

Identifying and incorporating business requirements into the business model

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Abstract

A business model by definition is an abstract representation of the business logic of a firm and as such encapsulates the core aspects of a firm. Business model ideation is a sequential process composed of three precursors - surveying the technological landscape, identifying and incorporating customer outcomes, identifying and incorporating business requirements. These precursors serve as key inputs to the final business model ideation phase. This paper focuses on the third precursor, identifying and incorporating business requirements into the business model, and this is termed as developing the business perspective.

The paper consists of three sections. The first section explores the concept of business requirements - what it is and how to identify business requirements. The second section explores the concept of business model. Specifically, it will focus upon the concept of business model as defined in the Business Model Ontology. The final section details out how to develop the business perspective i.e. explicates methodology by which business requirements can be incorporated into the business model of a firm using Solution Summary matrix, Solution Comparison matrix and the Solution Canvas.

1. Introduction

All businesses follow a model which may be explicitly stated or implicitly followed. [1] Today business models are a prerequisite to ensure a successful enterprise. Indeed it is now standard for all start ups to define their business model along with their business plan to secure any kind of funding. [2] While designing a new business model there are certain prerequisites a business needs to perform to ensure that the resulting business model is valid and relevant to the business. One extremely important prerequisite is identifying and incorporating business requirements into the business model after all a business model must meet the business requirements of an organization else it is of little value. Indeed, even for existing businesses it is crucial to ensure that their current business model continues to meet and support their business requirements. [3] [4] It is now considered to be a strategic exercise for businesses to analyze, evaluate, and modify their business models periodically as the business environment changes and along with it the business requirements of the firm. [5] [6] Figure 1 provides an overview of how to develop the business perspective concerned mainly with identification and incorporation of business requirements into the business model.

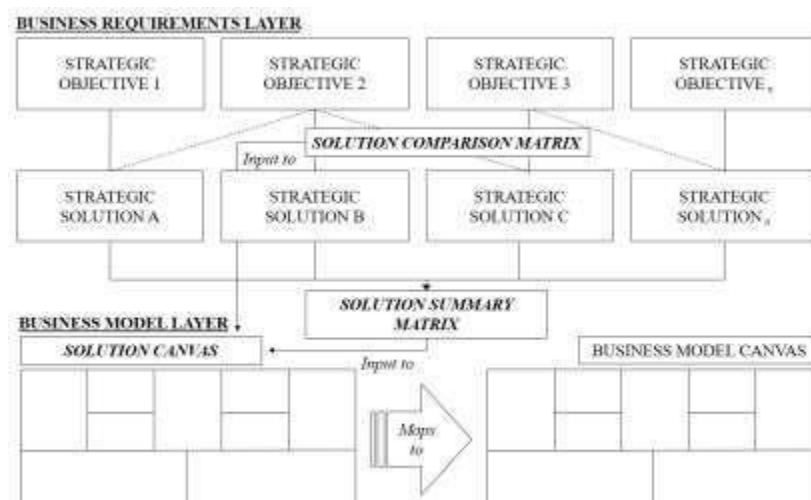


Figure 1: Developing the business perspective

The following section discusses in detail what business requirements are.

2.1 Business requirements overview

According to BABOK's requirements classification schema, a business requirement is defined as 'statements of goals, objectives, and outcomes that describe why a change has been initiated. They can apply to the whole of an enterprise, a business area, or a specific initiative.'

[6] There are two very important take away's in this definition. First, business requirements are objectives, goals and outcomes. Second, such objectives, goals and outcomes can be defined at many different levels i.e. enterprise level, business area i.e. marketing, finance, production etc. and at specific initiative levels i.e. project levels. The following are examples of objectives and goals at the various levels.

