Analysis of Competitive Strategy to Create Sustainable Competitive Advantages Seen From the Nine Factor Model and Bacos Treacy Model

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Abstract. This paper seeks to examine the importance aspects of strategy and information technology to create sustainable competitive advantage. Various discussions about aspects of the strength of competition, information technology, and competitive strategies by the researchers were previously analyzed. This study seeks to design a conceptual framework about the important role of strategy and information technology in creating sustainable competitive advantage. Various scientific articles from leading journals are reviewed again, especially articles that discuss about strategies (such as the theory of Porter Diamond Model and development). Based on various previous studies, a conceptual model was built to include various relationships between important concepts that are related. In the context of creating sustainable competitive advantage, aspects of The Nine Factor Model and Bakos-Treacy Theory have a significant role in pushing Sustainable Competitive Advantage. In addition, the two concepts are ultimately useful for building creativity, the creation of value, and competitive culture in each organization. This study seeks to design an integrated conceptual framework about the important role of strategy, innovation, and information technology in creating sustainable competitive advantage based on a recent literature review. Therefore, the conceptual framework that is built needs to be reviewed, strengthened, and continued with other empirical studies.

Keywords: Porter Diamond Model, The Nine Factor Model, Bakos Treacy Theory, Sustainable Competitive Advantage

1. Introduction
Michael Porter’s Five Forces Model has been modified by several experts. Moon, Rugman, and Verbeke (1995, 1998) modify this model so that it combines multinational and government activities precisely. Tambo (2015) also believes that Porter's original model has limited applications in developing countries. He emphasized various groups of human factors and various types of physical factors in explaining the competitiveness of a country. Human factors include workers, politicians and bureaucrats, employers, and professionals. Physical factors include resources, domestic demand, related and supporting industries, and other business environments. External factors, opportunities, will be added to the eight internal factors to create a new paradigm, the nine factor model, as shown in Figure 2. According to the opinion of experts
above the nine factor competitive model is very useful in understanding the role of a country's competitiveness.

Below will be described the original Michael Porter’s Five Forces of Competition Model and its modification to Nine Forces Model of Competition.

![Diagram of Nine Forces Model of Competition](image)

Source: Adapted from Porter (1993: 7)

**Figure 1.** Strengths Encouraging Competition between Companies
As the Michael Porter (1990) model shows, the traditional model, made by Adam Smith and David Ricardo called classical economics, does not miss from many flaws. Other economists see national competitiveness as a macroeconomic and financial phenomena. They argue that a cheap currency and a balanced budget increase competitiveness. However, there are many cases where the country has prospered despite appreciating currency and budget deficits. This is where the need for a new national competitive model.

The Nine Forces Competitive Model is seen as more comprehensive and more dynamic than the original model made by Michael Porter. First, this framework includes four groups of human factors in addition to the four physical factors derived from Michael Porter's original model in explaining the competitiveness of a country. Therefore, it is more comprehensively applied in various types of nations, in particular, where the roles of various groups of people are important for their economic development. Second, more dynamic. Human factors and physical factors interact in order to spur the development of a nation. This model embodies Porter's idea that "national prosperity is created, not inherited." In some ways, humans are the
main trigger for gaining national competitiveness by regulating and combining physical factors in productive ways. In addition, government officials are an important factor in the new model and thus have a direct influence on national competitiveness, while government factors are variables outside Porter's original model.

In addition to the three frameworks for strategic advantage above, Omsa, et.al (2017) also propose five stages that can be done by companies to explore strategic opportunities that can be done. The five stages are as follows:

- Conduct an assessment of the intensity of information.
- Every activity in the value chain is examined in order to see the intensity of the information, therefore the company can have the opportunity to gain strategic advantage.
- Determine the role of IT in the industrial structure
- For information technology to play a role in adding value, it is necessary to identify and determine the role of information technology.
- Identify and rank the ways of information technology to create competitive advantage.
- Investigate in the possibility of information technology developing new businesses
- Develop a plan for taking advantage of IT

From this it is clear that the field of information technology plays a very important role.

Boafo, et.,al (2018) used two main sources of the Porter competition threat model, namely bargaining power and comparative efficiency to achieve competitive advantage. These two main sources are determined by five factors, namely: search costs, unique product features, switching costs, internal efficiency and inter-organization efficiency. Search costs are costs that must be incurred by the consumer, if the consumer will move to a competing product. The uniqueness of product features is related to the uniqueness of new products that can be produced. Moving costs are costs paid by consumers, because consumers move to competing products. Internal efficiency is related to cost strategy. Internal efficiency can be done by reducing all internal costs or increasing productivity. Whereas efficiency between organizations can be achieved by establishing beneficial cooperative relations with other organizations. Below is the Bakos and Treacy Model:

![Figure 3. Bakos and Treacy model](image-url)
2. Research Methods
This research uses a descriptive research approach. Data collection in this study was carried out using observation and documentation techniques. While the analysis of research data uses a phenomenological approach developed by Creswell (2010).

3. The Study
The application of information technology in order to have a strategic advantage is not always easy. Therefore companies must pay attention to what factors can influence the success and failure of implementing strategic information technology. These factors need to be known, because the failure of information technology will reduce the good name of the company and cause customer disappointment. Companies that need information technology are companies that have high information intensity. The successful application of information technology will have a big impact in the company, namely winning the competition.

