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## Strategy Competitive for Creating Sustainable Growth in Software Development in Indonesia: A Conceptual Model

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### Abstract

Every company is trying to achieve a competitive advantage and maintain sustainable business growth. Software development industries in Indonesia have a high growth potential. In line with technological developments, the need for software particularly applications has increased to support the activities of the government, education, business, or society. This paper attempts to describe the actual conditions of software development industries in Indonesia and also proposed a conceptual model by identifying the factors that influence software development industries to achieve the sustainable growth. The model developed is expected to be a reference in the software development industries, particularly in developing countries.

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### 1. Introduction

Successful implementation of a company's strategies can be seen from how well the company can grow consistently in a tight competition from time to time. In facing a global competition a company must have a distinctive advantage that can differentiate it from other companies in the industry. Thus, the company must take efforts to achieve a competitive advantage for having a sustained growth by continuously adapting to the trends, external occurrences, ability, competence, and internal resources. In addition, the company must effectively formulate, implement, and evaluate the strategies that can take advantage of those factors (David, 2006). The Company must be able to increase

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their competitive capabilities globally in turbulent conditions by formulating strategies that are adaptive and easily adjusted to keep abreast of the changes that occur in a short time within an era of a global competition as nowadays (Hill & Jones, 2001).

An achievement of the competitive advantage for a sustainable growth is gained by making a differentiation through technological innovation (Stern & Henderson, 2004). Technology and information are an important element for the company which enables it to innovate, adapt, and respond quickly to the consumers (Chatteli, 1995). One of the competitive industries and has a global potential is software development industry, which is the applications of the current advances of technology and information. Today in Indonesia, software development companies have started to grow as a part of the digital creative industry. According to the data of the Central Bureau of Statistics (2014), creative economy contributed seven percent of the total GDP (gross domestic product) with a value of Rp 642 billion in 2013. This industry is the fourth largest that absorbed labor in Indonesia with 10.72 percent of the total 11, 9 millions of the national workforce or nearly 1.4 million workers.

Indonesia's software development Industry has the opportunity to compete at national and international levels, and to encourage the growth of young entrepreneurs in this field. Based on data from the Central Bureau of Statistics (2015), Indonesia's population is currently 250 million people with an average growth rate of 1.2% every year. Supported by the explanation presented by Tutang (2013), more than 200 colleges have courses related to information technology with the predicted number of graduates reaching 500 thousands annually. Indonesia has the potential to become an important player in the software industry not only as consumers but also producers.

Nowadays, software applications have become a trend and influence the activities of daily life ranging from shopping, traveling and social habits. Indonesia's software development industries compete tightly with those of foreign industries that already have a market and loyal customers, even many of the Indonesian population are loyal to foreign-made software products. In fact, the quality of the local software products is not inferior compared to foreign-made ones. One advantage of the local software products is they are more in line with the local character and needs. The Potency of the local software to develop in Indonesia is very large, based on data from the Central Bureau of Statistics (2015), the current number of UMKM (micro, small, and medium businesses) in Indonesia has reached 56.5 million units. It is such an opportunity and a potential market for the software development industries as the fact that only a small numbers of MSMEs (micro, small, and medium businesses) have used IT to support their business activities.

According to Wibowo (2002), there are several factors that can increase and affect the local software industries in Indonesia, namely the human resources, infrastructures, and government. Research by Jan et al (2012) also discusses the factors that affect the local software industries based on clusters, technology, and capital. The cluster consists of a talent which explains the need for human resources to develop the software industries. Meanwhile, the technology illustrates that technological innovation is very major to produce differentiations in products. Lastly capital explains the role of the government to build infrastructure which can combine the two clusters of talent and technology.

This study aims to describe the condition of software development industries in Indonesia and discusses the competitive strategies of the industry in order to achieve a sustainable growth. The research methodology approach used is a literature review based on an analysis of actual conditions of the industries today and an assessment of the previous studies. Thus, this paper presents conceptual model through identifying factors that influence software development to achieve a sustainable growth.

