



TTC - MESTRADO EM MICROBIOLOGIA APLICADA
IE - MESTRADO EM MATEMÁTICA APLICADA ECONOMIA & GESTÃO
ITT - ENGENHARIA BIOMÉDICA E BIOFÍSICA
IE - OPCIONAL PARA 2º CICLO

FCUL – 2017/2018

AULA 3
05 MARÇO 2018

Sumário

- ⦿ Inovação e o processo de desenvolvimento de novos produtos. O processo *from bench to market*.
- ⦿ Alex Osterwalder e o Business Model Canvas – o Método e as diferentes parcelas. Hipóteses e Testes.
- ⦿ O Cliente, o Utilizador e o Influenciador.
- ⦿ Desenvolvimento de Clientes
- ⦿ A Competição.

INNOVATION

- ⦿ **Innovation** is **people** creating **value** by implementing new ideas
- ⦿ **Innovation** is **something different** that has **impact**
- ⦿ **Innovation** concerns the **search** for and the discovery, experimentation, development, imitation and adoption of new products, new processes and new organizational set ups
- ⦿ **Innovation** is the **conversion of knowledge** and ideas into a benefit, which may be for commercial use or for the public good; the benefit may be new or improved products, processes or services

INNOVATION

- ◎ INNOVATION is **NOT** TECHNOLOGY BASED
- ◎ INNOVATION ≠ **CREATIVITY**
- ◎ INNOVATION ≠ **NOT BEEN DONE BEFORE!**

INVENTION VS INNOVATION

**WHAT IS THE MAIN
DIFFERENCE?**

INVENTION

A system made of aluminum with turns that holds paper

A system of intertwined pieces of metal that is joined up by another larger metal piece in a successive way, up and down.

An electric pump linked to a suction system can push in objects and small particles from the environment

Production of an artificial circular double stranded DNA containing an origin of replication, a polylinker and an antibiotic resistant gene

Isolation of a fluorescent protein from a water mollusk.

An aluminum foil covered capsule for moisture and humidity tightness for coffee storage.

INNOVATION

INVENTION

+

EXPLOITATION

=



INNOVATION

NO IMPACT



NO



INNOVATION

LEONARDO DA VINCI

VS

THOMAS EDISON

INNOVATION

◎ GENIUSES

- ◎ **Da Vinci** – ability to see future, designed & created models that were never implemented in his time (he was a **thinker**, not a doer!)
- ◎ **Thomas Edison** – he implemented his ideas – light bulb; phonograph; motion-picture industry – and they had impact because he was a **doer**.

INVENTION

A system made of aluminum with turns that holds paper

A system of intertwined pieces of metal that is joined up by another larger metal piece in a successive way, up and down.

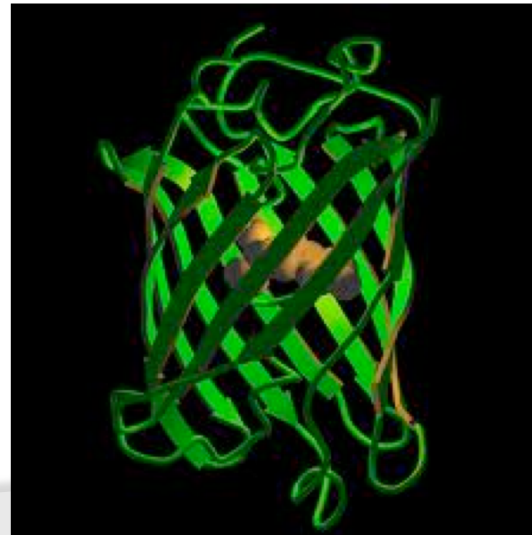
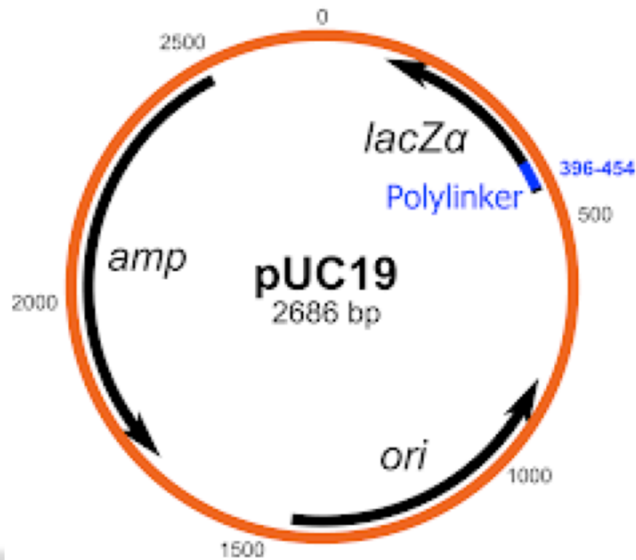
An electric pump linked to a suction system can push in objects and small particles from the environment

