

Business models of life science companies

How to select the right one? Tools and thoughts.

Kit? Service? Licensing? Inhouse? Outsourced? Risk-sharing?
Going alone or partner? Distributors? VC or other forms of financing?

How to organize a life science company to create the most value out of a technology and increase the competitive advantage? Rarely there is only one approach – a careful analysis of alternatives and internal competencies and resources should guide decisions on how to organize the business. Tools like the business model canvas and the lean canvas, can be invaluable in learning to ask the right questions in the beginning of the innovation journey and later when corporate strategy is planned.

In this **SPARK EUROPE WEBINAR**, **Sebastian Soidinsalo** will present the tools of the trade in conceptualizing and polishing life science business models.

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WHY ARE WE HERE?







TECHNICAL FEASIBILITY

UNMET MEDICAL NEED



TECHNICAL FEASIBILITY

UNMET MEDICAL NEED



REGULATION



TECHNICAL FEASIBILITY

**MANUFACTURING AND
SCALEUP WITH PROFIT
MARGIN**



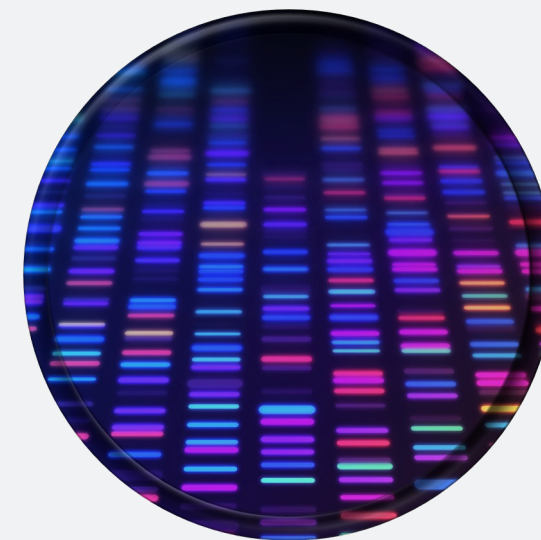
UNMET MEDICAL NEED



REGULATION



TECHNICAL FEASIBILITY







PATENT

CAN YOU STILL FAIL?



A POOR BUSINESS MODEL CAN CAUSE FAILURE



A company sells locally a patented diagnostic service for one disease with a gross profit margin of 70%, has CE mark, can analyse thousands of samples a week, the unmet medical need is there, no one else provides the same service. The company now wants to reach the global market with a newly established sales force.

What challenges does the company face?



What challenges does the company face?

A few key questions may reveal a business model issue:

What is the cost of customer acquisition?

E.g. how many dollars need to be spent in sales and marketing to get a customer.

If too high, the operational profit margin may be non-existent.

How can the service reach the customer?

Does the sample need to be sent oversease or abroad, what is the unit cost of logistics? Will the additional logistics cost change the health economic benefit or profitability of the business?

How much operational costs are added by replicating the infrastructure elsewhere?

Could the company instead start selling a device with a consumable reagent kit?

Could the technology be adapted to someone else's device and sold as a kit?

Instead of hiring a salesforce, could the company reduce the cost of customer acquisition with inbound marketing and virtual sales channels? Maybe a distributor network is more efficient than direct B2B sales with the enduser organization.

Different business models have different partners and internal resource needs, different cost structures and different revenue streams.

It is the innovators' / entrepreneurs' responsibility to identify and analyse the different options and choose the best one.

Business model should be considered as one of the key factors that affects an innovation's success.

Let's untangle what the business model is.





what is the definition of business model



A business model is a framework for generating revenue and profits in a business. It outlines the way that a company creates value for its customers, and the methods it uses to capture value in return. A business model typically includes details such as the target market, the types of products or services offered, the distribution channels used, and the revenue streams generated. It also outlines the key resources, activities, and partners involved in the business, and the costs and revenue associated with each. In short, a business model is a blueprint for how a company operates and generates revenue.



