Extended Validated learning Concept and Business Model Canvas for Start-up Business to Increase The Knowledge with Knowledge Management System

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Abstract

Business start-ups are companies that have not been operating for a long time. These companies are mostly newly founded companies and are in the development and research phase to find the right market in the technology. Such conditions have an impact on the long process of business start-ups to develop their businesses which have a high risk of failure if the process is not followed by the right method to develop their business. Several business concepts are used by start-up companies to help develop their business such as the Model Business Canvas (MBC). On the other hand, knowledge management system is a type of IT system that stores and retrieves knowledge to improve understanding, collaboration, and alignment of processes that can be utilized by business start-ups to develop their businesses by managing their knowledge and using Knowledge Management Systems to help them make business decisions. Thus, the purpose of this research is to help business start-ups manage their knowledge by combining the concepts of validated learning and knowledge management systems to develop their businesses. The research method uses a qualitative approach through observation of business start-ups to identify their business problems. Meanwhile,

literature review is used to find alternative solutions using the business development concept that has been used by many companies, namely MBC.

Keywords
Start-up Business, KMS, Validated Learning.

1. Introduction
The increasing competition between companies requires companies to innovate to win in the competition. Business startups are one of the companies that are also innovating to excel in business competition. Business startups have bigger challenges because at the beginning of the company's establishment it requires a lot of knowledge that can support the company's business (Casero and Arnaldo 2019) (Henry et al. 2020) (Franceshelli et al. 2018). Figure 1 explains the high growth of startups in Indonesia compared to other countries

Source: Cento Ventures
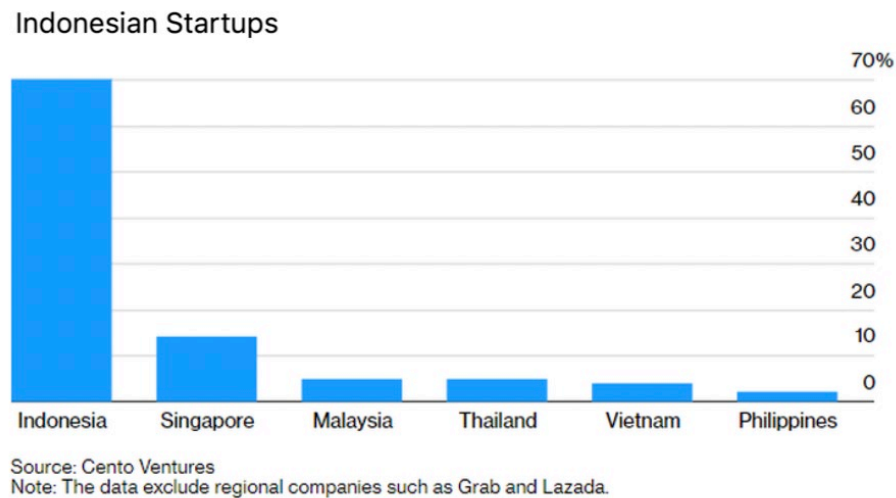Note: The data exclude regional companies such as Grab and Lazada.

Figure 1. Indonesian Startup Rules

Meanwhile, Business Model Canvas (BMC) is a strategic management tool to define and communicate business ideas or concepts quickly and easily. A BMC is a one-page document that works through the fundamental elements of a business or product and organizes ideas in a coherent way. The right side of the BMC focuses on the customer (external), while the left side canvas focuses on the business (internal). Both external and internal factors converge around the Value Proposition, which is the exchange of value between the business and the customer. The knowledge needed by business startups includes knowledge in the fields of market segmentation, funding, business partners, resources, revenue which is accommodated on the Business Model Canvas (BMC). To determine the right part for the company, the part of the BMC can adopt the concept of validated learning. where every part of the BMC will go through the build, measure, and learn process which is part of the validated learning process. For example, to determine market segmentation, the initial process is to build a market segmentation based on the initial information owned by the company (Shanbag and Eric 2022) (Carvalho et al. 2020) (Ojasalo and Katri 2018).