Production of an artificial circular double stranded DNA containing an origin of replication, a polylinker and an antibiotic resistant gene

Isolation of a fluorescent protein from a water mollusk.

An aluminum foil covered capsule for moisture and humidity tightness for coffee storage.

INNOVATION



INVENTION

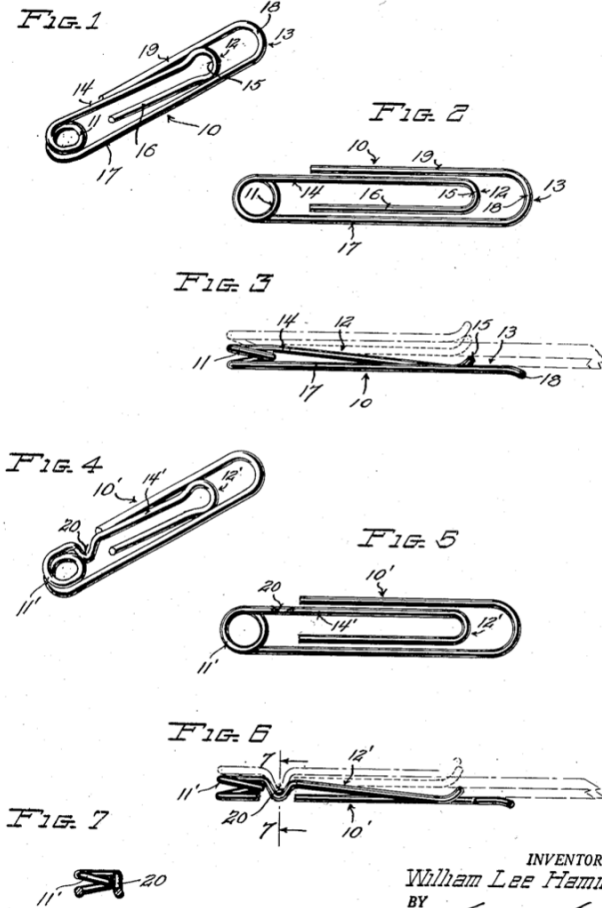
Feb. 19, 1957

