

DEVELOPING BUSINESS MODELS USING THE BUSINESS MODEL CANVAS (BMC) BASED ON DEPENDENCIES AND INTERCONNECTIONS

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ABSTRACT

Purpose

The paper proposes an alternate developmental sequence of business model elements, using the Business Model Canvas (BMC) and the Business Model Ontology (BMO), based on two types of relationships between business model elements - dependencies and interconnections.

DESIGN/METHODOLOGY/APPROACH

Both the BMO and the BMC are comprised of same nine elements that are interrelated and interconnected. The proposed methodology explores these dependencies and interconnections between the elements and suggests an alternative approach to business model development. A dependent element depends upon a related independent element for its identification. Interconnections refer to special relationships between elements. Interconnections identify dual relationships.

FINDINGS

An alternative approach to business model development based on dependencies and interconnections is proposed.

ORIGINALITY/VALUE

Majority of the current literature favor the use of business model as an ideation tool where the focus is primarily on economic value creation and delivery. However, we prescribe an additional role to business model - as a unifying force bringing together all the elements of a business. In this regard, the developmental sequence proposed in this paper works specially well.

Keywords: Business Model Canvas implementation, BMC implementation, Business model design, Business model development, Business model element associations, Business model element dependencies, Business model element interconnections.

INTRODUCTION

Business Model Canvas (BMC)

One of the most popular methods for designing business model was developed by Alexander Osterwalder. He developed the Business Model Canvas (BMC) to model any type of business (see Fig 1.).

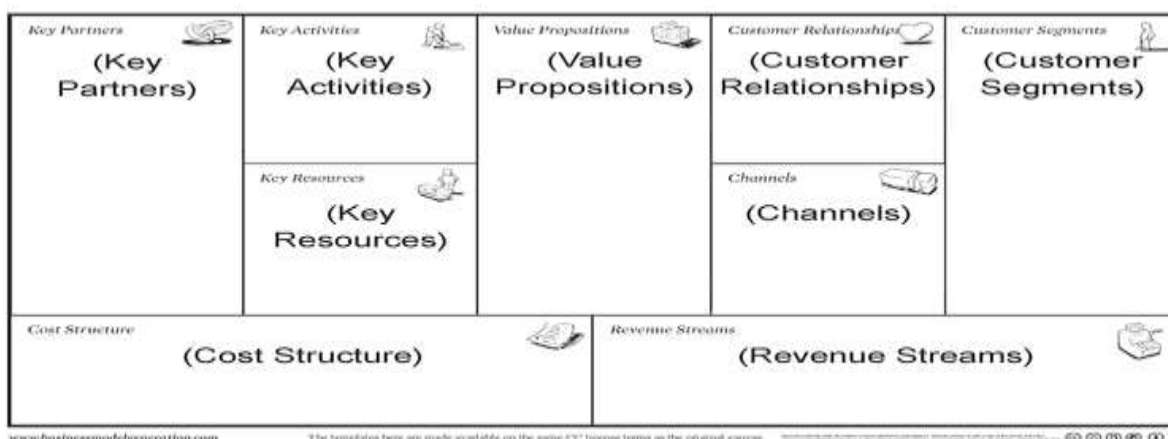


Figure 1: Business Model Canvas (BMC) (Cowan, 2016).

The Business Model Canvas (BMC) consists of nine elements that together can be used to represent and model any business. The BMC is a widely used and accepted ontology for modelling businesses. Today, the BMC is being used to evaluate/examine existing business models and innovate and try out new models by companies such as Microsoft, MasterCard, Adobe, 3M, SAP, Ernst & Young, Xerox, Capgemini, Ericsson, Oracle, Deloitte, Intel, Fujitsu and more.

In his book ‘Business Model Generation,’ Alexander Osterwalder specifies a very broad approach for developing a business model consisting of the following five phases: Mobilize, Understand, Design, Implement and Manage. The nine elements of the Business Model Canvas (BMC) are to be developed in the following sequence:

| Number | Element | Number | Element |
|--------|------------------------|--------|--------------------------------------|
| 1 | Customer Segment | 6 | Capabilities (Key Resources) |
| 2 | Value Proposition | 7 | Value Configuration (Key Activities) |
| 3 | Channels | 8 | Key Partnerships |
| 4 | Customer Relationships | 9 | Cost Structure |
| 5 | Revenue Stream | | |

Table 1: Sequence for developing the Business Model Canvas elements

Essentially, for implementation and development purpose, the BMC is divided into two parts (i) the right hand side and (ii) the left hand side as depicted in Fig. 2.