BUSINESS MODEL

VS.

REVENUE MODEL

Business model is broader than revenue model and includes the revenue model

How a company operates, and is organized to create value to customers and generates revenue

How revenue is generated

Example: subscription model, licensing, fee-for-service etc..

BUSINESS MODEL CANVAS (Osterwalder, Pigneur, 2010)

KEY PARTNERS

Who else do you need to make it work?
What other competencies are needed besides what you have?(think e.g. manufacturing, R&D CROs, Etc.)

KEY ACTIVITIES

How do you approach solving this unmet medical need?

VALUE PROPOSITION

What value you create that is not created as of now.

CUSTOMER RELATIONSHIPS

What is difficult to copy,
Patents?
Competencies?

CUSTOMER SEGMENTS (KEY STAKEHOLDERS)

Who are the paying customers?
Who are the users?
Who are the key decision enablers?

KEY RESOURCES

What and who do you need inhouse
How much capital is required?

KEY CHANNELS

How are customers reached?
How your company communicates with customers?

COST STRUCTURE

What costs will the business incur? How many people are needed?
What are their roles and salaries?
What is the estimated cost of goods sold and gross profit margin?
(e.g. manufacturing cost of a drug)

REVENUE STREAMS / REVENUE MODEL

How will the company receive cash from buyers? Licensing/exit?
Selling a product? Subscription? Fee-for-service?
Based on the market size and market share how much annual revenue could be received at its peak?

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Therapeutic Biotech Revenue Models



LICENSING



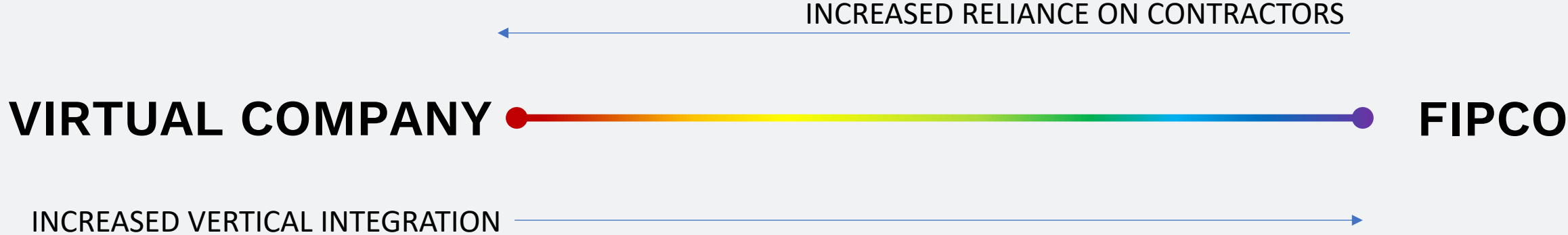
**RISK SHARING
PARTNERSHIP**



**M&A
(TRADE SALE EXIT)**

Also, becoming a FIPCO
e.g. Moderna
Also involved in marketing and sale

Therapeutic Biotech Business Models (partnerships vs internal resources)



**FIPCO = FULLY INTEGRATED
PHARMACEUTICAL COMPANY**

Therapeutic Biotech Business Models (partnerships vs internal resources)



VIRTUAL COMPANY

A small group of people
managing all CROs, CMOs
Low upfront investment in
infrastructure

FIPCO

A company that can
discover, run clinical
trials, get drugs
approved and market
them

A company that has some internal
infrastructure and R&D capabilities

**FIPCO = FULLY INTEGRATED
PHARMACEUTICAL COMPANY**

BUSINESS MODEL CANVAS (Osterwalder, Pigneur, 2010) - Therapeutic biotech

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CUSTOMER SEGMENTS (KEY STAKEHOLDERS)

Which indication?

VC is always a key stakeholder and the value proposition should be compelling to VCs.

