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Business Model Design and Innovation process

(Case studies of four IT Start-ups within Kathmandu valley, Nepal)

by

Sudip Nepal

A THESIS

SUBMITTED TO DEPARTMENT OF MECHANICAL ENGINEERING IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE DEGREE OF MASTER OF SCIENCE IN TECHNOLOGY AND INNOVATION MANAGEMENT

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The undersigned certify that they have read, and recommended to the Institute of Engineering for acceptance, a thesis entitled "Business Model Design and Innovation Process- Case studies of four IT Start-ups within Kathmandu valley, Nepal" submitted by Sudip Nepal in partial fulfilment of the requirements for the degree of Master of Science in Technology and Innovation Management.

……

Supervisor, Dr. Ajay Kumar Jha
Associate Professor
Department of Mechanical Engineering

……

External Examiner, Dr. Iswor Bajracharya
Technical Officer
National Academy of Science and Technology

……

Committee Chairperson, Assoc. Prof. Dr. Nawraj Bhattarai
Head of Department
Department of Mechanical Engineering

Date: November 6, 2019

ABSTRACT

The business model design has not been highly researched in the Nepalese start-ups. As start-ups face the threat of failure due to a lack of suitable business model, this thesis is intended to examine the business model design and innovation process in IT start-ups within Kathmandu valley of Nepal.

The finding shows that most of the start-ups are partially aware about business model design. Start-ups are yet to focus on all the 9 elements of the business model. The finding further supports that business model of start-ups have evolved in a way like trial and error, structured effort using renowned methods and copying of other's business model. All the four start-ups taken in this study have mainly focused on value proposition and given it the highest priority; also, 3 out of 4 start-ups have given second priority to customer segment of business model canvas. While financial aspects are regarded as the least important aspects of business model.

The study revealed that the changes occur 3-4 times within the first year of business model innovation process with iterative process is characterized by a stronger changes in the beginning, including 20 building blocks per change and a slight declination in the following changes. During the first year of business model innovation process customer feedback plays a vital role to change the customer segments. Similarities between the start-ups, the frequency of business model changed and finally antecedents that cause the change in business model were observed during the first year of business model design and innovation process.

This study advances the research of business model design for start-ups by adding new findings to existing literature. Moreover it creates framework for further studying and made recommendation on how the process can be improved by pointing out important task in the process of business model design and its innovation.

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LIST OF ACRONYMS AND ABBREVIATIONS

BB	Building Blocks
BMC	Business Model Changed
BMI	Business Model Innovation
CH	Channel
CoSt	Cost Structure
CR	Customer Relationships
CS	Customer Segment
CSR	Corporate Social Responsibility
INGO	International Non-Governmental Organization
IT	Information Technology
KA	Key Activities
KP	Key Partners
KR	Key Resources
NGO	Non-Governmental Organization
NISC	National Standard Industrial Classification Codes
RS	Revenue Structure
VP	Value Proposition

CHAPTER ONE: INTRODUCTION

1.1 Background

Starting a company is a complicated and challenging task. During the early years of an organization, the entrepreneur has to make many decisions that will influence both the business and product. Moreover, the decision making has often to be done within the constraints of money and time. Studying business model design in entrepreneurship could facilitate these decisions.

Start-ups are seen as innovative and flexible in the accomplishment of their operations but still nine out of ten start-ups fail, within the first 18 months (Roth, 2016; Griffith, 2014; Wagner, 2013). According to the diagram of CB(Chubby Brain) insights, that summaries an analysis of 101 start-ups about the reasons of venture failure, the need or lack of a business model, being on the 7th position in the ranking, is one of the top ten reasons why start-ups fail (Griffith, 2014). In addition to these difficulties, IT companies are confronted with rapidly moving markets, emerging new technologies and changing customer demands, causing the need for those companies to become more flexible and adaptive towards change (Mitchell and Coles, 2003; Demil and Lecocq, 2010; Trimi and Berbegal-Mirabent, 2012; Sur, 2016).

Over the past decade researcher and practitioners have come together around the business model concept. Business model research is at confluence of strategy and entrepreneurship research (Demil et al., 2015). From an entrepreneurial perspective, the entrepreneur is the one who recombines already existing elements into novel forms (Schumpeter, 1934). While as a strategic concept, business models help expose how practitioners can tap into new markets and opportunities by innovating on this system-level construct (Amit and Zott, 2001).

Despite the importance of the topic, combining business models and entrepreneurship have been a topic clearly absent in business research. While the business model concept is highly prioritized by the entrepreneurial community, it has yet to be acknowledged by the scholars to the extent it ought to be. While studies have concluded that the characteristics of new ventures differ from incumbent

organizations in several ways, the implications for the business model design process have largely been ignored.

Business model research is at the confluence of strategy and entrepreneurship research (Demil et al., 2015). From an entrepreneurial perspective, the entrepreneur is the one recombining already existing elements into novel forms (Schumpeter, 1934). While as a strategic concept, business models help expose how practitioners can tap into new markets and opportunities by innovating on this system-level construct (Amit and Zott, 2001). Together in theory, entrepreneurs take already existing ideas and concepts and reapply them into niche or innovative business models. This then allows entrepreneurs to create and hopefully capture value from serving new markets or opportunities. Therefore, the purpose of this thesis is to uncover and examine the processes that start-up entrepreneurs go through while designing and developing their business models. Otherwise put it is to understand how entrepreneurs got to know; what processes did they utilize or follow in getting to the business models that are on display today. This is done with the intent of deciphering the kind of development that might ultimately lead to a unique or innovative business model.

1.2 Problem Statement

In the context of the fast-paced, uncertain and ever-changing world, the business model for startups companies operates, where business model design serves a purpose. Furthermore, Amit and Zott (2007) have managed to show that business models create large values for entrepreneurs. Based on this, it is easy to argue for the value of business model research in entrepreneurial context. Osterwalder (2004) has created a framework, explaining the components of a business model. While this framework has received high praise in academia, it has yet to be applied in Practice.

Most of the start-ups face a substantial risk of failure due to lack of a flexible business model that needs to be developed in a short period of time to keep up with market development. As start-ups also face resource limitations, they need to perform an effective and efficient process of business model innovation, to be able to create a business model that will commercialize their innovation and to keep them adaptable to market changes. The increasing attention on the business model is a fortunate trend, taking into account the likely importance that sound business models have firm performance.

Teece (2010), for example, argues that the lack of robust, thoughtful business models was a key factor for the failure of many IT firms involved in the dot.com crisis at the turn of the millennium. Business models and business model innovation appear to be fundamentally connected; understanding the business model helps a manager identify the variables in the organization that can be modified and thus subject to innovation. In this sense, the business model can effectively be regarded as the very tool a manager can apply in order to achieve innovation.

In this globalized world, Nepal cannot be far from trend that is happening around the world. Most of the startups are also following what is happening outside world. For example, Tootle, pathao, Hamrobazar, daraz etc. are following existing business model. But they are competing themselves. However other startups which are not succeeding are also running startup. Some startups are doing well while some are not. Many new startup founders throw around the term “business model” when discussing and planning strategies for their venture. Questions like “What business model works best with my idea?” or “How do I know if my startup is using the right model?” are a few questions founders need to consider which will ultimately impact the overall success of their venture in the long run.

1.3 Objective

1.3.1 Main Objective

The main objective of this thesis is to observe business model design and innovation process regarding its characteristics in terms of what, when, and why changes occur in IT start-ups within Kathmandu valley, Nepal.

1.3.2 Specific Objectives

This thesis aims to address following specific objectives:

- To observe how IT startup designs their business model
- To examine the parts of business model changed and their effect on other building blocks
- To examine how often changes the business model and what are the cause of business model change.

1.4 Research Questions

The researcher's interest and experience, in start-ups and business model design led to the wide research scope of business model design in new ventures. Understanding the process of business model design in start-ups, would not only shed some light on the process itself but also facilitate for start-ups in the future. While all businesses have a business model, the business model design is not necessarily a structured process. Hence, this generates the first part of research questions.

- How do IT start-ups design their business model?
- What are the focus areas of the business model when IT start-ups engage in business model design?
- How often changes of the business model occur?
- How many building blocks in the business model change per event?
- What parts of business model change and what causes these changes?

1.5 Limitation

The application of a qualitative research design with a case study approach also comes with weaknesses and limitations. In general, qualitative research based on the case studies is often criticized for its deficiencies in scholarly consistency and referred to be just "anecdotes and stories" and therefore lack intensively in validity (Gioia et al. 2013; Stuart et al. 2002). Eisenhardt and Graebner (2007) state multiple case studies are "less precise, objective, and rigorous than large-scale hypothesis testing". Yin (2014) points out that scholar see case studies as questionable rigorous because the results of case study research can be consciously or unconsciously influenced by the researcher due to the researcher performs carelessly or does not "follow systematic procedures". Besides above, following limitations have been observed.

- Most of startups do not want to reveal their business model
- This research is limited within Kathmandu valley
- To reduce the amount of data that may create to comprehensive theory, only four start-ups have been chosen.

CHAPTER TWO: LITERATURE REVIEW

2.1 Business Models

In the literature as well as in corporate practice the term business model is not clearly defined (Trimi and Berbegal-Mirabent, 2012). Due to its misuse of the related term business strategy, there is the need to distinguish business strategy from business model before narrowing down business model in detail (Chesbrough and Rosenbloom, 2002). A business strategy defines the relationship between the company and its ecosystem, thus acknowledged as competitor and environmental centric (Pynnonen et al. 2012; George and Bock, 2011). In contrast to this, the business model is examined to be a tool to implement the business strategy (Pynnonen et al. 2012). Moreover, the business model is considered as an instrument to exploit opportunities, therefore conceded as opportunity-centric (George and Bock, 2011; Amit and Zott, 2001).

The concept business model is a rather new topic within business research. Emerging from the dotcom era, the term “new economy” was introduced to describe how Information and Communications Technology (ICT) companies reshaped the business environment, with impacts well outside their own markets (Amit and Zott, 2001). With new technologies, new possibilities opened up, hence, leading the way to a dramatic increase in research concerning business models. While ICTs introduced the concept of business models, it has been separated from ICTs since, and is now studied within all forms of organizations (Osterwalder, 2004; Amit and Zott, 2012). The main explanation to the interest in business model stems from research finding correlation between companies’ competitive advantage and its business model (Hamel, 2000; Morris et al., 2005; Amit and Zott, 2008). Table 1 shows the definition of Business model by different authors.

In practice, the business model is used to analyze companies in order to get a deeper insight in the firm’s activities (McGrath, 2010). The core task of the business model is to commercialize the innovation in a way that the company can capture the highest possible value from it (Chesbrough and Rosenbloom, 2002; Chesbrough, 2007; Teece, 2010; Zott et al, 2011; George and Bock, 2011; Chesbrough, 2010 ;). In other words, with the business model a company creates a clear link between innovation

and value creation. Teece (2010) goes even further and underlines that enabling value capture from innovation is the main task of a business model as it defines how to go to the market and how to capture value.

Table 1: Business model definitions

Author	Concept	Definition
Timmers(architecture)	Architecture	The business model is "an architecture of the product, service and information flows, including a description of the various business actors and their roles: a description of the potential benefits for the various business actors; a description of the sources of revenues"
Amit and Zott(2001)	Structural template	The business model is "the content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities"
Chesbrough and Rosenbloom (2002)	Framework	The business model is "the heuristic logic that connects technical potential with the realization of economic value"
Johnson et al., (2008)		The business model "consist of four interlocking elements that taken together, create and deliver value". The four elements referred to are: value proposition, profit formula, key resources and key processes.
Casadesus-Masanell and Ricart(2010)	Structural template	The business model is "the reflection of the firm's realized strategy"
Osterwalder and Pigneur(2010)	Conceptual tool	"A business model describes the rationale of how an organization creates, delivers, and captures value"
Amit and Zott (2010)	System	"The business model is an activity system that is designed and enabled by a focal firm in order to meet perceived market needs and thereby create value for all stakeholders involved: customers, strategic partners, suppliers, and, of course, the focal firm"

This commercialization of the innovations value is important for companies as research has proven in recent years that it is not about technology anymore through which companies can create a competitive advantage, but a business model that ensures the fit mentioned (Teece, 2010; Chesbrough, 2007; Morris, Schindehutte and Allen, 2005; Chesbrough and Rosenbloom, 2002).

In recent years, there has been considerable interest of business models in entrepreneurship, for instance, George and Bock (2011, p.102) describe the business model as a significant part of the "entrepreneurial enactment process". However, start-up founders are often considered as "specialists in the technical area of the innovation", but lack in the design of a business model (García-Gutiérrez and Martínez-Borreguero, 2016). In this context, many frameworks for designing a business model exist. The most famous one is the Business Model Canvas from Osterwalder and Pigneur (Spieth et al. 2014). These frameworks provide insights about the business model design itself.

2.2 Purpose of Business Model Innovation

As the increased research on business models seems to be linked to the emergence of the internet (Osterwalder et al. 2005), shifting the focus from product innovation itself to business model innovation might be also connected to the emergence of the internet and the availability of new technology. Consequently, the research on business model innovation was firstly related to topics like e-business, information technology, technological innovation and strategic aspects such as competitive advantage and firm performance (Zott, Amit and Massa, 2011; Amit and Zott, 2001). (Osterwalder and Pigneur, 2010) further mention that the aim of business model innovation emerges from four purposes: "satisfy existing but unanswered market needs, to bring new technologies, products or services to market, to improve, disrupt, or transform an existing market with a better business model, or to create an entirely new market".

Nevertheless, the main reason why the development of a new business model became so important, relates to the fact that technological innovations do not create value on their own (Chesbrough, 2010; Chesbrough, 2007; Chesbrough and Rosenbloom, 2002). It is not only about creating a disruptive innovation anymore, but rather creating a new business model that commercializes this novel invention because the

right business model creates a fit between the value proposition and the customer needs.