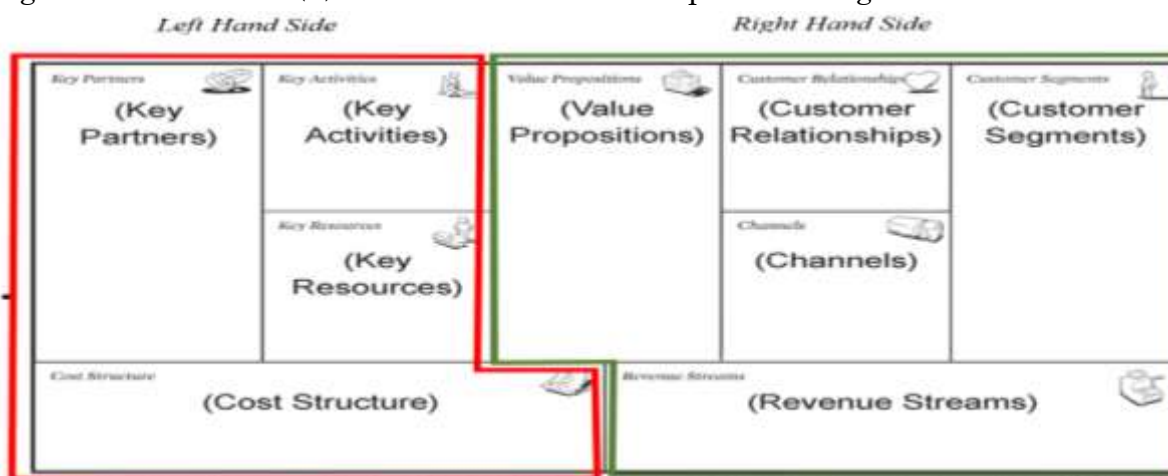


Figure 2: The BMC divided into two sides – the right hand side (value side) and the left hand side (cost side)

The right hand side answers the following sets of questions:

- Who are we serving?
- What are we serving?
- How are we serving (refers to distribution as well as revenue streams)?

Hence, it is customer centric and is often referred to as 'value side.'

The left hands side answers the following sets of questions:

- how are we going to do it?

The left hand side focuses on the production and operations and is referred to as the 'cost side' (Osterwalder, 2015). The two sides are inextricably interlinked and any changes to the right hand side has immediate consequences on the left hand side. This implementation approach favors the use of business model as an **ideation tool** where the focus is primarily on economic value creation and delivery.

Perhaps, the biggest short coming of the above development method is that it ignores the **dependencies** and **interconnections** between the elements. The nine elements of the Business Model Ontology (BMO) are not independent and do not exist in isolation. Rather they form an interconnected web. **Dependencies** are relationships between elements that tell us whether an element is dependent upon another element for its identification. In other words, a dependent element depends upon a related independent element for its identification. Any changes in the related independent element will result in changes in the dependent element. **Interconnections** refer to special relationships between elements. Interconnections identify dual relationships. For example, a channel element is interconnected to relationship element. This means a channel can serve as a channel but also as a relationship mechanism. Alexander Osterwalder has defined the interconnections between the elements as depicted in Fig. 3.

