

Introduction to Biomimicry
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Lecture – 38
Taking Your Biomimicry Ideas to Market

Over the course of the last 7 weeks, we have seen several instances of innovations that have emerged from biomimicry. It is very clear that biomimicry can lead to sustainable innovations. Biomimicry offers a way to solve human challenges using the lessons learned from nature, we can design new products and processes, and services using biomimicry or we can redesign what is already there using biomimicry as well.

As part of this course, we have encouraged you to pick up a problem statement and use the biomimicry spiral to start solving a problem. However, it is not enough to just solve a problem on paper, it is not enough to just have a small test or a prototype of a solution and say that is all we are doing with it. Sometimes, depending on the problem that you are solving, it is important to think about how you can scale it up, how you can take it to the market.

And in this section, we are going to talk about how can you take your ideas to market. And for that purpose, we are going to introduce a tool to you, a very well-known tool which is called the Business Model Canvas. So let us look at how that can help you look at your idea and find out how you can convert it to a business. Remember that I am only introducing the tool to you in this module. This is not a business course, so I cannot cover all the details.

But we encourage you to learn about the tool more in case you are interested in going to market with your idea and find out how it can help you to do that. Now, if you look at any idea, an idea cannot just be a business, an idea is a very small part of the business. And if you look at any business, there are other things that come into play when you are looking at a business solving a problem or providing a solution to a customer. What are those things?

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Business Model

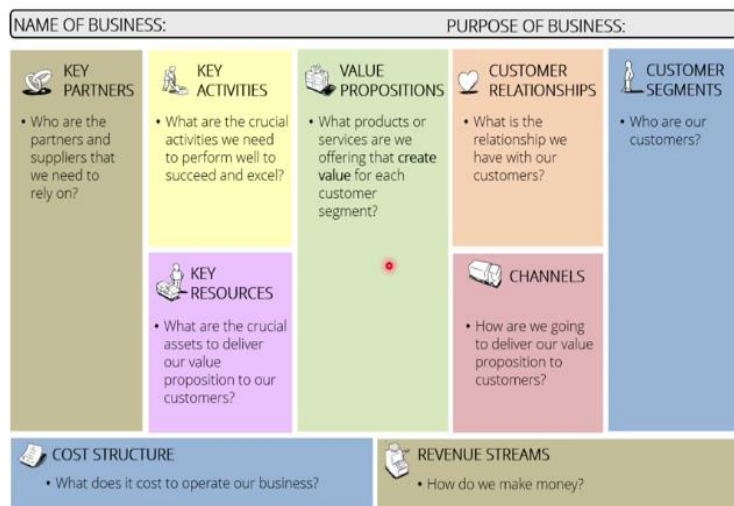


Those could be customer segments. So, what are the customers that the business is serving? Who are these customers? What are the value propositions that are being delivered those customers by the business? The value proposition is another word for the benefits that are being delivered. What are the channels through which the value proposition is delivered to these customers? What are the relationships that are maintained by this business with its customers? And how does the business make money?

Also, what are the key resources and the key activities that this business has to perform in order to succeed and excel? And since a business cannot do all the activities and have everything on its own, they need to partner with others, maybe suppliers, maybe other types of parties and who are these key partners going to be for this business? And what will be the overall cost structure for the business? That is in order to do all of this, what are the costs that the business is incurring? So, these are the 9 blocks that can be used to describe a business.

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Business Model Canvas



Now instead of just listing it down like this, what we do in the business model canvas is map it out in the form of a diagram or we map it out on a canvas or a single page. And the way we do this is say, we have customer segments, we have value propositions, channels, customer relationships, revenue streams, key resources, and key activities along with the key partners and the cost structure.

So, we have this very structured way of mapping out what a business looks like and what activities it does. Of course, we have to mention which business is this for and what the purpose of this business is. So, this is how you start thinking about what does the business entail? And as I mentioned earlier, your idea is a very small part of the entire business. Of course, it is the basis, yes you created a solution out of it, but that is not enough.

You cannot think that that is enough to start a business. You have to think about all these aspects as well if you are looking to take your idea to market. So, you start filling this out and as the business model canvas for what you are trying to do. You take this blank sheet of paper and under each of these building blocks, you start putting down what you know about your business, what you think your business has to do under that building block.

