Innovation Forecasting

Objective of the practice

Understand the components of the business model.

Understand the concept of innovation forecasting and practice how to place useful and ordered questions about the future of a product/service and its business model.

Get a method to apply the previous concepts to a project of a particular product/service.

(Still of Frank Langella in Robot and Frank, 2012)

Fig 0. Summary

1	2	3	4
Central question	**Research**	**Questions**	**Hypothesis**
Fill the Canvas (BMC) with the components of the current Business Model and identify one inspirational Central Question.	With the Central Questions in mind, propose as many precise questions as possible in relation to different components of the BM.	Score the questions: IL: Impact Level UL: Uncertainty Level Score = IL x UL	Propose and discus possible answers for each one of the questions.
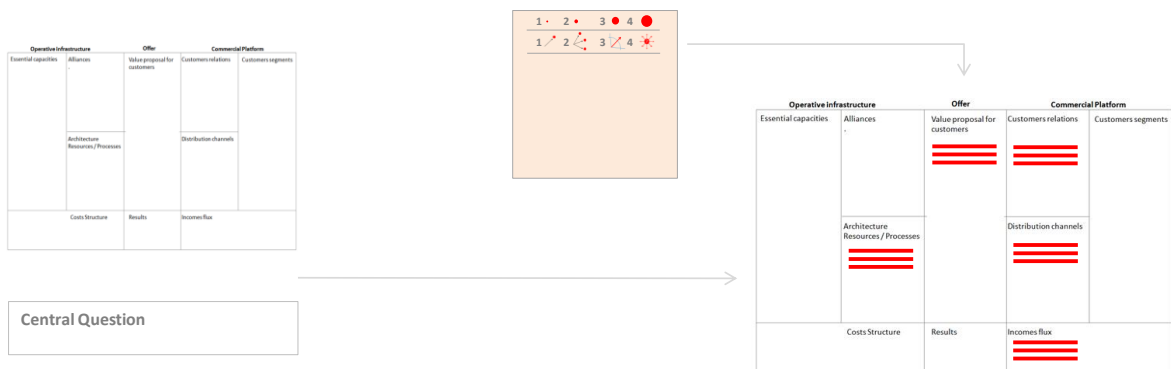
Introduction

The Business Model Canvas

A Business Model describes the rationale of how an organisation creates, delivers, and captures value. It may be represented in a synthetic manner using a canvas that connects visually the main components of the global process that takes place during the creation and delivery of a product/service. In Annex 1 are defined the components of the Business Model Canvas (BMC), and in the next image is presented a canvas inspired in the one proposed by Osterwalder and Pigneu[1].

Fig. 1 BMC

Operative infrastructure		Offer	Commercial Platform	
Essential capacities	Alliances	Value proposal for customers	Customers relations	Customers segments
	Architecture Resources / Processes		Distribution channels	
	Costs Structure	Results	Incomes flux	

In the practice about "Product-service deconstruction" the focus of work was put in the central component of the business model, that is to say, the Value Proposal and the strategy to compare our product service attributes against the ones of a Benchmark. In this practice, the focus will be put also in:

---

[1] *The version of the Business Model proposed is based in the BMC from Written by Osterwalder, Alexander and Pigneur, Yves , www.businessmodelgeneration.com . A change has been introduced to ad at the the essential capabilities at the left side beginning of the canvas, and the results between incomes and costs.*
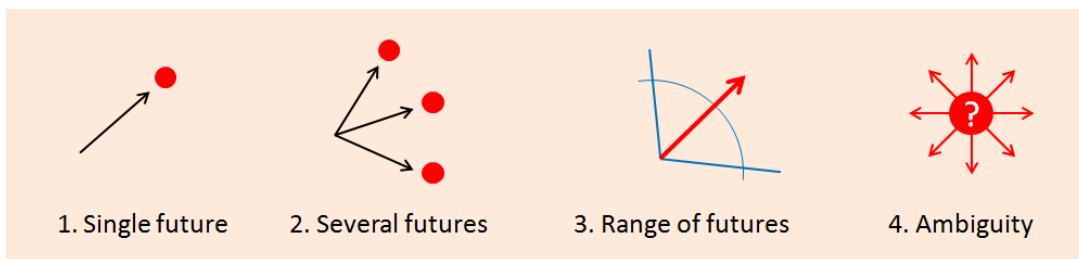
- The components of the operative infrastructure to design and produce the product/service.
- The components of the commercial platform built to deliver it.

The BMC is a tool used nominally to define the current model of a business, but it is going to be used here as an aid for Innovation Forecasting. The objective of the practice is to analyse what kind of changes may be expected in the different components of the BMC and the strategy in this case will be to formulate useful questions.

What is forecasting innovation?

It is widely accepted that the effects of the current pace of technological change, combined with the impact of other socio-economical drivers, forces organisations to manage uncertainty. As more complex the environment gets, more dynamic and unpredictable the future will be. Four levels of uncertainty may be considered[2] when trying to forecast innovation:

Fig. 2 Uncertainty degree of a forecast.