Besides the potential to generate a competitive advantage through business model innovation, another advantage that researchers have identified, is its positive effect on firm performance. Several studies found evidence that companies undertaking business model innovation perform better than those who do not (Cucculelli and Bettinelli, 2015; Aspara, Hietanen and Tikkanen, 2010; Zott and Amit, 2007; Pohle and Chapman, 2006; Mitchell and Cole, 2003). Mitchell and Cole (2003), for instance, concluded in their study that top performing companies frequently improve or even reinvent their business model. They findings also included that companies that made changes in their business model every second year were the most effective ones (Mitchell and Cole, 2003). Contributing to this, Cucculelli and Bettinelli (2015) observed the linkage between business model innovation and investments in intangibles and concluded that business model innovation itself has a positive impact on firm performance with a rising effect the higher the degree of novelty. Another study about this research topic has been conducted by Aspara and colleagues (2010). They examined the distinct impacts of business model innovation and replication in small and larger firms and found that large firms can improve their financial performance rather through business model replication than business model innovation, whereas small companies with the focus on business model innovation rather than replication, experience solid increasing profits (Aspara et. Al 2010). Consequently, business model innovation is an important activity of companies to stay competitive and increase its profitability.

2.3 The Literature Gap and Relevance of Research

As mentioned above, current research on business model design and the development process only considers the steps to be taken to get from one business model to a new one or what stages a company goes through. However, none of those studies conducted a closer observation on the iterative characteristic of the process of business model innovation. Another gap is that most literature is conducted on established company and not on start-ups, however, as many studies acknowledge business model innovation as an entrepreneurial act, start-ups can be considered as

most suitable for conducting research on the process of business model innovation (George and Bock, 2011; Zott and Amit, 2010; Foss and Saebi, 2017).

Hence, this thesis aim to fill this gap by conducting research on the process of business model design and innovation in start-ups regarding its characteristic in terms of when, what and why changes occur. Therefore, our research study includes the description and visualization of the process of business model innovation in start-ups and the discovery of the patterns in it, by examining (1) how often changes of the business model occur, (2) how many building blocks in the business model change per event, (3) what parts of the business model changed, (4) what caused these changes.

This research is theoretical relevant as dynamic adaption processes towards environmental change, such as business model innovation, are tremendously complex (Miles et al. 1978). By observing different processes on patterns in organizational behavior, the complexity of these processes can be diminished and the adaption process described or even forecasted (Miles et al. 1978). In this context, Langley (1999) points out that especially the research on patterns within the temporal order of sequential events is vital for the development of process theory. By providing knowledge about how these adaption processes, such as business model innovation, move and due to what reasons, decision makers receive knowledge in terms of "what to do, at what point in time, in what context" (Langley et al. 2013). Thereby, this research can contribute to a better understanding of the process of business model innovation by visualizing the processes of four start-ups and identifying patterns in those visualized processes and by that provide more information on the characteristic of the process of business model innovation regarding when, what and why changes occur.

CHAPTER THREE: THEORETICAL FRAMEWORK

This chapter reviews research on business model canvas developed by Osterwalder and Pigneur (2010), Business model Innovations, Business model in new ventures, Business model practices and visualizing the process of business model development.

3.1 Business Model Canvas

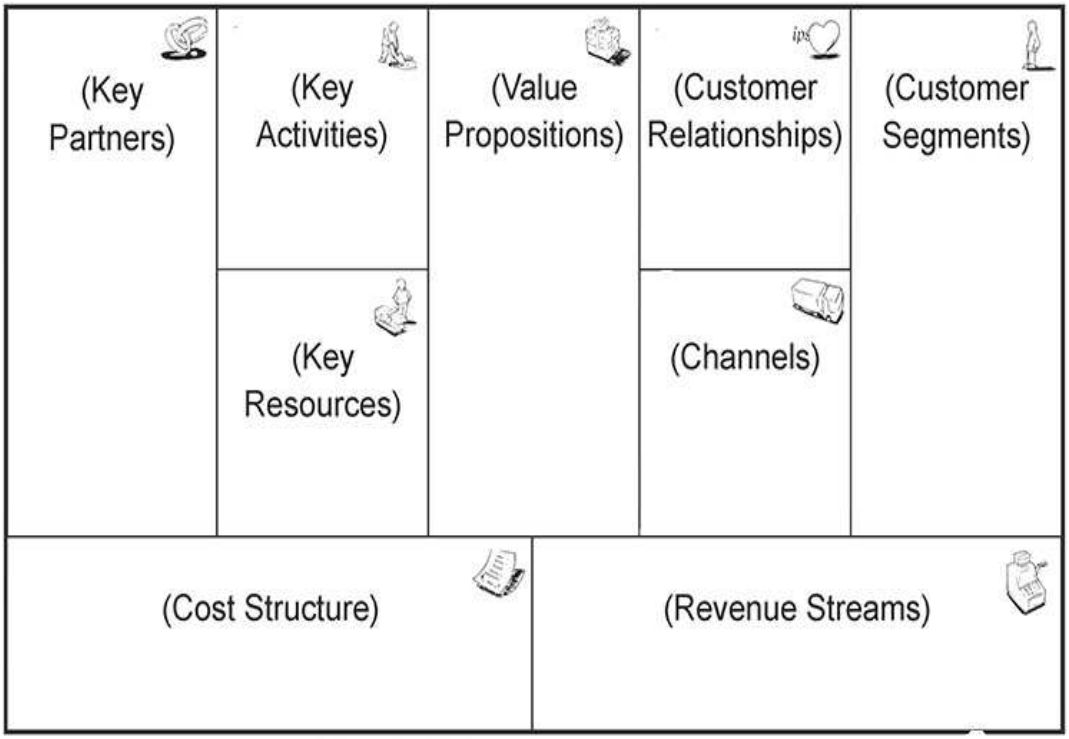


Figure 1: Business model canvas by Osterwalder

The business model canvas has been created by Osterwalder and Pigneur (2010). And since then this model has been experienced high acceptance in the research area for business model. Most of the entrepreneurs, managers and scholars have been using this model as business model tool. The creators itself define the canvas as “a tool for describing, analyzing and designing business models” and instrument that guarantees a “shared language” during business model innovation. It is “simple and easy to use” and can be used as an instrument to improve “Transparency, creativity and innovation” as it enables iterative enhancement (Martinez-Borreguero, 2016).

The canvas has four pillars named as Product/offer, Customer Interface, Infrastructure Management and Financial Aspects (Osterwalder and Pigneur, 2010).

3.1.1 Product

The business model pillar Product includes everything a company offers to its customers. It includes all aspects of products and services the firm produces as well as the way the company diffuses itself from its customers. The element composing this pillar is Value Proposition.

Value Proposition

A Value Proposition is an overall view of a company's bundle of products and services that are of value to the customer. The value proposition defines how a firm's offer, and as such its product/service perceived customer value, differs from its competitors (Lindic and Marques da Silva, 2011). It revolves around perceived customer value, existing of two variables, perceived benefits and perceived costs. Perceived benefits are correlated with characteristics, features and functionalities of the product or service (Afuah and Tucci, 2003). Perceived costs are not only the actual price of the product, but also other additional costs such as time, search and effort (Slater and Narver, 2000). Chesbrough and Rosenbloom (2000) define the value proposition as a description of core customers' problem, and a proposed solution to mentioned problem that generates value to the customers.

While research is clear concerning what the value proposition entails, studies have shown that companies have found it complex adopting it. Tailoring the value proposition is not always easy, and scholars have shown that companies often designs value propositions revolving around what is offered to the customers, rather than how the offer creates value for the customers (ibid). However, a clear value proposition should not focus on the products features or offerings, but rather on the customer experience concerning needs and wants (Barnes et al. 2009).

3.1.2 Customer Interface

How a firm interacts with its customers—is the customer interface of a business model. The type of customer interaction depends on how a firm chooses to compete. For a new venture, the customer interface that it chooses is central to how it plans to compete and where it is located in the value chain of the products and services it provides. The three element of customer interface is Customer relationships, Channels and Customer Segments.

Channels

Distribution channels are the connection between a company's target customers and its value proposition. It does not focus on how to distribute goods or services to customers, as could be misinterpreted by its name, but rather on how communication is committed concerning marketing and sales, endorsing the business model. There is a wide variety of distribution channels for a company to incorporate. Historically, the element being divided into either direct or indirect contact with customers, direct customer contact indicating the use of a sales force to establish connection with customers and indirect customer contact using intermediaries.

Customer Relationships

It concerns the connections a firm creates with its customers. Customer relationships are of immense importance for any corporation as it is core in profit creation. Defining, what customers to target, how to reach them, and how to maintain them as customers all boils down to Customer Relations Management (CRM). CRM can be described as the process in which company's separates high-value and low-value customers for the purpose to profit on different segments in different ways.

Customer Segment

Identifying the target customer is a key in a business model and this sub-component focuses mainly on segmentation. Efficient customer segmentation is a key when allocating resources, to target customers in line with the company's value proposition (Osterwalder, 2004). The sub-component has traditionally been further divided into business-to-business (B2B) and business-to-customer (B2C). However, companies implementing new innovative business models, mainly driven by ICT companies, have led to a new layer of customer segmentation and targeting.

3.1.3 Infrastructure Management

The pillar named Infrastructure Management concerns how a firm creates value to its customers. It consists of three sub-components: Key partners, Key Activities and Key Resources**.** Allee (2000) defines the infrastructure management pillar as a value network generating economic value through exchanges between enterprises, its customers, suppliers, partners and community. The infrastructure management is

centered around the key activities to deliver the firms value proposition (Osterwalder, 2004).

Key Partners

The business model element Partnership refers to the network of partners a company aligns itself with. Moreover, it is argued that a company does not necessarily be perfect in all dimensions, as long as it manages to have partners assisting them in economies of scale, reduction of risk and uncertainty, and acquisition of resources (Osterwalder, 2004).

Osterwalder and Pigneur (2010) distinguish four types of partnerships important for a successful business model.

- Strategic alliances between non-competitors
- Strategic partnerships between competitors
- Joint ventures
- Buyer-supplier relationships

Key Activities

These are the crucial things the business needs to do to deliver on its propositions and make the rest of the business work. For a product-driven business, this probably includes ongoing learning about users and new techniques to build better product. If you're focused on doing a bunch of things for a particular set of customers, this probably includes maintaining superior expertise on the segment(s) and creating or acquiring products and services that are a good fit, whatever that entails. For an infrastructure business, it probably includes keeping the infrastructure working reliably and making it more efficient.

3.1.4 Financial Aspects

The financial aspect is the last pillar on which the business model sits. It consists of two different sub-components: cost structure and revenue models. This pillar is dependent on all other sub-components in the business model, as they will influence the financial aspects (Osterwalder, 2004).

Cost Structure

The Cost Structure is the representation in money of all the means employed in the business model. It concerns all costs that are generated from the other sub-components. Osterwalder (2004) defines the cost structure as “all cost the firm incurs in order to create market and deliver value to its customers”. The importance of low-cost structures is different between business models. Osterwalde rand Pigneur (2010) suggests that business models can be reviewed on a spectrum ranging from cost-driven to value-driven. Cost-driven business models focuses on minimizing cost, so that the company can increase the perceived customer value with a low price. Value-driven business models on the other side of the spectra, focuses on maximizing the value for the customers, often by increasing personalization. A lean cost structure is more important for cost-driven than value-driven business models.

Revenue Models

The revenue model is the sub-component in which customer value transforms into money. The internet revolution has put increased pressure on pricing as transparency has increased (Kocas, 2002). However, this has led to an increased number of pricing mechanisms (Klein and Loebbecke, 2000). Osterwalder and Pigneur (2010) provide a list of the most common pricing mechanisms being:

- Asset sale/ Usage fee
- Subscription fees/Lending/Renting/Leasing
- Licensing/Brokerage fees

3.2 Business Model Innovation

The idea that business models can be reinvented, or innovated, is straightforward if aforementioned definition of business model components is accepted. However, business research has not noticed the subject until recent years (Frankenberger et al. 2013). Research suggests that business model innovation (BMI) involves changes to business components, when striving to achieve a competitive advantage (Amit and Zott, 2001; Chesbrough, 2010; Demil and Lecocq, 2010; Teece, 2010). A wide range of researchers has since accepted this definition. However, the debate on which components the business model entails has been ongoing, as previously mentioned.

Casadesus-Masanell and Ricart (2010) argue that main drivers of BMI are globalization, deregulation and technological change. They further argue that these drivers have reshaped the competitive landscape, forcing firms to seek new ways to increase competitive advantage. The second phenomenon driving BMI are organizational efforts to enter new markets in emerging economies, targeting customers with low purchasing power, commonly referred to as "the bottom of the pyramid" (Prahalad, 2010). Innovation was for long an activity solely performed as product or service innovation. However, as the perceived value of business models has increased, developing a business model that maximizes the company's competencies is now a top priority (Anthony, 2012).

3.3 Business Model in New Ventures

The business model has received little focus in business research compared to the high praise it has received in entrepreneurial practice (George and Bock, 2011) and research has often been committed studying business models and entrepreneurship as separate topics (Trimi and Berbegal-Mirabent, 2012). While there is an arguable gap in business research, the importance of business models for entrepreneurial firms is large (Amit and Zott, 2007).

Early research on entrepreneurship shows the flexibility of start-ups, being less controlled by earlier decisions and resources, than more established firms (Stinchcombe, 1965). This has implications for business models of entrepreneurial firms as they can construct the business models from scratch. Brown and Gioia (2002) argue that an advantage for start-ups is that the companies can try multiple business models simultaneously, opposite to larger firms.

Hite and Hesterly (2001) show the value of business model design for entrepreneurial firms and argues that the performance of the entrepreneurial firm is critically reliant on boundary-spanning organizational activities, an antecedent to the business model. Ireland et al. 2001) further emphasize these findings when arguing that early business model design in entrepreneurial firm is the main reason for the firm's existence, as the entrepreneur's agenda is to change industries by introducing new ways of doing business. Aldrich (1999) introduces the idea that start-ups replicate business models of existing firms, further emphasized by Zott (2003) showing that imitative business models often are centered on minimized costs. McGrath and MacMillan (2000)

propose that while this might be the case, even imitative entrepreneurial firms adapt their business models to fit market needs. As scholars have agreed upon the importance of the business model for entrepreneurial ventures, research has focused on more aspects of the business model of the new firm.