So what you start off with is writing down the name of your business, what the purpose of your business is and then start filling up each of these blocks. So, here you have the customer segments, who are your customers? Who are the people that you are going to provide a solution to? What are the solutions you are going to provide that need to create value for those customers? This means that there has to be a tangible benefit or an advantage for the customer.

It has to be something that you going to increase performance or reduce cost or give them a better design. What is it that you are going to give by way of a tangible value? And remember even customers cannot just be a huge block of people saying these are my customers, you need to be very specific in saying what are the categories of people that you are going to serve. Are they going to be researchers at universities?

Are they going to be students? Are they going to be teachers? Are they going to be senior VPs at a company? Are they going to be the procurement officers at a manufacturing company? So, the whole world cannot be your customer, you need to be very specific about which are the categories of customers you have and who are they? What is the specific tangible benefit that you are going to give them in by way of your product or service?

It is not just enough that I am going to give this product that is great. How is it going to help that specific customer segment? Then you think about channels. How are you going to deliver this value to your customer? Which is the channel? And this is starting right from making your customer aware of your product or service right up to doing delivering that to them and also doing the post-sales service for them. So, this is a challenge for you.

Then you think about what is the relationship you need to have with your customers. There are some businesses that have extremely personalized relationships with customers, right? They know each customer, they build a relationship, the smaller companies tend to do that, larger companies tend to have very automated ways of keeping in touch with their customers. So that is something that each business needs to decide.

What are the types of relationships you will have with your customers? And of course, very importantly how will you make money? What is it that your customer is going to pay you for? For what product or service they are going to pay and how much are they going to pay? So, the right side of the canvas here you see is focused on what you are going to do outside the company with your customers.

The customer segments, what your value you are giving, how you are going to reach them, the relationships you have with them, and how you are going to make money from them. The left side of the canvas is more internal focus to your business. So, you start off with the key

resources and the key activities that you need to do as a business. Now remember key resources and key activities are crucial assets and crucial activities.

See every business will have resources like buildings or machinery depending on what you are doing. So, every business will have several assets, does not mean each of these is crucial. So, you need to think about what are the physical assets that are very important for you to deliver this benefit to your customer. So, it could be physical assets that you have, maybe your manufacturing plant.

It could be intellectual assets like your IP that you have or you have a set of customers that are very crucial or it could be human resources, you have trained designers or trained engineers who are crucial to you delivering this value to your customer or you could have financial resources. So, these are the critical resources you need in order to deliver value to your customer, similarly critical activities.

So, these are the actual activities that are critical for performing your business. So, every business needs to do certain things like you know pay the bills and things like that, but those are not critical activities. Critical activities are things that you need to do in order to succeed as a business. So, it could be things like either production manufacturing that you need to do or if you are a tech company it could be some platform developments that you need to do or if you are a consulting company it could be problem-solving that you do.

So, these are activities that are underpinning how you will make money and these are therefore very important. Of course, as a business you cannot do all the activities and have all the resources inside your company, therefore you create partnerships. So, you have partners and suppliers that you rely on and these will be also supporting your activities and resources. Then you have the cost structure which is looking at where are you incurring costs in order to operate your business.

So, as you can see this is a very systems view of the entire business. It is easy for you to visualize your entire business on one page and see the interconnections between them. Now, let us take an example to understand this better.

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Business Model Example – OLA CABS

What is Ola's business?

- Taxi aggregator
- Marketplace that connects Taxis with Customers
- Technology company - that uses technology to find the nearest taxi and give customers choices



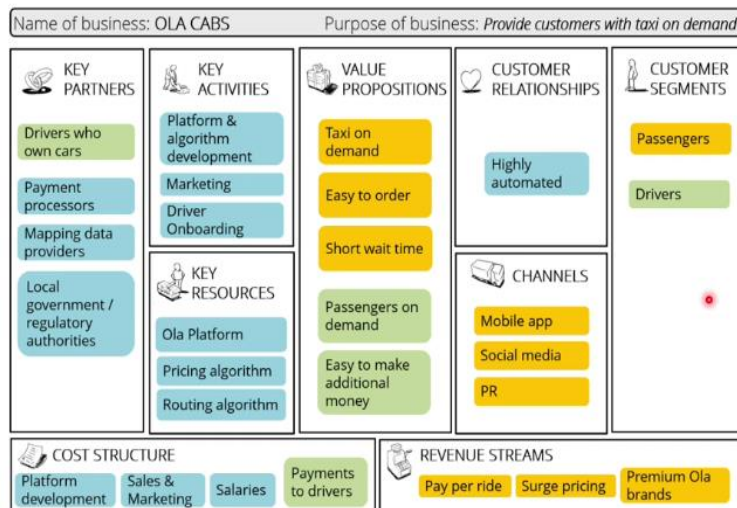
And I am going to start with this example of Ola cabs. I guess all of you know what Ola cabs is. It is a rideshare service where you can download an app and order a cab online saying I need to get from point A to point B, are there any cabs available and Ola shows you a bunch of options and you can book a cab. Now what business is Ola actually in? You could say that they are a taxi aggregator, fair enough.

