

Introduction

This paper is to examine competitive advantage, an interesting topic in strategic management, and most cited topics with over 3.93 million times quoted from google scholar (Google Scholar). Warren E. Buffett, an American business magnate, said, “A good business is like a strong castle with a deep moat around it. I want sharks in the moat. I want it untouchable” (Peyote 2016). In 1995 Berkshire Hathaway’s shareholder meeting (Hagstrom 2014), Buffett said “I look at a long-term competitive advantage and that is something that’s enduring.” “The bigger the moat, the more sustainable” (Peyote 2016). In contrast, Elon Musk, CEO of Tesla Motors, said “Moats are lame” (Frick 2018). This is an interesting debate over academics and practitioners in studying strategic management. The purpose of this paper is not to defend either side of the view on competitive advantage. This paper aims to explain why sustain competitive advantage is theoretical difficult and apply empirical examples as illustration.

First, this paper begins by examining the definitions of competitive advantage and sustain competitive advantage. Second, this paper will study Resource-Based View (RBV) and understand the characteristics of the value-rare-imitable-organisation (VRIO) framework (Barney 1991). As an example, Apple co-founder Steve Jobs will be examined through the VRIO framework as a source of competitive advantage. Will competitive advantage sustain without Jobs’ presence? Third, this paper will attempt to address the question of why, how, and what is difficult to sustain competitive advantage? An exploration of a case study in strategic management under the theory of RBV. Finally, considering the difficulties to sustain competitive advantage in discussion, this paper will propose a sustainability framework leveraging the VRIO framework. The framework will remind firms and strategy practitioners to assess threats and opportunities both internally and externally, to shift resources and make strategic choices, and the possibility to minor the gaps, due to the era of *CHANGE*.

Competitive Advantage and Sustain Competitive Advantage

Why do some firms perform better than others? In a keynote speech delivered by Professor Michael Porter, most influential strategic management academic, Porter defines strategy as a set of choices a firm has to make (Arthsastra 2017). A strategy is not about being the best or being number one in the industry. Strategy is to define how a firm should compete differently and starts with a unique value proposition. The purpose of strategy is to distinguish a firm from its competitors and is a long-term process. A firm's strategy should synthesis all business functions to drive unique value creation to their target customers and compete against rivals. The reason some firms outperform rivals is that they gain advantages over competitors. The principle of achieving a superior performance over rivals, possessing competitive advantage, is driven by two major forces external forces from competing environment and internal forces from a firm's resources and capabilities (Huang et al. 2015).

Competitive Advantage

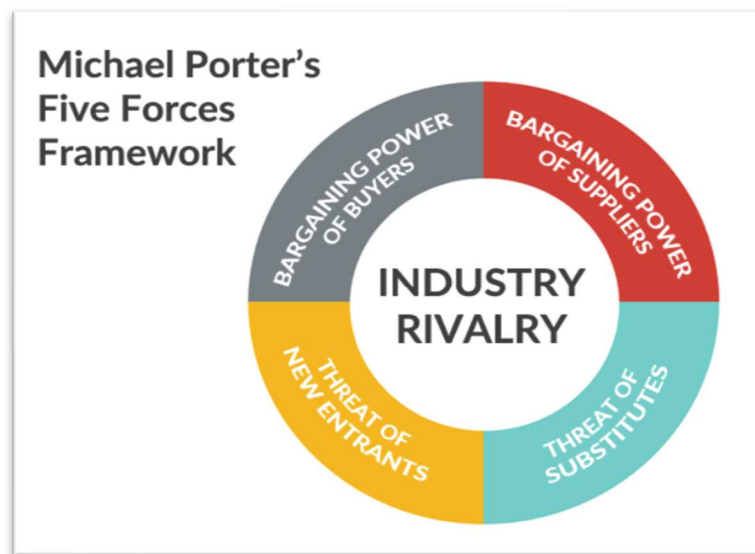
Porter affirms it is crucial to be different and a firm can position strategically within its industry and defend itself against the five forces or manipulate the forces to favor the firm to obtain competitive advantages (Bachmann, 2002). The 5-force are the bargaining power of buyers, the bargaining power of suppliers, the threat of entry, the threat of substitution, and rivalry between existing competitors within the industry.¹ The theory is to assess competing environment and is the essence of strategy formulation.

Resource-Based View (RBV) put emphasis on evaluating internal resources and capabilities of a firm. In the following chapter of this paper, we will discuss the key attributes of competitive advantage under RBV tenets. When a firm's resources meet the attributes, a firm will gain

¹ Figure 1 – Porter's Five Forces Framework

competitive advantage over rivals at different levels – competitive parity, temporary competitive advantage, unused competitive advantage or sustain competitive advantage.