Patients

Physicians

COST STRUCTURE

R&D COSTS OFTEN VIA OUTSOURCED PARTNERS

REVENUE STREAMS / REVENUE MODEL

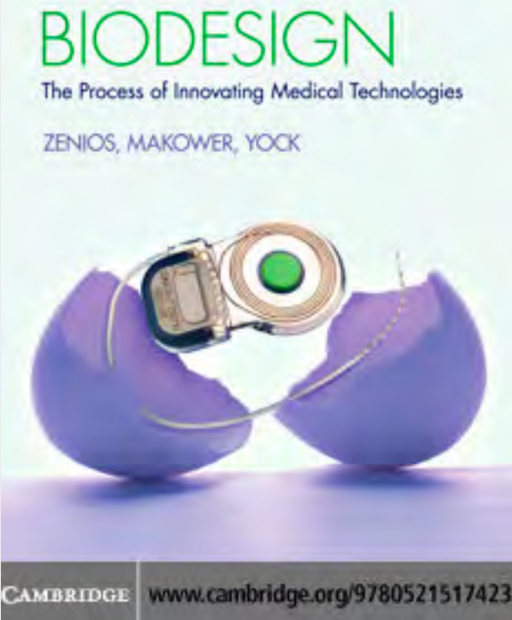
ASSET LICENSING, TRADE SALE

Medtech Revenue Models

In the medtech field, common business models include disposables, reusables, implantables, and capital equipment, although many others exist.

There are several different business models that are commonly used in the medical technology (medtech) industry. Some of the most common include the following:

- 1. Product sales: E.g. capital equipment sales or consumable sales
→ Printer ink and razor razorblade models are common
Disposable products and reused products exists**
- 2. Subscription or lease: E.g. capital equipment lease, annual fee,**
- 3. Licensing and partnerships: Just like in biotech, the end goal may be to just license or sell the technology to a partner with global distribution channels**
- 4. Service-based: As-a-service boom, instead of a fee you pay recurring fee for access to something of value, fee per patient etc.**



Business model	Margin structure	Sales investment	Importance of IP	Barriers to entry	Customer training	Clinical hurdles	Financial requirements
Disposable							
Low cost	Low	Low	Low	Low	Low	Low	Neutral
High cost	High	High	High	High	High	Neutral	Neutral
Reusable							
Pure	Low	Low	Low	Low	Low	Neutral	Low
Implantable							
Mid cost / high-cost	High	High	High	High	High	High	High
Capital equipment							
Pure or combined	High	Neutral	High	High	Low	Neutral	High
Service							
Pure or attached to product	Low	Low	Low	Low	Neutral	Low	Neutral
Fee per use							
Pure or combined	Neutral	High	High	Neutral	High	High	Neutral
Over the counter (OTC)							
Pure or combined	Neutral	High	Neutral	Neutral	Low	Neutral	Neutral
Prescription							
Pure or combined	High	High	High	High	High	High	High
Physician-sell							
Pure or combined	Neutral	High	Neutral	Neutral	Neutral	Neutral	Neutral

Note:
Neutral = Importance of issue could go either way.

FIGURE 4.4.1

Each common medtech business model listed above carries with it an expected set of opportunities and challenges that dramatically impact the plan for the business.

How is the business model found?

Most commonly it is a result of various independent choices on various aspects of the organization and occurs very organically and adhoc. Copying others and tweaking is common.