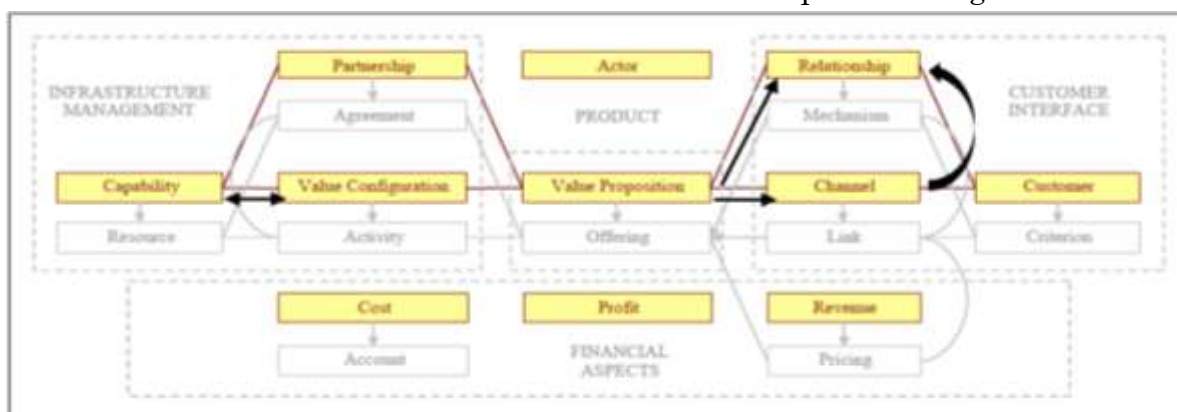


Figure 3: The Business Model Ontology elements (Osterwalder, 2004).

The thin grey lines connecting each sub-element indicates relationships between the elements but it does not indicate the type of relationship i.e. whether it is dependency or interconnection. The interconnection between the few elements are partially explained in the **attribute** section of each element. From the attribute section the following interconnections have been identified:

- Value proposition **can be** channel
- Value proposition **can be** relationship
- Channel **can be** relationship
- Capability **supports** value configuration

This is highlighted in the diagram with the thick black lines. However, the BMO does not explain how the other elements are related. It is not mentioned in the attributes of the elements but the diagram clearly suggests these elements have relationships.

The dependencies and interconnections between the elements can be used to create a developmental sequence. This developmental sequence especially makes sense when we view business models as a strategic tool interconnecting all elements of a firm and providing a holistic perspective of the enterprise. It allows for logical development of elements which significantly eases the implementation process.

In exploring the relationships between elements, several new **dependencies** were identified in addition to the relationships identified by Alexander Osterwalder. The following section highlights the relationships between elements and based on these relationships suggests developmental sequence of each element.

Developmental Sequence of BMC elements based on Relationships

Customer element

| Developmental sequence | BMO element | Relationship | BMO element _n |
|------------------------|-------------|---------------------|--------------------------|
| First | Customer | Identifies** (weak) | Value Proposition |
| | | Identifies | Relationship* |
| | | Identifies | Channel* |

*BMO relationships defined by Alexander Osterwalder. However, whether such relationships are a dependency and direction of dependency between elements is defined by me.

The relationship **Identifies depicts **dependencies** i.e. Value Proposition element is dependent upon Customer element

The first element we shall consider is the Customer element. Three relationships are defined (i) The Customer element identifies the Value Proposition element (ii) The Customer element identifies Relationship element and (iii) The Customer element identifies Channel element.

The first relationship is labelled as weak relationship. Concerning the first relationship, it is not always necessary that Customer element identify Value Proposition element. Many times organizations start with an idea before identifying target customers. However today most businesses have adopted a customer centric approach placing the target customer first, identifying their unique needs and then developing a suitable value proposition (Ulwick, 2002) (Kotler & Keller, 2012). The second relationship states that the Customer element identifies the Relationship element. This is always the case. Relationship element is entirely dependent upon Customer element. Alexander Osterwalder identifies the following type of relationships:

- **Personal Assistance** – personal assistance provided to customers during or after the sales process.
- **Dedicated personal assistance** – providing a dedicated customer rep for each individual client.
- **Self Service** – Customers help themselves. Tools are provided to ensure customers can help themselves.
- **Automated Services** – Using software capabilities to provide automated customized services i.e. amazon.com
- **Communities** - Establishing user communities with the intention of better understanding customer prospects.

- **Co-Creation** - Co-creating value with customers – involving the customers in the value creation process. i.e. Amazon.com invites customers to write book reviews.

(Osterwalder, Pigneur, & Yves, 2010)

Businesses must match customer segment groups with the type of customer relationship they would like to provide. The third relationship states that Customer element identifies Channel element. This is always the case. Channel selection is a function of customer reach, customer impact and control. Hence, channel selection always follows customers.