W. L. HAMMER

2,781,566

PAPER CLIP

Filed March 3, 1953



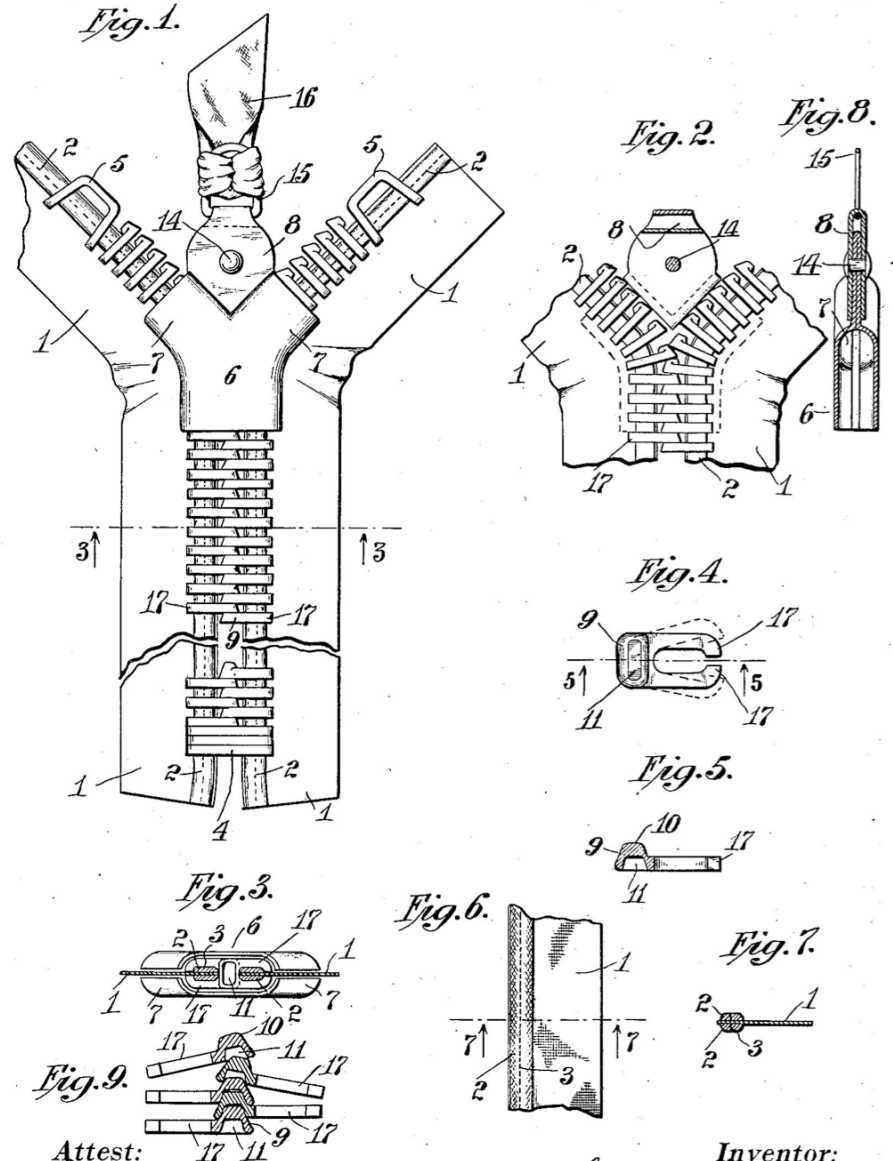
INVENTOR.
William Lee Hammer.
BY
Erwin B. Moring
ATTORNEY

INVENTION

G. SUNDBACK.
SEPARABLE FASTENER.
APPLICATION FILED AUG. 27, 1914.

1,219,881.

Patented Mar. 20, 1917.



Attest:
J. D. Connolly, Jr.

Inventor:
Gideon Sundback,
by *Edward Lager Wooster*
Attys.