Business goals at the enterprise level:

- To increase market share by 10%

Business objective at the business area level - production:

- To reduce wastage in production line by 5%

Business objective at the project level – new CRM project:

- To improve customer acquisition rate by 8%

The importance and significance of identifying business requirements cannot be overemphasized. [7][8] It is the business requirements defined at the enterprise level that dictate what activities a business undertakes, what resources a business acquires, how resources are allocated, how partnerships are defined and much more. Indeed, objectives defined at the enterprise level constitute **strategic objectives** of the firm and as such they stem from the Vision and Mission of the firm. [9][10] Strategic objectives provides overall direction to the firm. They set a course of action and employs resources, develops capabilities, designs strategic solutions to achieve those objectives and hence is fundamental to a firm. [11] Hence, while considering business modeling strategic objectives constitutes business requirements that a modeler must consider and incorporate into the business model of the firm. Before discussing the methodology for incorporating business requirements into the business model it is imperative that the concept of business modeling should be clarified.

2.2. Business modeling overview

Despite a wealth of literature defining what is a business model surprisingly, there is no one standard definition for what constitutes a business model. It means many different things to many different people. Differences largely center upon what components make up a business model. [12] Some experts state that a business model must specify business infrastructure. [13][14] Other's state that a business model must include operational processes. [15] Still others organizational policies [17], value chain of the firm [16][17], and even information technology. [19] However, almost all authors agree on certain components: A business model must specify the value proposition of the firm i.e. products and services it is offering. It must articulate the economic logic of the firm i.e. how the firm plans to make money. [13-19]

It is beyond the scope of this paper to examine the concept of business model in detail. For this paper we will rely on the business model concept as proposed by Alexander Osterwalder. In 2004 Alexander Osterwalder developed the Business Model Ontology (BMO), an ontology designed specifically to model businesses. According to Alexander Osterwalder, a business model is a 'conceptual tool that contains a set of elements and their relationships and

allows expressing a company's logic of earning money.' The Business Model Ontology is comprised of four pillars – Product, Customer Interface, Infrastructure Management, and Finance. The four pillars are in turn made of nine building blocks that together represent a business model. For this paper, the Business Model Canvas (BMC), a lean version of the Business Model Ontology will be used to demonstrate how business requirements can be incorporated into the business modeling process. The BMC is a highly popular tool widely used by entrepreneurs, businesses and analysts to quickly ideate business models and perform swift analysis. The BMC consists of the same four pillars and nine elements that comprise the BMO. However, unlike the BMO, the BMC is intended to be used as a canvas – one canvas to capture the essence of a business model [4]. Figure 2 depicts the Business Model Canvas.