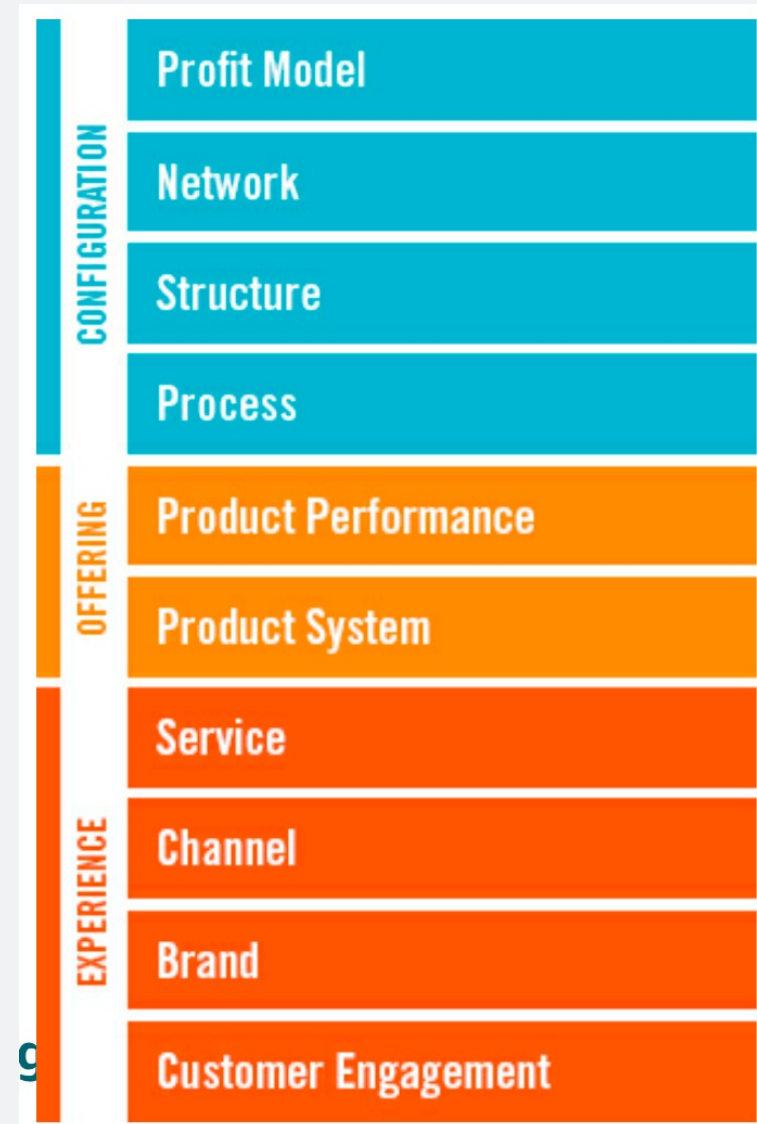
What is often missed is the interdependencies of the choices and in-depth analysis on how it affects the operating profit margin.

The canvas aims to solve this by integrating the analysis.



The business model can be a source of competitive advantage

Keeley, Larry; Walters, Helen; Pikkell, Ryan; Quinn, Brian. Ten Types of Innovation . Wiley.



ANTECEDENTS FOR EFFECTIVE BUSINESS MODELLING

UNDERSTAND THE WHOLE VALUE CHAIN AND TARGET MARKET

- YOU SHOULD KNOW THE CUSTOMER SEGMENT AND MARKET YOU INTEND TO TACKLE
 - Some level of market analysis should precede, talk to customers, partners advisors etc.
- Try to test your value proposition, if the value proposition is not valid, you don't need the rest of the business model.. Start from the unmet need and value proposition

BRAINSTORMING TOOL: BUSINESS MODEL HYPOTHESES

KEY PARTNERS

KEY ACTIVITIES

VALUE PROPOSITION

CUSTOMER RELATIONSHIPS

CUSTOMER SEGMENTS
(KEY STAKEHOLDERS)