This paper is divided into five sections. After the introduction, the second part contains a review of literature by explaining the concept of competitive strategies and sustainable growth. The third part is the research methodology. The fourth section is a discussion of the actual condition of the software development industries in Indonesia and the proposed conceptual model based on the results of the literature review and the analysis of the software development industry in Indonesia. This paper is ended with a conclusion and discussion of this study.

## 2. Literature Review

George A. Steiner in his book "*Management Policy and Strategy*" states the strategic planning is the process of selecting the company's objectives, determining policies and programs needed to achieve certain targets in order to achieve the objectives and the establishment of methods to ensure that the policy and the strategic program is implemented (Stoner, 1996). The benefits of corporate strategy, among others, are that the strategy is a way to

anticipate problems and future opportunities in the environmental conditions which change rapidly, giving a clear picture of the direction and objectives of the company in the future, minimizing the risk and making the manager's job easier. The strategy must be tailored to the organization's resources, changes in market environment, and customer lifestyle (Porter, 1998). The more natural and beneficial approach in the company's strategy is to increase the knowledge and skills required by the company to maintain or increase their competitiveness.

According to David (2011), strategic management is an art and knowledge in formulating, implementing, and evaluating the decision - cross-functional decisions that enable an organization to achieve its goals. Hunger and Wheelen (2003) describe that management strategy is a series of managerial decisions and activities that determine the success of the company in the long term. The activities consist of the formulation / planning of the strategy, the execution / implementation and the evaluation. In this study, the definition of strategy management is a series of managerial decisions and activities in formulating, implementing and evaluating decisions to achieve sustainable growth in the long term. The management strategy is about how to obtain and maintain a competitive advantage. According to David (2011), competitive advantage is everything that can be done much better by a company than its competitors.

Day & Wensley (1988) states that sustainable competitive advantage are the kinds of strategies to assist the company in continuing to survive. Based on the resource-based theory, Barney (1991) in Hoffman (2000) proposed a formal definition which is closer to the definition of sustainable competitive advantage that is often used today, namely the advantages achieved continuously by implementing the strategies for achieving value- unique value that is not owned by the competitors. Further, it is said that the company is considered to have a sustainable competitive advantage if the company is able to create value which is at the same time not being done either by the competitors or potential competitors and other companies are not able to imitate the advantages of this strategy.

Day & Wensley (1988) argues that there are two factors that could affect the company's efforts in order to create competitive advantages that are superior capabilities and Resources Excellence. The opinion was supported by Ferdinand (2003) who states that based on the resource-based theory, the essence of competitive advantage is a unique combination of resources and capabilities. Meanwhile, to preserve the competitive advantage, the company should have the typical resources and capabilities (*company specific*).

### **3. Methodology**

This study used mixed mode research approach to gain the deep understanding of the research underpinnings (Moleong, 2009). The object of this study is competitiveness strategy with the subject of the research is software development company in Indonesia. The source that has been used to collect the data in this study consist of primary and secondary data. The primary data was obtained through semi structured interviews with several parties who are expert in the software industry, while the secondary data was obtained through corporate annual reports, and from published literature (Sekaran, 2007). Data analysis technique is divided into stages, namely the examination of data from various sources, data reduction, categorization, data validity and the interpretation of data. Furthermore, in order to test the validity of the data, then the triangulation of data sources is done, as well as comparing data from the interviews with the results of field observations. A conceptual model proposed in this study is based on the interviews and a review of previous literature synthesis. This data will then be presented in the the form of descriptions to explain the results of the author's analysis towards the findings in the research (Moleong, 2009).

### **4. Analysis and Discussion**

The software industry is one of the sectors in the creative industries that can be done by a lot of people, with the capital which is relatively not as big as that for other businesses (Indonesia Kreatif, 2014). Within the next few years, the development of software industries in Indonesia is believed to increase sharply. The opportunities for the software industry is currently more open and promising. Indonesia has a great potential in becoming the provider of the software experts or software developers for the software industries of the world.

