

Investment Analysis of Establishment the Architectural Technical Design Service as a Creative Economy Based on BMC (Case Study in East Java Province)

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Abstract—National GDP and East Java Province GRDP show an increasing trend. The increase occurred because it was supported by an increase in several macro-industries such as the creative industry, real estate industry, and others. This shows good economic conditions in East Java Province. While the increase in the number of new households continues to increase, the need for home ownership continues to increase and the backlog of homes in East Java is still high above around 1,000,000 housing units every year, so the need for architectural services to make the design of houses or buildings still exists. Therefore, further analysis is needed by analyzing the investment feasibility study in establishing an architectural design service business.

Investment analysis is done by making the business model based on BMC and analyzing from several aspects such as financial aspects and non-financial aspects (market and marketing aspects, operational aspects, and management aspects). This study uses qualitative methods, where data collection is done by means of discussion (Focus Group Discussion), interviews, and through literature. By conducting an investment feasibility study based on the BMC business model, it is expected to obtain a feasible business model for Architectural services business in meeting the needs of the design of the house or building.

Keywords—Feasibility Study, Business Model Canvas (BMC), Qualitative Methode.

I. INTRODUCTION

Before analyzing investment feasibility, somethings need to be done beforehand is pre-feasibility studies where in the pre-feasibility study must be first checks the economic conditions of an area and industrial sector that are the object of investment. One important indicator to see economic conditions in one region in a given period is gross domestic product (GDP) or gross regional domestic product (GRDP).

The value of National GDP in the period 2010 - 2018 shows an increase of Rp. 6,864 T - Rp. 14,837 T. The same is shown at the provincial level, where the value of East

Java Province's GRDP has increased in the year 2010 - 2017 has increased from Rp. 990 T - Rp. 2,000 T which can be seen in Table 1. Gross Domestic Product

The contribution of the creative economy has a very positive impact on national GDP. Likewise also happens at the East Java provincial level which provides an increase in value every year. Architecture as a sub-sector of the creative economy also played a role in increasing national income, especially in East Java Province by showing an increase in value from around 1 trillion rupiah in 2010 to 2.5 trillion rupiah in 2016.

TABLE 1.
GROSS DOMESTIC PRODUCT (TRILLION RUPIAH)

Tahun	ADHK Nasional	ADHK Jawa Timur
2010	6.864,13	990,65
2011	7.831,73	1.120,58
2012	8.615,70	1.248,77
2013	9.546,13	1.382,50
2014	10.569,71	1.537,95
2015	11.526,33	1.691,48
2016	12.401,73	1.857,60
2017	13.587,21	2.019,20
2018	14.837,36

The property industry or the real state industry is an industry that uses a lot of architectural service personnel also experiencing growth in the level of income from around 15 trillion rupiah in 2010 to 30 trillion rupiah in 2017, thus contributing to the growth of the condition of the National GDP and East Java GRDP. In addition to good economic growth in East Java, population growth continues to grow. Especially with family status, it also increases, so the need for housing continues to grow. The backlog of home ownership in East Java is still very high, can be seen in Table 2. Backlog of Home Ownership in East Java.

The government obliges every citizen that in establishing or carrying out renovations that result in changes in the initial form of the building, it requires each homeowner to make an IMB (Building Permit). In submitting the IMB, building drawings or designs are

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needed so that architectural services are needed to make the design.

TABEL 2.
BACKLOG OF HOME OWNERSHIP IN EAST JAVA

Year	Number of Household	Percentage of Household Owned	Number of Household Owned	Backlog of Home Ownership
1999	-	89,87	-	-
2000	9.499.800	89,92	8.542.220	957.58
2001	-	86,25	-	-
2002	9.873.000	87,69	8.657.634	1.215.366
2003	10.064.000	89,54	9.011.306	1.052.694
2004	10.144.000	88,08	8.934.835	1.209.165
2005	9.845.200	88,2	8.683.466	1.161.734
2006	9.926.000	88,27	8.761.680	1.164.320
2007	10.068.400	86,66	8.725.275	1.343.125
2008	10.121.200	87,63	8.869.208	1.251.992
2009	10.173.400	88,09	8.961.748	1.211.652
2010	10.405.800	87,05	9.058.249	1.347.551
2011	10.555.936	86,85	9.167.830	1.388.106
2012	10.580.404	88,56	9.370.006	1.210.398
2013	10.626.600	87,66	9.315.278	1.311.322
2014	10.677.600	87,14	9.304.461	1.373.139
2015	10.738.900	90,46	9.714.409	1.024.491

The excellent growth in business revenue for architectural services, and the positive growth of the real estate industry and the high level of demand for home ownership show that there are opportunities to open an architectural services business. However, this needs to be studied and investigated further regarding the appropriate business model and investment feasibility analysis for the business in order to find out whether the business is feasible or not feasible.