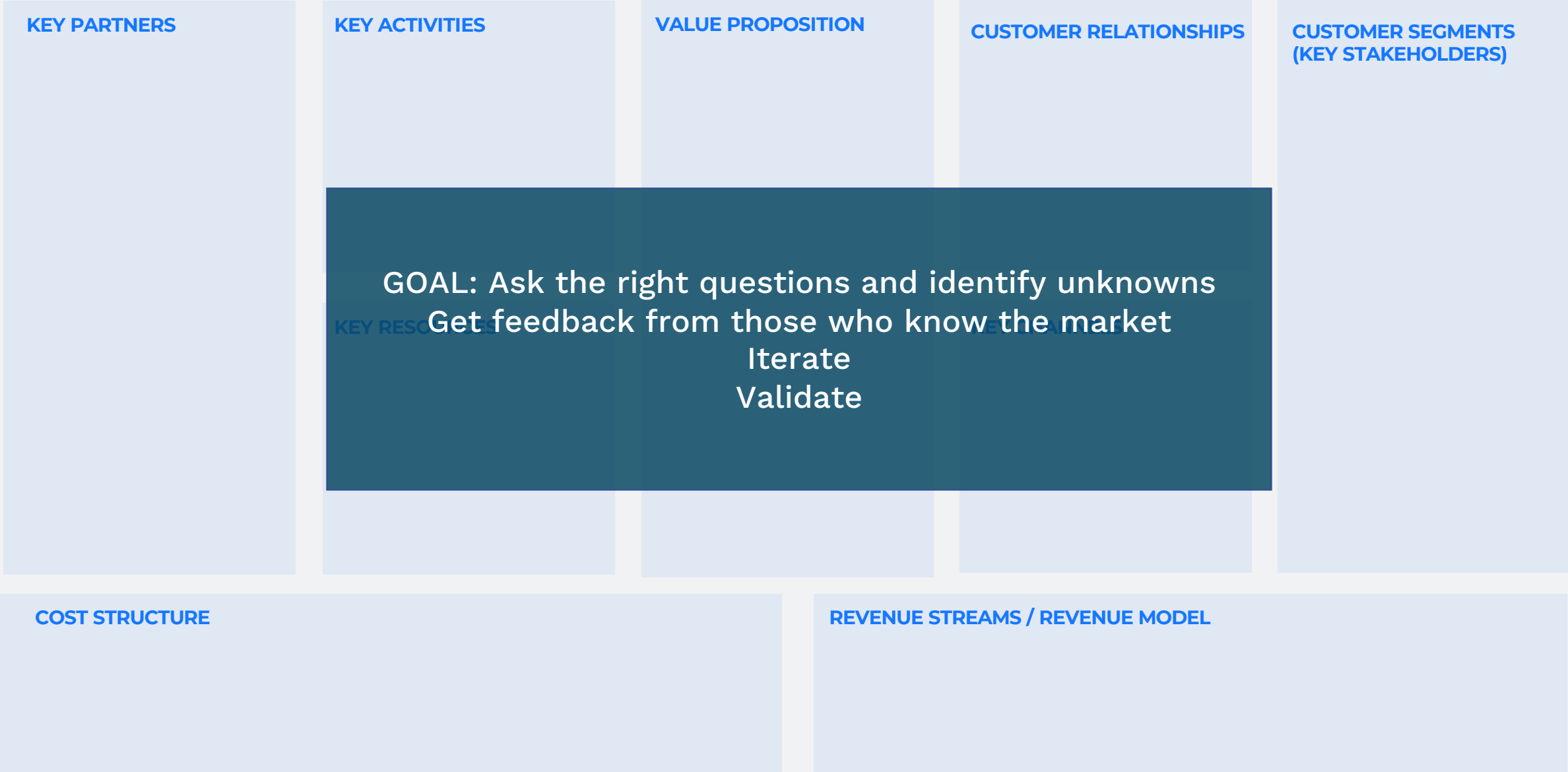
KEY RESOURCES

KEY CHANNELS

COST STRUCTURE

REVENUE STREAMS / REVENUE MODEL

1st BRAINSTORMING TOOL: BUSINESS MODEL HYPOTHESES



KEY PARTNERS

KEY ACTIVITIES

VALUE PROPOSITION

CUSTOMER RELATIONSHIPS

CUSTOMER SEGMENTS
(KEY STAKEHOLDERS)

KEY RESOURCES

CHANNELS

GOAL: Ask the right questions and identify unknowns
Get feedback from those who know the market
Iterate
Validate

COST STRUCTURE

REVENUE STREAMS / REVENUE MODEL

SECOND STEP: BUSINESS MODEL VALIDATION

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KEY CHANNELS

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**GOAL: ANSWER THE UNKNOWNNS
ASK EVEN BETTER QUESTIONS
SHOW THAT IT WORKS IN REAL LIFE**

MAKE A PLAN AND TEST AND SCALE THE BUSINESS MODEL

COST STRUCTURE

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BUSINESS PLANNING CANVAS- better alternative for early teams that are still validating problem-solution fit

A version of the “lean canvas”

PROBLEM

What is the unmet medical need?