INVENTION

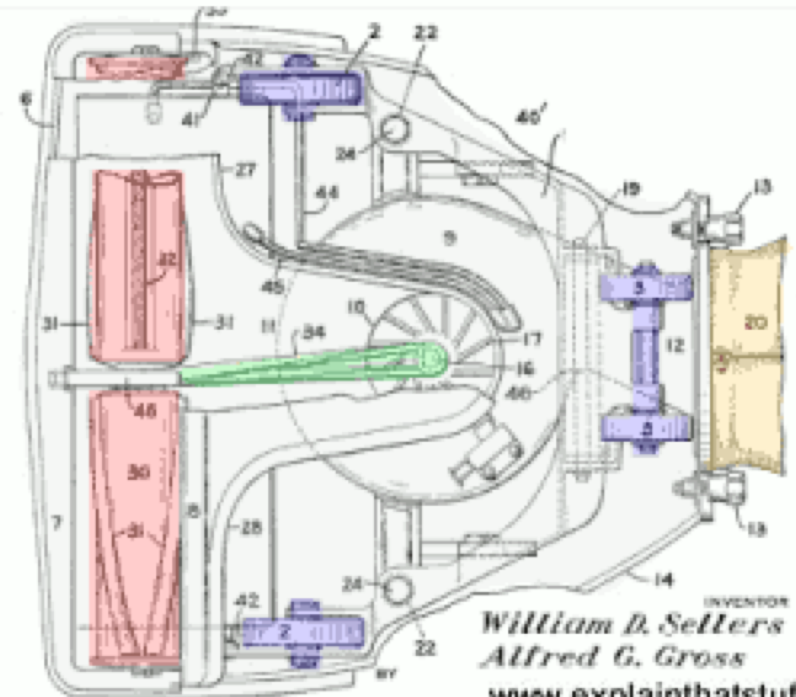
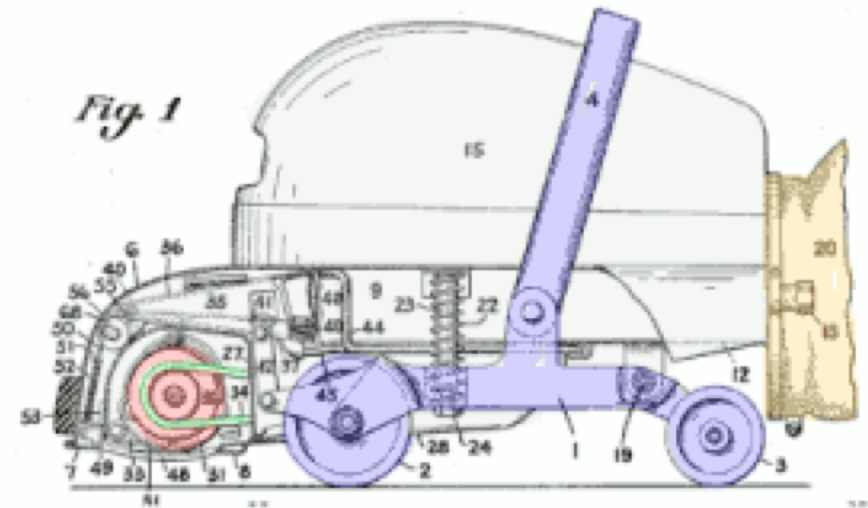
Feb. 29, 1944.

W. D. SELLERS ET AL

2,343,227

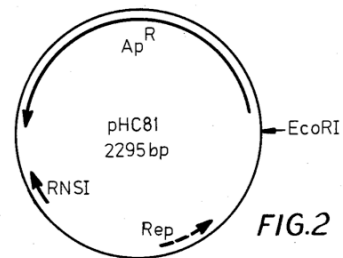
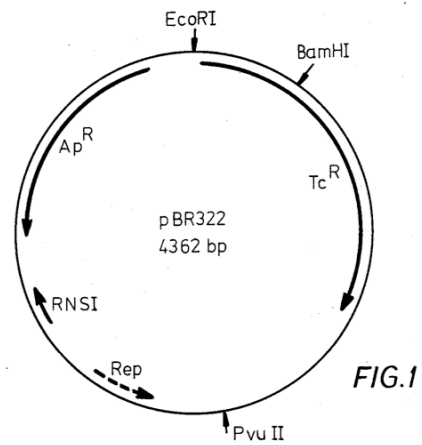
SUCTION CLEANER