Based on these relationships, Customer element is developed first. The Customer element is entirely independent and is not dependent upon any other element although there may be instances where firms may start with the value proposition first and then identify potential customers. However, Value Proposition element is defined by many additional relationships including interrelationships with other elements. Hence, it is recommended that Customer element be developed first. This is the same sequence as proposed by Alexander Osterwalder.

Value Proposition

| Developmental Sequence | BMO element | Relationship | BMO element _n |
|------------------------|-------------------|-------------------|--------------------------|
| Second | Value Proposition | Interconnected to | Channel* |
| | | Interconnected to | Relationship* |
| | | Identifies | Partnership* |
| | | Identifies | Value Configuration* |
| | | Identifies (weak) | Capability |
| | | Identifies | Cost |
| | | Identifies | Revenue |

* BMO relationships defined by Alexander Osterwalder

The second element we shall consider is the Value Proposition element. The first relationship states that the Value Proposition element is interconnected to Channel element. According to Alexander Osterwalder a Value Proposition element can serve as a value proposition as well as serve as a Channel element (Osterwalder, 2004). For example, consider a company web portal providing product and service information. The web portal itself is a value proposition but also serves as a channel disseminating product and service information i.e. communication channel. The second relationship states that Value Proposition element is interconnected to Relationship element. This is a relationship defined by Alexander Osterwalder (Osterwalder, 2004). It states that a Value Proposition element can serve as a value proposition as well as serve as a Relationship element. For example, reverting back to our previous example, consider online support services being offered by a firm via its web portal. The web portal is a value proposition and the online customer support is a relationship mechanism. The third relationship states that Value Proposition element identifies Partnership element. Partnerships are based on value proposition, more precisely it is based on capabilities (resources). Organizations enter into partnerships because they lack certain capabilities and resources. These capabilities are required to provide and support the value proposition. The fourth relationship states that Value Proposition element identifies Value Configuration element. Value configuration is entirely dependent upon the value proposition of the firm. What activities a firm performs is dictated by what the firm is offering.

In addition, the following new dependencies have been identified.

| | | |
|-------------------|-------------------|---------------|
| Value Proposition | Identifies (weak) | Capability |
| | Identifies | Revenue |
| | Identifies | Cost Accounts |

The relationship Value Proposition element identifies Capability element is a weak dependency. Generally, it is the value proposition that firms have chosen that identifies required capabilities but there are instances where organizations have proposed value proposition based on existing capabilities. For example, Amazon web services was designed to leverage the existing investments in IT infrastructure that Amazon had made for its ecommerce division. Finally, it is obvious that Value Proposition element identifies Revenue element and Cost element. Value propositions are a source of revenues as well as cost.

We develop Value Proposition element next because there is a strong relationship between Customer element and Value Proposition element. There is a logical sequence in the developmental process. It is the same sequence as proposed by Alexander Osterwalder.

Channel

| Developmental Sequence | BMO element | Relationship | BMO element _n |
|------------------------|-------------|-------------------|--------------------------|
| Third | Channel | Interconnected to | Relationship* |
| | | Identifies | Capability |
| | | Identifies | Value Configuration |
| | | Identifies | Partnership |
| | | Identifies | Cost |

* BMO relationships identified by Alexander Osterwalder

The third element we shall consider is the Channel element. According to Alexander Osterwalder, a Channel element can also serve as Relationship element (Osterwalder, 2004). For example, consider an online customer support forum operated by a firm. It serves as a support channel and at the same time serves as a relationship mechanism.

In addition, the following new dependencies have been identified.

| | | |
|---------|------------|---------------------|
| Channel | Identifies | Capability |
| | Identifies | Value Configuration |
| | Identifies | Partnership |
| | Identifies | Cost |

It is self evident that channels dictate what capabilities, value configuration and partnerships are required by a firm. For example, a company offering web portal to disseminate product and service information (communication channel) will require high speed internet connectivity and trained IT personnel (capabilities) to maintain, update and edit content on the website (value configuration). The entire solution will require hosting services and internet service providers (partnerships). Similarly, it is obvious that channels are a source of cost. Indeed, cost is one key consideration in selecting channel options.

