various products and services, targeting different users, including parents, educators, students, management of educational institutions, and companies. These exist and may overlap with free products produced by MoEC and open education resources (OER) provided by the Open University. For the most part, EdTech Indonesia products aim to assist students with learning and skills improvement, educators with student management, communication, and teaching, and educational institutions with administration.

Most Indonesian EdTech companies offer more than one product or service to support their target groups more comprehensively (DSResearch & DailySocial, 2020). Many of the EdTech companies surveyed offer administration and management products targeted at educators or institutions, such as learning management systems (LMS) (30 percent), online learning courses (27 percent), and career development or online vocational learning (25 percent) (Bhardwaj et al., 2020). The product offerings of EdTech startups in Indonesia can be categorized into two broad groups: those aimed at students and those aimed at education providers. The products and services offered to education providers are grouped around administration and management-related offerings. The products and services offered to students tend to be for online learning, exam preparation, skills enhancement, and career development/planning style support. While more than 40 percent of companies do not emphasize one type of content over another, they tend to focus more on technology-related skills, such as programming and coding, rather than on traditional subjects, such as social
science, science, and languages (Bhardwaj et al., 2020). This is interesting because it again points to the fact that disparities in the education system are not concentrated in one subject area.

One of the frameworks used in identifying and evaluating company resources that support competitive advantage is the VRIO Framework. Using this model framework, a company can gain and maintain a competitive advantage only if it has resources that meet the VRIO criteria. If the company has resources representing VRIO attributes (Value, Rarity, Imitability, Organization), the resources enable the company to gain and maintain a competitive advantage (Rothaermel, 2017). Companies with various resources will benefit based on scarce resources (Barney & Peng, 2001). This Resource Based View model relies on tangible and intangible resources that must be heterogeneous and immobile and have VRIO attributes; these qualified VRIO resources provide a sustainable competitive advantage for the company (Handrian & Mansoer, 2021).

Valuable resources enable the firm to exploit external opportunities or offset external threats. This positively affects the company's competitive advantage (Rothaermel, 2017). Indonesia's EdTech sector faces significant obstacles that prevent it from replicating similar levels of success seen in other technology sectors and countries. These barriers can be broadly categorized into two groups. Supply-side constraints include (i) difficult access to finance, (ii) high marginal costs mainly to acquire and retain new customers, and (iii) a shortage of qualified talent to develop and maintain the product. This is compounded by demand-side constraints, including (iv) low willingness to pay on the part of customers, schools, and parents in particular; (v) lack of digital literacy, especially on the part of education providers; and (vi) poor digital infrastructure, which limits connectivity in remote areas and download speeds across the country. The overlapping responsibilities between local and national governments on new educational tools, together with the limited capacity of the public education system and limited incentives to assess the potential of EdTech products, further complicate these constraints. In addition, Indonesia's undeveloped consumer protection regulations, particularly regarding data security and privacy, but student and school data at risk.

A resource is scarce if only one or a few companies own it. If the resource is common, it will result in perfect competition in which no firm can maintain a competitive advantage. Valuable but not scarce resources can lead to the best competition. A company is on the road to competitive advantage only if it has valuable resources that are also scarce (Rothaermel, 2017). Competence is conceptually closely related to literacy and life skills and becomes an empirical study related to human resource development and productivity in education (Koeppen et al., 2008). However, in its development, competence refers not only to knowledge and skills but also to attitudes and attributes attached to a person's personality, such as innovation and collaborative work (Hartley et al., 2010). Competence can increase as a person's experience increases, which requires different levels of interaction and can provide encouragement to find a competency framework in the future (Sampson & Fytros, 2008). Having a competency framework allows the creation of an integrated transfer of knowledge and skills between materials to consider the development of the teaching and learning process of the students themselves. This requires careful planning and specification of competencies or curriculum frameworks that follow needs and have supervisory management (Lytras, 2008). Competence is a unique and rare resource for EduTech startups because the competencies offered by these startups have different values and will become a competitive advantage.

A resource is expensive to imitate if a firm that does not own the resource cannot develop or purchase the resource at a reasonable price. It is internal strength and core competency if the resource is valuable, rare, and expensive to imitate. If a firm's competitors fail to duplicate strategies based on valuable, rare, and expensive to-imitate resources, the firm may achieve a temporary competitive advantage (Rothaermel, 2017).

Products and services offered in the EdTech sector typically target junior secondary schools, high schools, higher education institutions, and professionals with little or no product in the primary, pre-primary, or technical/vocational education sector (Bhardwaj et al., 2020). The reason for targeting a higher education level is that the barriers to reaching consumers are slightly lower than trying to target more junior students. For example, for high school students, interviews conducted for this study revealed that secondary school teachers are more concerned with learning outcomes (more so than elementary school teachers). Therefore, many of the company's marketing strategies focus on persuading these teachers to purchase products and services (Bhardwaj et al., 2020).