After building a market segmentation, the next step is to measure the effectiveness of the results of the selected and applied market segmentation. The last stage of the validated learning process, such as data and ideas, is stored in the knowledge management system. Knowledge Management System (KMS) is a system that includes knowledge creation, knowledge storage, knowledge transfer and the application of that knowledge within the organization to create work effectiveness and efficiency by bringing pre-existing knowledge as a basis for decision making and work reference. In the context of the validated learning concept, KMS will process the data and information on a knowledge engine which will produce decisions that can be used by the company for the company's business development (Demir et al. 2021) (Al-Emaran et al. 2018) (Zaim et al. 2019).

With the background described above, the purpose of this research is to help business startups improve their knowledge by combining BMC and validated learning which then optimizes the knowledge generated by adopting the

Knowledge Management System. The research method uses a qualitative approach to find problems faced by business startups. The literature study was adopted to identify possible solutions with an information technology approach. The result of this research is a model that integrates the Business Model Canvas, Validated learning, and Knowledge Management System for business startups.

2. Literature Review

2.1 Validated Learning
When traditional key performance indicators aren't very effective, validated learning is a way to make improvement toward corporate goals. Validated learning as a small squad of progress that can be swiftly tested to see whether a chosen route is appropriate (Zhou et al. 2019) (Tlili et al. 2018). (Figure 2)

The knowledge is then utilized to check reality and good the product by asking potential buyers for comments on the prototype. The process is designed to be incremental, and it is **repeated** throughout the product's lifecycle. Validated learning is particularly useful for preventing startups from developing things that their clients don't desire or want. The idea is that by constantly confirming what important most to customers, the startup will be more likely to show growth against traditional KPIs, such as revenue, in the long run. Validated learning views research and development as a set of trials that employ the scientific method to answer market demand issues. After the businessman has developed a hypothesis about what buyers desire, the next stage is to test the theory by building a prototype, often known as a minimal viable product in lean terms. The information is then utilized to check reality and seek potential buyers for input on the prototype (Ghezzi 2019). Figure 1 show the validated learning model
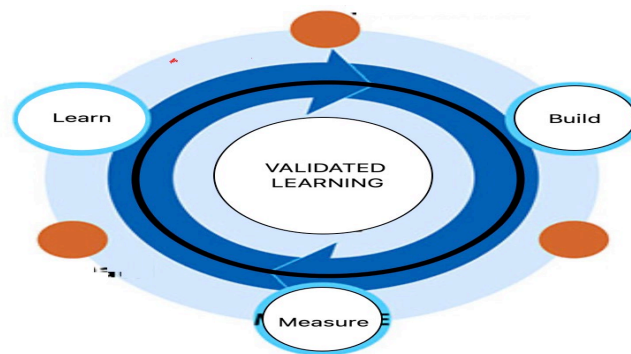

Figure 2. Validated Learning (Rubin 2013)

2.2 Model Business Canvas
Business Model Canvas (BMC) is a framework that discusses the business model by presenting it in a visual form in the form of a canvas painting, so that it can be understood and understood easily. This model is used to explain, visualize, assess, and change a business model, to be able to produce more optimal performance (Faradillah et al. 2022) (Hoffman et al. 2020). BMC can be used for all business lines without being limited to the business sector. BMC is very helpful to speed up the process of analyzing business strengths and weaknesses. By knowing the strengths and weaknesses, the analysis of needs and profits can be done quickly and effectively (Garcia et al. 2020). The Business Model Canvas can explain the relationship between the nine elements of a business model that is visually depicted, so that the innovations made in the company's business model will be easier to understand and understand. Although there are several versions, roughly as follows:

2.3 Value Proposition
In business there is always a product or service to be offered. In the Value Proposition area block includes what products or services are offered to potential customers (Garcia et al. 2020).