II. LITERATURE REVIEW

A. Creative Industry

1) Creative Economy Agency

Bekraf stands for "Creative Economy Agency" which is a new milestone in Indonesia's creative economy. The power of creative economy relies more on the superiority of human resources. Artwork, architecture, books, technological innovations, and animations come from creative ideas of human thought. On January 20, 2015, through the Presidential Regulation of the Republic of Indonesia Number 6 of 2015 concerning the Creative Economy Agency, the President formed a new non-ministerial institution called the Creative Economy Agency (Bekraf). Bekraf is in charge of assisting the President in formulating, establishing, coordinating and synchronizing policies in the creative economy.

Bekraf's vision is to build Indonesia into one of the world's economic powers in the creative economy by 2030.

The mission of Bekraf itself consists of 6, The missions are:

- a. Unite all assets and creative potential of Indonesia to achieve an independent creative economy.
- b. Creating a conducive climate for the development of the creative industry.
- c. Encouraging innovation in the creative field that has added value and competitiveness in the international world.
- d. Open people's insight and appreciation of all aspects related to the creative economy.
- e. Build awareness and appreciation of intellectual property rights, including legal protection against copyright.
- f. Design and implement specific strategies to place Indonesia on the map of the world's creative economy.

With the formation of Bekraf, the creative economy is expected to be the backbone of the national economy. Bekraf itself stipulates that there are 16 sub-sectors of the creative industry that are the focus for management and development, one of which is the architecture subsector.

2) Architecture

Architecture speaks of buildings and spaces where people move. As part of the creative economy, architecture plays an important role, especially in terms of producing building and creative space that answer various problems such as increasing population, limited land, global climate change, local identity crisis, and low environmental carrying capacity. The development of buildings and creative spaces will foster creativity, encourage the progress of the creative economy sector, and other industrial sectors. Creativity in producing architectural works also increases the tourist attraction of a region.

The word Architecture is an uptake of English "Architecture" which comes from the Greek "architekton" which is built from two words "arche" which means "the first" or "the main" and "tektion" which refers to carpenter (artisan rich) and builder. In general, Architecture can be defined through three approaches, namely results, processes, and science [1]. Through the results approach, architecture is a manifestation of a building. Through a process approach, architecture is a style or design method. Through a scientific approach, architecture is science that is applied in the process of designing buildings. Architecture can also be defined as the practice of the architect profession, which is to offer or provide professional services related to the design and construction of buildings or built environments. According to the Indonesian Architecture Association, architecture is "a manifestation of the results of the application of knowledge, science, technology, and art as a whole in composing the built space and environment as part of human culture and civilization".

The government further evaluates the definition of architecture is "the manifestation of the results of the application of knowledge, science, technology and art as a

whole in composing the built environment and space, as part of human culture and civilization, so that it can unite with the whole external environment". Keywords of that the definition is:

- a. Forms or objects are physical structures and buildings that are produced through the design and development process.
- b. Knowledge is the ability, skill, and understanding of designing and building physical structures and buildings.
- c. Science is knowledge in designing and building physical structures and buildings that are arranged systematically and agreed upon as theories through research and experimentation.
- d. Technology is a methodology, tool, and machine that is used to implement art, science, and knowledge in designing and building physical structures and buildings.
- e. Art is the ability to design and build beautiful structures and shapes.
- f. The built environment is the composition of humans to the place of activity of life.
- g. Space environment. On a micro scale, the space environment includes interior parts (interior), outdoor parts (exterior), and landscape in the area around the room. On a macro scale, the space environment includes town planning, urban / rural planning, landscape planning, urban design, and transportation planning.

The main character of the architecture industry is service or provision of services with the scope of planning and design. In providing services, the architectural industry cannot live without an employer. The architectural business model is formed from two main things that shape the way of operating, management, and organization of a bureau :

- a. The technology choice of the bureau. Technology in this case refers to the operational system of the project or the work process carried out by the bureau.
- b. The collective value of the leaders in the bureau. Value in this case refers to the goals and motivations of the bureau leaders.