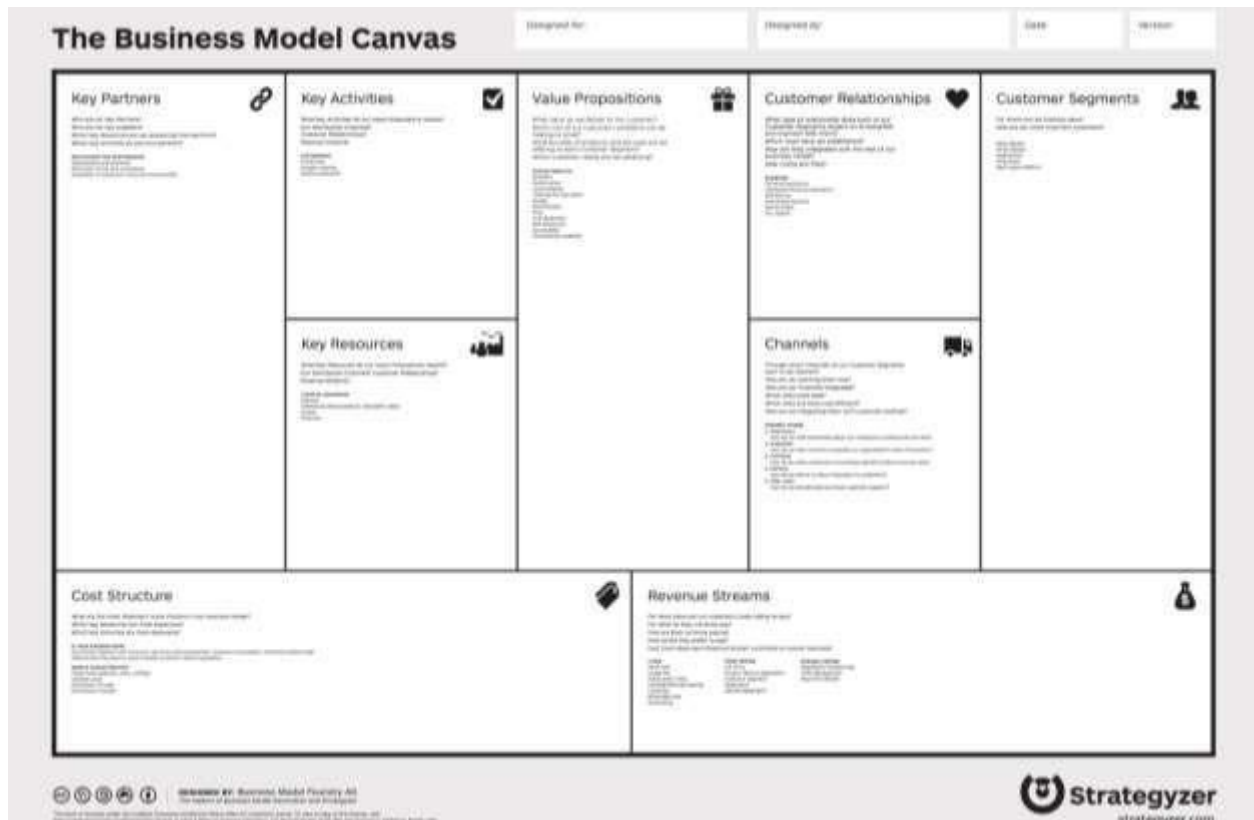


Figure 2: Business Model Canvas. [22]

Incorporating business requirements into a business model.

As stated in the prior section, strategic objectives framed at the corporate, enterprise and functional level constitute business requirements. These strategic objectives are the cornerstone in defining and identifying business requirements. [4] However, it is not the strategic objectives themselves that specify the business requirements. Strategic objectives like any objective set the direction and give purpose to organizational action. They specify 'where' the organization aims to be. It exhibits management's commitment to action and outcomes. There is another part to the puzzle, strategic solutions that specify 'how' the organization aims to achieve its goals and objectives. It is from the strategic solutions that business requirements are derived. Developing the business perspective consists of the following steps: framing strategic objectives, generating strategic solutions and finally mapping strategic solutions using the Solution Summary matrix, Solution Comparison matrix and the Solution Canvas.

Perhaps the biggest challenge in framing strategic objectives is identifying the relevant business areas where strategic objectives need to be framed. Generally, objectives must be set

for key areas managers deem important to the overall success of the firm. Hence, it is suggested that business strategists / modeler should start by examining individual business model components. A business model by definition is an abstract representation of the business logic of a firm and as such encapsulates the core of a firm. [20] The Business Model Ontology (BMO) consists of four pillars further divided into nine elements. These nine elements constitute the core of any business and as such represent key areas of a firm and hence serves as an ideal starting point for framing strategic objectives. This approach provides us with the following advantages:

First, the BMO has already identified key areas of a business which can be used to frame the strategic objectives. There is no need to reinvent the wheel.

Second, this approach ensures a clear synergy between business strategy and business model. By framing strategic objectives in the nine areas of the Business Model Ontology, it is assured that the business model created supports the overall business strategy and this is of immense value to the firm.

Applying concepts to the case study

The best way to illustrate the development of business perspective is via a case study. For the case study we will assume a hotel business. While framing strategic objectives it must be ensured that objectives meet the SMART criteria, that is they must be specific, measurable, attainable, relevant and time bound. [21] In addition some authors also call for challenging, hierarchical, and congruent across departments. [22]

Table 1 depicts the strategic objectives framed for the case study. Since this step is for