We develop the Channel element next since it follows a logical sequence as Channel element is directly connected to Value Proposition element. This is the same sequence as proposed by Alexander Osterwalder.

Relationship

| Developmental Sequence | BMO element | Relationship | BMO element _n |
|------------------------|--------------|-------------------|--------------------------|
| Fourth | Relationship | Interconnected to | Channel* |
| | | Interconnected to | Value Proposition* |
| | | Identifies | Value Configuration |
| | | Identifies | Partnership |
| | | Identifies | Capability |

* BMO relationships identified by Alexander Osterwalder

The fourth element in the developmental sequence is Relationship element. The first relationship states that Relationship element is interconnected to Channel element. In other words a Relationship element can serve as a Channel element. This relationship has already been defined in the previous section under Channel element. The second relationship states that a Relationship element is interconnected to Value Proposition element. This relationship has also been defined in the previous section under Value Proposition element.

In addition, the following new dependencies have been identified.

| | | |
|--------------|------------|---------------------|
| Relationship | Identifies | Value Configuration |
| | Identifies | Partnership |
| | Identifies | Capability |

A Relationship element identifies Value Configuration element, Partnership element and Capabilities element. For example, consider customer help desk that provides support services to customers. Such a service will require customer complaint management process (value configuration), might require partnerships with business process outsourcing companies and capabilities like information system solutions to record, monitor, and handle customer complaints. This is the same sequence as proposed by Alexander Osterwalder.

Capabilities

| Developmental Sequence | BMO element | Relationship | BMO element _n |
|------------------------|--------------|--------------|--------------------------|
| Fifth | Capabilities | Identifies | Value Configuration* |
| | | Identifies | Partnership* |
| | | Identifies | Cost |

* BMO relationships identified by Alexander Osterwalder

The fifth element in the developmental sequence is Capabilities element. This is a departure from the developmental sequence proposed by Alexander Osterwalder. He recommends developing the Revenue element next. It is based on differentiating between value delivery components (value side) and value creation components (cost side). This is based on economic reasoning and logic. In my opinion, it is premature to develop revenues at this stage because partnerships (which fall on the cost side) can contribute directly to revenue generation. For example, consider a commission based customer referral partnership amongst competing hotels.

Based on the interconnections and dependencies between elements, the next element in the developmental sequence will be Capabilities element. The first relationship states that Capabilities element identify Value Configuration element. For example, consider marketing and advertising campaign (value configuration) which will require marketing experts (capabilities) and information system solution (capabilities). Without capabilities organizations will not be able to carry out set activities. Likewise, capabilities identify partnerships. The basis of partnerships are resources. Hence, based on existing capabilities organizations will opt for

partnerships. For example, a firm offering web solutions will require partnerships with web hosting companies as they may lack existing capability to provide their own hosting solutions. In addition, the following new dependency has been identified.

| | | |
|--------------|------------|------|
| Capabilities | Identifies | Cost |
|--------------|------------|------|

The above relationship is self-evident. Bulk of an organization’s cost is accounted for by capabilities which take the form of assets and other key resources. Hence, the fifth element in the developmental sequence is Capabilities element.

Partnership

| Developmental Sequence | BMO element | Relationship | BMO element _n |
|------------------------|-------------|--------------|--------------------------|
| Sixth | Partnership | Identifies | Value Configuration* |
| | | Identifies | Revenue |
| | | Identifies | Cost |

* BMO relationships identified by Alexander Osterwalder

The sixth element in the developmental sequence is Partnership element. This is again a departure from the developmental sequence proposed by Alexander Osterwalder. He recommends developing the Value Configuration after Capability element. Based on the dependencies, it is recommended that Partnerships be developed first. The first relationship states that Partnership element identifies Value Configuration element. For example, partnership programs requires sets of processes and activities which can only be designed and developed once we have partnerships in place. Different partnerships may well require different sets of activities. For example, partnerships with web hosting services will require registration, online payment, server configurations etc. whereas partnerships with competing hotels under commission based customer referral program requires solicitation, contract management etc. In addition, following new dependencies have been identified.

| | | |
|-------------|------------|---------|
| Partnership | Identifies | Revenue |
| | Identifies | Cost |

The above two relationship are self-evident. Partnerships can result in revenues yet at the same time incurs cost in implementation.