3.4 Business Model Practices

The recent increase in research concerning the business model has introduced several practices for business model design that has gained widespread attention. Trimi and Berbegal-Mirabent (2012) argue that the entrepreneurial business model design process can be divided into two main phases. The first phase is characterized by trial-error dynamics and is called the business model design step. During the first step the entrepreneurial venture tests several hypotheses regarding its product/service, or its internal processes, to formulate a robust business model. The second phase concerns application of the business model being designed in the first phase.

Organizational theory argues that organizations remember by doing (Nelson and Winter, 1982) and the most efficient way for an organization to change, and learn, according to Sosna et al. (2010), is by trial-and-error experimentation. Research on similar concepts, such as experimentation (Ahuja and Lampert, 2001), improvisation (Moorman and Miner, 1998) and learning-by-doing (Minittiand Bygrave, 2001) has further fueled concept as key in handling changing demands. A study by Sosna et al. (2010) highlights the value of trial-and- error processes in business model innovation, arguing that it is key lever for successful BMI.

While aforementioned studies have mostly focused on larger firms, the link to new ventures has not been researched to the same extent. Furthermore, young companies will face many challenges they have not faced before, and as young organizations lack resources and experience, forcing them to improvise (Zahra et al. 2006). Hence, it is easy to argue that the extended agility of the start-up would further enhance the possibilities for trial-and-error experimentation, and the value stemming from it.

3.5 Visualizing the Process of BMI

In this framework, changes in the business model are viewed as the sequential events to draft the business model innovation process. As business model innovation is a continuous process research laid focus on the first year since the draft of the very first

business model. In order to visualize the business model innovation process of each start- up for the within-case analysis the BMI Process Diagram as shown in figure 2 is created. The ‘BMI Process Diagram’ shows the amount of changes in their temporal sequence in the timeframe of one year in relation to how many building blocks in the business model canvas were modified in each event of change. The x-axis depicts the timeline in months that displays how often and in which temporal sequence the event of changing the business model occurred in the process of business model innovation of each start-up. As the business model canvas consists of nine building blocks the y-axis counts from one to nine. For instance, slightly changes in the building block ‘revenue streams’ are less intense then changes in several building blocks. Also, radical changes in one single building block involve quite likely further changes in the other building blocks of the canvas, such as the ‘value proposition’ that then might further cause changes in the other building blocks, as the ‘Customer segments’, the ‘channels’, ‘key resources’, ‘key activities’, ‘cost structure’ and ‘revenue streams’ might need adaption. Moreover, in each event of changes, antecedent and the building blocks (abbreviation BB) that dominate the changes have been determined.

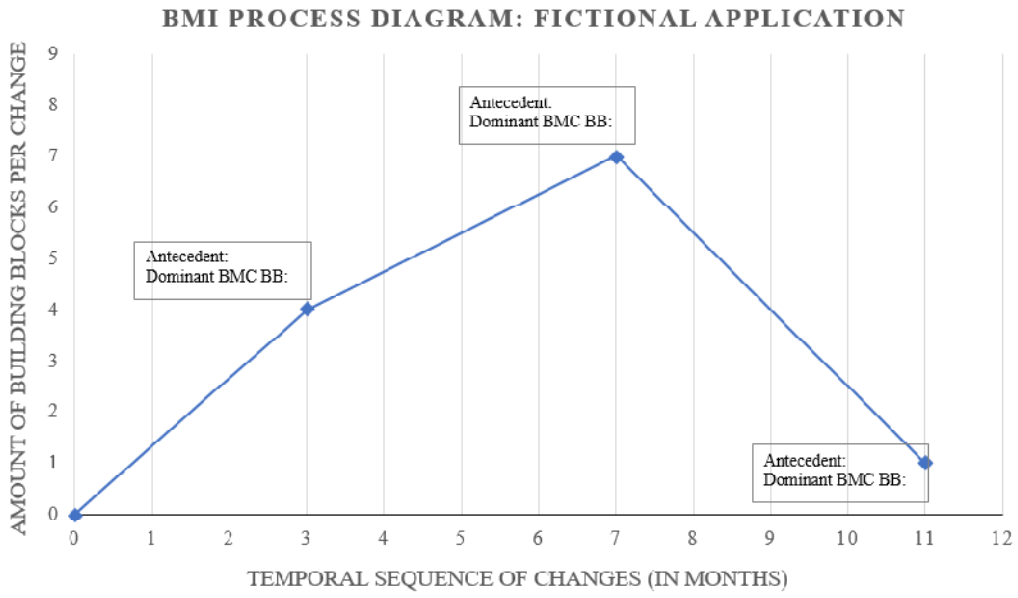


Figure 2: BMI process diagram

CHAPTER FOUR: RESEARCH METHODOLOGY

4.1 Research Approach and Design

This study is mean to be an exploratory attempt at discovering the process involved in designing and developing a business model innovation process. A qualitative research design is a deliberate choice for a multitude of reasons. Qualitative method is well intended when researcher aim for “how certain phenomena have come to happen. And when the research questions asked seek to uncover what is happening and how it has come to happen, a qualitative research design is most appropriate (Myers, 2013). Also considering that the business model is relatively young management concept, and its development and innovation is both ‘complex and unquantifiable’ (Myers, 2013), it is recommended that a qualitative research approach be undertaken to obtain a “complex, detailed understanding of the business model development and innovation issue (Creswell, 2013).

For conducting research about business model design and innovation process in IT startups, qualitative research approach based on a case study research has been applied (Gioia et al. 2013; Eisenhard, 1989). Yin (2014) indicates that case studies are used when the researcher aims to make sense of “complex social phenomena”, such as process theory (Miles et al. 1978). Furthermore, case studies are especially suited for solving research questions that address “how” and “why” problems and are particular appropriate for extending the knowledge about dynamics and processes (Yin, 2014; Eisenhardt and Graebner, 2007; Eisenhardt, 1989). In this context, Gioia et al. 2013 and Yin (2014) point out that especially processes are more about how actions are carried out and what experience are gained, which can only be discovered through qualitative research. As our research question concerns how this research apply relatively new concepts of business models and business model designs to new ventures within a specific industry, IT and a specific location Kathmandu, this thesis targets to shed some light on relatively new phenomena of Business Model Design and their Innovation Process within the IT starts up. As the research question concerns how start-ups design business model and its innovation process is characterized in terms of how start-ups design and when, what and why changes occur, therefore case study approach is carried out as the most appropriate one.

The aim of the research is to identify patterns in the process of business model innovation, observing several start-ups is necessary to compare several processes. Additional advantages by applying a multiple case study approach are that the "theory is better grounded, more accurate and more generalizable" (Eisenhardt and Graebner, 2007). Moreover, multiple case studies generate more robust and empirical valid theory as the theory is built upon a broader range of empirical evidence (Yin, 2014; Eisenhardt and Graebner, 2007; Eisenhardt, 1989). In comparison with single-case studies, multiple case studies appear also less vulnerable because the conclusions drawn from the analysis is more meaningful as the uniqueness of a single-case is eliminated (Yin, 2014). Therefore, a multiple case study benefits from analytical strength (Yin, 2014). As it is suggested by Eisenhardt (1989) to use a sample number between four and ten, four samples of start-ups have been chosen.

4.2 Selection of Study Objects

The study objects of this thesis are the business models employed by innovative new ventures. Business model of the start-ups is the unit of analysis. In order to select startups as case studies sample universe is decided and the sample size (Robinson, 2014). Afterwards purposive sampling strategy has been use to take samples.

In terms of sample size, 4 start-ups have been selected. As there is no perfect amount of cases a researcher can take, experience of researchers have shown that an amount between four and ten cases for multiple case studies is suitable (Eisenhardt, 1989). In terms of participants per start-ups founders or business managers have been called for interview as they are the ones who were responsible to make changes in the business model.

When sampling case start-ups, purposive sampling strategy has been used, the certain start-ups have been excluded which has not been found adequate, for example technology consultancy start-ups, as their offering is not a technology. Start-ups has been contacted by email including a cover letter that described the research project, the benefits the start-ups can get by collaborating.

The sample Universe to select cases was framed by certain factors. The companies registered in Company of Registrar are chosen in this study, were carefully selected based on set of pre-requisites. These pre-requisites were created in order to have

homogeneous selection as possible to yield relevant insights. The following evaluation pre-requisites are used in when accessing the companies:

- Companies from Kathmandu valley
- Companies working with IT solutions/tools
- Companies in line with the definition of innovation
- Companies not older than 3 years
- Companies under different NSIC codes.

Table 2: Overview of four Startups Company

Company	Industry	Main Product
Medikoma	IT	Online platform to book appointment for doctor (Medical related software)
Paaila Technology	IT	Production of artificial intelligent human friendly service robot, restaurant chain
Third Eye Tech	IT	Child incubator, drone services and other technology
Cell App	IT	Incubation to Start-ups, Smartpalika app or system

4.3 Selection of Interviewees

The selection of interviewees is based on finding the person at every company most suitable and probable to give elaborative answers to questions asked. In order to do so founders of the companies chosen were decided to be most suitable. The interviewer contacted the interviewees directed to set of interviews. The following table shows short presentations of the interviewees of this study, as well as their title.

Table 3: Short presentation of interviewees

Company	Name	Title
Medikoma	Matrika Adhikari	Business Manager
Third eye tech	ShamhuSiwakoti	Founder
Paaila technology	Narayan pd Nepal	Engineer
Cell App	Manoj Bhattarai	CEO

4.4 Data Collection Method

In order to actualize this qualitative design, a well-defined data collection procedure is followed. The initial task was to reach out to Office of Company Registrar and collect overall company registered. Then the companies according to National Standard Industrial Classification (NSIC) codes have been selected. So, an hour-long interview with IT officer of Company of Registrar is performed.

Table 4: Start-ups with their NSIC code

NSIC code	Objectives	Company choose
0004	Web sites related works	MediKoma
7210	The activities of computer hardware consulting services	Paaila Technology
7290	Other creators related to computers that are not in classification	Third eye tech
004	Incubation to start-ups/software/websites related work	CellApp Innovation

In-depth interviews with the company's entrepreneurs or founder were conducted as this allowed for the elicitation of the "personal experiences and motives" entrepreneur. The interviews are taken in place in-person and over the phone.

Primary Sources

The primary sources used in this thesis are solely based on the outcome of semi-structured interviews with the aforementioned respondents, as well as a follow up email asking one additional question regarding milestones in their business model design.

4.5 Data Analysis

The data analysis has been followed both within-case perspective and a cross-case perspective. These perspectives are for their own strategic purpose. Within-case perspective follows a narrative strategy; while cross-case perspective obeys to find some patterns with data.

During the case analysis within a case, the process of business design and innovation has been observed by taking their 1st year participating start-ups. The general idea of the within-case approach is to well understand each case as a single unit and gain familiarity with the data (Eisenhardt, 1989). This procedure is the first step to discover "unique patterns of each case", while with the second step the "investigators push to generalize patterns across cases" (Eisenhardt, 1989. For the within-case analysis, a narrative strategy has been followed. The data is analyzed by providing a detailed description of the single business model innovation process of each start-up (Langley, 1999). The narrative strategy approach aims to construct "a detailed story from the raw data" (Langley, 1999). In other words, the process of business model design is refined and described in detail. To describe the changes in business model, analyzing the process of business model innovation by using the business model canvas in time has been done. That means business model canvas at different points in time of each start-up has been compared. By using the narrative strategy, frequency of business model change and priority given by start-ups have been examined. Also observation has been done in many aspects like how many building blocks in the business model canvas altered per change, what caused these changes and what parts of the business model changed. Finally, the narrative strategy is further supported by the visualization of the business model innovation process of the four participating start-ups in the BMI process diagram.

As stated earlier, the within-case perspective is necessary to enable a sufficient and fruitful cross-case pattern analysis of the data, to look beyond initial assumptions and grasp indications through multiple lenses (Eisenhardt, 1989). Therefore, besides describing and visualizing the four-business model design and innovation processes, the data on similarities and differences between these four processes were observed and searched for patterns within the data by carrying out a cross-case analysis. The data analysis method for identifying patterns within the data is in generally called grounded theory (Eisenhardt and Graebner, 2007; Eisenhardt, 1989). Yet, the method 'grounded theory' can be understood in two ways, in general as "creating theory by observing patterns within systematically collected empirical data" and as the so called 'original' grounded theory developed by Glaser and Strauss (1967) (Eisenhardt and Graebner, 2007). However, the grounded theory developed by Glaser and Strauss

requires a large number of cases and an in-depth microanalysis but these requirements cannot be fulfilled in our limited research project (Langley, 1999).

In order to determine patterns between the different processes of business model innovation in cross-analysis, following categories were formed based on the five sub-question of research question.

Table 5: Sub questions for data analysis

Sub questions	**Categories**
How often changes in the business model?	Amount of changes
What parts of the business model change?	Building Block element
What causes these changes	Antecedents
How many Building blocks in the business model changes per event?	amount of modified Building blocks per change

The analysis is then carried out in the same order. Firstly, processes on comparable temporal sequences and amount of changes were observed. In the next step, investigation of how many and which building blocks altered in each event of change were performed and if there were similarities on when the same amount of building blocks or if specific ones occurred. Then, different antecedents were observed and examine the relationships between the antecedents and the building blocks.

4.6 Research Process

There are two separate research strategies to commit business research, namely, quantitative research and qualitative research (Bryman and Bell, 2011). The qualitative research method aims to answer research questions such as “how” and “why”, while quantitative research methods targets questions such as “what” to a higher extent (Saunders et. al, 2015). While qualitative research methods focus on analyzing information gathered from in depth interviews, discussions or likewise, quantitative research emphasizes numerical data to answer the research questions (Bryman and Bell, 2011). While both quantitative and qualitative research has its advantages as well as disadvantages, the quantitative research approach was chosen as it was deemed most appropriate to answer the exploratory research question.