You could say that they are a marketplace that connects taxis with customers, but I think you will agree that a very accurate way of describing Ola's business is that they are a technology company that uses technology to find the nearest taxi and give customers choices. Now why this is important to understand the business that you are in because then you will understand what you need to do as part of your business model.

And where is it that you can start refining, making tweaks doing things better in order to serve your customers better and obviously in order to succeed better. So, when you will just see, now I am going to show you the business model canvas for Ola and you will see why this understanding which business Ola is in becomes very important.

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Business Model Canvas – Example



So, this is the blank canvas that I start with before I start filling up. So, the name of the business is Ola cabs. The purpose of the businesses providing customers with taxi on demand, so that is what I take as the purpose of the business. Now, the first thing that you start with of course is the customer because the customers are the lifeline of any business, you cannot have a business without a customer.

And remember these are customer segments. So, you look at which are the segments of customers that you serve. So, Ola serves two distinct segments. One is the passengers of course like you and me who want to go from point A to point B and therefore start using their apps and pay them for getting the ride. The other are of course the drivers because without these drivers the Ola cannot provide a service as well, right.

So, the passengers and drivers are both customer segments for Ola. Now, you will see that they are in different colours and you will shortly also be able to see why they are in different colours. The value proposition; what is the value proposition? The value proposition is the benefit that Ola provides to each of these customer segments. So, what is the value proposition? What is the benefit that Ola is providing to passengers?

The benefit is of course taxi on demand, easy to order, and a short wait time. These three are colour coded to show that they are the benefits that Ola is giving to this specific customer segment of passengers. Of course, Ola also provides benefits to the drivers, what are those benefits? What are the advantages that it gives to the drivers? Passengers on demand. So as a

driver, I do not have to look for passengers, it just comes to me and it is easy for me to make additional money as well.

So, this is the benefit that Ola is providing to its customer segments. Look at channels, what are channels? Channels is the way in which Ola reaches its customers and delivers the value proposition to those customers. So, in the case of Ola, remember they are a technology company, so they are leveraging technology in this case. So, they use their mobile apps, social media and PR in order to reach, deliver value to their customers.

Now in the case of brick-and-mortar companies, you will see that this could be a little different, they would have a supply chain, they would have trucks delivering goods to the customers, etc., so that is channels for you. Now you looking at customer relationships. Now this customer relationships outlines how this company gets customers, grows customers and keeps customers with them. In the case of Ola, it is a highly automated customer relationship.

So Ola is not having an army of sales or marketing professionals coming to each of its customers and talking to them, etc. So, it is a highly automated customer relationship scenario. Other companies may have a different scenario where personally they have customer service representatives for each customer or groups of customers like banks have relationship managers, etc. So that could be a different mode of managing customer relationships.

Then you have revenue streams which is how does Ola make money? Of course, a pay-per-ride is the model. Then they also have surge pricing and they have premium brands like Ola luxury, etc., that they use to make money. This part is the outward-facing part for Ola, outside the company. Let us look at the left side of the canvas. Left side of the canvas, what are the key resources that Ola has? Remember, this is what is unique to Ola as assets that they need to perform well.

The Ola platform, of course the app and the website, etc. that allows passengers to book cabs on demand which means that it is crucial for Ola to deliver this value proposition to these customers. Also, the pricing and the routing algorithm because without that they would not be able to deliver this value proposition. Then the key activities are developing that platform algorithm, the marketing of course, and onboarding drivers because without the onboarding drivers they would not be able to do it.