Figure 1 – Porter's Five Forces Framework



(Source: <http://fernfortuniversity.com/term-papers/porter5/analysis/>)

Sustain Competitive Advantage

Professor Porter, in collaboration with his colleagues, has developed a framework, together with a variety of strategic models by other scholars, for assessing environmental threats and opportunities. Industry or environmental analysis, however, is not sufficient as argued by Professor Jay Barney. Barney, one of the key contributors to RBV, emphasizes that internal resources and capabilities scanning are also important. In theory, there is a distinct difference between competitive advantage and sustain competitive advantage. Sustain competitive advantage should have four attributes to a firm: (i) providing a value creation within the organization/customers and on defense to competitors, (ii) resources must be rare to competition, (iii) resources must not be imitable and (iv) resources and capabilities cannot be substituted by other firms and organized well across the firm (Barney 1991). In summary, sustain competitive advantage is a result of implementing a unique value creation strategy, not attempted by competitors, and it is costly to duplicate the benefits or displace by substitution of the same strategy (Hoffman 2000).

Resource-Based View

Why do firms, engage in the same industry, often differ in their performance over time?

Strategy is about choice, discussed earlier, a firm's choice based on its assessment on competing environment. The Resource-Based View (hereafter RBV)² is a theoretical model that assess internal resources and capabilities, as a source of competitive advantage, owned and controlled by a firm (Barney & Hesterly 2018). Resources alone do not enable a firm to form and implement strategies. A firm's skills and abilities allow them to compete more effectively with other players in the industry. A firm can achieve greater organizational performance, explicit value creation mostly in terms of profit, only when internal resources and capabilities are utilized efficiently and effectively (Barney & Hesterly 2018). There are two types of resources: tangible and intangible resources.

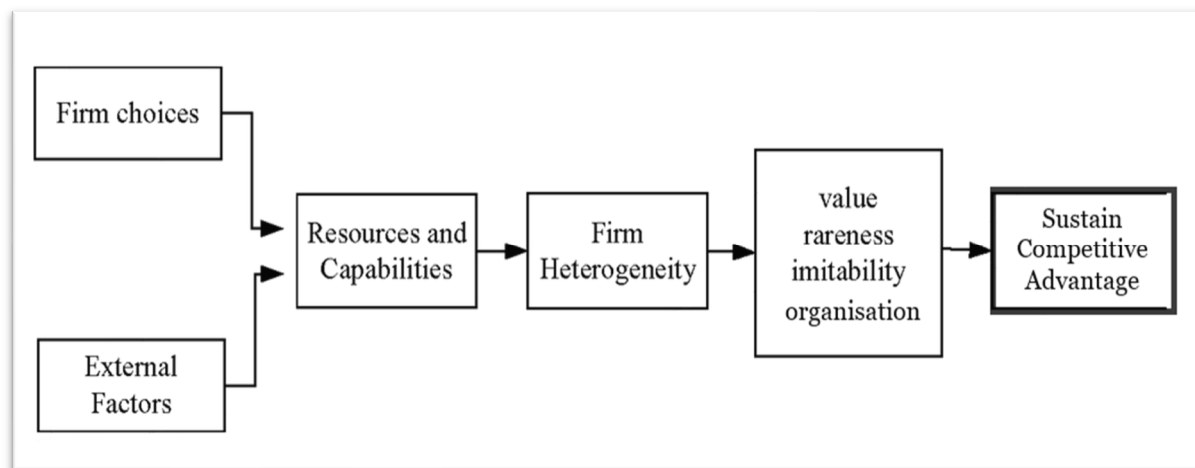
Tangible resources are resources with physical appearance, include land, assets, buildings, machinery, equipment, and capital. Physical resources are, comparatively less in strategic value, as resources easily accessible in the market. Competitors can easily acquire the same resources by purchasing the entity in the market. *Intangible resources* are resources without any physical appearance owned and controlled by a firm. Brand reputation, human resources, trademarks, intellectual property, trust, leadership and teamwork are group as intangible resources. Different from physical resources, intangible resources, for example, brand reputation to some degree cannot be traded on the market, costly to duplicate, and takes a long time to build. Intangible resources are more sustainable in nature, as a source of competitive advantage for a firm.

Barney (1991) explained by implementing the same strategies, firms will achieve the same level of efficiency and effectiveness. Under the same conditions, no firm can employ the same strategy to

² Figure 2 – Resource-Based View Model

outcompete another. One company could simply follow the other and there would be no competitive advantage (Arthsastra 2017) (Barney 1991). Competitive advantages will only be gained if a firm is utilizing internal resources efficiently and effectively. If competing firms are implementing the same strategies, in the same context, each firm will improve its resources, skills, and capabilities, to a similar or same extent (Barney 1991). RBV assumes resources are immobile and unable to move from a firm to another, at least, in short-term. The immobility prevents a firm from replicating its rivals' resources or implementing the same strategies (Barney 1991). Intangible resources, compared to tangible resources, tend to be more immobile. Then, resources are selected, accumulated, and distributed based upon the heterogeneity of the firm's resources (Kostopoulos et al. 2003)

Figure 2 – Resource-Based View Model



Source: Kostopoulos, K., Spanos, Y.E., & Prastacos, G. (2003)