This thesis uses the qualitative method to understand the attitude of the study group towards business model design. Moreover, as the qualitative research method is used to identify opinions, beliefs and behaviors' concerning a specific topic, it should be considered appropriate to answer previously mentioned research question. Bryman and Bell (2011) propose the normal way of conducting qualitative research as a six-step process:

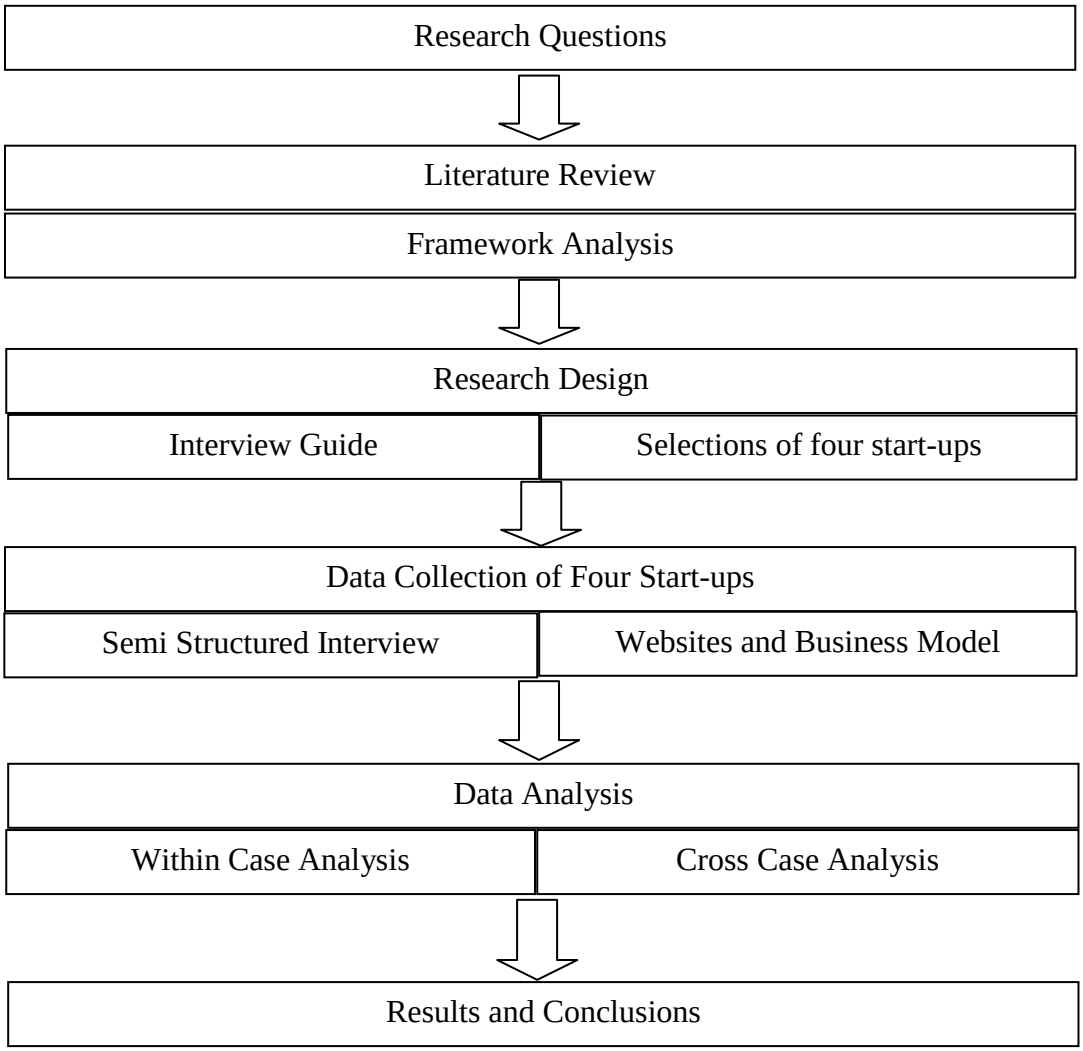


Figure 3: Methodology flow chart

It describes the fundamental stages in the process of qualitative research. The research initiates by finding a focus area and creating a research question. Secondly, a literature review is committed to gain knowledge in the area studied. As the researcher's knowledge has increase of the subject, the research question is refined. When the research question is refined, the researcher collects data by interviews. The

empirical findings are linked to theory and conclusions can be drawn. This thesis uses abovementioned process proposed by Bryman and Bell (2011) to answer its research question. To get an increased understanding of the research procedure for this thesis, following steps has been followed.

Step 1. Literature review searching for relative subjects

Step 2. Brief analysis of literature for business model design and start-ups

Step 3. Literature review of methodology

Step 4. Decision taken for area of interest and study purpose

Step 5. General research question created

Step 6. Extensive literature review

Step 7. Development of theoretical framework

Step 8. Refined research question

Step 9. Development of interview guide

Step 10. Identification of relevant case companies and interviewees

Step 11. Collection of primary data by interviews with case companies

Step 12. Transcription of interviews

Step 13. Established empirical findings

Step 14. Analysis of collected primary data

Step 15. Analyze empirical findings and compare to theoretical framework

Step 16. Conclusion

CHAPTER FIVE: RESUTLS AND DISCUSSION

The following section presents case empirics in order for the reader to understand what information can be derived from the interviews. At first each start-ups participating in this case study have been introduced, and later empirical findings for the companies have been presented.

5.1 Analysis within Cases

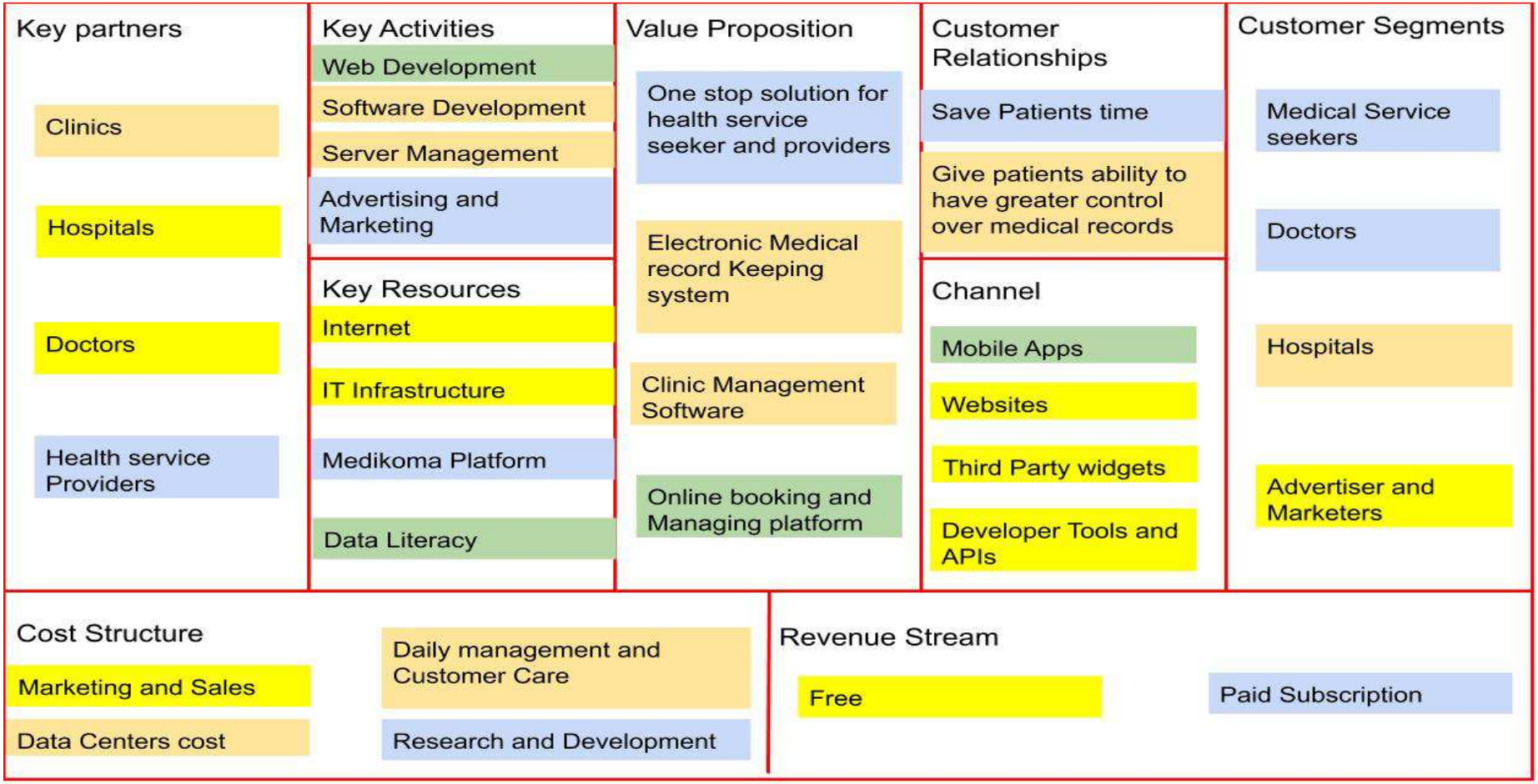
5.1.1 Case Study One: Medikoma Technologies

Medikoma Technologies is a company founded in 2074 B.S. currently employing 4 staff. MediKoma is centralized software with the aim of bringing Clinics, Doctors and Patients all together in one platform. Medikoma is a trusted platform that aims to connect with users on a growing scale and provide them a healing touch by healthcare professionals. They are home to professional doctors, which include Dentists, pediatrician, gynecologist, dermatologist, cardiologists, and many more specialists. They function to provide us a doctor or a clinic, and make it feasible for everyone to share the common platform. The Business manager of MediKoma, Matrika Adhikari, was interviewed initially to gather information. He describes the business model of the company. According to him, they are providing connection with 695 clinics and 2330 doctors.

Business Model Design According to MediKoma

Talking about the business model of MediKoma, the business manager, Mr. Matrika Adhikari focuses on value proposition. The market for this type of startup hasn't been prepared. So they are searching for solution of both existing problem of a patient and new problem that might come along the way. MediKoma's business model is described as "connecting with the right professionals where you can assess your health issues and concerns in a convenient and better fashion and stay healthy for prolonged duration with the righteous guidance. Moreover Mr. Adhikari mentions that MediKoma weren't working consciously with business model design in the past since it is easy to de prioritize in favor of other activities. However they have designed a business model of MediKoma. Now they are preparing for venture capital, it has almost touched upon many of the business model lately, he argues. Business model currently used by Medi Koma is shown in table 6.

Table 6: Business model currently used by Medikoma



Value Proposition

MediKoma's value proposition is one stop solution for health service seekers and providers. They bring Clinics, Doctor and Patients all together in one platform. They provide fastest way to book an appointment with desired practioner and help to avoid long queue of patient waiting in the clinic.

Infrastructure Management

The key activities done by the Medikoma till now are software development, web development, server management, advertising and marketing. Software development has been done collaborating with outsourcing company. Outsourcing is done so as to reduce cost and for better management of overall company.

The Key partners are Clinic, Hospitals, Doctors and other Health service provider. Besides that they are also collaborating with software development team and server management from outsourcing, which Mr. Adhikari didn't mention in interview.

As they are hiring the personal and other resources as per their requirement, they have around 8 members actively working on this platform. Their human resource includes database admin, app developer, business manager, customer service officer each and 3 marketing staff. For other type of works they hire from outside and the get the things done.

Customer Interface

During discussion with interviewee, he is all aware of who are his target customers. Initially they were planning to collaborate with hospitals only. But after sometimes, they observed that they can provide service to Doctor, Hospitals and Medical service provider. He also describes that the company communicates to customer through websites, Mobile apps and third party widgets. They are actively working on this to maintain the good interface with customer. However most appropriate channel he describes is Mobiles Apps and Websites.

Financial Aspects

As the company is just spreading in the market, they are not giving main focus on revenue model completely. However, they are generating revenue through paid subscription. Once they got recognized in the market, other parts of revenue model will be considered accordingly. Mr. Adhikari is well aware of Medikoma's cost

structure, as they don't have venture capital to support financially. They have single owner and all the cost are divided into datacenter cost, Marketing and sales, R and D, daily maintenance and customer care.

Milestones for the Business Model of MediKoma

Mr. Adhikari states that currently the MediKoma's business model is more or less same since the company started however there have been some changes of business model after researching scope of the service. As the investor wants to grow the company first regardless of the revenue it generates, once it excels their company from start up to something larger, they are ready to collaborate.

Importance of Business Model Components According to MediKoma

During interview the companies were asked to prioritize the subcomponent of business model and the table 7 shows the priority given by the MediKoma according to their business model. They have given priority number 1 for highest priority and 9 for lowest priority during the design of their business model.

Table 7: Importance of business model component according to MediKoma

Pillar	**Medikoma Priority**	**Subcomponent**
Product	1	Value Propositions
Customer Interface	2	Customer Segments
	6	Channels
	4	Customer Relationships
Infrastructure Management	7	Key Partners
	3	Key Activities
	5	Key resources
Financial Aspects	8	Cost structure
	9	Revenue Stream

Business Model Innovation Process in Medikoma

The business model innovation process of Medikoma within the first year includes three different models, thus three main changes of the business model in different sequence of months were observed within the timeframe of one year. The process is visualized in the 'BMI Process Diagram' in figure 4.