With the development of new technologies, new forms of competition and new opportunities to add customer value, we need to start redefining the strategic rationale and competitive advantage. Building and maintaining competitive advantage requires companies to learn and adapt far more quickly in order to distinguish themselves from competitors. The product life cycle has been suppressed so that products and services become commodities with a much shorter period of time. Even intellectual and technological assets with proprietary rights protected by patents are widely available and can be used. For example, the latest software (Linux), micro-processor design (Transmeta), music offerings (MP3), have become fixed equipment on the internet.

All industries will face significant changes in their competitive environment as a result of breakthroughs in new technology, changes in customer demand and the emergence of new competitors. However, according to Venuturumilli,S, et.,al (2016), this change has several general trends, including:

1. Increasing the importance of knowledge work;
2. Growth in substitute product and service;
3. Enhancing the nature of intensive information in various value added activities.

- **Knowledge work.** Knowledge work can be found in research and development, ongoing experiments, and the creation of new technology standards that determine how far a company can create products and services that are superior to its competitors. This shift towards knowledge work places greater emphasis on the ability of managers to attract and retain talented personnel, both through training and recruitment of personnel from competitors and from other industries. This will increase the flow of ideas, insights, and innovations that are expected to produce new technological and business developments.

- **Substitute products and services.** Companies in other related industries often produce substitute products. Substitute product innovations create opportunities for new entrants to change the way companies deal with competition. For example the emergence of the use of telephone technology through the internet that can threaten traditional telephone companies.

- **Increased information intensity.** Increasing the intensity of information in various industries shows that the costs of creating, sending and disseminating information continue to decrease over time. For example the use of the internet and e-mail is increasingly widespread in the distribution of information.

The factors mentioned above will result in changes in strategy and sources of competitive advantage so that the structure of the industry will become increasingly unstable. In general, we can see the effects of changes in the industrial environment that are repeated and massive in three ways:

- **Commoditizing new technology.** Innovation and new technology have become a kind of commodity.
- **Reducing costs / units quickly.** Some sophisticated forms of knowledge are widely available on the internet at very low cost, sometimes even for free.

- **The burden of strategic commitment.** The ability of companies to learn and create a source of competitive advantage continuously becomes increasingly difficult. Change requires a new framework and a willingness to challenge assumptions about value added tailored to customer needs.

Companies also should not focus on competitors in small strategic groups or in their own industry, because competitors may emerge from different or unexpected industries.

Companies can only survive and prosper if they are able to change as fast as or even faster than the changing of industrial environment. Companies need to make changes on several dimensions: (1) it needs to be recognized, that if the customer has been able to determine prices and offers, then the company's products and services have become commodities; (2) a company is able to obtain high profitability if it is able to distinguish itself significantly from its competitors; and (3) companies must create balanced organizational designs to create innovations, experiments and thoughts that will drive renewal and new discoveries.

The development of new technology and the increasing number of new entrants show that companies must be able to use these strategies together to create new sources of competitive advantage. Some things need to note include:

- **Fast learning.** Alliances, mergers and acquisitions are forms of response in the face of a competitive environment that allows value-added activities at lower costs or faster turnaround times. Vertical integration to build economies of scale may no longer be an appropriate competitive strategy, especially in industries that continue to undergo radical and high-frequency changes.

- **From physical to virtual value chains.** This is made possible by the development of internet technology and digital media that enables the emergence of value creation networks that have high levels of distribution and a much wider market space.

- **Evolution of value creation technology.** Value creation activities continue to grow rapidly in the manufacturing and service industries. For example the use of complex information networks in the field of health services so that doctors and medical experts are more like "knowledge brokers" who work with certain clients and serve them with various services.

Because the company's economic and technological resources that lead to competitive advantage are constantly changing, managers need to develop new competencies to direct their companies through this shift. Some things to consider in building these new competencies include:

- Looking for new skills and insights that can influence company strategy, product development and the creation of new competitive advantages, including those from industries that may not be related;

- Legitimating and encouraging the use of various perspectives and ideas about what skills, technology and competencies are needed to develop in the future.

- Design and develop a reward system that is able to encourage employees to create new ideas without having to worry about being pressured if the idea changes existing practices;

- Understand that knowledge work can be cross-industry in nature, meaning that managers can recruit new personnel from outside the industry;

- Each member in the alliance gives contribution, learns from each other, and together develops key skills from partners.

4. **Discussion**
The creation of sustainable competitive advantage is an important factor in strategic management because with competitive advantage the company is able to continue to operate, win competition and achieve company goals. This sustainable competitive advantage can be built by considering strategy and resources as key factors for organizational success. Management must also continue to pay attention to environmental factors of competition and technological developments that are constantly changing so that they are always able to adapt and respond quickly or even faster than these changes. From various sources, there are various ways for companies to gain competitive advantage in the future:

4.1 Bargaining and Negotiation

Bargaining and negotiation are important tools that help manager manage conflict because change causes conflict, bargaining is an important tool in overcoming resistance to change. By using action research, managers can anticipate the effects of the change on interpersonal and inter-group relationship. (Fuerles, et., al, 2020). The firm has to increase the capability of bargaining and negotiation to customer. The firm can increase the performance management with using the Porter’s five forces model to gain a competitive advantage in the future. Porter’s model has some weakness but with combining with other models such as The Nine Forces Model and Bakos & Treacy model, the weakness of the model will be covering very well.

4.2 Manipulation

When it is clear that change will help some individuals and groups at the expense of others, senior managers need to intervene in the bargaining process and manipulate the situation to secure the agreement, or at least the acceptance, of various people or groups to the result change process. (Fuerles, et., al, 2020).

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