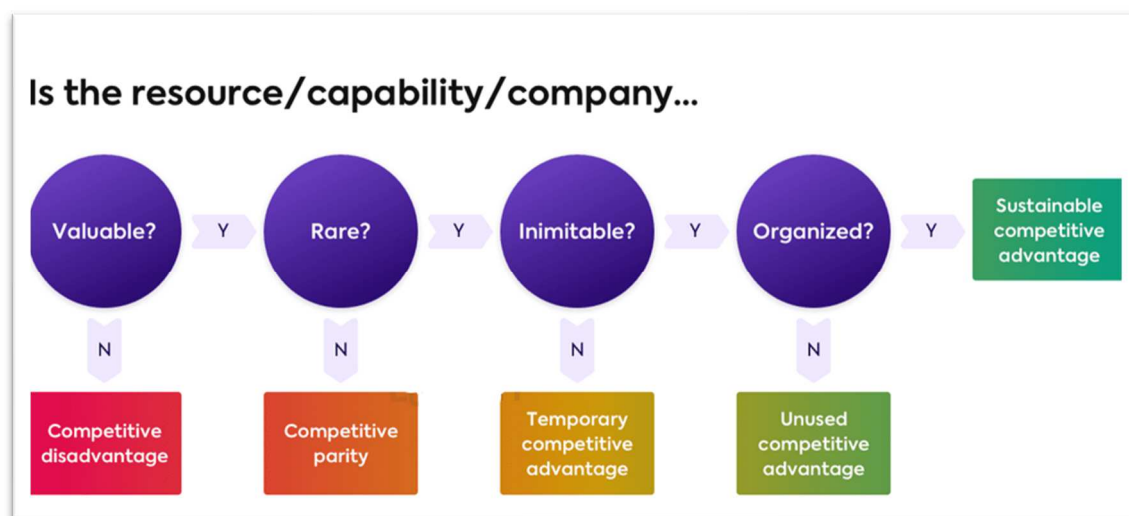
Value-Rare-Inimitable-Organisation (VRIO) Framework

Considering competitive advantages of a firm, Barney (1991) argues that just looking at external forces or industry environmental scanning is not enough. RBV introduces the Value-Rare-Inimitable-Organisation (VRIO) Framework, a simple tool, for firms looking into internal resources and capabilities.

A firm is unable to generate value from its resources without serious preparation and planning. Value creation is dependent on a firm's ability to influence outcome by exploiting internal resources and capabilities. In RBV's theory, not all resources are sources of competitive advantage. Resources must possess the attributes of rareness, value, and imitability so as to be sources of competitive advantage. For resources to provide a sustainable competitive advantage, resources must be organized well within the company (Hoopes et al.2003).

Based on VRIO, the framework distinguishes five distinct types of competitive position - competitive disadvantage, competitive parity, temporary competitive advantage, unused competitive advantage and sustained competitive advantage - by identifying a firm's characteristics in resources and capabilities.

Figure 3 – VRIO Framework



(Source: <https://getlucidity.com/strategy-resources/introduction-to-the-vrio-framework>)

A firm will be at a competitive disadvantage if the resources are without value. To begin, a firm's resources and capabilities must address the question of value: will resources and capabilities bring values to the firm? Value is not limited to monetary gains. RBV says a firm's strategic resources are

valuable when resources enable a firm to leverage opportunities or mitigate threats by implementing effective and efficient strategies (Barney 1991) (Barney 1995). In the absence of any resources considered valuable for a firm, the firm is competitively disadvantaged in the marketplace.

A firm will be at competitive parity if the resources are valuable but not rare. A rare resource is one that only a few companies can obtain. It is regarded rare when a company holds resources, at least for a limited time, cannot be accessible by competitors. Competing will be difficult when a firm's valuable resources are common among competitors, and the firm will be at competitive parity in the marketplace.

A firm will obtain a temporary competitive advantage if the resources are valuable and rare but imitable. Competitors may copy or invest to imitate the performance a resource as a result of competition (Barney & Zajac 1994). Only resources that cannot be duplicated or substituted will give a company a competitive advantage. Cost differentiation in the production of the same resources also allows a firm to gain competitive advantage over competitors.

A firm will obtain an unused competitive advantage if the resources are valuable, rare, and inimitable by others but cannot be organized internally. Resources alone do not provide a competitive advantage unless a company is structured to take use of them as well maximize the value they provide (Agrawal 2010). Human Resources (Wright et al.1994), the role of Human Resources (Barney & Wright 1994), Trustworthiness (Barney 1994), and Organizational Identity (Foil 1991) are just a few of the many strategic resources that have been researched and tested under VRIO by scholars. If a firm can exploit these strategic resources internally, a firm will enjoy sustain competitive advantage when resources are owning the four attributes value, rare, inimitable, and organized internally.

Among the four VRIO attributes, Hoopes (et al. 2003) argues value and inimitability, are the most essential attributes. In general, a company will determine value creation and gain advantage by being difficult to duplicate or substitute by rivals. Rareness is a result of the process (Hoopes et al. 2003). According to Barney (1991), just because there is a possibility of substitution in the market does not mean that a resource cannot be a source of long-term competitive advantage. As long as the substituents are either rare or highly imitable, or both. A management team with knowledge and the ability to link resources can help a company maintain a competitive advantage (Barney 1991). Hence, what is a firm's strategic resource? Steve Jobs (hereafter Jobs), late CEO and co-founder of Apple Inc., will be used as an example in the following discussion to demonstrate his attribute as a strategic resource.