Filed Aug. 23, 1939



INVENTOR
William D. Sellers
Alfred G. Gross

INVENTION



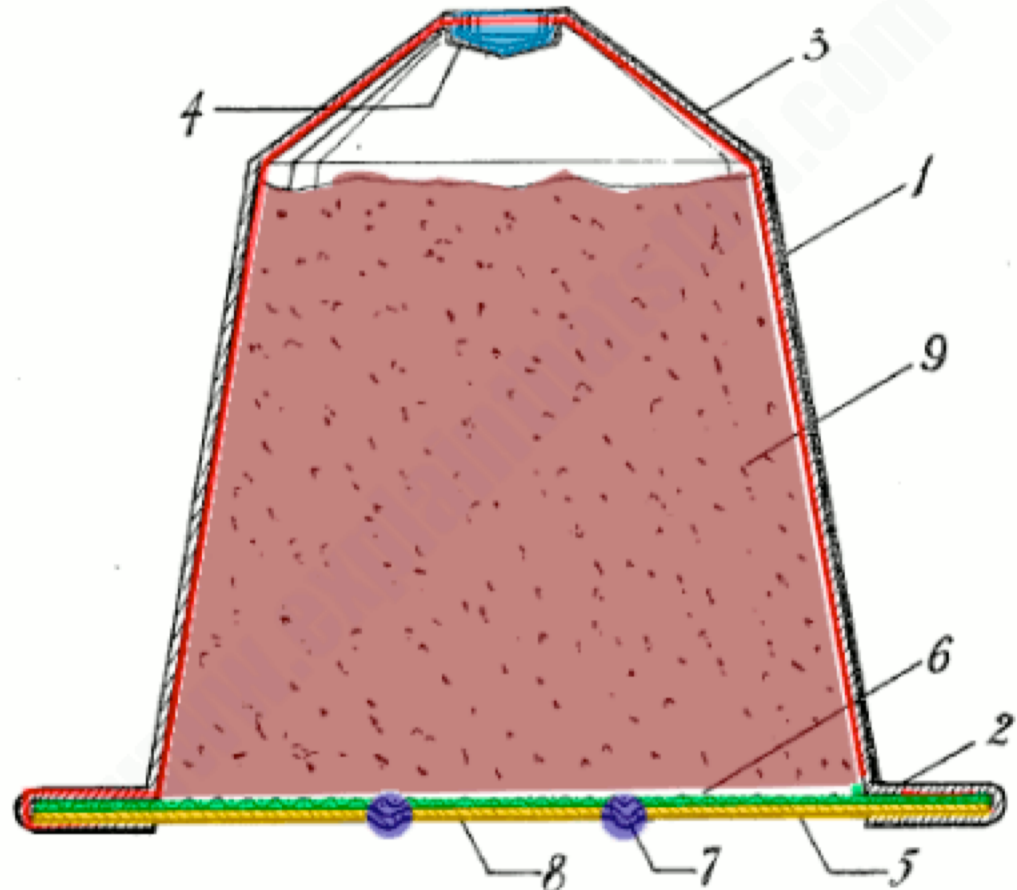
INVENTION

U.S. Patent

Jan. 23, 1979

4,136,202

www.explainthatstuff.com



Courtesy US Patent and Trademark Office

INNOVATING TAKES TIME!



INNOVATION

- ① **Incremental innovation** seeks to improve the systems that already exist, making them better, faster, cheaper. This is sometimes called "Market Pull" Innovation.
- ② **Radical innovation** is more focused on new technologies, new business models and breakthrough businesses. This is sometimes called "Technology Push" Innovation

PERFECTING THE PROSTHETIC LEG

How incremental innovation works for patients



c. 1800



c. 1920



Today

RADICAL INNOVATION



Degrees of Innovation: Products



INNOVATION

- ◎ **Open innovation** valuable ideas come from inside or outside the company and can go to market from inside or outside the company as well.
- ◎ **Closed innovation** valuable ideas for a company come from within this company and go to market from within this same company (centralized R&D).

CLOSED INNOVATION



The Coca-Cola logo, featuring the brand name in its iconic red, cursive script with a registered trademark symbol.