BMO Element: Target Customer		Pr.
OBJ1	To achieve and maintain outstanding customer service such that customer complaints are near zero and customer satisfaction ratings are at least 4 or 5, all within the first 12 months of operation.	1
OBJ2	To attract more international customers within the first two years of operations.	4
BMO Element: Value Proposition (Product)		
OBJ 3	To ensure success of all events hosted by the hotel within one year of operation.	3
OBJ 4	To provide opportunities to customers to experience local culture within one year of operation.	6
BMO Element: Distribution Channel		
OBJ 5	To develop online capability to support hotel reservations such that online reservations account for 60% of the total revenues by the end of the third year of operations.	2
OBJ 6	To develop online capability to support marketing and sales functions within one year of operation.	5

Table 1: Strategic objectives for the case study

illustrative purpose only, objectives were framed for only three elements of the BMO. For each element, two strategic objectives were framed. Priority was also assigned to each objective. For the case study this was done on a subjective basis.

3. Mapping solutions

The next step involves strategic solution ideation. It is beyond the scope of this paper to elucidate how to ideate strategic solutions to meet business objectives. Strategic solution ideation is a core strategic process and as such vast number of literature exists on the topic. One possible framework to aid in generating strategic solutions is the Strategy Formulation Analytical framework. [22][23] The Strategy Formulation Analytical framework is depicted in Figure 3.

For this paper, for illustrative purpose, a set of strategic solutions have been developed to meet the strategic objectives. The following section describes the mapping process. The mapping process consists of three steps performed in a sequential manner.

Step 1: Construct Solution Comparison matrix

Step 2: Construct Solution Summary matrix.

Step 3: Construct Solution Canvas using the Business Model Canvas (BMC)

Mapping strategic solution yields a number of benefits. It serves as a vital input to the business model ideation process. The mapping exercise will infinitely ease the business model ideation process by specifying how each and every solution fits into the business model. The following are key advantages resulting from the mapping process.

First, it helps uncover how each strategic solution provides business value to the organization. This business value is reflected by how well it satisfies strategic objectives.

Second, it serves as an excellent analytical tool. It allows us to assess the following regarding each strategic solution:

- Why has a given solution been selected?
- What BMO elements are impacted by a given solution?
- How BMO elements are impacted by a given solution?
- How much (to what degree) are the BMO elements impacted by a given solution?
- How does a strategic solution leverage information technology? Information technology is another dimension that requires careful analysis and assessment in terms of how it can be leveraged by a business model. It is beyond the scope of this paper to discuss how new technology/ies can be identified and assessed for its impact on businesses. In a separate paper entitled 'ICT Assessment Framework: A Generic Framework for Assessing and Prioritizing Impact of Technology on Businesses' I have discussed in depth how such an assessment and evaluation can be conducted using the ICT Assessment Framework, a framework aimed at identifying ICTs that can be adopted by the business that have substantial impact on business performance. Here the term business performance is used in its broadest sense to encapsulate everything from decision making capability, information dissemination, strategy development, market analysis, quality control etc. [24]

Finally, it allows businesses to trace solution back to the BMO and its corresponding strategic objectives. Such capability can allow for quick assessment and analysis should a business decide not to opt for a given strategic solution or offer some variation of the business solution.

Constructing the solution comparison matrix

The first step is to construct the Solution Comparison matrix. The Solution Comparison matrix is a **T matrix**. It allows us to compare information along two dimensions. First between strategic solutions and strategic objectives and second between strategic solutions and technology including cost and revenue. It answers the following questions

- Why has a design solution been selected?

- How much i.e. to what degree does a given design solution satisfy strategic objective?
- How does a given design solution leverage technology i.e. in what manner?

Finally, it also allows us to trace design solutions back to the strategic objectives it was designed to fulfill. Table 2 depicts a sample Solution Comparison matrix.

Strategic Objectives			Strategic Solutions	Tech.	Cost	Rev
Description	Pr.	Rt.				
OBJ1: Achieve and maintain outstanding customer service	1	5	SS1: CRM solution	S	M	M
		5	SS2: Property Management System (PMS)	N	H	H
		5	SS3: Intranet portal	N	M	M
OBJ2: Attract more international customers	7	3	SS4: Strategic partnerships	NA	L	L

Table 2: Sample Solution Comparison matrix

Table 3 describes the contents of each column.