2.4 Customers Segment
Customer Segments become the most important block area because it is from customers that we will get income. Channels are a means to convey the value or benefits of the product to the customer segment. It is a mechanism used

by startups to connect with customers. The goal is to increase traction, so as not to turn to competitors' products. Within this scope what is assessed is how to build relationships with customers. So that customers do not easily turn to other businesses, it is very important to establish good relationships. In addition, strict and intensive supervision is also required (Keane et al. 2018).

2.5 Key activities
Key activities are various activities that need to be carried out to realize the four elements above, ranging from consumer research, product development, to distribution through the selected channel. Then includes all the activities that must be carried out by a businessperson to produce a good and satisfying product or service. Included in this scope are branding, packaging, internet market and others (Kuhne and Tilo 2018).

2.6 Key Resources
Various needs that need to be provided to realize the business model, can be in the form of support from people, tools or software, and others. Included in the Key Resources area are various resources owned by a business or organization to realize a value proposition such as people, brands, equipment, and technology (Kuhne and Tilo).

2.7 Key Partnership
Key Partnership contains the parties who determine the course of a business. Key Partnership affects the success of a business. A good business is not only able to establish relationships with customers, but also with other relevant parties such as suppliers and the marketing team. For example, an e-commerce platform is developed, it could be that the main partners are suppliers of goods or distributors (Ferranti et al. 2020).

2.8 Revenue Stream
The business model canvas includes the steps that must be mastered by a businessman. Such as the use of advertising costs, subscriptions, retail sales, licenses, and so on (Simanjuntak 2021).

2.9 Cost Structure
Contains costs that need to be incurred to develop, market, and distribute services that have been successfully developed by startups. Then include what costs must be incurred to form, produce and market business products or services. With proper cost management, the business we run will be more efficient, economical and minimize the risk of loss (Keane et al. 2018). Figure 3 show Business Model Canvas or BMC (Osterwalder et al. 2011).
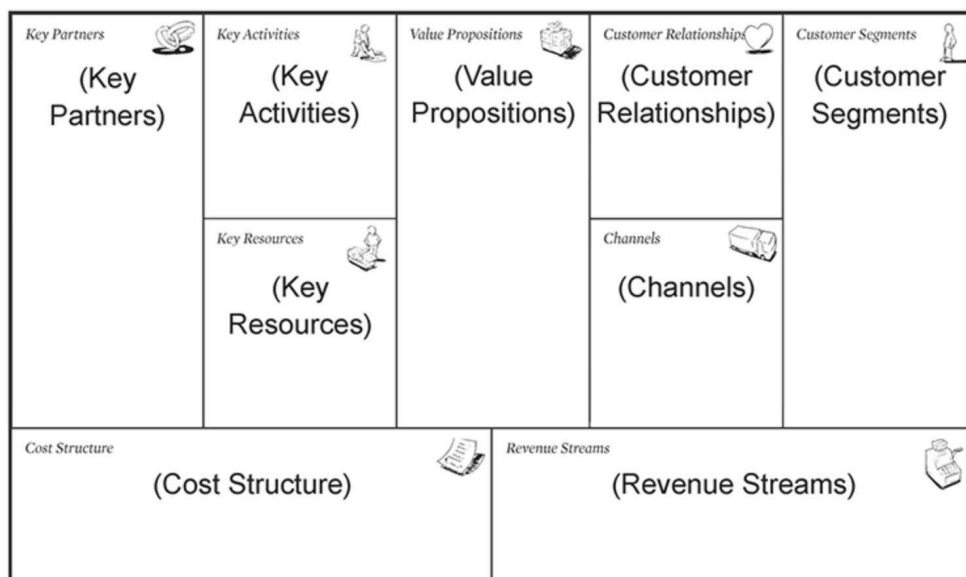

Figure 3. Business Canvas Model (Osterwalder et al. 2011)