In the case of high school students, the targeting strategy is based on the assumption that these students care about getting good grades on university entrance exams. More than 80 percent of consumers (students) are 11th and 12th graders and students preparing for college entrance exams. This aligns with markets in other countries, such as China, where the college entrance examination (GaoKao) is a key driver of the EdTech sector. Many Indonesian EdTech companies also offer administrative and learning management systems for education providers or educators. These usually fall into three main categories: school administrators, university, and corporate management. In terms of product distribution, the 35 EdTech startups studied in depth currently support more than 2,160 educational institutions and serve more than 9.7 million students/individual users throughout Indonesia (DSResearch & DailySocial, 2020).
The final criterion of whether a rare, valuable, and expensive resource to imitate can form the basis of a sustainable competitive advantage depends on the company's internal structure. To fully exploit the competitive potential of its resources, capabilities, and competencies, the firm must be managed to capture value—that is, it must have an effective organizational structure and coordination system (Rothaermel, 2017). Enterprise technology resources should not be overlooked, especially for EduTech startups. Every company has a platform, system, and algorithm, and it should be up to date. Living in the era of digitalization, new trends emerge every day, including in education, which edtech companies may not be ready for. These companies must become adaptive organizations, creating technological resources for changing external environmental conditions. Looking through the technology resources of many companies, a large number of problems were identified. At a time when the company positions itself as an international company, operating in several developed and developing markets, it does not adapt to customer needs. For example, an educational platform can only be in one language, even if it is offered to customers from countries where this language is not popular or native. Nor do companies adapt their resources to the new country's mentality, culture, and markets, leaving them all in the same universal form. These companies are more likely to fail in new markets than adaptive organizations and go to great lengths to ensure their products align with the emerging global strategy. So like it or not, EduTech startups must have an adaptive organization to achieve competitive advantage.

Conclusion
In conclusion, it should be noted that the edtech industry has not only developed global education in general but has also contributed to the growth of a relatively new sector of the state economy. Edtech presents not only development and learning possibilities but also the elimination of global inequality and the inability to have equal rights for Indonesians.

EdTech startups need to develop new business strategies to stay relevant in business related to informal architecture, especially during and after the COVID-19 pandemic. The new business strategy is a development of the previous strategy and aims to maximize the company's untapped potential to excel in its industry. The development strategy is divided into Product Development Strategy and Diversification Strategy. Product development strategy aims to offer improvements to existing products for existing markets. In contrast, diversification strategy aims to develop new products or services based on existing resources and market them to new markets.

Further development of the edtech industry can take place according to several scenarios. One of them is that technology and various computational methods, algorithms, and artificial intelligence will enhance holistic learning, helping students experience the learning process regardless of digital format; they will be able to create emotions and moods. The effectiveness of edtech tools will also increase, thanks to integrating new technologies and introducing innovations into the educational process. New trends and educational media will emerge to complement the tech industry.

The tech industry will become automated and scalable. Children no longer need to go to school; all education will enter the digital world regardless of time and location. Physical work and on-site presence no longer make sense, as freelancers will occupy a large part of the market. Due to global digitization, there will be changes in the private, public, economic and other fields. Everyone should be familiar with digitization and its main tools; otherwise he will not be able to work and live in this environment. All fields will move from formal to free and digital.

References


Authors’ Bibliography

Heru born in Palembang, August 5, 1979 and Heru career is long and varied. Growing up in East Java and his passion for information technology that drives him to take a degree in the field of informatics engineering at the Sekolah Tinggi Teknik Surabaya (1997-2002). After finish the Undergraduate degree, he continue to take her Master's degree in Information Technology Management of Engineering Institute of Technology Surabaya (2003-2007). Strong desire to learn something new, make it achieve a dream to study International Business Management at IMI, Belgium (2007). Heru is A practitioner and academic who began his career as a developer in the field of information systems, but because of his love for the business world, particularly in the field of entrepreneurship, he tried to develop the use of information and communication technology as well as innovation in the business world. A combination of education and professional experiences inspires him to develop SociopreneurID (www.sociopreneur.id) as a Co-Founder and Operation Manager. SociopreneurID founded to promote and foster social entrepreneurship in Indonesia through various activities to nurture the growth of leaders with entrepreneurial mindset in business, government, academia and socio-cultural. Heru believes that education plays a vital role to change not only oneself and surroundings, but also, to make a better world for all.