If you notice key activities, the key resources and customer relationships, I have not colour coded them because they are not specific to a customer segment, they are for the entire company. The key partners, Ola cannot do everything itself. So therefore, who are the key partners for Ola? One is drivers who own cars, you can consider them as customer segments as well as partners in this case because they treat them as such.

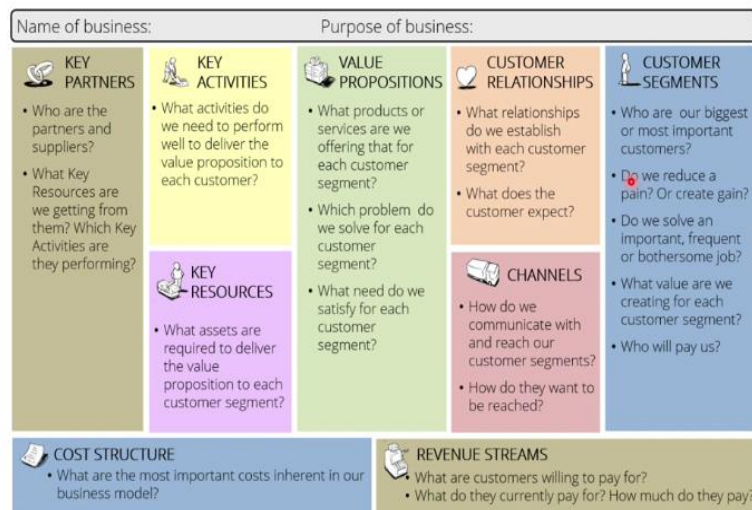
Then, of course, payment processors, Ola is not going to keep on creating payment processing platforms, so they use existing payment processors. Mapping data providers like Map My India, Google Maps, etc. And the local government and regulatory authorities because Ola needs to make sure that they have a working relationship with them because otherwise, they will not be able to operate in those cities. So, these are key partners for Ola.

Then the cost structure, based on all these, you see what are the costs that Ola will incur in order to run this business. So of course, platform development you can see from here, you look at sales and marketing, salaries of course, and payments to drivers. Now payments to drivers become very specific to a specific partner that you see, which is why it is colour coded. So, as you can see from this example, by looking at for example cost structure, you can look at the other blocks and find out what are the costs that I am incurring.

You look at customer segments and value propositions and find out okay these are the revenue streams. So, everything is related in this. This is not that each of these blocks are in silos, which is why we map them out on a single piece of paper like this to be able to see the connections and this is the business model canvas for you.

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Business Model Canvas



Now, what we will urge you to do if you are looking to take your idea to market is to do the same exercise for yourself. So, you will say what is the name of your business, what is the purpose of your business, and you will start filling up this canvas for your business. So, under each of these blocks, you will ask yourself these questions. You will say when I look at customer segment, who are, I know that customer segments is all the customers I serve, the organizations, the people that I serve, but who are our biggest customers?

Who are our most important customers? What are we doing for them? Are we creating a gain? Are we reducing pain? What are we solving? Are we solving a very important job? A job is an activity that a customer needs to do and therefore they look for solutions to do that. So, therefore are you solving an important frequent or bothersome job for them? What value are you creating for each customer segment? What is the benefit you are giving?

And very importantly, who is going to pay us? Because many times new businesses think that they have come up with this great idea and everybody will want it, but very important to ask yourself who is going to pay you for that solution. So, you are saying that; let us say a manufacturing company will want your solution, but who in the manufacturing company is going to actually end up writing the cheque for you?

And remember, they will write the cheque only if they can see a benefit. Therefore, that brings you to the value proposition. You need to be able to give a benefit to each of your customer segments because otherwise, they will not be paying you. So, you need to clearly understand what is the problem you are solving and what is the need you are satisfying for each customer.

Remember that when we spoke about the biomimicry spiral and the define phase, we spoke about getting enough information about the stakeholders and the problem, etc. and that is useful because when you actually come to take your idea to market, you will be able to clearly understand why you are doing something like this instead of coming up with the solution and then figuring out who wants this solution, that is not the way to do it.

The way to do it is figuring out who has a problem, why do they have a problem, what are they trying to do before designing a solution. And that is what this will help you do as well once you come to taking the idea to market. Then, of course once you have this, you look at how do you reach your value proposition to your customer, which is the channels. Remember you are looking at not just telling your customer that you have a product or service, you are also thinking about how will you deliver that value to them.