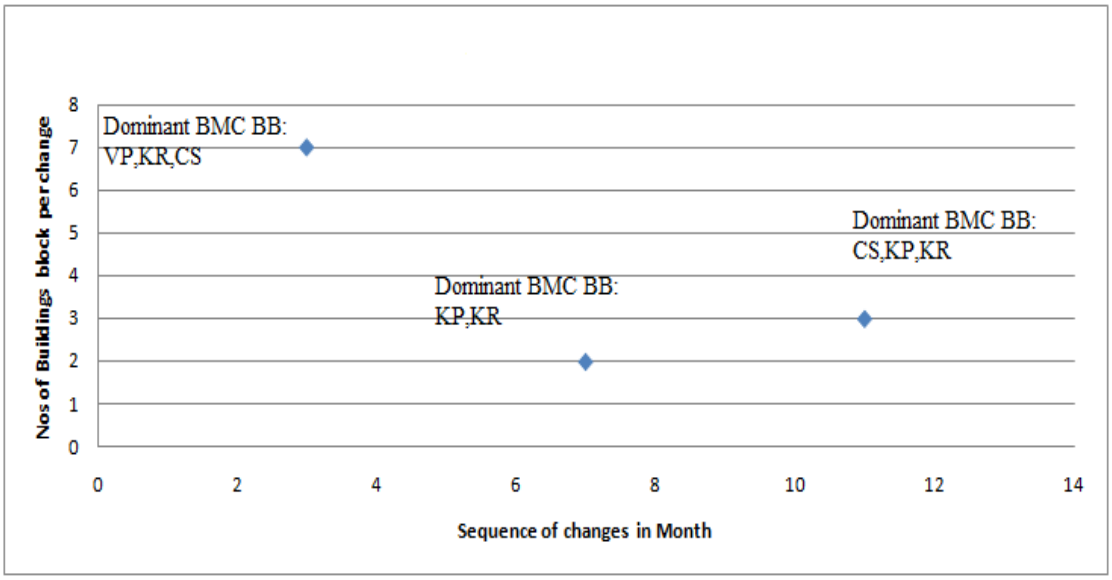


Figure 4: BMI Process Diagram: Medikoma

The figure 4 shows that Medicoma Technology has changed its business model three times within the 1st year of its business model innovation process. Dominant building blocks changes during the 1st change are value proposition, key resources and customer segments. The antecedents found for first change during the process were customer feedback and need of knowledge. After four month another changes in business model have occurred including key resources and Key partners. This time leadership approaches the innovative way to design the business model after consulting with more customers. Medikoma aims to penetrate the market first. So they have gone through most of the customer and taken customer feedback and initiate the marketing strategy accordingly. Third change results changes in customer segment, key partners and key resources. During the 1st year of business model innovation process, Medikoma went through three phases and antecedents observed are shown in table 8.

Table 8: Antecedents for medikoma business model

Reason for 1st change	Reason for 2nd Change	Reason for 3rd change
Customer feedback	Customer feedback	Marketing strategy
Need of Knowledge	Use of innovative leadership	Customer feedback
	Growth in Business	

5.1.3 Case Study Two: Third Eye Tech

Third eye tech is a start-up founded in 2018, with office in Rabibhawan, Kathmandu. It is established to introduce and innovate the new technologies in Nepal. They research and design the products by integrating the new technologies to solve and simplified social problems. They do not only design and manufacture the products but also introduce the technologies from other countries in Nepal. Automatic Water Level controller for buildings, Child Incubator, Egg Hatching Machine, Traffic Light System, Home/ Office Automation System, Network System for internet connection etc. are some of their own designed products. Now the company has 4 core members working together. And around 17 persons are needed to complete the project. Third Eye Tech Company provides both services and products to the customers. The third eye tech is preparing for releasing its product child incubator. The company has given this product as a brand name "Nyanomaya". Now the company has grown fast because the founder has experience of similar company which he had founded earlier and later he left that company.

The founder Shambhu Siwakoti was interviewed in first phase to gather information about business model design. Overall concept of business model canvas of "Nyano Maya" was described by the founder.

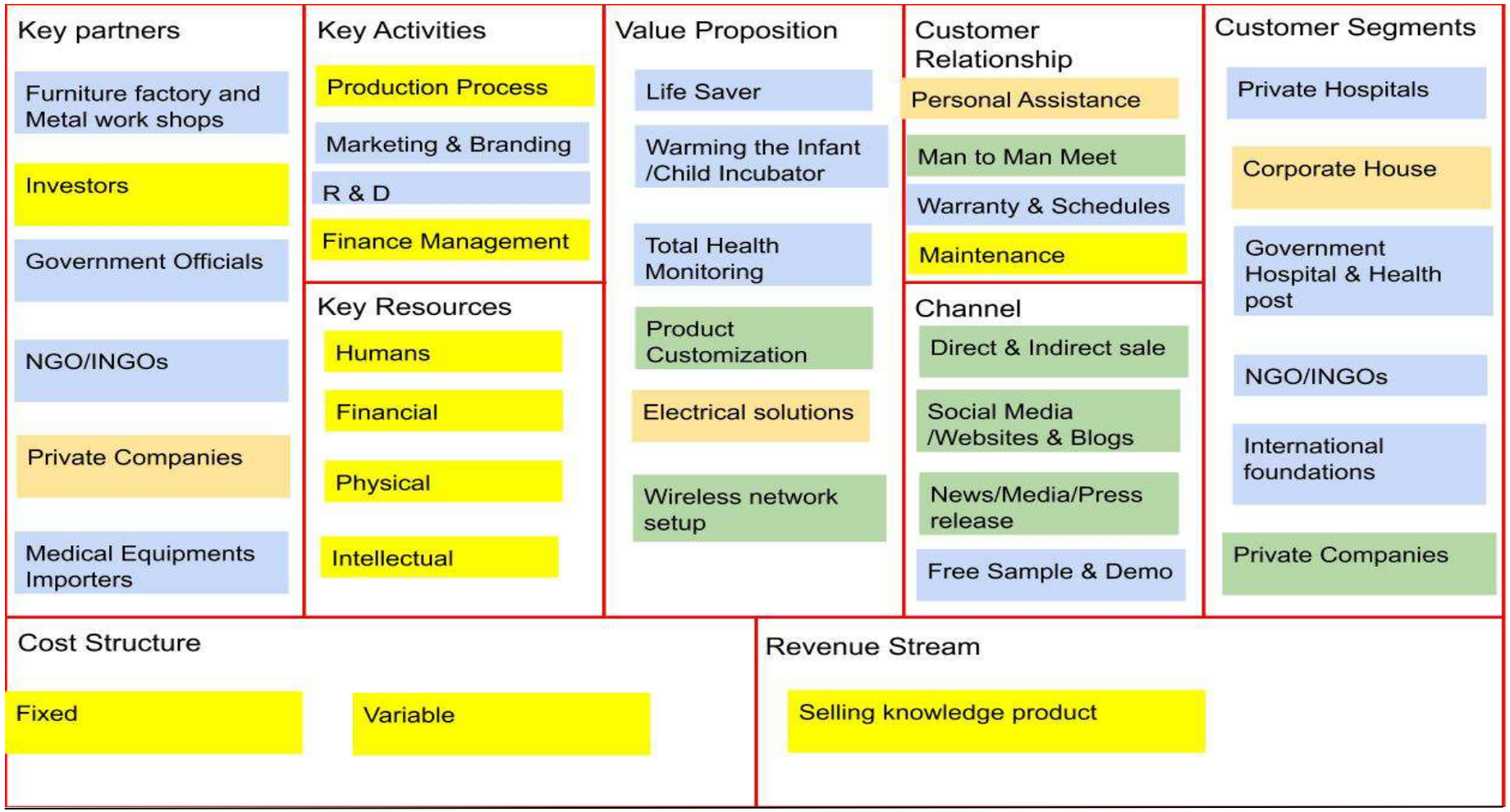
Business Model Design According to Third Eye Tech

While discussing about the business model, third eye tech founder Mr. Shiwakoti, his focus is on the overall business model of the product design. His team is focusing and actively working on business model design and they have the complete business model design pamphlet on their office wall. Anybody entering the office can visualize their business model and can understand their value proposition.

The company has all round capabilities to serve through the entire project life cycle. They have tried and tested technology and capabilities have been built over the years with diversified project to deliver to the client. Dedicated talent pool with core

engineering skills in industry segments are also with them. So, they are providing various service like wireless network setup, electrical solution, Electronics and robotics projects etc. The child incubator is one of them. The business model design recently used by Third Eye Tech for child incubator is shown in table 9

Table 9: The business model currently used by third eye tech



Value Proposition

The interviewee describes the business model of child incubator. The incubator maintains optimal temperature, humidity and gaseous content of the atmosphere inside. They are making this product in consulting and collaborating with NGO/INGO. Their priority is to develop “Low cost child incubator” for rural areas health post and birth center. Design a low-cost neonatal incubator along with Phototherapy unit in the same device to address the problem of neonatal jaundice, where 60% of new birth is prone to suffer from neonatal jaundice. A system consists of a mechanism to keep the baby in the incubator warm and provide an artificial environment that mimics the environment of the mother’s womb regarding the temperature, humidity and oxygen supply. The base of the incubator is a composite panel that includes a heater, a fan and a humidifying element. A phototherapy unit consisting of a blue LED light compartment is added on top to address the health needs of jaundiced baby. Therefore, child Incubator would be the best solution to treat the babies of rural areas of Nepal for health center’s having low resources. Easy to access in local market, easy to handle and low complication on performance. They have the belief this incubator is likely to be acceptable by the public and health personal on days to come.

Infrastructure Management

According to Mr. Siwakoti, the company is trying to figure out complete resources to make the final product. Recently they are operating through rental rooms. But they need factories for manufacturing. He also agrees that he needs some resource to complete the project. For example, R and D lab, Machine for cutting lathe and testing equipment. Besides these physical resources, they also required human resources too. R and D engineer, management executives, legal advisor and sales personal etc. They are also tying up with investor as well. Financial resources include fund from investor, loan from the bank and current cash of the company. Also Mr. Siwakoti has mentioned that they have the intellectual resources like system design of product, design copyright, design code and concept. Also, brand, trademark and customer database etcetera are also the key resources the company has.

They are also performing some key activities like different aspects of management, production process, and branding license. They are also promoting the product through news and media.

The company has different partners to complete the project. Mr. Siwakoti mentioned that all the task of cutting, joining, coloring and finalizing will be done by furniture factory. He also considers, to make this product acceptable and usable, the help of government is vital. They are also identifying the appropriate government agency to showcase the product to help the health sector. Besides that, they also want to have partnership with INGO/NGO who are working in children health, who always look for easier and best solution to do social services. Also considering the fact that some private company involves in Corporate Social Responsibility (CSR) project, the company wants to collaborate with them as well. Also, Logistic Company can be their partners so as to outsource the system development.

Customer Interface

The company will go to customer through personal assistance. The company representative will meet the customer segment to describe about the product and assistance will be provided by means of email, call, social media and visit. Mr. Siwakoti believes this will further help for market research also. The company has also decided that they will provide warrantees and schedule maintain so as to assure the customer. Actually, the infant mortality is major problem in Nepal. They are also planning to create communities to discuss over the issues. They are ready to work out with such communities if any.

As company need to go to customer, they are applying various channel. The company will use news agency to write about the product. The product will be showcased as a brand and innovative that can help the Nepal's health sector. Besides that, Social media, websites, blog will be also used to reach to the customer. As many numbers of NGO/INGO is working in Nepal to decrease the infant mortality, they want to donate such devices in rural areas if price is minimum and if they got their requirement.

Financial Aspects

Third eye tech is well aware of cost structure. Initially they are investing on the product both as fixed and variable cost. Since they are doing other various project like

Automatic Water Level controller for buildings, Egg Hatching Machine, Traffic Light System, Home/ Office Automation System, and Network System for internet connection, these projects are generating some revenue which will be use in the cost of its main product child incubator. Mr. Siwakoti states that "child incubator is concerned of its costs, but we are capable of doing other projects mentioned as above, we will make this product successful".

Milestones for the Business Model of Third Eye Tech

Mr. Siwakoti says the company has changed its business model few times. Company has been delivering both product and service to the customer. So, they are adding its value proportion accordingly. Moreover, he also says that he and his partners had put a lot of works to come to initiate this product "Nyano maya". Since Third Eye tech is planning to have multiple partnership in order to reach to the customer, he states that this partnership can make the changed in business model.

Importance of Business Model Components According to Third Eye Tech

During interview the companies were asked to prioritize the subcomponent of business model and the table10 shows the priority given by the Third Eye Tech according to their business model. They have given priority number 1 for highest priority and 9 is for lowest priority during the design of their business model.

Table 10: Importance of business model components according to Third Eye Tech

Pillar	**Third Eye Tech Priority**	**Subcomponent**
Product	1	Value Propositions
Customer Interface	2	Customer Segments
	9	Channels
	4	Customer Relationships
Infrastructure Management	6	Key Partners
	3	Key Activities
	5	Key resources
Financial Aspects	7	Cost structure
	8	Revenue Stream

Business Model Innovation Process in Third Eye Tech

Our findings about the process of business model innovation of Third Eye Tech included four major changes of the business model and are visualized in the BMI Process Diagram as shown in figure 5.