The question of value? Is Jobs creating value to Apple? The majority of people will have an affirmative answer to the question. Jobs founded Apple in the mid-70s and led the company through several milestones. Besides managing the company, Jobs provides direction to the company. In many ways, Jobs' vision on product design, marketing, and branding are the essential components of Apple today. Jobs prefers simple, elegant, and innovative design which are also the characteristics associated with Apple design. Jobs is a central figure of Apple culture that is heavily debated or examined by a number of scholars. Jobs, as a strategic resource of Apple, ensure Apple to maximize opportunities and minimizing threats is the answer to the question of value. It is worth noting that Jobs was thrown out of the company in mid-80s (Wikipedia Contributors 2018).³

The question of rare? Is Jobs rare? As an individual or leader, the answer is yes. A strategic resource, providing a value are essential but not sufficient to be a source of competitive advantage

³ Wikipedia Contributors (2018). *Steve Jobs*. [online] Wikipedia. Available at: [//en.wikipedia.org/wiki/Steve_Jobs](https://en.wikipedia.org/wiki/Steve_Jobs).

(Barney & Wright 1994). In spite of the value Jobs brought to Apple, he was asked to leave the company by John Sculley⁴, to most people it was caused by a power struggle, but by casual observation, it is apparent that Sculley thinks Jobs can be replaced, in another word not rare. A valuable but not rare resource can only provide competitive parity. Yet, rarity arises when individuals possess different skills and capabilities. Nowadays, many people believe that job assignments are designed so that anyone can pick up the job without any special skills, while job assignments requiring high-quality skills are considered rare. (Wright et al. 1994). Jobs is a visionary leader with an adept skill set and taste that provide value to Apple. Casual observation suggests the decision to force Jobs out of Apple was a mistake because Jobs is rare. This may be a reason why Apple has welcomed Jobs return in 1997.

The question of imitable? What remains to be answered is: Is Jobs imitable? If it is not Jobs, then perhaps Bill Gates⁵, Steve Wozniak⁶ or John Sculley? Can these names perform the same? Jobs add value to Apple, as a strategic resource, led Apple to produce better economic performance and compete against rivals. Apart from economic value, Jobs also add value from different perspectives. Why is Jobs different from other names?

In RBV tenet, resources can be duplicated or substituted as a result of competition. Competitors can buy or invest in a company's success to imitate it. Jobs can theoretically be duplicated. Yet, a number of factors can impede imitation, such as unique historical conditions, casual ambiguity, and social complexity (Barney 1991) (Barney 1995).

⁴ John Sculley, a business leader, who took the role of Chief Executive Officer and leads Apple Inc. from 1983 -1993 (https://en.wikipedia.org/wiki/John_Sculley).

⁵ Bill Gates is co-founder of Microsoft Corporation and software developer (https://en.wikipedia.org/wiki/Bill_Gates).

⁶ Steve Wozniak is co-founder of Apple Inc. and computer engineer (https://en.wikipedia.org/wiki/Steve_Wozniak).

History, as it relates to Jobs and Apple, is inimitable. One may argue that Bill Gates and Steve Wozniak are also associated with Apple in the context of history. Jobs has his own significance in Apple's history with unique personality, experiences, and relationships which makes him imperfectly to be copied (Barney 1995). As a leader, Jobs will require to make daily decisions. These countless decisions can rarely be duplicated by other names, which is the reason for inimitable due to casual ambiguity (Barney 1995). A firm's connections on trust, friendship, culture, teamwork, faith, reputation, etc., lifted the difficulty to imitate. Observers will agree the culture of Apple is centered around Jobs which make Jobs perfectly inimitable. A firm can choose to imitate resources or capabilities; however, a firm may incur a cost disadvantage (Barney 1995) due to imitation may require substantial investment. This may answer the question why forcing Jobs out of Apple is a mistake in mid-80s.

The question of Organisation or Non-substitutable?

Is Jobs utilizing Apple's resources and capabilities to their greatest competitive potential? Observers will agree that Apple maintains a sustain competitive advantage when Jobs is leading. When a firm is organized to capitalize on the valuable, rare, and not easily imitated aspects of intangible resources, the firm will enjoy a result in sustained competitive advantage. Now Jobs is dead, is it possible to substitute Jobs?

A debate over years on the substitution of individual or human resources by other resources, for example, technology. Wright et al. (1994) addressed the issue that human resources are a few of many resources, of a firm that will remain and stay even with the emergence of technologies, products, and markets. An example was used to illustrate the statement that human resources cannot be a substitute because resources like technology can be replaced or duplicated by substitution. For instance, in competition between two firms, firm A and firm B, firm B has developed a technology to win over firm A's skilled labour in terms of productivity and performance.

Technology is imitable and firm A can choose to purchase the same technology as firm B to compete and gain the same advantage. Thus, an individual or human resources cannot be substituted, unless, the replacing resources hold the four attributes of valuable, rare, inimitable, and non-substitutable.

Despite Jobs CEO vacancy is replaceable, as a legend, Jobs cannot be replaced. There is no substitution or replacement for the values that Jobs create to Apple's culture, vision, and mission as well. These strategic resources, are sources of competitive advantage, embedded and organized within Apple's operation. Although Jobs passed away, Apple gains sustain competitive advantage by combining strategic resources and complementary resources within to exploit opportunities and neutralize threats of competition. As a casual observer, Apple retains a competitive advantage over rivals even after Jobs' death. It is difficult to answer whether the competitive advantage will sustain.