OPEN INNOVATION



OPEN INNOVATION



The Microfactory

A place where your ideas come to life. Think of it like a playground for adults. If you can think it, you can build it, and the microfactory is the catalyst behind making that vision a reality.

What is the one idea you wish you could bring to life?

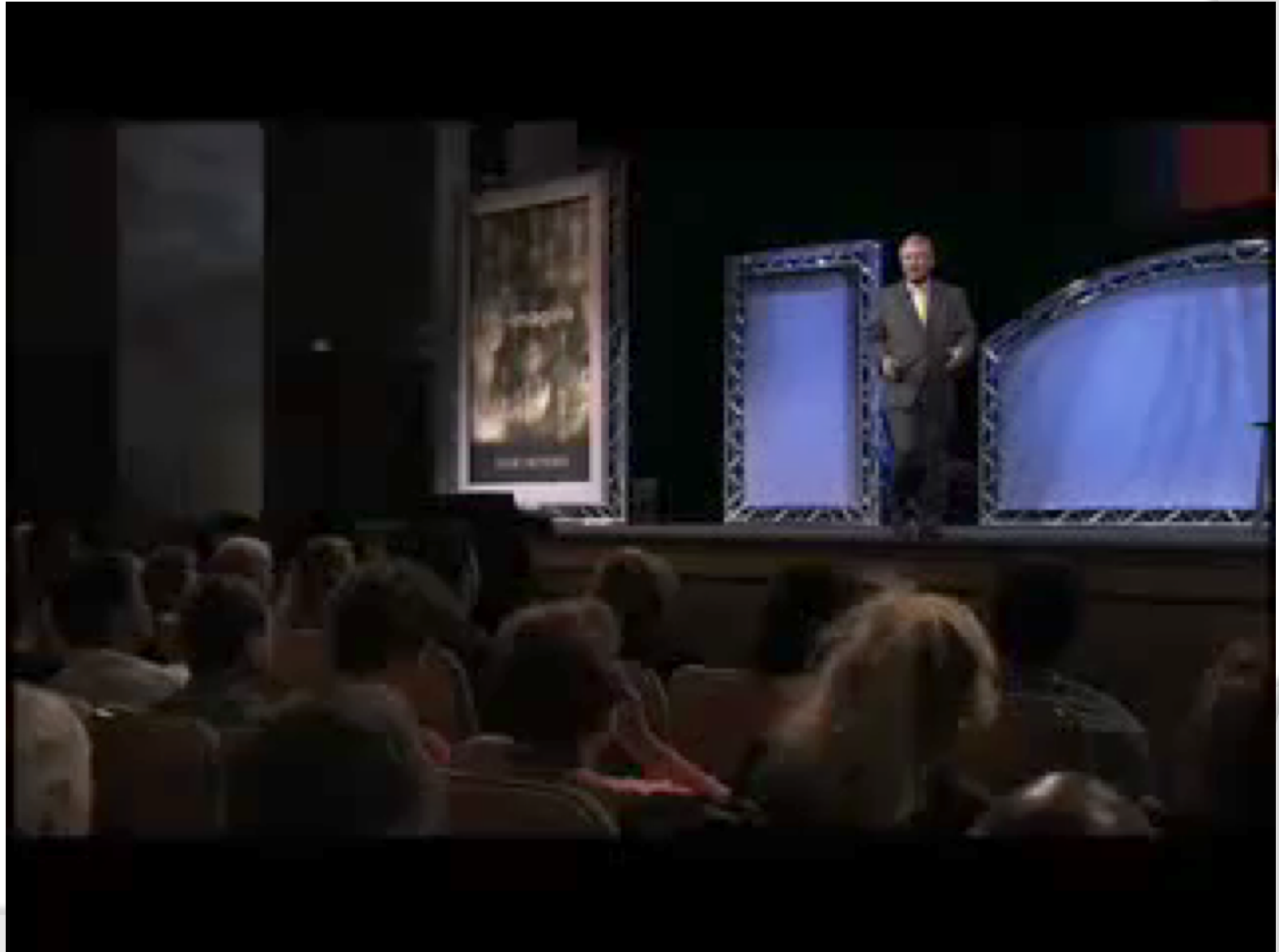
EXPLORE CO-CREATE

INNOVATION

- ⦿ The distinction between "invention" and "innovation" is that invention is the creation of a new idea or concept, and innovation is turning the new concept into commercial success or widespread use
- ⦿ **INNOVATION HAS IMPACT!**