1. Single future   2. Several futures   3. Range of futures   4. Ambiguity

1	**Single View of the Future**	The Single View of the Future may be applied when it is clear what is going to happen.
		Hospitals will completely manage administrative patient relations with the support of mobile devices.
2	**Several Futures**	One of Several Futures will occur because in a particular situation there are a limited number of options.
		The payment of the costs of delivering health services to citizens will be shared among users, insurance companies and public funding.
3	**Range of Possible Futures**	There exists a Range of Possible Futures when there is a combination of variables or some kind of model to create

---

[2] *Courtney, Kirkland and Viguerie. Strategy under uncertainty. Harvard Business Review. 1997.*

		different scenarios.
		The increase of productivity in the delivery of health services based in tele-health will change the balance between local and global health market.
4	**True ambiguity**	True ambiguity is when complete ignorance about a situation exists.
		Nobody knows exactly when and how the new developments of genetics are going to change the patient-citizen health outcome.

So, managing uncertainty and trying to forecast reasonable futures for innovation is one of the most important challenges that organisations have to face now and in the future.

Putting the right questions

How are things going to change over time? Formulating the right questions is an important part of the solution of a problem. Moreover many of the current problems connected to innovation are dynamic. Think for instance on smartphones, or in any high technology area that introduces improvements regularly. A similar evolution pressure may be recognised in sectors as different as the entertainment or the car industry.

To identify the right questions may be done following the systematic process summarised below:

1	**Formulate a central question**	You need a **first vision to formulate a central question**, a space of opportunities that may stimulate imagination and surface new possibilities. The vision may be a hypothesis, but it's not trying the guess the future directly.
		An example would be to consider the idea of Robotic Doctor. The central question may be formulated as: When and how will patients interact with Robotic Doctor?
		This central question has to allow deep inspiration.
2	**Do oriented research**	With this central question in mind the second step is doing research oriented to understand the context of this question. The previous history may help to analyse the pace of change in the past in similar situations, and to discover what kind of factors may help or hinder the change.
		As the research goes on, it may help to identify milestones, and questions may become more precise.
		In the case of our Robotic Doctor example it may be useful to study the pace of robotisation of other areas.
		When will a base of sufficient knowledge be available to provide answers for patients?

| 3 | **Identify Driving forces** | As research produces results, insights emerge. Everything is connected, so it's necessary to build some kind of synthesis with the key driving forces that can influence the change. |

A driver may be constant and predictable, may work in cycles or may be a novelty which carries on certain consequences.

In the table below there are some cases of driving forces that may cause influence in the example of the Robotic Doctor.

Driving forces	Constant change	Cyclical change	Novelty
Technology	*When will automated analysis of medical images be possible?*	*When will wearable devices be used by patients?*	*Is it possible to imagine a kind of augmented health professional?*
Application	*Are health service delivery standard possible?*	*When will a new generation of health software manage patient records?*	*Which will the next health social networks similar to patientslikeme. com be?*
Culture	*When will the health literacy of patients achieve a sufficient level to speak at an acceptable label of medical language?*	*When will overpopulation force a kind automated relation with patients?*	*When will regulations and legal changes allow the participation of automats in health diagnostic and treatment?*

| 4 | **Build scenarios** | Once a significant list of drivers in the form of questions has been identified, next step is to order these questions to analyse what possible futures can emerge. |

What are the most important drivers? The ones that have more importance are those that have the biggest impact and the greatest uncertainty about occurrence and timing.

In the example of the Robotic Doctor , let's consider the drivers:

Technology:

> *About the use of sensors (4=4x1). Impact (4) Uncertainty (1)*
>
> *Culture:*
>
> *Legal conditions of use of the Robotic Doctor (8=2x4). Impact (2) Uncertainty (4)*
>
> *Applications:*
>
> *Continual diagnostic (12=4x3). Impact high (4) Uncertainty (3)*

Finally, as a consequence of the previous insights and drivers, a new structure of information about the future has been built. The questions are now: What kind of actions may be taken? How may we participate to this future? Why different aspects are important for us?