Difficulties to sustain competitive advantage

Why can't competitive advantage sustain? The term sustainability has been defined in different ways but mostly associated with long-term continuity and stability. A misconception of sustain competitive advantage is implying that will “last forever”. In RBV context, sustain competitive advantage is defined as not losing advantage to rivals by substitution (Barney 1991). This paper has addressed some firms are doing better than others when they can successfully transform resources to competitive advantage and sustain competitive advantage. From 1991 to 2021, in collaboration with other scholars, Barney has published his view on competitive advantage in different journals. The core message of sustain competitive advantage is not associated with duration of time, instead, focuses on a firm's competence in utilizing valuable, unique and inimitable resources to form strategies and compete against rivals. Nowadays, when change, speed, and uncertainty are all part of life, sustainability is becoming increasingly difficult (Kinni 2014).

How can competitive advantage sustain? A firm's strategic resources are seen as a key source of competitive advantage under the resource base view. Towards achieving competitive advantage, unique resources must entail and be valuable-rare-inimitable. It is imperative that these strategic resources are available well structure across a firm to maintain competitive conditions. Competitive advantage will only sustain if the resources own the four attributes of value-rare-imitate-organization. Among the considered factors resulting in sustainable competitive advantage are people, culture, technology, strategic capabilities, innovation, industry outcomes, and dynamic capabilities (Sołoducho & Sulich 2020). Strategic resources easily being copied by the competition, losing economic value, and quickly dated in consumer's point of view will only gain a temporary advantage. The resources and capabilities of a firm, alone, will not generate value creation and require a firm to fully utilize and influence the outcome with serious considerations and planning. The difficulties to maintain sustainable competitive advantage promote sustainability studies focal

on the rise in temporary benefits. There is a various school of thoughts on supporting to gain sustain competitive advantages, distinctly, unable to find competitive advantage due to dynamic changes. Changes will not limit to competing with the external environment but also the internal environment including organization life cycle, value chain analysis, products, and services (Sołoducho & Sulich 2020). As such, constant evaluation on both internal and external forces can improve sustainability of a firm.

What is the difficulty to sustain a competitive advantage? Barney & Zajac (1994) defined a firm's resources, capabilities, and competencies as behavioral and social phenomena. When a firm conceptualizes and implements strategies, it must be able to incorporate social and behavioral factors. A link between decision-making, action, and leadership influences strategy implementation. Competition results in competencies, suggesting that a firm can develop potentially valuable resources and capabilities through overcoming competition. If a firm fails to answer the competitive threat, thus unable to develop relevant competencies. It is difficult to maintain and sustain the behavior and social phenomena explained due to the nature of complexity.

Some businesses succeed in building positive and valued reputations, while many others fail in the long run (Barney & Zajac 1994). The reputation of a company could be a socially manufactured entity that changes as time evolves. The variables in reputation creation as a strategic source of competitive advantage lifted the obstacles to sustainability. However, reputation, when combined with unique historical circumstances, is difficult to imitate, resulting in a competitive advantage if reputational advantages are developed. Together, casual ambiguity refers a firm's competencies are bundled or how daily decisions are made (Barney 1995) are also factors to inimitability. It is a strategic choice for a company to either expanded or contracted depending on a firm's core competency and linkage between strategic resources. The ambiguity raises the difficulty for others to copy or replicate which becomes a significant competitive advantage (Barney & Zajac

1994). This raises the question of whether companies with good reputations will always maintain their competitive advantage? Below will discuss Kodak a classic example of strategic failure, though company is good in reputation, a unique history and gain sustain competitive advantage over rivals in decades.

A case study on classic strategic failure – Eastman Kodak Company

The Eastman Company was founded in 1889 and named Eastman Kodak Company (Kodak) since 1892 by George Eastman and Henry A. Strong. The company is specialized in film production photography, motion pictures, printing and publishing, document imaging, health imaging and space imaging. Eastman built Kodak business on four basic principles: 1) a focus on the customer, 2) mass production at low cost, 3) worldwide distribution, and 4) extensive advertising (www.kodak.com).

Fujifilm Holdings Corporations (Fuji) was founded in 1934 with over 87 years of history. The company is specialized in digital imaging, medical imaging, photographic materials, cosmetics, biologic manufacturing, equipment and services (www.fujifilm.com).

The core business of Kodak and Fuji was selling films and film production, before digital imaging, dominate the world's photographic imaging industry (Ho and Chen 2018). The global shift on sharing pictures through online platforms, social media, mobile apps and computer storage, instead of printing, put the two company's core business model on challenge. Both firms, differentiate from rivals, with good reputation, unique historical condition, technology and human capital in their industry. Fuji sustains their business model while Kodak filed for bankruptcy in 2012. Scholars have studied this classic case extensively to discover why? What went wrong with Kodak?