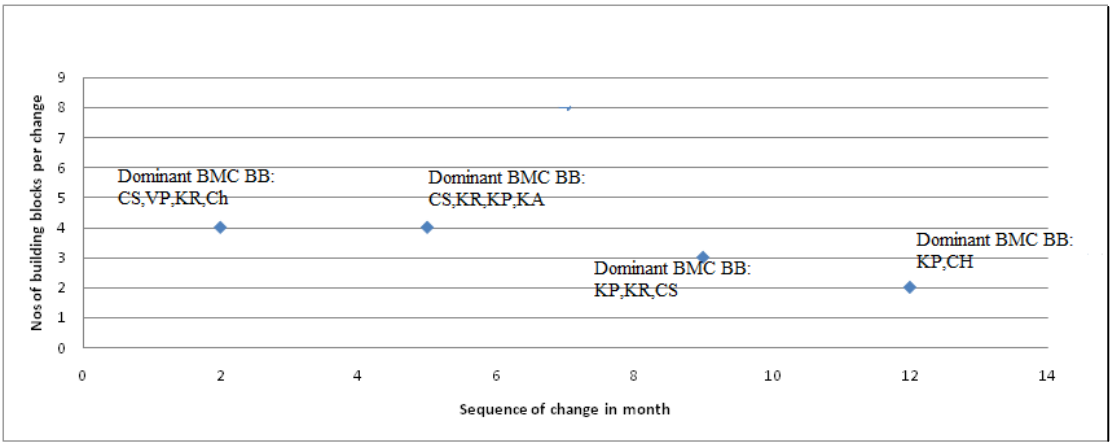


Figure 5: BMI process diagram: Third Eye Tech

Figure 5 shows that Third Eye Tech went through four changes in its 1st year of business model innovation process. First changes include changes in dominant building blocks customer segment, value proposition, key resources and channel. Increasing in knowledge and expertise was the main reason to change its business model. They got multiple partners to sell the product, so they came with new marketing and selling strategy, resulting in second changes of business model. Again after the feedback from both partners and customer, they changes the business model third time. Again they collaborated with NGO to sell the product in rural areas. Table 11 shows the reason (Antecedents) that causes the start-ups to changes their business model.

Table 11: Antecedents for Third Eye Tech

Reason for 1st change	**Reason for 2nd Change**	**Reason for 3rd Change**	**Reason for 4th Change**
Need of Knowledge	Use of innovative leadership	Customer feedback	Addition of key partner
Problem Identification	New Marketing strategy	Growth In Business	
	New selling strategy		

5.1.3 Case Study Three: Paaila Tecnology

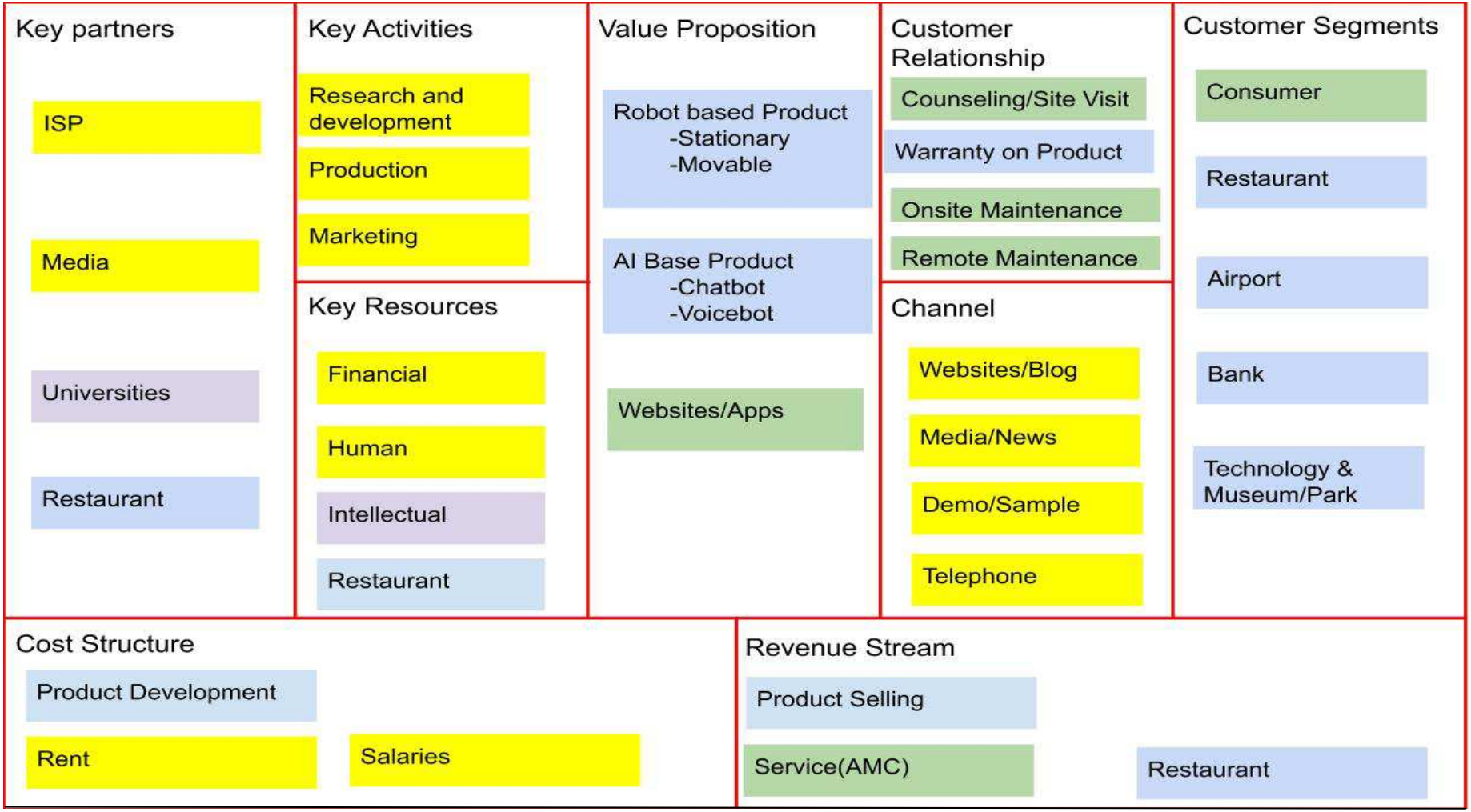
Paaila Technology is a tech startup based in Kathmandu Nepal which has been working on research, design and development of humanoid service robots and AI solutions for various business sectors. Paaila has also launched its own digital robotics restaurant, Naulo in Kathmandu. At Paaila, they believe in power of robotics to benefit humanity and business and aim to create robots and services that define the role robotics play in our lives today, and in the future.

The engineer working at Paaila technology, Narayan Pd Nepal was interviewed to gather initial information about Paaila technology. Paaila aims at producing artificially intelligent human friendly service robots that adds value to the business houses that deploy them all over the world. As the world is rapidly embracing AI and reaping its' benefits, Paaila Technology wants to help companies in Nepal integrate AI technologies in their business to improve customer stickiness while also making them globally competitive.

Business Model Design According to Paaila Technology

When discussing about the business model design, with Mr. Narayan Nepal, Paaila has focused on Value proposition and Revenue stream of Business model canvas. However, Paaila has not been working actively with business model design in the past. Their team were technically sound and made product perfectly, but couldn’t generate revenue due to lacking somewhere in their business model design. During the course of their journey they realized the importance of business model, now they are updated with the business model. Business model currently used by Paaila Technology is shown in the following table 12

Table 12: Business model used by Paaila Technology



Value Proposition

The Paaila's value proposition is "producing human friendly robots that really add value to the business houses that deploy them." As the world is rapidly embracing AI and reaping its benefits, Paaila technology wants to help companies in Nepal integrate AI technologies in their business to improve customer stickiness while also making them globally competitive. They have used these robots in fully digitalized Naulo Restaurant. The restaurant has a menu implanted in digital screens on tables from where orders can be placed directly to the kitchen. After the dishes are ready, the robots collect them from the kitchen counter and serve the customers. To generate revenue, initially they are producing robots according to demand of customer. Besides producing robots, they are also making Chatbot for banks, telecom companies, business seller, finance and e-commerce. These business use Chatbot to provide quick and accurate solution to the inquiries their customer seeks. Paaila is constantly working with developing its value proposition. A key driver for constantly improvement according to interviewee is to provide world class product to the customer.

Infrastructure Management

While discussing about infrastructure management, Paaila has given more importance on this, so as to give the best product in the market. Paaila now is certifying that the company has right resources and activity in place to create the value for the customer. Paaila initially discusses having a feedback loop with the user of its and then started developing infrastructure accordingly. Paaila is constantly work to become more efficient in order to know what to develop and how. They always appreciate and try to hire people with the skills and sparks to make the changes.

Initially they invested more on R and D. They develop their own robots. But the product doesn't go on sales as per their objective. Later they found that they were poor on marketing and now they are working on this.

He states that they have also opened Naulo Restaurant where they can test the Robot system and they have used this place as a marketing place. They are making partnership with university, media, ISP and Restaurant.

Customer Interface

While further discussion with him, he mentions their weakness is their ability to know their target customer very well. Furthermore, he states that Paaila is not targeting a specific customer segment, but rather anyone can have their product which uses AI and Robotics services. Initially they sell their product to the SBI bank and now continuously increasing their marketing so as to get more customers.

Paaila are currently using telephone and email with its existing and potential customer. Also, they reach to the customer through Websites/Blog and Media/News also. Their sample demo in Naulo restaurant has created a lot of attention towards the use of robotics system in any industry. They are continuously getting feedback from the restaurant as well.

The Target customer segment of their business model is ongoing process as the importance of robotics and other AI activities are yet to come in the market. As the offer from Airport and government body is also in the list of potential customer of Paaila technology. They are also in search of technology musueum/park. He assumed that this will be the good place for marketing their product as well.

Financial Aspects

The Paaila has given more importance to financial aspects as well. They are well aware about their production cost structure and key cost drivers. Their investor has invested in R and D in the first. Now they can use their same research to produce many other products. Also, they are extending their activities towards Chabot and voicebots, which can generate revenue continuously. As per the customer demand they can make pricing strategy. However, they are also working on pricing strategy as their customer differs in requirement.

Milestones for the Business Model Paaila Technology

Paaila has had a few milestones that have influenced the company business model. It has received Best Startup and most innovative product ICT award 2017. This has help to think further about business model of the company and they made the business model accordingly.

Importance of Business Model Components According to Paaila Technology

During interview the companies were asked to prioritize the subcomponent of business model and the table 13 shows the priority given by the Paaila Technology according to their business model. They have given priority number 1 for highest priority and 9 is for lowest priority during the design of their business model.

Table 13: Importance of business model component according to Paaila Tech

Pillar	Third Eye Tech Priority	Subcomponent
Product	1	Value Propositions
Customer Interface	5	Customer Segments
	9	Channels
	8	Customer Relationships
Infrastructure Management	7	Key Partners
	3	Key Activities
	4	Key resources
Financial Aspects	6	Cost structure
	2	Revenue Stream

Business Model Innovation Process in Paaila Technology

The findings about the process of business model innovation of Paaila Technology included three major changes of the business model within the first year.

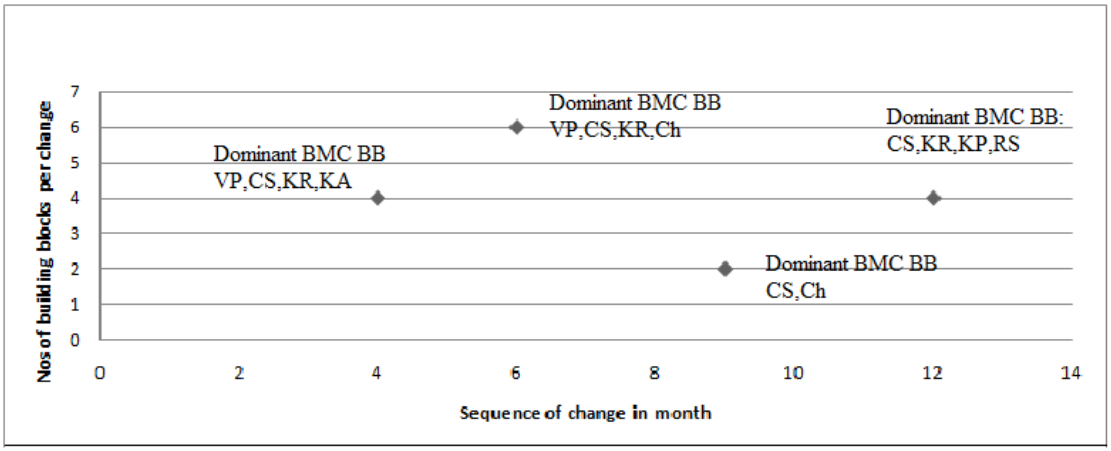


Figure 6: BMI process diagram: Paaila Technology

Innovation processes are visualized in the BMI Process Diagram as shown in figure 6. Figure 6 shows the Business model innovation process diagram of Paaila technology which went through 4 changes during its 1st year of business model innovation. Initially Paaila started with automatic tap as its value proposition. Then member with innovative idea met together and discussed how they can do better in this field. Then they came with new idea and changed the business model by changing its value propositions. This also results changes in other building blocks like key resources, customer segment and channel. With the production of robots they made partnerships with Naulo restaurant. This causes the second changes in Business model. After few months they didn't get other customers. As they were firm about their product, they started to find new customers which slightly change their business model. After getting customers from different sectors they need to produce more robots. They extended their key partners for knowledge and expertise also. During the business model innovation process, following reason (Antecedents) shown in table 14 causes the Paaila Technology to changes business model.

Table 14: Antecedents for Paaila Technology

Reason for 1st change	**Reason for 2nd Change**	**Reason for 3rd change**	**Reason for 4th change**
Problem Identification	New Marketing strategy	No Customer	Funding Requirement
Use of innovative leadership	Revenue Structure(Naulo)		Customer Feedback
	Growth in Business		

5.1.4 Case Study Four: CellApp Innovation

CellApp Innovation was founded in 2074 B.S. CellApp Innovation is a Tech Innovation company. They develop and deliver Accelerating Technology to an Organization and Business. CellApp Innovations holds expertise with 8+ years of experience and portfolio in Global Tech Industry. Their dedicated Innovations wing is focused in working with Organizations and local level Government Entities. Their core services are Digital Outreach, iDea Grooming and Product development. Also, the company has some Impact project like EmBlood, Nepal Flood Relief, SmartPalika and Rakshya.

Their vision is simple – bring about revolutionary changes in the lifestyle and the way problems are being solved, at the center of which would be Information Technology.

Business Model Design According to CellApp Innovation

Talking about business model of CellApp innovation, the CEO, Mr. Manoj Bhattrai has given the more emphasis on Value proposition. He claims that his team is not here just for business, they are here to iMpact. They create local level iMpact and social good projects involving Information, Technology, innovation and Data.