#### 4.1 Software Development in Indonesia

Software development companies in Indonesia are part of the digital creative industry. Software development is a creative industry which is one of the pillars of the national economy. According to data from the Central Bureau of Statistics, in 2013 this sector grew 5.76% or above the average of the national growth rate of 5.74%, with the added value of IDR. 641.8 trillion or 7% of the national GDP. This industry is also the fourth largest which absorbed labor in Indonesia with 10.72 percent of the total national workforce of 11.9 million, or nearly as big as 1.4 million workers (Central Bureau of Statistics, 2014). This current era of globalization has forced a country to conduct technological innovation to promote exports.

Nowadays, there is no exact data on the number of software houses in Indonesia, but it is estimated to have reached more than 500. However, based on data from the Software Association of Indonesia (ASPILUKI), the number of registered applications of software development has increased every year. This shows an increase in the number of software developers in Indonesia.

Table 1. Number of Registered Application Software

No.	Year	Total
1	2012	41
2	2013	130
3	2014	206
4	2015	254

Source: ASPILUKI, 2015

Currently, the local softwares have been widely used by various agencies and companies. Some of the local softwares developed by the software developers include:

Table 2. Software Based on Function

No.	Function	Percentage (%)
1	data warehouse/business intelligence	10,11
2	ERP	9,46
3	HRIS	5,81
4	E-Learning	5,59
5	CRM	4,73
6	Payroll System	4,73
7	Procurement System	4,52
8	Financial/Accounting System	3,66
9	Administration System	2,80
10	Utility	2,58
11	Mobile Application	2,37
12	Point of Sales	2,15

Source: ASPILUKI, 2015

Based on the software licenses used by the software developers in Indonesia, 66% are open source software, and 34% are proprietary software (software.or.id). Open source software is software which opens / frees the source code and gives the working guideline of the software and at the same time, improves the weaknesses that exist in the software. While Proprietary software is the software that is protected by copyright from the misuse and unauthorized use.

Industrial technology market in Indonesia, according to data from Business Monitor International (BMI) is growing quite rapidly. BMI estimates that the cost of IT spending in 2015 will reach US \$ 10.2 billion with the growth of local software reaching 18 percent per year (Malya, 2015). In addition, there is an increase in competitiveness, which is based on the data of Sourcingline noted that Indonesia is ranked number two in the world for *outsourcing software development* after India with an index of 6.7. Even in terms of *cost competitiveness*, Indonesia is above India (Merina, 2014).

According to Marketing Director of BSA Asia, Roland Chan, Business Software Alliance (BSA) estimates that only about 15 local companies are committed to the development of software. The piracy reduction of up to 10% itself can absorb 2200 local software experts (source: Industri Komputer, 2009).

Based on data from International Data Corporation (IDC) Indonesia, it is predicted that the consumption of information technology Indonesia in 2015 will reach US \$ 15.6 billion, despite experiencing the economic slowdown that is less than 6% in the last three quarters. That number has increased by 17.9% compared to the period of 2014 which reached US \$ 12.8 billion. The Senior Analyst of IDC Indonesia, Lutfi Hussein, said the high consumption of Indonesian IT is a result of high consumerism and lifestyle behaviors of consumers seeking to improve the quality of life, without trying to produce by themselves. The Government IT spending in 2015 will reach US \$ 603 million in 2014 compared to only US \$ 515.8 million. (Malya, 2014).

Market opportunities in Indonesia is still very large, and the Indonesian software development industries have the potential to capture the local market. Currently, the demand for software is increasing. This is in line with the development of the Internet. Based on data from APJII (2014), The number of the internet users always increase every year and is expected in 2015 will reach 139 million users. Some electronic devices can be connected to the internet, including smartphones, computers, laptops, tablets, televisions, radios, etc. This is supported by the number of the smartphone users penetration in Indonesia, which in 2015 has reached 74.8 million (eMarketer, 2013). Based on the data, it is obvious that the chances of software development growth in Indonesia is very large as software applications.