Also, you need to think about what the customers want. It may be cheaper for you to do online, but does your customer actually want it online that is something you need to understand. Then the customer relationships, how will you get customers? How will you keep those customers and how will you grow the customers that you have? So, this is something that you will have to think about as well, find out whether you are going to have personalized relationships with customers?

Are you going to make it more automated? What is it that you are going to do? What is the business requirement that is what you have to think about. Then what are the customers willing to pay for your value proposition? Also try and understand what do they currently pay for the same thing because that is very important. If they are paying a certain amount and they are paying for a certain solution, how are they going to switch to something that you have given?

You need to understand that too in order to come up with an answer to this revenue streams. Then, of course your key activities and your key resources. This is something that you need to do uniquely as a company. This is not just a laundry list of all the assets that you have or all the activities that you do. These are the key things that you need to do to succeed as a company. And then of course, you cannot do everything yourself.

So there will be partners and suppliers who will be doing some of your key activities and key resources. You need to list them down here because then you will understand where the dependencies in your business model canvas lie. And looking at all of these find out what are the important costs that you will end up incurring as part of this business. So, this is the way to actually go about filling up the business model canvas.

Another important point that I want to mention here is this is the way I have outlined this is a business model canvas for any company. Now we are talking specifically about a biomimicry business which means a solution that has been born out of biomimicry, so how would you bring that into the business model canvas? There is information available on biomimicry dot org for you to help you do that.

But one thing you can think about here is in each of these, you can think about applying nature's unifying patterns, nature's design principles in order to align that to a biomimicry business. So, for example, you are looking at value propositions, you look at am I or are we as a company creating conditions conducive to life? Are we doing that? Are we following nature's design principles in the benefits that we are offering to our customers?

Similarly, the key resources that we are using, are we using these resources efficiently? Are we doing something that is wasting energy? Are we building using abundant resources rather than rare resources? So, this is something you can examine in key resources and key activities. Look at your cost structure. Are you optimized as a cost structure or are you maximizing as a cost structure?

Key partners, are you developing symbiotic relationships or are you developing competitive or parasitic kinds of relationships? So, you can bring in all your learning from biomimicry into this biomimicry business model canvas and you can actually get a view of what your business can be in when you are trying to take your idea to market.

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Business Model Canvas – Taking your idea to market

Name of business:		Purpose of business:		
KEY PARTNERS	KEY ACTIVITIES	VALUE PROPOSITIONS	CUSTOMER RELATIONSHIPS	CUSTOMER SEGMENTS
	KEY RESOURCES		CHANNELS	
COST STRUCTURE		REVENUE STREAMS		

So you have this blank canvas and start filling it up. Also, remember that the business model canvas is an evolving canvas, it is not static. So, what you saw in Ola, this is Ola which is today, the customer segments, the value propositions that you saw on that canvas are what is Ola today. When they started, the canvas would have looked very different. The same thing applies to your business as well.

You will start filling up this canvas today saying this is my business, this is the purpose, these are the customer segments, these are the value propositions, etc. But remember after you have come up with a solution, whatever you put down here is just going to be hypothesis. These are your hypotheses about who your customer is, and who your value proposition is. And you cannot run a business based just on a hypothesis, right?

Therefore, you will have to take this and validate it. So, you will say okay, I think my customers are X, Y, and Z, you will actually go and talk to these customers and find out are these actually your customers. If not, then you will have to revise that. Ola would have done the same thing. They would have started with something and then revised it as well. Similarly, the benefits, you think you are giving these benefits because you think these are useful to your customers.

But you may actually figure out that customers are looking for a different benefit, can you offer that? Therefore, you validate this hypothesis of value propositions, and your business model will then get changed, and refined, likewise for all the building blocks as well. So, the business model canvas is not a static drawing that you make once and for all and say this is my business and that is it.

When you start with you have certain hypotheses about your idea, about your business and then you start validating your hypotheses and finding out which is actually true in the market, which is not and you change as you go along. So that is the business model canvas for you. I hope I have been able to give you a quick snapshot of how you can use this tool. I will be very interested in hearing from you whether you used it, how did you use it and what you found the end result of it was. So, look forward to seeing what you do with this tool.