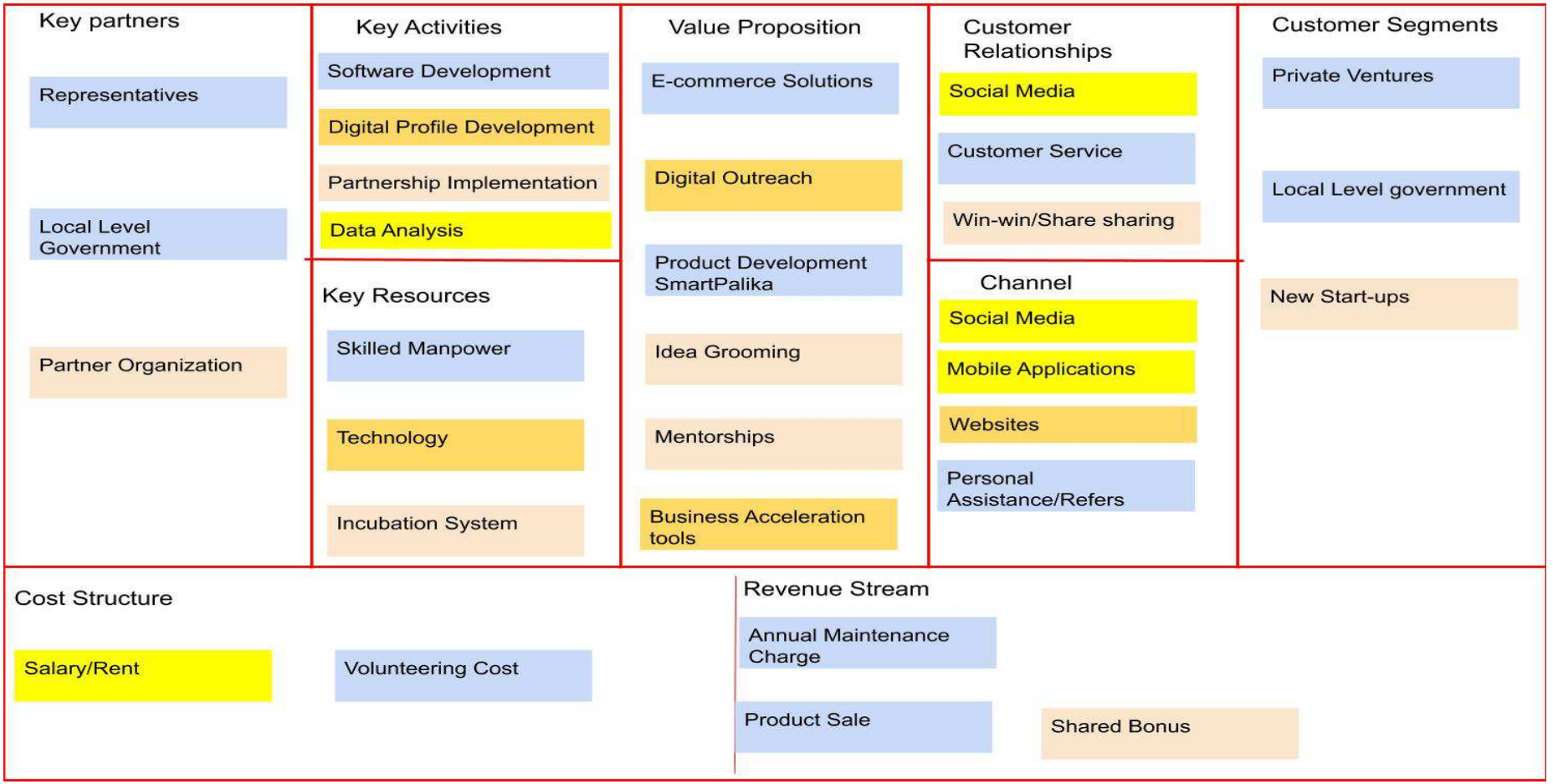
CellApp Innovation is currently working with different projects. SmartPalika is one of them. SmartPalika is a concept to convert a village into a technology Accessed Smart Village. Mr. Manoj also states that having 481 villages in Nepal, there has been 0% Penetration of technology overall. Also CellApp business model is currently working with the business model design and trial and error method has been applied. The currently used business model by CellAp is shown in table 15.

Value Proposition

At CellApp innovation, they born babies-startups. Anybody can join them in a team. They have also mentioned some criteria for this. A team with leader and commitment of involving at least for six months is must. While doing all these, benefits are knowledge sharing, startup grooming, operation and Scaling up, Backup Resource, Mentorship and long-term career opportunities.

Besides incubation of startups, they have also produced product like SmartPalika. SmartPalika, is a concept to convert a Village into a Technology Accessed Smart Village. Recently more than 70% of their recourses have been used to build this product.

Table 15: The business model currently used by CellApp Innovation



Infrastructure Management

Talking about infrastructures, they have skilled manpower with dedicated skills, technology tools and Incubation system. They perform various works to put idea into products and services. Digital profile development, volunteering orientation and development, data analysis, software development, hardware design etc are the key activities performed by the CellApp innovation. They also help in implementation of the system throughout the time period according to the demand of customer.

While discussion with Mr. Bhattarai, he gives his priority to describe the mostly about the product Smart Palika and its operation. Partners related with Smart Palika are Representatives, Local level government and partner organization.

Customer Interface

The customer interface includes the target customer, relationships with customer and the distribution channel. As our country is developing its infrastructure slowly, so as in the technology, so they are very confident that their dream to convert a village into a digital system would come true. They are targeting a local level government for Smart Palika and New startups for Incubation. They are also producing software to the private venture/company as well.

They are maintaining the relationship with customer through regular services, social media and win-win/share basis. To reach to the targeted customer they have used websites, mobile application and social media. During interview he also claims that our system is running with people who believe in “Natabad and kripabad”. Due to this type of system they are facing problem to reach to the targeted customer. So, they have also used Personal Assistance and refer.

Financial aspects

CellApp innovation has not given much priority to the financial aspects. During the interview he mentions that first they want to reach to the local level market. They have reached to 22 local governments till now and may more to come. So, they are heading towards good financial status very soon. They have spent their money on making products and volunteering cost as well. Also, some sort of amount in volunteering cost has been bearded by local government as well.

Milestones for the Business Model of CellApp Innovation

Talking about milestones of CellApp innovation, it has received Top 5 Nepali Startups award in 2018. So, it has already shown that it has huge potential in upcoming days. It is working hard to fulfill the requirement of what local government wants. The business model of CellApp is changed from where it was in its' initiation phase. It has developed its strong team; management system and also has developed marketing strategy. It has broadened its trajectory and developing.

Importance of Business Model Components According to CellApp Innovations

During interview the companies were asked to prioritize the subcomponent of business model and the table 16 shows the priority given by the CellApp according to their business model. They have given priority number 1 for highest priority and 9 is for lowest priority during the design of their business model.

Table 16: Importance of business model component according to CellApp Innovation

Pillar	CellApp Priority	Subcomponent
Product	1	Value Propositions
Customer Interface	2	Customer Segments
	7	Channels
	5	Customer Relationships
Infrastructure Management	6	Key Partners
	3	Key Activities
	4	Key resources
Financial Aspects	8	Cost structure
	9	Revenue Stream

Business Model Innovation Process in CellApp Innovation

The business model innovation process of CellApp Innovation within the first year includes three different models, thus three main changes of the business model in different sequence of months were observed within the timeframe of one year. The process is visualized in BMI process diagram in figure 7.

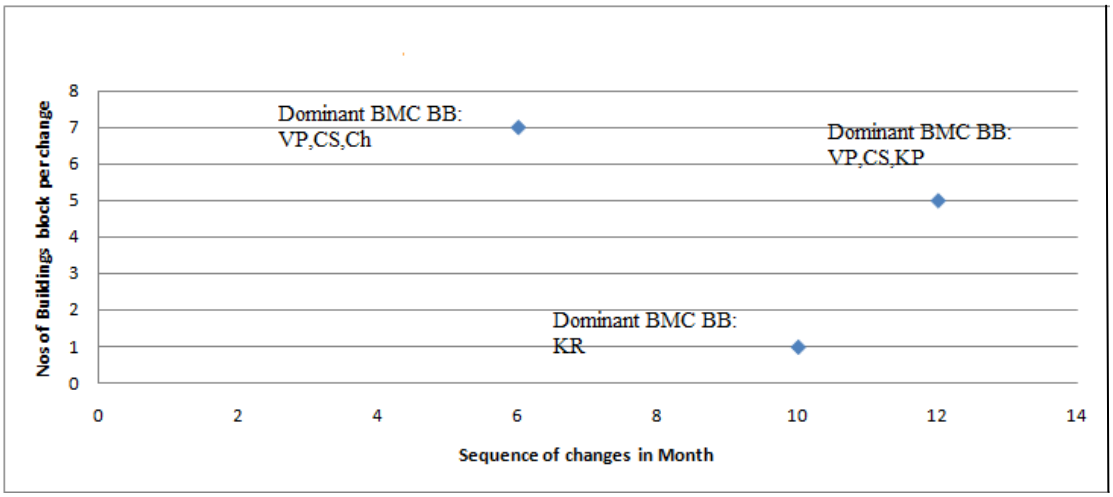


Figure 7: BMI process diagram: CellApp

CellApp Innovation has changed its business model three times in a year. SmartPalika is their main product and to achieve this product first they visited smart villages in India and found new idea of making the village smart. Finally they planned to implement this idea in Nepalese villages with many other features. So they met with government officials. Finally they are ready to implement the system. Then the team initiated by CellApp made the product SmarPalika. This caused the first changes in business model, where value proposition, customer segment and channel were changed. In this point of time, they knew that they would go long way in this field. So they added IT experts as key resources. Again they started with other value propositions, like idea grooming for start-ups, mentorships, e-commerce solutions etc. This caused the third changes in business model. The Antecedents that causes the start-ups to change the business model of CellApp Innovation are shown in table 17.

Table 17: Antecedents for CellApp Innovations

Reason for 1st change	Reason for 2nd Change	Reason for 3rd change
Problem Identification	Knowledge Requirement	Customer feedback
Growth in Business	Use of Innovative leadership	
Knowledge Requirement		

5.2 Cross Case Analysis within Four Cases

5.2.1 Business Model Design

The Start-ups taken in this thesis qualifies, by the definitions of Eismann (2013), as they are bringing innovative products to their markets. Moreover, Eismann (2013)

argues that entrepreneurial firms are facing resource constraints. The empirical findings show that all companies have faced resource constraints in different ways during its life span. Besides, all companies in this study has either received, or thought of receiving financial support from venture capitalists, indicating that the financial constraint heavily effects the companies. The empirical findings show, in line with the research of Chuchill and Lewis (1983), that the entrepreneurial companies are all in the same growth stage – success-growth. This stage involves profitability, recruiting and developing employees. All of the companies interviewed discussed recruiting the right personnel as a key activity, further supporting the theory.

Product

The empirical finding shows that 4 out of 4 start-ups have given the first priority the value proposition. This shows that all the start-ups are focused on the customer problems and in search of solving them in efficient way. All the start-ups interviewed states that they are constantly working to improve the value proposition, to various degree. When asked to prioritize the value proposition in regard to the other business model component, all the start-ups have given the first and most importance to the Value proposition.

Customer Interface

As the customer interface revolves around Customer relationship management, it includes three sub components customer segments, channels and relationships. All the start-ups taken are very well aware of its target customers. Most of the manager believes and are working actively to extend its offering to its target customer. Out of 4 start-ups, 3 start-ups have given priority to customer segments. From empirical findings this clearly shows that majority of the startups are giving priority target customer higher after value proposition. While the most of the start-ups are communicating through social media, mobile application and telephone channel. Most of the start-ups have given less priority to the channel. However, Medikoma and third eye tech have given customer relationship a medium priority, while other two companies have given less. They believe that good relationship with customer helps the start-ups to grow rapidly. They also mentioned that availability as well as personalized customer contact, as being key for strong relationship.

Infrastructure Management

All start-ups covered in this thesis are IT related start-ups. Therefore, tangible assets, as highlighted by Osterwalder (2004) decrease in importance. However Key activities and key resources as manpower plays importance role in producing IT product and services. While studying start-ups business model, they are all aware of the key resources and key activities but key partners are less important in their business model. The business model studied in this thesis shows that extending with partner also helps to increase customer as well. So, all start-ups are ready for partnership but they have given less important to this component of business model. During initial phase of business model, all the start-ups face difficult to have right resources at right time.

Financial Aspects

All the start-ups have their own type of cost structure and revenue model. All the start-ups studied are IT based so they are focusing in an idea to implement rather than focusing on financial aspects. The empirical findings show that most of the start-ups studied are not focusing on financial aspects. In the interview, all the manager and CEO's are aware of the financial aspects but their priority is not on this. All they want is to launch the product, have some response from customer and then they will think about revenue model, such as pricing strategy and finding more potential cash flows. As they are trying trial and error to get the success over an idea, they are not in the condition of reducing and designing cost structure. However, Third Eye Tech Company has given second priority to the revenue model component as they are with proper planning and management.

Table 18: Prioritization of subcomponents by four start-ups

Pillar	Subcomponent	Medikoma Priority	Third Eye Tech Priority	Paaila Technology Priority	CellApp Priority
Product	Value Propositions	1	1	1	1
Customer Interface	Customer Segments	2	2	5	2
	Channels	6	9	9	7
	Customer Relationships	4	4	8	5
Infrastructure Management	Key Partners	7	6	7	6
	Key Activities	3	3	3	3
	Key resources	5	5	4	4
Financial Aspects	Cost structure	8	7	6	8
	Revenue Stream	9	8	2	9

5.2.2 Business Model Innovation Process

Number of changes in Business Model

Firstly, research found that out of 4 startups 2 startups have changed their business model two times within a first year. Again another 2 startup had four changes. The following table suggests that most of the startups changed their first business model within 2-6 month. Based on the results, the research observed that after implementing the changes in the business model new business model is tested within 2-6 month.