#### *4.1 Conceptual Model for Software Development in Indonesia*

Based on the previous literature review and the analysis of today's software development industry condition, so the proposed conceptual model in this study take efforts to devise a competitive strategy for software development industries to achieve the sustainable growth, several phases of which include the preparation, implementation, and sustainability of growth. The model below is an integrated model, which requires collaboration and cooperation of various stakeholders. Considering the tremendous potential of software development industries in Indonesia, it can be realized by synergizing the actors in it.

In the preparation phase, it is begun with the growth of awareness and the ability of a Technopreneurship in capturing business opportunities of today's technological advances. Technopreneur is a business person who focuses on the application of information technology in the business activities and the products / services produced. In addition, some other things that should be done in the preparation phase is business preparation by preparing guidance and any resources needed; Local software industry will remain survived in the middle of the foreign software companies invasion, although local software developers are still considered less competitive compared to foreign software developers. That is because the local software developers do not yet have a vision of their business ahead, so that at this preparatory stage, they must define the vision, mission, and objectives of the company to be used as the company's identity to go ahead and the statements of the company's future goals; set the company's development strategy to the future; the ability to identify the current technology and technology in the future; software development industry is a dynamic industry that keeps abreast of rapid technological change, so that the distinctive competence abling to adapt to these conditions is needed.

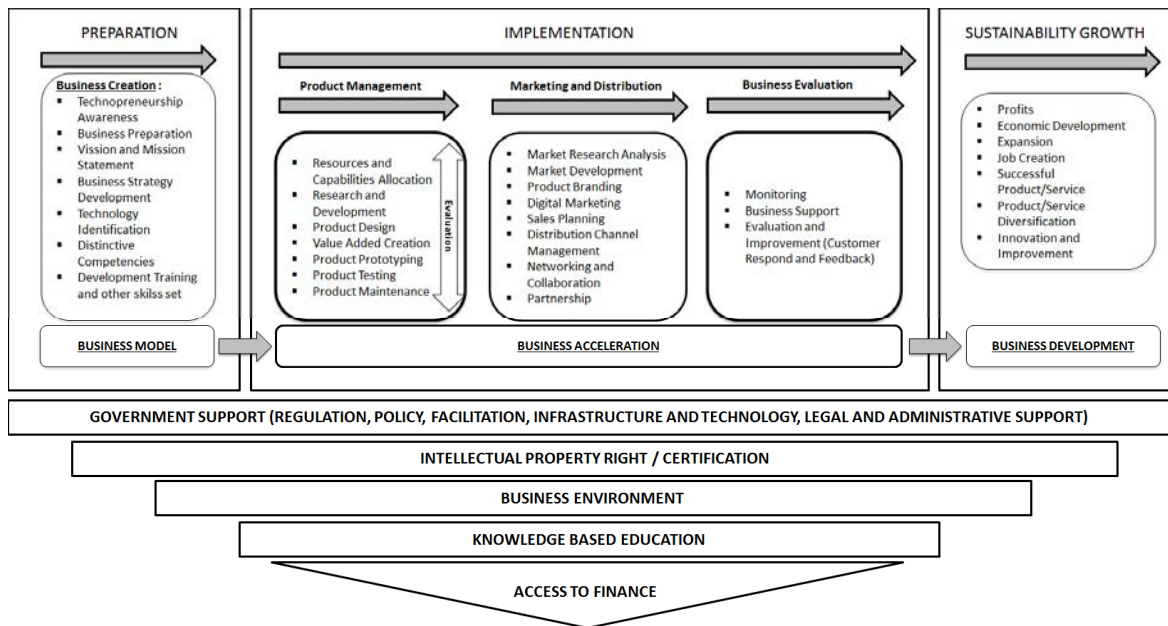


Figure 1. Conceptual Model

Soft ware developers are knowledge workers who use their brains to work instead of muscles. Knowledge of software developers will not be worn, unless they are not willing to continuously learn and stay up-to-date with the current development any more; and, the development of other skills and abilities needed by the company. At this stage, companies must establish their business models, for the operation and productivity of their enterprises.