To do

The practice consists in filling the Business Model Canvas provided (BMC) and with this shared image in mind, identify relevant questions about future scenarios for innovation.
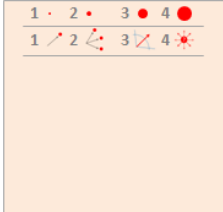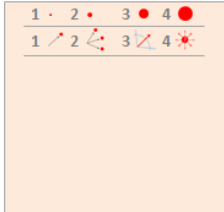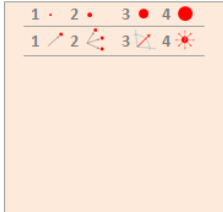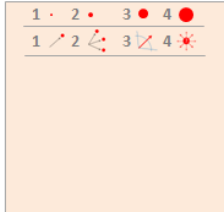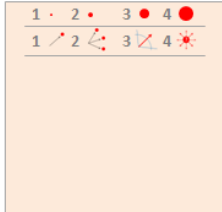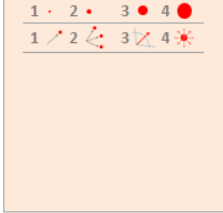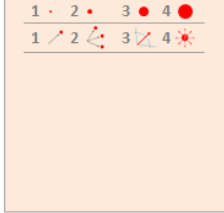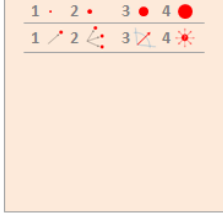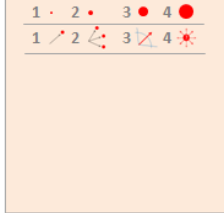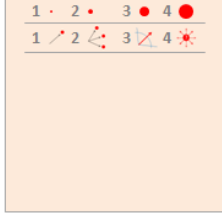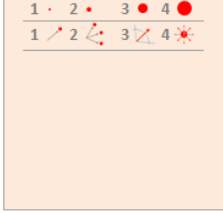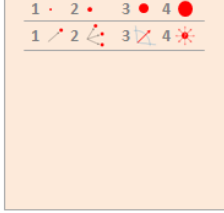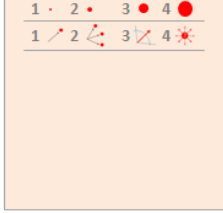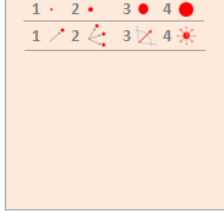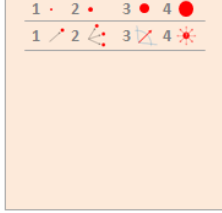
1	Fill the BMC with the components of the current business model[3], and Identify at least one inspirational central question. Use a Brainstorming technique. Review basic rules in Annex 2. Decide one central question and reserve the others for the next step.
2	With this central question in mind, propose as many questions as you can in relation to different components of the BM. The questions may be more or less precise and at this point it is not important the order or the characteristics of the questions.
3	Use again the BMC to place the questions in each one of the components. *Examples of questions:* - *Essential capabilities: Which will the main capabilities for our team be in the future?* - *Distribution channels: Is this ... (particular) channel going to survive?* Use the form provided, and decide for each question: - The **Impact Level** of the question. Between 1 and 4. If everything may change it's a 4 and if changes are minor than 1. - The **Uncertainty Level** of future that the question supposes. Between 1 and 4 depending on the kind of answer/s about the future: simple (1), several (2),

---

[3] *The Value Proposal defined in practice about "Product - service deconstruction" may be used here otherwise it has to be defined.*

	range (3) or ambiguity (4)?
	Reorder the questions according to a score obtained by multiplying Impact Level by Uncertainty Level.
4	Discuss each one of the questions and propose possible answers.

Use the table of figure 3 to list and assess the questions.

Fig. 3 List of questions to forecast innovation.

If the exercise is done in a group then a collective discussion, component by component, may help to manage a creative session with contributions from different points of view.

Annex

1. Business Model Canvas

Essential capabilities	The essential capabilities of a team, group or company is formed by a set of skills and organizational resources that establishes a sustainable knowledge environment.
Alliances	A company or organisation needs providers for any kind of

	resources and related knowledge.
Key resources and processes	The core activities that the company or organisation does by itself using key resources and following key processes.
Value proposal	The offer of the company or the organization that supposes a value appreciated by one or more segments of custumers.
Relations with customers	How the company and the customers communicate and relate. The relationship with customers has become one of the most relevant elements of the BM.
Distribution channels	How the company or organization deliver the product or service to the customer. Intermediaries and distributors that facilitate the communion of channels and customers.
Segments of customers	Groups of customers interested in buying the offer.
Costs structure	All the costs that the company or organisation needs to consider to create the product, deliver it and maintain the necessary knowledge base to do the whole process.
Incomes sources	The origin, moment, reasons and conditions of the incomes that the company or organization fetches.
Results	The results expressed in terms of economic difference between incomes and costs as well as other tangible or intangible resources.

2. Question brainstorming rules

There is different kind of brainstorming techniques but more or less all of them follow these basic rules:

Defer judgement	Just collect all the ideas without making any prejudgement about sense and value of the ideas. This is necessary to avoid that people feel hesitant of contributing to. *The dread of criticism is the death of genius. William Gilmore*
Quantity	It is necessary to collect as many ideas as possible. *To have a good idea have a lot of them. Thomas Edison* *Ideas are like rabbits you get a couple and learn how to handle them, and pretty soon you will have a dozen. John Steinbeck*

Freedom to propose any kind of idea	The quality of ideas may be connected with many aspects, so if it looks crazy this may be a good point.
	One doesn't discover new lands without losing sight of a shore for a long period of time. Andre Gide