Column Label	Description
Description	The description column identifies the specific strategic objectives being addressed. It is preceded by an identifier (CO _n) followed by a textual description.
Pr.	Lists the priority assigned to a given objective. It is crucial that firms prioritize their objectives. Here priority is assigned on a subjective basis.
Rt.	Lists the subjective rating of how well a given strategic solution meets the associated strategic objective. The ratings are given on the following scale: 1=Very unsatisfactory 2=Unsatisfactory 3=Somewhat satisfactory 4=Satisfactory 5=Very Satisfactory
Strategic solutions	Identifies each strategic solution. Each solution is preceded by a unique identifier.
Technology	Communicates whether technological solutions are being leveraged and in what manner. This column can take the following three values: <ul style="list-style-type: none"> ▪ S = Standard. This label implies that although technology solution is being used, it is in a very standard manner i.e. exactly how competitors and others may be using the same technology. In the above example, online reservation system is labelled as S since it is fairly common and popular method offered by hotels for making reservations. ▪ N = Novel. This label identifies whether a given technology solution is being used in a novel way i.e. competitors and others may not be using the same technology or in the same manner. This can be a source of advantage for a business. In the example, property management system is listed as novel solution because

Column Label	Description
	majority of the hotels of this star category do not employ such system to manage their daily operations. <ul style="list-style-type: none"> ▪ NA = Not applicable. Technology solutions are not applicable for this strategic solution.
Cost	Subjective assessment of how much it would cost to implement this strategic solution. It can take three values: <ul style="list-style-type: none"> ▪ H: high cost ▪ M: medium cost ▪ L: low cost
Revenue	Subjective assessment of how much a given strategic solution contributes to revenue generation. It also takes the same three values: <ul style="list-style-type: none"> ▪ H: high revenue generation ▪ M: medium revenue generation ▪ L: low revenue generation

Table 3: Description of the column headers

Table 4 depicts the Solution Comparison matrix for the hotel case study for the first five objectives.

Strategic Objectives			Strategic Solutions	Tech.	Cost	Rev
Description	Pr.	Rt.				
OBJ1: Achieve and maintain outstanding customer service	1	5	SS1: CRM solution	S	M	M
		5	SS2: Property Management System (PMS)	N	H	H
		5	SS3: Intranet portal	N	M	M
OBJ2: Attract more international customers	7	3	SS4: Strategic partnerships	NA	L	L
OBJ3: Ensure success of events	5	5	SS6: Event management services	NA	M	H
OBJ4: Provide opportunities to customers to experience local culture	15	3	SS5: Online platform for handicrafts	N	L	L
		3	SS3: Intranet portal	N	M	M
OBJ6: Online support for marketing and sales functions	11		SS1: CRM solution	S	M	M
			SS2: Property Management System (PMS)	N	H	H
			SS7: Web portal	S	M	H

Table 4: Solution Comparison matrix for the case study

Constructing a solution summary matrix

Step 2 involves constructing a Solution Summary matrix. Table 5 depicts the Solution Summary matrix for the case study. Here the strategic solutions identified in the Solution

Comparison matrix is further defined and elaborated upon. A Solution Summary matrix is a L matrix that answers two things:

- How a strategic solution creates business value and
- How BMO elements are impacted by a given solution.

Identifier	Name	Description	Technology
SS1	CRM solution	Cloud based CRM solution. Such a system will have among other capabilities Social Media Management, Case Management, Email Marketing Integration, Campaign Management, Marketing Automation Integration etc. It will be offered as a relationship mechanism.	Internet (WWW) based web application offering Software as a Service (SaaS). Requires client connectivity to the internet.
SS2	Property Management System (PMS)	Cloud based Property Management System. A PMS is a software designed specifically for hotel industry. Modules included in a standard PMS software are Front-desk operations, Channel management, Revenue management, Housekeeping and Back-office management. It will be offered as a value proposition but can also play a role as customer relationship mechanism and information channel.	Internet (WWW) based web application offering Software as a Service (SaaS). Requires client connectivity to the internet.
SS3	Intranet portal	Company owned intranet portal. Such a portal will offer plethora of services aimed at improving customer experience and service. It will be offered as a value proposition but can also play a role as customer relationship mechanism and information channel.	Intranet (WWW) based application offering multitude of services in the form of web apps. Requires client connectivity to the internet.
SS4	Strategic partnerships	Strategic partnerships between the organization and various stakeholders such as travel agents, transportation service providers and other hotels. It will be offered as partnership.	Not applicable
SS5	Online platform for handicrafts	Intranet based web portal that will showcase local handicrafts. Customers can order products	Intranet (WWW) based application. Requires client