Based on the technology, there are three categories of architectural industry bureaus :

- a. *Strong ideas (brains) firms*, bureaus that are managed to provide specific expertise or innovation on specific projects.
- b. *Strong service (gray hair) firms*, bureaus that are managed to provide experience and reliability especially on projects with a high degree of complexity.
- c. *Strong-delivery (procedure) firms*, bureaus that are managed to provide efficient services for projects that have similar characteristics and often for clients who prioritize results rather than services.

In practice, often these three categories intersect according to requests from clients. Based on its value, there are two categories of architectural industry bureaus:

- a. *Practice-centered*, professionals who generally have the main goal of serving as well as possible and producing superior works that can present their fields. The indicator of success in this category is qualitative.
- b. *Business-centered*, professionals who see how the process is carried out in service by paying attention to the performance performed. The indicator of success of this category is quantitative.

According to [2] through grouping technology and values, it can be determined :

- a. *Strong delivery practice centered (SDPC)*
- b. *Strong serviced practice centered (SSPC)*
- c. *Strong idea practice centered (SIPC)*
- d. *Strong delivery business centered (SDBC)*
- e. *Strong serviced business centered (SSBC)*
- f. *Strong idea business centered (SIBC)*

B. Business Overview

1) Defenition of Business

In terminology, business is an activity or business carried out by individuals or groups. The word business comes from English "Business". According to [3] business is all activities from various institutions that need to be for everyday life. The understanding of business according to [4] in his book said "business is an activity carried out by a person or group of people or companies in the form of services or goods to obtain profits". Business activities are carried out by the community to fulfill their life needs by gaining satisfaction with the activities carried out, but there are also those who carry out these activities to get better challenges and hopes for the future. Therefore, humans will try to utilize the strengths and analyze the opportunities provided by the business world. The target or target is a reflection of the results expected to be carried out by the company organization, where the organization will determine the long-term performance of the company. The objectives to be achieved by business people vary between business activities and one with other business activities. The objectives of business organizations according to [5] are seven :

- a. Produce goods and services efficiently based on customer satisfaction.
- b. Creating a performance that is profitable for the company through activities that can create value for the company.
- c. Protect employee health and well-being.
- d. Train to be good citizens in community social life.
- e. Providing healthy growth for the company and obtaining good profits.
- f. Maintain environmental quality.

Some of these objectives should be reflected in the company's activities as a whole.

In addition to having a goal, the business also has enormous benefits. Benefits that can be obtained by the existence of business activities for government, society, and companies[5]:

a. Receiving benefits.

A business is said to be feasible to run if it provides financial benefits for business owners. This profit is measured by the value of money obtained by the business owner from the results of the business carried out.

b. Open jobs.

With the existence of the business, it will open jobs for people who are directly involved with the business or the community around the place where the business was established.

c. Economic benefits.

With the existence of business activities, the number of goods and services produced increases, which will increase income for the community, government and business owners themselves.

d. Facilities and infrastructure available.

The opening of the company will usually prepare suggestions and infrastructure that can be used by the community, especially the community around the place of business establishment.

e. Open isolation territory.

Certain areas that were previously closed or isolated will benefit from the establishment of businesses in the area because with business activities the area will be opened so that it is no longer isolated, such as the opening of plantation, mining and other businesses.

f. Increase unity and help equitable development.

With the existence of projects or businesses usually workers who work in them come from various ethnic backgrounds. Thus it can increase the unity and integrity of the nation. In addition, the existence of projects in various regions will provide equitable development.

In the selection of company models, it must be determined when the company will be established. There are several considerations in choosing a models of company :

- a. The type of business that will be carried out (services, industry, trade, etc.).
- b. The amount of capital for business and the possibility to increase the capital.
- c. Profit sharing plan.
- d. Determination of corporate responsibility.
- e. Risk management that will be faced.
- f. Principles supervision that will be used.
- g. The period of establishment of the company.

Before establishing a business that needs to be done is analyzing whether the business is feasible or not feasible. Therefore it is necessary to make a business model that will be carried out to describe the business to be carried out in detail and the feasibility study of the business plan.