According to some scholars, Kodak seems to have failed or has been disrupted by innovations (Ho and Chen 2018) (Anthony 2012). From RBV point of view, both firms can sense the disruptive

innovations on digital but have chosen a different path on strategic directions. In a different extent, Kodak and Fuji recognised the disruption and the substitution brought about by digitization, which led to divergent response. Kodak owned the technology to invent the first digital camera in 1975 (Ho and Chen 2018) (Anthony 2012). Kodak was not producing digital camera commercially until 1991, 3 years later, comparing to Fuji was producing the first digital camera in 1988 (Ho and Chen 2018). The lag in time reflects that Kodak failed to recognize the value creation of digitization when current and potential competitors are not engaged; yet, Fuji was looking for new opportunities and to shift their resources to embrace the digital world. Kodak has the resources, capabilities, technology and asset, since 1975, to respond to the shift and fail at the end due to misinterpreting the urgency to change (Anthony 2012). Kodak also fails to redefine online photo sharing is a new attribute to consumers, a new opportunity, rather as a different platform to expand printing business, and direct resources to an imperfect model (Anthony 2016). A firm must possess insights that other firms in the field do not possess about the opportunities associated with implementing a strategy and Kodak misread opportunities (Barney 1991). A firm can enjoy “First-Mover-Advantages”⁷ and impose “Barriers to entry”⁸ (Barney 1991). Kodak, apparently, has missed the opportunity to make the right strategic choice, when the firm has the opportunity, to redirect various resources fittingly. Ultimately, Kodak failed for the reason of inability to divert sufficient resources to participate in an emerging market, inappropriate assessment, and wrong strategic choice (Anthony 2016).

⁷ A firm that implements a strategy first in the industry is considered as First-Mover and can obtain a sustain competitive advantage in competition (Barney 1991).

⁸ A firm that can restrict other firms entering the industry by putting barriers can obtain a sustain competitive advantage in competition (Barney 1991).

The Sustainability Framework of Competitive Advantage

After discussing the difficulty in sustain competitive advantage, this paper attempts to build a sustainable framework for competitive advantage leveraging the VRIO framework. An examination of the characteristics of the source suggests that competitive advantage is potentially viable. Six major threats will explore, illustrating either on human resources or social aspects of a firm, and discuss sustainability threat to competitive advantage.

Figure 5 – Sustainability Framework of Competitive Advantage



Threat of Substitution: Will there be a replacement or substitution of an individual or workforce?

Traditional human resources are concerned primarily with the balance between the demand for and the supply of human resources (Beardwell et al. 2007). In 1760, the first industrial revolution began with the running of an engine that changed the world. In the late 19th century, mass production, using machines and assembly lines, begins the second industrial revolution. In 1960s, the computer became the catalyst for the third industrial revolution (Schwab 2017). Nowadays robots and automation are expanding workforce skills at an accelerated pace, posing an uncertain future for human labor (Mfanafuthi et al. 2019). A number of studies have shown by adding one robot per 1,000 workers, the national employment-to-population ratio in United States of America

decreased by 0.2 percent between 1990 and 2007. (Dizikes 2020). Human lost their jobs, especially during pandemics, and was replaced by robots (Semuels 2020). Human labor, from handmade to machines to computers to robots, has been replaced throughout the eras. The question of whether human resources, the pool of employment, will completely be replaced?

Resources of a firm differ and can also be substituted for one another as a strategic alternative (Barney 1991). Firm A is having a charismatic leader with a good vision as a competing resource. Firm B is having a good planning and managing system which is a strategically equivalent resource to firm A. Although a good leader in Firm A is rare and inimitable, having systematic planning by most of the competing firms, Firm A will not have a sustain competitive advantage on the leader (Barney 1991).

In the RBV tenet, the substitution of human resources by an alternative resource is possible to some extent. A firm may choose to replace human resources; yet, a firm will not enjoy sustainable competitive advantage if the majority of other firms are having the same choice. As such, when there is a threat of substitution, it is an agitation to remind a firm or strategy practitioner to assess competition both internally and externally.

Threat of Imitation: Will the concept of imitation or a threat of artificial intelligence replacing a workforce or individual? Both Stephen Hawking, an English theoretical physics, and Elon Musk, CEO of Tesla Motors, raise their fears on artificial intelligence (AI) is a threat to human survival (Cellan-Jones 2014). Artificial intelligence is a concept in computing that allows a machine to think and solve complex problems like humans (Saha n.d.). Professor Hawking is astonished by how powerful AI can become; he warns one day AI could surpass, or even match, humans in terms of abilities. (Cellan-Jones 2014).

In March 2021, a South Korean technology company introduced an artificial idol group. The firm presents artificial intelligence and experiments art imitate life entertainment. This new girl group is made up exclusively of non-human AI members, performs like humans, and all members with unique facial features. The latest technology allows the girls to mimic human facial expressions high in realism, low in cost, and requires a shorter production time (Anne 2021).

The latest researches have been focusing on the provision of artificial intelligence and how it will affect the future of labor (Mfanafuthi et al. 2019). A range of researchers worldwide are developing computers that are able to imitate human minds (Flamm 2016). Nowadays, algorithms are widely used to predict human interest such as Netflix will provide suggestions of movies when you cannot decide; Apple's Siri will solve your question when you interact (Saha n.d.); Facebook is predicting your choices and likes (Time n.d.). Humanity is moving in a new direction due to technology, but debates will not stop about whether AI can replace, at the very least, or imitate humans as a source of competitive advantage.