3. Methods

A business start-up as a new company has many challenges that risk hampering the business. business risk becomes a problem if a business start-up does not have a way to reduce that risk, so we need a method that can help business start-ups reduce the risk to develop their business. Based on observations, the Business Canvas Model is a popular model used for business start-ups. In the proposed model, BMC is combined with a validated learning concept with the aim that each part of the MBC is carried out an iterative process to generate new knowledge. The knowledge generated from the iteration process is stored and managed with a Knowledge Management System so that it can be used by management for business decision making. Figure 4 describes the research methods described above.
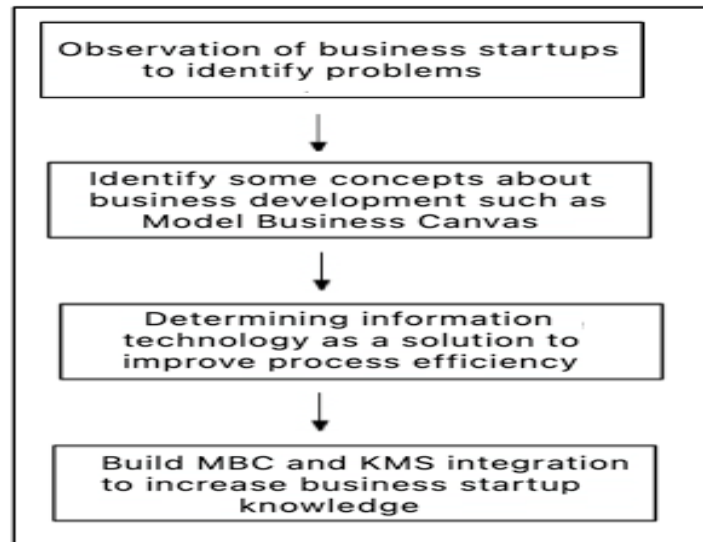

Figure 4. Research Method

4. Results and Discussion

Figure 5 describes the proposed model which combines the Business Canvas Model (Osterwalder et al. 2011) and validated learning (Rubin 2013) where the knowledge generated will be managed by the Knowledge Management System. The proposed model begins with components in MBC consisting of key partners, key activities, key resources, value proposition, customer relationships, cost structure and revenue streams. Each of these components will go through the process of build, measure and learn which is a cycle of validated learning. Ideas, products, and data will be stored in the knowledge base then will be processed in the knowledge management engine and will generate new data, information, knowledge that can be used by management for business decision making.
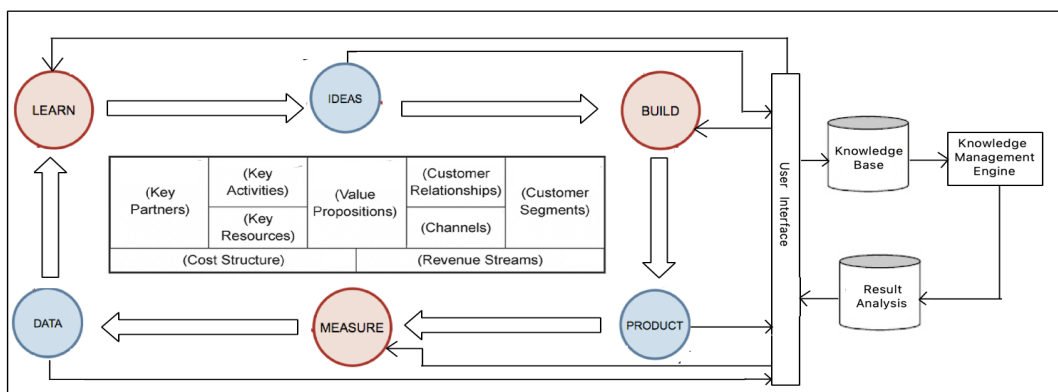

Figure 5. Proposed Model

5. Conclusion

The challenges faced by business start-ups due to limited knowledge and experience can have a serious impact on the company's business continuity. With the Business Canvas Model, business start-ups can make plans about important parts of the company to be built. By adopting validated learning for components at BMC will generate new knowledge that is useful for the company. The adoption of a Knowledge Management System functions to store the resulting knowledge and KMS will process the information into new knowledge that can be used to support management decision making.

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