2) *Business Model Canvas*

In planning the making of a business that needs to be done earlier is to create a business model that will be planned in the abstract level, so that it can help and facilitate the owner of the company or organization to know what will be done in running the business which will then be tested at a real level. One method or tool that is widely used to simplify making business models and popular in recent times is the canvas model business. The canvas model business was first introduced by Alexander Osterwalder and Yves Pigneur in 2005 in his research entitled "Clarifying Business Models: Origins, Present, and Future of The Concept". Where in his research considers the terminology of the existing business model needs a deeper explanation and is associated with the work that has been done in a company. Then in the study produced nine terminology in making a business model concept. In 2010 Alexander Osterwalder and Yves Pigneur published a book entitled "Business Model Generation". They created a canvas model business framework and consisted of nine boxes from the terminology of their previous research results. The definition of a business model is to illustrate the rationale for how an organization creates, gives, and captures value [6]. Businessman canvas models are a common language that describes, visualizes, evaluates, and changes business models[6]. This means that the canvas model business can be used by every business model to create a business model that will produce a corporate strategy or a new policy alternative.

Nine elements in the canvas model business are divided into two major parts, namely the first part that focuses on consumers is a part that explains the perceptions of consumers consisting of customer segments, value propositions, channels, and customer relationships. The second part that focuses on the company is a part that explains the company's operations which include key recommendations, key activities, and key partnerships

Nine elements related to the business model canvas, that are :

a. *Customer Segments*

The customer segment is the most important part because the business is made to meet customer needs or be a solution by providing answers to problems faced by customers. The company must know the customer in accordance with the business that will be made so that the business model and strategy that will be run as expected means the company can know which customers are priority and which customers are not priorities. Therefore, companies must conduct market analysis and segment customers by conducting general groupings based on similarity of needs, behavior, economic level, status, or other attributes. Customer groups can represent separate segments, if :

1. Having different needs
2. Requires a different distribution channel
3. Requires a different service

4. Give different benefits
5. Willing to pay for various aspects of the offer.

b. Value Propositions

Value propositions explain about the product or service offered to customers giving importance to customers who have been prioritized based on customer segmentation that has been made. Value propositions are the reason why consumers of one company move to another company.

c. Channels

Channels are a way done by companies to reach out and establish communication with consumers to provide information about company value propositions so that customers have an interest in using the products or services offered. Channels or channels are an important part because they become touch points that will provide experience in providing information about the company's value propositions to consumers. There are five functions of this section :

1. Increase customer awareness about the value of the product or service offered by the company.
2. Helping customers to evaluate company value propositions.
3. Allows customers to buy products or services offered.
4. Delivering the company's value proposition to customers.
5. Providing support to post-purchase customers for company products or services.

d. Customer Relationships

This section explains the types of relationships that are built with consumers, especially those that are the top priority.

e. Revenue Streams

The revenue streams section describes the revenue generated by the company from each customer segment where the income has been deducted from the costs incurred. If customer segments are the heart of the business model, revenue (revenue streams) is the meaning. Each income can have different pricing mechanisms, such as fixed prices, bargains, auctions, market dependence, volume dependence, and yield management. Business models can use two different types of income models :

1. Income from customers with one payment transaction means non-recurring income.
2. Recurring income from customers through recurring payments.

Each source of income may have a different pricing mechanism. The type of pricing mechanism chosen can make a large difference in the income generated. There are two main types of pricing mechanisms, namely fixed pricing and dynamic pricing.

f. Key Resources

The part or element of the main resource is the most important asset that is owned so that the business model can run well. These resources enable companies to create

and offer value propositions, reach markets, maintain customer relationships, and earn revenue. Different main resources are needed depending on the business model being run. The main resources can be physical, financial, intellectual or human. Resources can be owned or rented by the company or obtained from the main partners.

g. Key Activities

The main elements of key activities explain the most important things that must be done by the company so that the business model can run well. Every business model requires key activities. This is the most important action that the company must do in order to operate properly. Like key resources, key activities must be required to create and offer value propositions, reach markets, maintain customer relationships, and earn revenue. Key activities can differ from each business model. For example Gojek or Gocar, the main activity is to pick up and deliver passengers to the intended destination. Gofix, the main activity of repairing or cleaning equipment owned by consumers in accordance with the initial order requested. Likewise with Gosend who has a key activity to deliver goods.