How many are there?

SOLUTION

How do you approach solving this unmet medical need?

UNIQUE VALUE PROPOSITION

What value you create that is not created as of now.

UNFAIR ADVANTAGE

What is difficult to copy,
Patents?
Competencies?

CUSTOMER SEGMENTS OR STAKEHOLDERS

How many years of development before market?

How much money is needed to reach market?

What are the regulatory milestones?

EXISTING ALTERNATIVES (COMPETITION)

How is the problem solved now? What drawbacks does it have?

PARTNERS

Who else do you need to make it work?
What other competencies are needed besides what you have?(think e.g. manufacturing, R&D CROs, Etc.)

R&D PATH

How many years of development before market?
How much money is needed to reach market?
What are the regulatory milestones?
Visualize a timeline.

COST STRUCTURE

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BUSINESS MODEL AND FINANCING

Some business models require larger investments than others.

What is your ability to fundraise and willingness to dilute affects choices too!

E.g. a sales force requires upfront capital, vs. licensing to a global vendor does not.

Which one has the best risk / benefit ratio to your risk appetite should determine the funding route and investment size.

Low risk low amounts could be covered by loans, FFF and angels vs. high risk high amounts would have to be covered by VCs or other financing.

MOST COMMON MISTAKES IN USING CANVASES

Primary market research does not precede it or follow it

→ what is filled are the hypotheses which are not validated

→ can create a false sense of security : *“Now we have a business model!!”*

The canvas is only used as a brainstorming tool

→ it is a good brainstorming tool and can lead to new alternatives to be tested or further analyzed

→ however, a detailed analysis should follow and a new iteration of the canvas filled based on the learnings → this gets forgotten too often.

Creating a business model for something that nobody wants is wasteful, start by getting feedback on the value proposition and choose the right market segment!

How I often approach business modelling?

It really does not have to be a canvas.

Economic modelling of costs structure / profit margin, and capital requirements go a long way. Calculate gross profit margin and expected operating profit margins. Benchmarking to public competitors is also smart.

Marketing and sales and customer's segments can be more easily tested and pivoted,

not everything have to emerge from canvas brainstorming.

UNDERSTAND your expected Profit and loss statement

Currency: USD	Q1 '21	Q2 '21	Q3 '21	Q4 '21	Q1 '22	Q2 '22	Q3 '22
Total revenue [?] YoY growth	1.09B —	1.13B —	1.11B —	1.20B +25.71%	1.22B +11.89%	1.16B +3.20%	1.11B +0.63%
> Cost of goods sold	-329.00M	-324.00M	-338.00M	-381.00M	-408.00M	-395.00M	-398.00M
Gross profit YoY growth	764.00M —	802.00M —	770.00M —	817.00M +29.68%	815.00M +6.68%	767.00M -4.36%	717.00M -6.88%
> Operating expenses (e...)	-571.00M	-615.00M	-1.31B	-754.00M	-631.00M	-737.00M	-471.00M
Operating income YoY growth	193.00M —	187.00M —	-545.00M —	63.00M -52.27%	184.00M -4.66%	30.00M -83.96%	246.00M +145.14%
> Non-operating income...	-24.00M	20.00M	965.00M	23.00M	-44.00M	-667.00M	-3.92B
Pretax income YoY growth	169.00M —	207.00M —	420.00M —	86.00M -71.14%	140.00M -17.16%	-637.00M -407.73%	-3.67B -974.29%

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