The next stage is the implementation phase consisting of product management, marketing and distribution, and business evaluation. Product management is related to the effectiveness and efficiency of the company in producing software in accordance with market demand. At this phase, it must ensure the availability of the resources allocation and skills needed to produce creative and innovative software according to customer demand. To identify the market needs it is necessary to do research and development of the software products that are used in present time and in the future. Then the designing process for added value creation is carried out, followed by producing a prototype, retesting the product to ensure the suitability of the functions and benefits of the product, and the maintenance process of the products that have been produced. Next is the process of marketing and distribution which involves the research analysis on the identification of market needs and market acceptance of products that have been made. Application developers should also see the target market to be addressed. Product branding to introduce the product to the market, digital marketing, sales planning, distribution channel management, networking and collaboration, and partnership. Business process evaluation consists of monitoring, business support, evaluation and improvement (customer respond and feedback). In the implementation phase, business accelerator is taking place to encourage businesses to improve and accelerate the business growth.

The last phase is the achievement of growth sustainability in which the company has achieved profit, economic development, expansion, job creation, successful product / service, product / service diversification, innovation and improvement. Companies must be able to maintain this condition over the long term, so that even though the company has reached a sustainable growth, companies must keep innovating and improving the quality of their products. And of course the further business development strategy follows the technological changes and dynamic environment.

Stages of strategy done by the company would be successful if supported by several factors, including government support (regulation, policy, facilitation, infrastructure and technology, legal and administrative support). The problem that often occurs is the impartial regulation for the local software developers, such as the tax system and the protection of local products. In addition, the uneven infrastructure and technology in several regions in Indonesia. And, other problems that often cause software development companies in Indonesia rise and fall is the difficulty in accessing



business licenses, and the need of the government support in the legal and administrative process of software developers who will build their business. Protection for the Intellectual Property Rights or Copyright is also felt very urgent to create a healthy ecosystem. And this protection depends on the government policy to develop the local software industry. A conducive business environment also encourages the success of software development companies in Indonesia; a healthy business competition climate is also one important factor. The success of software development industry is also strongly influenced by the ability and knowledge of human resources, so that the role of educational institutions is needed in the process of knowledge delivery. Another constraint is the average of local software companies has limited capital. This is because most software companies are unable to obtain a business loan from a bank because it has no real assets that can be used as collateral for loans. As a result, many software companies can not survive for a long time. So, it needs the participation of the government to seek the best solution in providing opportunities for software development companies to have access to capital / finance.

## 5. Conclusion

Global competition at the present time has created opportunities and challenges for companies that want to contribute to a strong position. Arena of global competition has made the business environment has changed radically in a relatively short time (turbulence) as well as the competition between companies is getting tougher. One of the key factors in determining success in the competition is through efforts to increase the company's competitive advantage. Software development company Indonesia has a great chance to win the competition the local market which is currently largely controlled by foreigners. Software development companies in Indonesia need to plan a strategy to achieve competitive advantage and achieve sustainable growth. Based on the analysis of actual conditions and previous literature review, then competitive strategy planning stage consists of preparation, implementation, and sustainability of growth. At each of these stages consists of several important factors that drive the success of each stage. In the implementation phase consists of project management, marketing and distribution, and business evaluation. And if every step can be performed, the company will achieve sustainable growth in line with expectations of each company. In addition, the company must have a dynamic capability and distinctive competencies in achieving a sustainable competitive advantage as a competitive strategy in the face of competition in the software development industry. The success of the proposed conceptual models specified by each stakeholder collaboration (academic, government, industry, and communities). The conceptual model of this study can be used as a guide to the industry, especially software development industry in planning the company's competitive strategy to achieve sustainable growth. Further research can be done with an empirical test of the model proposed.

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