h. Key Partnerships

Parts of key partners describe the network of suppliers and partners that make the business model run or function. The company established partnerships for various reasons, and partnerships became the foundation of many business models. Companies form alliances to maximize business models, reduce risk, or obtain resources. This type of partnership can be divided into four categories:

1. Strategic alliances between non-competitors,
2. Strategic partnerships between competitors,
3. Joint ventures to develop new businesses,
4. Buyer-supplier relationships to ensure reliable supply.

i. Cost Structure

The cost structure section describes all costs incurred to operate the business model. This section will help clarify the most important costs incurred when operating under certain business models. Creating and giving value, maintaining customer relationships, and generating income are things that require money. These costs can be calculated relatively easily after defining key resources, main activities, and key partners. It is natural for companies to try to minimize costs in the business model. There are companies that make a fee structure based on minimal costs and some are based on providing more value in the business model. Therefore the preparation of the business model on the cost structure is driven on the basis of two big things:

1. *Cost – driven*

Business models that are driven by costs focus to minimize costs incurred. This approach aims to create and maintain a minimum cost structure, using low value, maximum automation, and extensive outsourcing value propositions.

2. *Value – driven*

Some companies are less concerned about the cost implications of designing a particular business model, and instead focus on creating more value. Premium value propositions and high-level personalization services usually characterize value-driven business models. Luxury hotels with luxury facilities and exclusive services are important in this category.

The business model canvas is a tool that resembles a painter canvas that has been formatted before in nine blocks or parts that make it possible to paint a picture of a new or existing business model. The business of the canvas model will function well when printed on a large surface so that a group of people can together start sketching and discussing elements of a business model. This is a direct tool that fosters understanding, discussion, creativity, and analysis.

A practitioner and lecturer in entrepreneurship and technology management at the University of Indonesia, stated the benefits and advantages of the business model canvas[7]:

a. Focus.

Enabling to focus on what is being faced and make clarity about the proposed business model.

b. Flexible

BMC is easily modified while still giving a comprehensive view of the business model.

c. Transparency

It is easier to understand and provides clarity in conveying the vision and business model created in the organization.

3) *Business Feasibility Study*

Business feasibility study is an activity that studies in depth which means researching data and information in real time, then measuring, calculating, and analyzing the business to be carried out with a certain size, so that the maximum results obtained from the research[8]. A business needs to be carried out a feasibility study before it is carried out so that if the business is run it will not use greater costs, more energy, and time is not wasted in vain and will not cause unnecessary problems in the future. There are five objectives of business feasibility studies, namely[9]:

- a. Avoid the risk of losses,
- b. Making easy of the planning,
- c. Making easy of the implementation of workers,
- d. Making easy of the supervision,
- e. Making easy of the control.

The results of business feasibility studies in principle can be used for[10]:

- a. Establish a new business, for example, establishing a service business, opening a shop, and so on.
- b. Develop existing businesses. For example, to increase factory capacity, expand business scale, add equipment or machinery, and so on.

- c. Choose the type of business or profitable investment. For example, select trading business, supply of goods or services, manufacturing or assembly, and so on.

Business feasibility analysis is divided into two major aspects are non-financial aspects and financial aspects. In the book "Business Feasibility Study" [4] explains aspects of business feasibility analysis :

a. Marketing aspect

In analyzing the marketing aspects, it must first conduct marketing research by using an adequate marketing information system based on analysis and predictions whether the business to be pioneered or developed has adequate or not market opportunities.

b. Production or operation aspects

Some elements of the aspect of production or operation that must be analyzed[8]:

- 1. Location
- 2. Volume
- 3. Machinery and equipment
- 4. Raw materials and auxiliary materials
- 5. Man power

c. Management aspect

There are several elements of management aspects that need to be analyzed[9]:

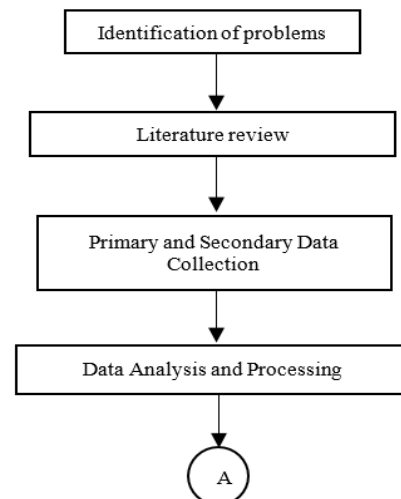
- 1. Ownership
- 2. Organization
- 3. Management team
- 4. Employees
- d. Financial aspect

In analyzing the financial aspects include several elements as follows[11]:

- 1. Funding needs
- 2. Source of funds
- 3. Balance sheet projections
- 4. Projection of profit and loss
- 5. Cash flow projection.