In RBV language, any resource can be a source of competitive advantage as long as it is valuable, rare, and inimitable. In the case of AI, Siri interacting with humans (manipulate by technology), is a source of competitive advantage when rivals are not able to possess the same resources. Apple may enjoy the First-Mover advantages for introducing Siri, however, as Huawei introducing Celia, Google introducing Google Assistant, AI will only be a temporary competitive advantage to Apple. Yet, the threat of imitation, as explained by Barney (1991), if a firm's resource is not having at least one or a combination of the three qualities: casual ambiguity, social complexity, or unique historical conditions, resources are perfectly imitable. The fact is technology or a system that can be purchased, though costly, is perfectly imitable which a firm may only enjoy temporary competitive advantage. As such, a firm should invest or increase complexity on the three qualities just mention to sustain competitive advantage.

Threat of Rareness: Will the concept of rareness especially on high-skilled talents be a threat due to globalisation?

RBV tenet is conceptualized and rooted in the concept of a stable environment competition with homogeneous and mobile resources (Barney 1991). Professor McGrath, from the Columbia Business School, said “competitive advantage is not untenable everywhere” (Kinni 2014). Globalisation stimulates dynamic changes, and a competitive environment is constantly unstable. The world has gone through revolutionary changes when boundaries are opened. A workforce shift to developing countries from western countries is a consequence of globalisation (Dickens 2007). The global shift is not merely due to lower labour costs, knowledge and skills as a source of sustain competitive advantage are also shifted (Ludviga & Chirjevskis 2010). In an interview, Apple CEO Tom Cook discussed highly skilled engineers in China. According to Cook, “*in China, you could fill multiple football fields*” of skilled labor when comparing to United States of America (Leibowitz 2017). What is rare, in some countries, may not be rare in others.

Barney (1991) points that when a firm possesses a particularly valuable resource, in general, is less than what rivals can possess, it is rare can be a source of competitive advantage if it is also perfectly imitable. In this case, globalisation may bring opportunities to find rare resources; yet, rareness will depend on whether competition can access the same rare resources. In Apple’s case, highly skilled technicians are abundant in China and, also available to Huawei and other competitors. Thus, Apple considering as rare may not necessarily pointing at the access of the resources, in other words, the competencies of highly-skilled talent are still rare. The threat of rareness will depend on whether the resources remain unique to a firm and are not commonly owned by competitors. As a result, the threat of rareness will prompt a firm's competitive resources to be discovered or reinvented.

Threat of Value: Will the concept of value be a threat to competitive advantage?

RBV is focused on the value creation of a resource and a characteristic of competitive advantage. Yet, when it comes to value appropriation, especially on intangible resources, a fundamental question of value remains unanswered (Molloy et al. 2011). What is value? Shall value describe as economic profits? Or, value means customer perceptions? Molloy et al. (2011) used Michael Jordan, the best basketball player, as an example. Michael Jordan, like a star, brings the audience and fans to watch the games. Tickets, star merchandises, and additional revenue from this star effect are uneasy to measure. Can value be trust or quality? What if value changes? Due to lack of measurement on intangible resources the source of competitive advantage is easily at risk. While a firm's resources and capabilities may have historically added value, changes in consumer preferences, technology, or industry trends, may result reduced value appropriation in the future. In the theory of RBV, value is the attribute of resources that creates opportunities for or eliminates threats against a firm (Barney 1991). Thus, a value contribution of a resource should be evaluated not only in terms of economic worth, but also in terms of opportunities or threats that may arise closing the possible gaps lifted. Look at Kodak's case we mentioned earlier, Kodak enjoyed sustain competitive advantage on film production for decades, when the value of customers changes from filming to digital and on-line sharing moments, Kodak lost the opportunities and economic profits. It is important for a firm or strategy practitioner to remember the potential threats to value.

Threat of Innovation: Will innovation be a threat to competitive advantage?

Some academics tend to believe innovation is, the primary cause of Kodak's decline. Kodak was forced into bankruptcy after it failed to recognize the importance of digitization and lag to respond. Professor McGrath of Columbia Business School claims a firm will lost to rivals as a result of incapability to innovate (McGrath & Gourlay 2012). The implication of innovation involves change (McGrath et al. 1996). Disruptive innovation is a term used by some critics, inferring a

threat, rather than embracing the change. Thus, will innovation murder competitive advantage, *The End of Competitive Advantage*, like Professor McGrath mentioned in her book?

Barney (2001) notes that RBV follows a gradual evolution over a period of ten years since its introduction in 1991. RBV focuses on a firm's resources, skills, capabilities and sustainability of competitive advantage. Over the years, RBV advocates extend the theory and highlights the fact that capabilities of firms have been transformed over time, and the implications for change (Barney 2001). A firm should have cognition on diverting sufficient resources to participate in emerging market, appropriate assessment, and make right strategic choice. When Fuji shift resources to embrace the emerging markets, that we discussed earlier, this is best represented on a right strategic choice. Innovation in sum is not a threat to competitive advantage, on the contrary, it leads a firm to rethink the source of competitive advantage holistically and integrate resources in a new way to compete or neutralize threat of rivals.