Table 19: Sequence of changes of business models

Startups	**1st change after**	**2nd change after**	**3rd change after**	**4th change after**
Medikoma	3 month	7 month	11 month	
third eye tech	2 month	5 month	9 month	11 month
Paaila technology	4 month	6 month	9 month	12 month
CellApp	6 month	10 month	12 month	

Amount and Identification of Modified Building Blocks per Change.

While reviewing the business model innovation process of the four start-ups, it reveals that there are certain changes in business model at different point of time. The table shows that higher amount of building blocks is changed during the first change

of business model. All total 20 building blocks have been changed during the first change of business model and followed by 13, 11,6 numbers of building blocks in second, third and fourth changes in business model respectively.

During the first year, the business model innovation process seems to be characterized by stronger changes in the beginning, including higher amount of building blocks per change and a slight declination in the following changes.

Table 20: Total amount of modified building blocks per change

Startups	**1st change**	**2nd change**	**3rd change**	**4th change**
Medikoma	5	2	3	
third eye tech	4	4	3	2
Paaila technology	4	6	2	4
CellApp	7	1	3	
Total	**20**	**13**	**11**	**6**

Also, the research showed that what building blocks changed when. The most changed building blocks during the first changes were “Customer Segment” and “Value proposition. During the second change of Business model, key resources were the most dominant building block that got changed.

Table 21: Building blocks dominating the change

Start-ups	**1st change**	**2nd change**	**3rd change**	**4th change**
Medikoma	CS,VP,KR	KP, KR	CS,KP,KR	
Third eye tech	CS,VP,KR,CH	CS,KR,KP,KA	KP,KR,CS	KP,Ch
Paaila technology	VP,KR,KA,CS	VP,CS,KR,Ch	CS,Ch	CS,KR,KP,RS
CellApp	VP,CS,Ch	KR	CS, VP,KP	

Antecedents

While analyzing the reason behind the business model change in the first year of business model innovation process, following antecedents have been observed.

During the case study of 4 start-ups, total of 11 antecedents were observed. These 11 antecedents were occurred during 14 times changes in business model. Among all the antecedents, Customer feedback occurred the most time, 6 and Knowledge

requirement, use of innovative leadership and growth in Business occurred 4 times each. So during the 1st year of business model innovation process customer feedback, knowledge requirement, use of innovative leadership and growth in business are the antecedent that occurred most which are shown in table 22.

Table 22: Numbers of antecedent occurred per change

	State of Change				
Antecedent	1st change	2nd change	3rd change	4th Change	Total
Customer feedback	1	1	3	1	**6**
Knowledge Requirement	3	1			**4**
Marketing strategy		2	1		**3**
Problem Identification	3				**3**
New selling strategy		1			**1**
Addition of Key partners				1	**1**
Use of Innovative leadership	1	3			**4**
Growth in Business	1	2	1		**4**
Revenue Structure		1			**1**
NO Customer			1		**1**
Funding requirement				1	**1**
				Total	29

Table 23 shows that, while comparing the antecedents with specific building blocks, the research found that out of four times the antecedent customer feedback impacts the six building blocks directly in total, and Customer segments four out of six. This shows customer feedback impacts the building block customer segment the most.

Table 23: Building blocks changed by antecedents

Antecedent	VP	CS	KR	KA	Ch	CR	KP	CoSt	RS
Customer feedback	1/6	4/6					1/6		
Knowledge Requirement			3/4		1/4				
Marketing strategy		2/3	1/3						
Problem Identification	1/3		1/3		1/3				
New selling strategy					1/1				
Addition of Key partners							1/1		
Use of Innovative leadership	1/4	1/4	1/4				1/4		
Growth in Business	1/4			1/4			2/4		
Revenue Structure									1/1
NO Customer		1/1							
Funding requirement			1/1						

** VP=value proposition, CS=customer segment, KR=Key Resources, KA=Key activities, Ch=Channel, CR=Customer Relationships, KP=Key Partners, CoSt=Cost Structure, RS=Revenue Stream

Also, antecedent knowledge requirement caused changes in the building block “key resources” three times out of four changes in key resources. This can be concluded that whenever the CEO/Founder decides to improve knowledge, he/she has to focus on the key resources. In these IT start-ups cases, mostly the key resources are technical manpower. Also use of innovative leadership has caused the most building block changes. The dominant changes are Value proposition, Customer segments, Key resources and Key partners.

So during the first year of business model innovation process customer feedback plays a vital role to change the customer segments and to acquire the more knowledge and expertise, the key resources play the vital role. Also with innovative leadership, most of the business model component changes and adapt the business model accordingly.

5.3 Discussion

In our analysis fourteen numbers of changes in business model have been observed. Two start-ups have four changes and other two start-ups have three changes each. Also, research found that business model innovation processes within the start-ups are most likely to change within 2-6 month. This can be concluded in a way that business model innovation process seems to be characterized by stronger changes in the initial

changes, including higher amount of building blocks per change and a slight declination in the following changes. As the business model innovation process is characterized by a declining trend in modified building blocks per change, it is suggested to start early with customer collaboration to get as much feedback in the beginning.

Among nine elements of business model, Value proposition and customer segments are the mostly changed during the 1st change of business model. As the most start-ups are trying different things in their own way, this is the reason they change value proposition and customer segment most. Once they are sure about the value proposition and target customer, other parts of building block created and changed accordingly.

This finding is also supported by Pynnonen et al, 2012; who claim that business model innovation needs to be customer driven, as the involvement of customer is essential for creating a fit between the value proposition and the customer needs.

After first change, next building block most likely changed is key resources. This shows that after setting value proposition and target customer, start-ups focus on key resources, which helps to generate value to the customer. The identified importance of 'key resources', such as extending the team to receive more knowledge and expertise, can be underlined by the literature about generating a competitive advantage based on unique resources, such as the resource-based view introduced by Jay Barney (Barney, 1991; Amit andZott, 2001; Morris, et al, 2005; Osterwalder et al, 2005;McGrath, 2010;George and Bock, 2011; Schneider and Spieth, 2013;). As a start-up lacks in resources, it needs to establish those to achieve a competitive advantage through scarce resources such as in-depth knowledge of an expert (Barney, 1991; Sosna et al, 2010; Schneider and Spieth, 2013; Griffith, 2014;). Therefore,conclude that during the process of business model innovation, the fit between customer segments and value proposition to commercialize the innovation as well as gathering resources to support the generation of a competitive advantage are crucial aspects and play a significant role in the beginning of the process.

Based on our findings, a chain of reaction can be drawn that starts with antecedent customer feedback causing changes in building block Customer Segments, with

further alteration in Value Proposition that then causes changes in the Key Resources, as further knowledge is needed.

Innovation generates new options for businesses and expands their possibilities. It is more than an instrument that can be used to enhance the brand image of companies. It is a key element to build emergent weapons to surprise competitors and satisfy customers (Schmitt and Ph, 2012). Therefore, the knowledge of business innovation is rising among management and academia literature. It is in the growing stage and the conditions for business worldwide are about to change forever (Drejer, 2006). Creating new ideas is easy for most modern companies. However; moving from ideation end to commercialization end in the business innovation process is the tough part in this puzzle. Companies are struggling and experience failure more in this particular phase of innovation process (Sniukas, 2012). So with innovative leadership provides conscious business model by changing all required parts of business model.

CHAPTER SIX: CONCLUSIONS AND RECOMMENDTIONS

6.1 Conclusion

This thesis presents how the IT start-ups design their business model and focus areas of business model while designing their business model in the very first year. The process followed by start-ups entrepreneurs has been observed by using the business model canvas. Based on the various results obtained from the multiple case studies, following conclusions have been made.

- Business model of start-ups have evolved in different ways like Trial and error, a result of a structured effort using renowned methods and follow others business model. All start-ups have given top priority to the value proposition of business model. Also, three out of four start-ups have given second priority to customer segment. That means out of 9 element of business model, Value proposition together with customer segments are regarded as the most important aspects. Key resources and key activities are the average and equally important aspects of the business model, while financial aspects is regarded as the least important aspects of business model during the 1st year of innovation process of IT start-ups.
- Innovation process seems to be characterized by stronger changes in the beginning with 20 building blocks and a slightly declination in the following changes. Value position and customer segments are the most changed building blocks during the business model innovation.
- Total of 11 different antecedents were observed. Among which customer feedback, need of knowledge, use of innovative leaderships and growth in business are the antecedents that occurs the most. Early feedback from customer can support the identification of necessary knowledge and expertise within the start-ups.

6.2 Recommendation

This study suggests the start-ups how to create suitable business model by identifying the building blocks and antecedents that have a significant impact on the process of business model innovation. The customer segments, value proposition and key resources are the main elements within the business model. To meet the fit between them, customer feedback should occur in time. Besides customer feedback observation also shows that the knowledge requirement as a key resource is an important part in the process of business model innovation, therefore startups should identify the needed of knowledge and expertise early in the process. As the identification of the needed knowledge and expertise can be difficult when the fit has not been established, the close collaboration with the customers becomes an even more important task to perform. However, as early feedback can support the identification of necessary knowledge and expertise, both the fit creation and resource establishment can be performed early in the process. This can increase the chance of survival as the start-up has the right resources in place. These resources then can obtain the opportunity to turn into the source of a competitive advantage.

With the help of innovative leadership, there is more chance of changing in different aspects of business model as per the requirement. It helps to stimulate and capitalize employees' creative potential. This type of leadership helps to increase company's ability to innovate and to enable business innovation.

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Appendix

Qualitative Questionnaires

The following questionnaire aims to ask you general as well as specific question towards your business model and business model innovation process at several stages from foundation of your company to today. Thank you very much for your cooperation.

1. General questionnaire:
    - Personal
    - Name:
    - Date of birth:
    - Company:
    - Foundation of company:
    - What is your work experience?
    - Have you found company before? If yes please describe.
2. Foundation of start-up:
    a. How did you come up with the idea of the product/service?
    - What are the main reasons for founding the company? Internal or external
    - What was the market situation when you found founded the company?
    - Has the market changed during the first years of operation?(if yes what were the main changes)
    - What challenges do you face in operating your business?
    - What is your company in the market?
        - Single ( )
        - Competitor ( )
    - What is your objective with your company?
        - Keep growing becoming a recognized player on the marke**t( )**
        - Sell it sooner or later ( )

3. Specific Information

Business model Canvas

A Business model is nothing else than a representation of how an organization makes (or intend to make). This can be nicely described through the 9 building blocks illustrated as follows that we mentioned it as a business model canvas.

a. **Value Propositions**. An organization seeks to solve customer problems and satisfy customer needs with value propositions. Key Questions: What value do we deliver to the customer? Which one of our customer's problems are we helping to solve? Which customer needs are we satisfying? What bundles of products and services are we offering to each Customer Segment?
b. **Channels**. Value propositions are delivered to customers through communication, distribution and sales channels. Key Questions: Through which Channels do our Customer Segments want to be reached? How are we reaching them now? How are our Channels integrated? Which ones work best? Which ones are most cost-efficient? How are we integrating them with customer routines?
c. **Customer Relationships**. Customer relationship are established and maintained with each Customer Segment. Key Questions: What type of relationship does each of our Customer Segments expect us to establish and maintain with them? Which ones have we established? How are they integrated with the rest of our business model?
d. **Customer Segments**. An organization serves one or more customer segments. Key Question: For whom are we creating value? Who are our most important customers?
e. **Key Resources**. Key resources are the assets required to offer and deliver the five previously described elements. Key Questions: What Key Resources do our Value Propositions require? Our Channels? Customer Relationship? Revenue Streams?
f. **Key Activities**. Key activities are the actual jobs and operations needed to be performed in order to produce key resources.Key Questions: What Key Activities do our Value Propositions require? Our Channels? Customer Relationships? Revenue Streams?

g. **Key Partnerships.** Key partnerships involve activities that are outsourced and resources that are acquired outside the enterprise. Key Questions: Who are our Key Partners? Who are our key suppliers? Which Key Resources are we acquiring from partners? Which Key Activities do partners perform?

h. **Cost Structure**. The eight previously described business model elements result in a cost structure. Key Questions: What are the most important costs inherent in our business model? Which Key Resources are most expensive? Which Key Activities are most expensive?

i. **Revenue Streams**. Revenue streams result from value propositions successfully offered to customers. Key Questions: For what value are our customers really willing to pay? For what do they currently pay? How are they currently paying? How would they prefer to pay? How does each stream contribute to overall revenues?

Please describe your 1st Business model of your company according to Osterwalder's Business Model Canvas

Date:

		BM1	Cause of Change
Product or Service	Value Proposition		
Customer Interface	Customer segment		
	Channels		
	Customer Relationship		
Infrastructure Management	Key Resources		
	Key Activities		
	Key Partnership		
Financial Aspects	Revenue		
	Cost structure		

Please describe your 2nd Business model of your company according to Osterwalder's Business Model Canvas

Date:

		BM2	Cause of Change
Product or Service	Value Proposition		
Customer Interface	Customer segment		
	Channels		
	Customer Relationship		
Infrastructure Management	Key Resources		
	Key Activities		
	Key Partnership		
Financial Aspects	Revenue		
	Cost structure		

Please describe your 3rd Business model of your company according to Osterwalder's Business Model Canvas

Date:

		BM3	Cause of Change
Product or Service	Value Proposition		
Customer Interface	Customer segment		
	Channels		
	Customer Relationship		
Infrastructure Management	Key Resources		
	Key Activities		
	Key Partnership		
Financial Aspects	Revenue		
	Cost structure		

Please describe your 4th Business model of your company according to Osterwalder's Business Model Canvas

Date:

		BM4	Cause of Change
Product or Service	Value Proposition		
Customer Interface	Customer segment		
	Channels		
	Customer Relationship		
Infrastructure Management	Key Resources		
	Key Activities		
	Key Partnership		
Financial Aspects	Revenue		
	Cost structure		