III. METHODOLOGY

A. *Flowchart of Research*



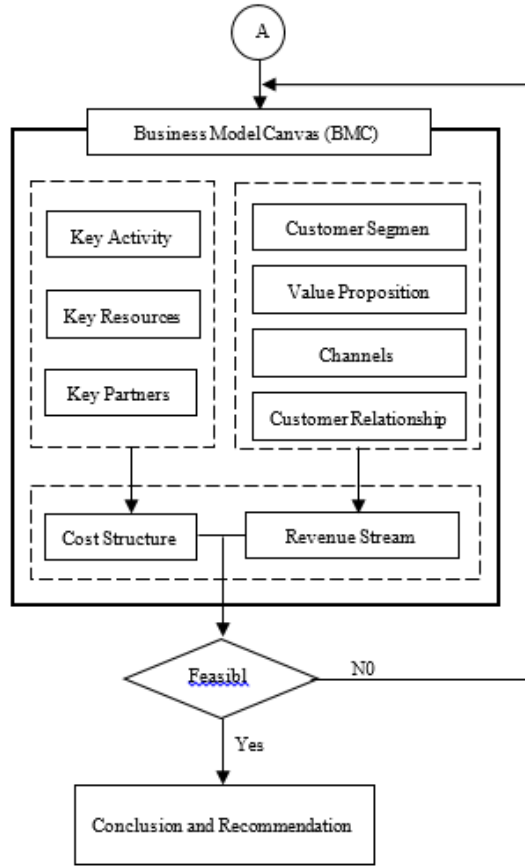


Figure 1. Flowchart of research

The research was conducted in several stages as shown in Figure 1. Flowchart of research.

B. Identification of problems

The problem identification stage is the beginning of making research, where at this stage the formulation of the problem is carried out, the making of the objectives and benefits of the research, and the limitations in the research,

as well as the assumptions used in the study. This stage provides an overview of what will be studied.

C. Literature review

Literature review is a stage that aims to find references and theories or methods that support the creation of solutions to the problems to be studied. References used can be sourced from books, journals, other research, papers, and so on.

In this study using several theories and methods in solving the problem under study, where the theory and method are business management theory, especially for BMC (Business Model Canvas) and analysis of business establishment and investment feasibility of financial and non-financial aspects.

D. Data collection

The stage of data collection is done to collect the data needed both in the form of primary data and secondary data. The data is obtained by conducting interviews, conducting discussions (Focus Group Discussion), and making direct observations..

E. Analysis method

The analysis carried out in this study is qualitative and quantitative analysis. Qualitative analysis was carried out to obtain an overview of the eligibility criteria for the establishment of an architectural design service business which included six non-financial criteria contained in BMC such as Customer Segments, Customer Relationship, Channels, Value Proposition, Key Activity, Key Resource, and Key Partnert, while quantitative data was obtained by processing using Microsoft Excel application which is then displayed in tabulation form to facilitate reading and interpretation descriptively. Quantitative analysis includes analysis of financial criteria. The criteria are the Cost Structure and Revenue Stream where later there will be a calculation of the Net Present Value (NPV), Internal Rate Return (IRR), and Payback

TABEL 3.
DATA ANALYSIS CRITERIA

NO	CRITERIA	INDICATOR	DATA COLLECT		
			DATA	METHODE	RESOURCE
1.	Customer Segment	List of Main Customer	Primer	FGD	Architect, Developer, Contractor
2.	Customer Relationship	List of Relationship Program	Primer	FGD	Architect, Developer, Contractor
3.	Channel	List of Channel	Primer	FGD	Architect, Developer, Contractor
4.	Value Proposition	List Value Propotioton	Primer	Interview	Architect
5.	Key Activity	List of Key Partner	Primer	Interview	Architect
6.	Key Resources	List of Key Resources	Primer	Interview	Architect
7.	Key Partnert	List of Key Partnert	Primer	Interview	Architect
8.	Cost Structure	Cost Sturctur	Secondary	Data Processing	Literature
9.	Revenue Stream	Revenue Stream	Secondary	Data Processing	Literature

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