Value Configuration

| Developmental Sequence | BMO element | Relationship | BMO element _n |
|------------------------|---------------------|--------------|--------------------------|
| Seventh | Value Configuration | Identifies | Cost |

The seventh element in the developmental sequence is Value Configuration element. Value configuration is largely based on all other elements and hence is developed after identifying the other elements except Revenue element and Cost element.

Alexander Osterwalder has identified three types of value configuration types (Osterwalder, 2004):

- 1) Value Chain pertaining to manufacturing firms
- 2) Value Shop pertaining to service firms
- 3) Value Network pertaining to brokerage firms.

Further, Alexander Osterwalder identifies two categories of activities (i) Primary activities and (ii) Supporting activities. This is the same concept as Michael Porter’s Value Chain framework. The supporting activities for all firms regardless of the value configuration types are the same. They differ in their primary activities. Each value configuration type has its own unique sets of primary activities. Primary activities are activities used to:

- Create and offer a value proposition
- Reach markets
- Maintain customer relationships and
- Earn revenues

REVENUE AND COST ELEMENTS

Revenues and costs are outcomes of other elements and as such do not identify any of the other BMO elements. They are entirely dependent upon the other elements. In terms of developmental sequence, it is up to the modeler to determine which element to develop first.

These dependencies and interconnections are depicted in Fig 4.

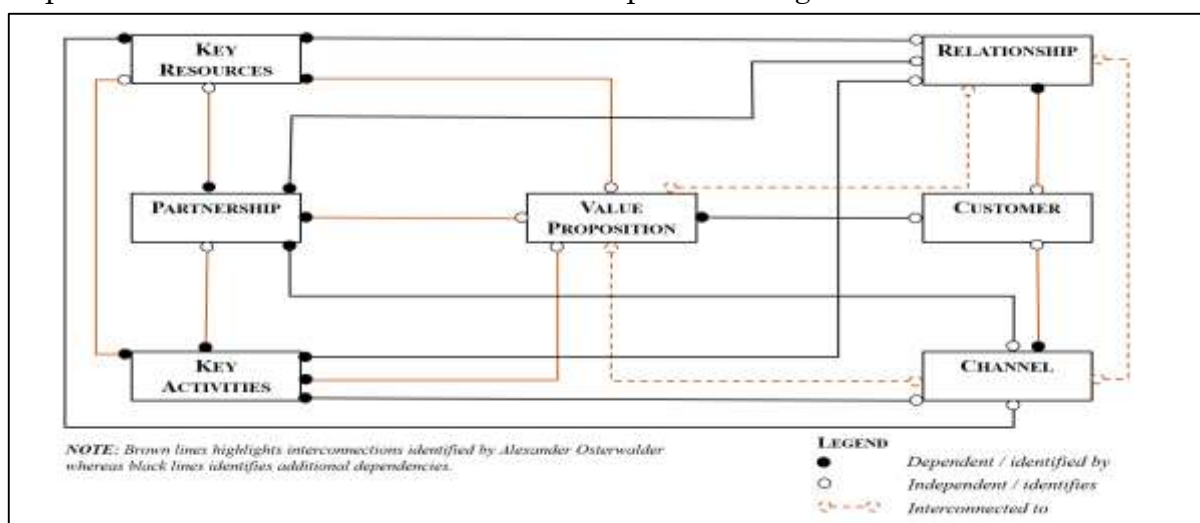


Figure 4: Dependencies and interconnections between the seven elements

CONCLUSION

Developing business model elements based on relationships (interconnections and dependencies) offers an alternate approach to business model development based on logical developmental progression from one element to the next. In this article I have identified and defined relationships between business model elements that results in a different developmental sequence of these elements. There is no single method for developing business model elements. As Alexander Osterwalder describes in his book, the epicenters for business model innovation can be many. It can be resource driven, offer driven, customer driven, finance driven, and multiple epicenter driven (Osterwalder, Pigneur & Yves, 2010). Each probably would result in different implementation approach. The developmental sequence proposed here works specially well if we consider business models as a strategic tool connecting all the elements of a business.

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