Identifier	Name	Description	Technology
		online which will then be delivered to the hotel. For larger items delivery can be arranged to customer's place of residence. It will be offered as a value proposition.	connectivity to the internet.
SS6	Event management services	In-house event management services offered by the business. Such services will include devising event concept, coordinating technical aspects, acquiring necessary permits, scheduling, arranging for entertainers, arranging decor, event security, catering etc. It will be offered as a value proposition.	Not applicable
SS7	Web portal	Company web portal that will promote and showcase the hotel. Amongst many other features the web portal will feature user-generated reviews, content management capabilities, promotion and discount code tools. It will be offered as a value proposition but can also play a role as customer relationship mechanism and information channel.	Internet (WWW) based web application. Requires client connectivity to the internet.

Table 5: Solution Summary matrix for the case study

Constructing a solution canvas

The final step involves constructing the **Solution Canvas** using the Business Model Canvas (BMC). The purpose of the Solution Canvas is primarily informative i.e. convey information like an executive dashboard. It is the end result of the earlier two steps. Figure 4 depicts the Solution Canvas for the case study.

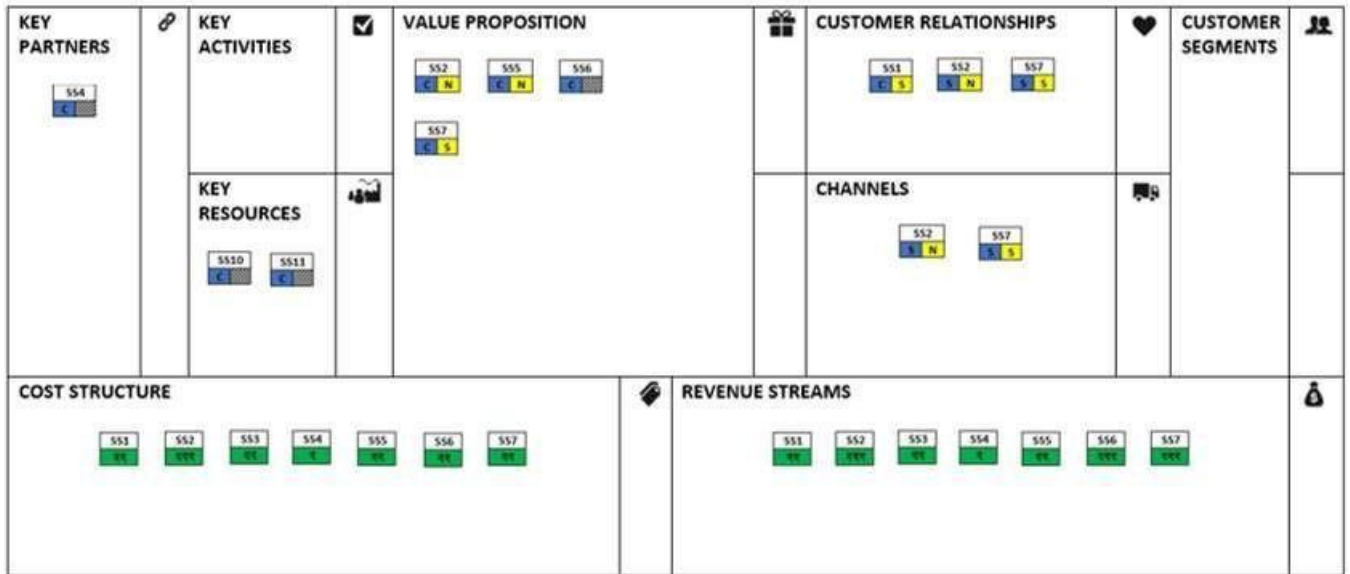


Figure 4: Solution Canvas for strategic business solutions

<p>SS1</p>	<ul style="list-style-type: none"> ▪ SS1 – identifies a particular strategic solution. Details of each strategic solution is provided in Solution Summary matrix constructed earlier. For example, SS1 in this case refers to CRM system. ▪ Blue quadrant (bottom-left) – identifies whether a strategic solution is a core offering represented by letter C or a supportive offering represented by letter S. In this given example, SS1 is a core customer relationship mechanism and is listed as such under customer relationship element. ▪ Yellow quadrant (bottom-right) – represents the technology quadrant. It can take one of the following three values: <ul style="list-style-type: none"> • S – standard solution • N - novel solution • Shaded cell – technology is not applicable or relevant to this solution.
<p>DS14</p>	<p>The green quadrant (bottom) represents monetary scale. It can either have one (low) or two (medium) or three (high) rupee symbols.</p>

Table 6: Description of the elements in the Solution Canvas

The final step involves inputting these solutions into the BMC. Fig. 4 depicts the business model for the case study. It is a partial model as only five objectives have been considered.