Threat of Others: Will there be other factors be a threat to competitive advantage?

Threat of substitution, threat of imitable, threat of rareness and threat of value are focused on a firm's internal resources and capabilities scanning. It is impossible to avoid external threat or opportunities in order to maintain a competitive advantage. Strategic tools such as Porter's five forces, SWOT analysis⁹, and the PESTEL¹⁰ framework is just a few of the many designed for external environmental scanning. To neutralise threats and exploit opportunities, a firm should be continually attentive and execute, not limited to internal scan, an environmental scan. In the era of change, globalization, digitalization, speed, peer-to-peer communication, increasing transparency, and other factors will contribute to competition instability. Sustainability frameworks

⁹ SWOT is abbreviation for strength, weakness, opportunities and threats. SWOT analysis will help a firm to understand the strategic potential of the business is engaged.

¹⁰ PESTEL is abbreviation for political, economic, social, technological, environmental and legal. PESTEL analysis is a strategic tool for a firm to understand macro environmental forces.

will remind firms and strategy practitioners to assess, to shift resources, or to reinvent competitive advantages so as to respond to the era of CHANGE.

Methodology

The objective of this paper is to illustrate the difficulty to sustain competitive advantage by using the value-rare-inimitable-organization (VRIO) framework developed by Barney (1991). The research period starts on 21st June 2021 and ends on 21st July 2021. Due to the limitation on time, research needs to be submitted latest by August 16, 2021, this paper will focus on examining academic literature, journals, empirical cases, video lectures, newspapers, and books. In the beginning, the research direction is put on RBV written by Barney (1991) and works of other scholars on RBV. Keywords such as Barney, resource-based view, resource-based theory, RBV, RBT, competitive advantage, sustain competitive advantage are used to get journals. After a brief discussion with the research supervisor on 15th July, research restarts and RBV journals written by Professor Jay Barney for every ten years from 2001 to 2021 are also reviewed to get in-depth knowledge on the RBV tenet.

This paper has put the research focus on the theoretic idea of RBV published in 1991 by Professor Barney. As said, every ten years, RBV will present a special edition till recently 2021 by Barney. RBV on human resources (Wright et al. 1994) (Barney & Wright 1998), organizational behavior (Barney & Zajac 1994) and trustworthiness (Barney 1994) as a source of competitive advantages are examined. Furthermore, journals focus on the future of RBV (Barney, Ketchen & Wright 2011), RBV and value creation (Barney, Ketchen & Wright 2021) are also reviewed. Together, this paper also studies some criticism on RBV and other schools of thought against competitive advantages in order to obtain a view on the challenge and sustainability threat on this topic. An interpretive analysis of resource-based view, VRIO framework, and Kodak case study written by other scholars are applied.

This paper has chosen a literature review and case study methodology to gain an understanding of the above.

Limitations

This paper is an exploratory research on RBV and the implication of the theory. The purpose of this study is to improve the understanding on competitive advantage and sustain competitive advantage. The study is based on literature review, casual observation, empirical studies and experience. A broad concept is used as a means of identifying issues without a definite result. The ideas are mostly conceptual without actual validity due to limited time. There are no specific measurements or statistical findings in this study on sustaining competitive advantage. Research in the future will benefit from the provision of validity statistics.

The author of this study is full of passion and interest in the topic. However, competence and ability to conduct a good research with in-depth insights are limited. Barney (2021) said researchers of the greatest influence embrace self-revelation as nature of a research. The expertise of this research needs to be improved.

Conclusions

The literature review on “Firm Resources and Sustained Competitive Advantage” by Professor Jay Barney (1991) raises a few significant interests:

- What is the definition/difference between competitive advantage and sustain competitive advantage?
- What is a resource-based view and the relevancy on sustaining competitive advantage?
- How to test intangible resources against the VRIO framework?
- What is the possible challenge and difficulties to sustain competitive advantage?
- Leveraging on the idea of value-rare-inimitable-organisation is it possible to sustain competitive advantage and how?

In order to answer the above questions, this paper has examined sustain competitive advantage under RBV tenet. An assumption on sustain competitive advantage is theoretically difficult and attempt to test the sustainability of competitive advantage leverage on the VRIO framework. A genuine thought on whether Buffett is correct with the idea “bigger the moat, the more sustainable” or Musk is correct with “moats are lame” is not being solved. However, as Professor Barney mentioned RBV has evolved into three stages, from introduction to growth to maturity stage, since 1991 (Barney et al. 2011) and is still evolving. The contribution of various scholars has added clarity and implications of RBV to some important factors covering human resources management, economics, entrepreneurship, marketing, and international business (Barney et al. 2011).

There are different schools of thought and at a different stage, RBV advocates have brought new contributions to RBV, from a view to a theory, as concluded by Barney et al. (2011). Thus, strategy is a set of choices to make and the capability to integrate resources to compete against rivals. To sustain competitive advantage is proven to be theoretically difficult and practitioners should revisit strategic resources over time. Strategy is not static and learning from Kodak’s failure, a firm should make strategic choices on resources while sustain competitive advantage is challenging.