<p>KEY PARTNERS</p> <ul style="list-style-type: none"> ▪ IT Vendors ▪ Travel Agencies ▪ OYO Rooms ▪ Handi 	<p>KEY ACTIVITIES</p> <ul style="list-style-type: none"> ▪ Marketing & promotion ▪ Research potential partners 	<p>VALUE PROPOSITION</p> <ul style="list-style-type: none"> ▪ Lodging and Boarding ▪ Web portal ▪ Handicrafts and handloom - 	<p>CUSTOMER RELATIONS HIPS</p> <ul style="list-style-type: none"> ▪ Intranet portal – online platform ▪ CRM system 	<p>CUSTOMER SEGMENTS</p> <ul style="list-style-type: none"> ▪ Economy ▪ Luxury ▪ Deluxe
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<p>crafts and Handloom suppliers</p>	<ul style="list-style-type: none"> Maintain and upgrade physical and IT infrastructure Identify IT vendors 	<p>platform</p> <ul style="list-style-type: none"> Event hosting Property Management System Web Portal Intranet portal - online platform Event management services - music stage lighting decorations 	<ul style="list-style-type: none"> Web portal Property Management System 	
<p>COST STRUCTURE</p> <ul style="list-style-type: none"> Infrastructure (physical & IT) costs Maintenance & operation costs License and hosting costs Marketing & promotion costs 		<p>REVENUE STREAMS</p> <ul style="list-style-type: none"> Tariff & Food Event hosting OYO Rooms-reservation revenues 	<p>CHANNELS</p> <ul style="list-style-type: none"> Web-portal Intranet portal - online platform Property Management System 	

4. Conclusion

Business modeling is a very value intensive creative exercise designed to capture and communicate the business and economic logic of a firm. A business model plays multiple roles. It serves to promote a shared understanding of the core aspects of the enterprise amongst its stakeholders. It also serves to identify and align internal capabilities and with other business elements and to ensure adoption of appropriate IT infrastructure and applications to support the business requirements. But above all a business model serves as an excellent tool in ensuring that business requirements of a firm are being supported. Business requirements with its roots in strategic objectives and goals are subject to constant changes based on changes in the internal and external environment. Hence, it is critical for businesses to ensure that the new business model or an existing business model continues to meet the requirements of the firm.

This paper provides a methodology for conducting just such as assessment by mapping strategic solutions to the business model using the Solution Comparison matrix, Solution Summary matrix and the Solution Canvas. The outputs from these mapping exercises serve as a vital input to the business model ideation process. The mapping exercise will infinitely ease the business model ideation process by specifying how each and every solution fits into the business model. Most of all it ensures that the business model created supports the overall business requirement. It assures a clear synergy between business strategy and business model - the final aim and outcome of developing the business perspective.

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