Source: Yuri Ijuri and Robert Lawrence Kuhn, *New Directions in Creative and Innovative Management: Bridging Theory and Practice*, Ballinger Publishing (1988).

INNOVATION (4)



100 USES EXERCISE

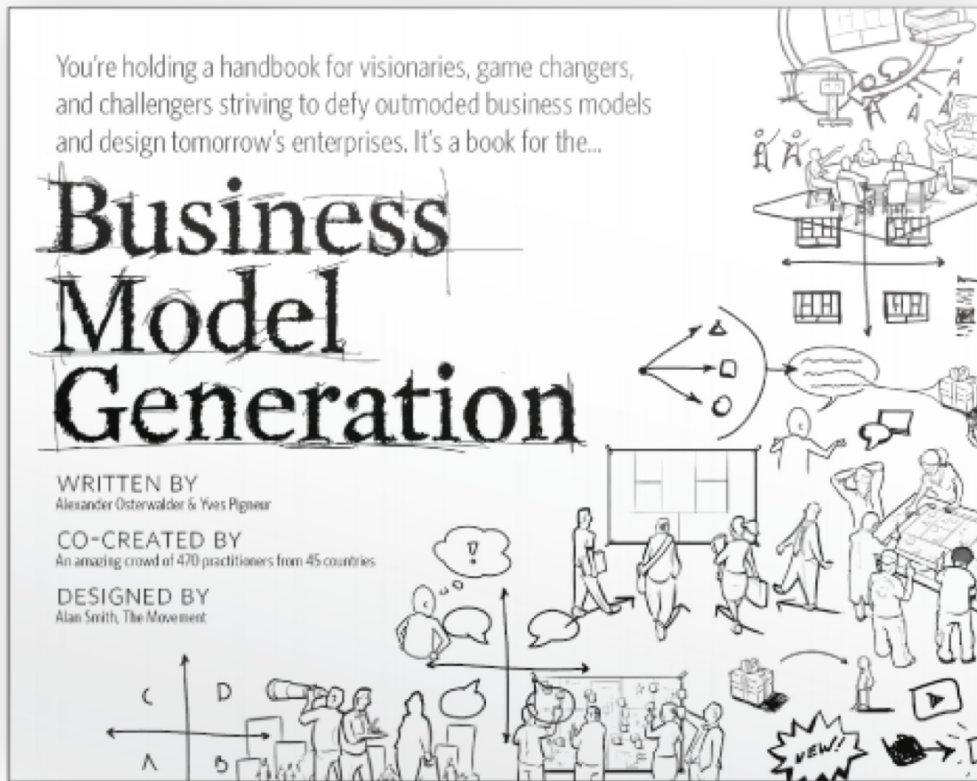
- ① Divide into groups of 5
- ① Each group must in 10 min come up with a list of 100 different uses for the item in their selected card.

TWO BUCKETS EXERCISE

- ⦿ Divide in groups of 3-5
- ⦿ Each group:
 - Pick a card from bucket A (Brands)
 - +
 - Pick a card from bucket B (needs)
- ⦿ **Challenge:** You work for the company on the A card, and they now require you to develop a product for them that is on the B card.

BUSINESS MODEL CANVAS

ALEX OSTERWALDER



Definição de Modelo de Negócio

“Um modelo de negócio é uma descrição lógica de como uma organização cria, distribui e captura valor.”

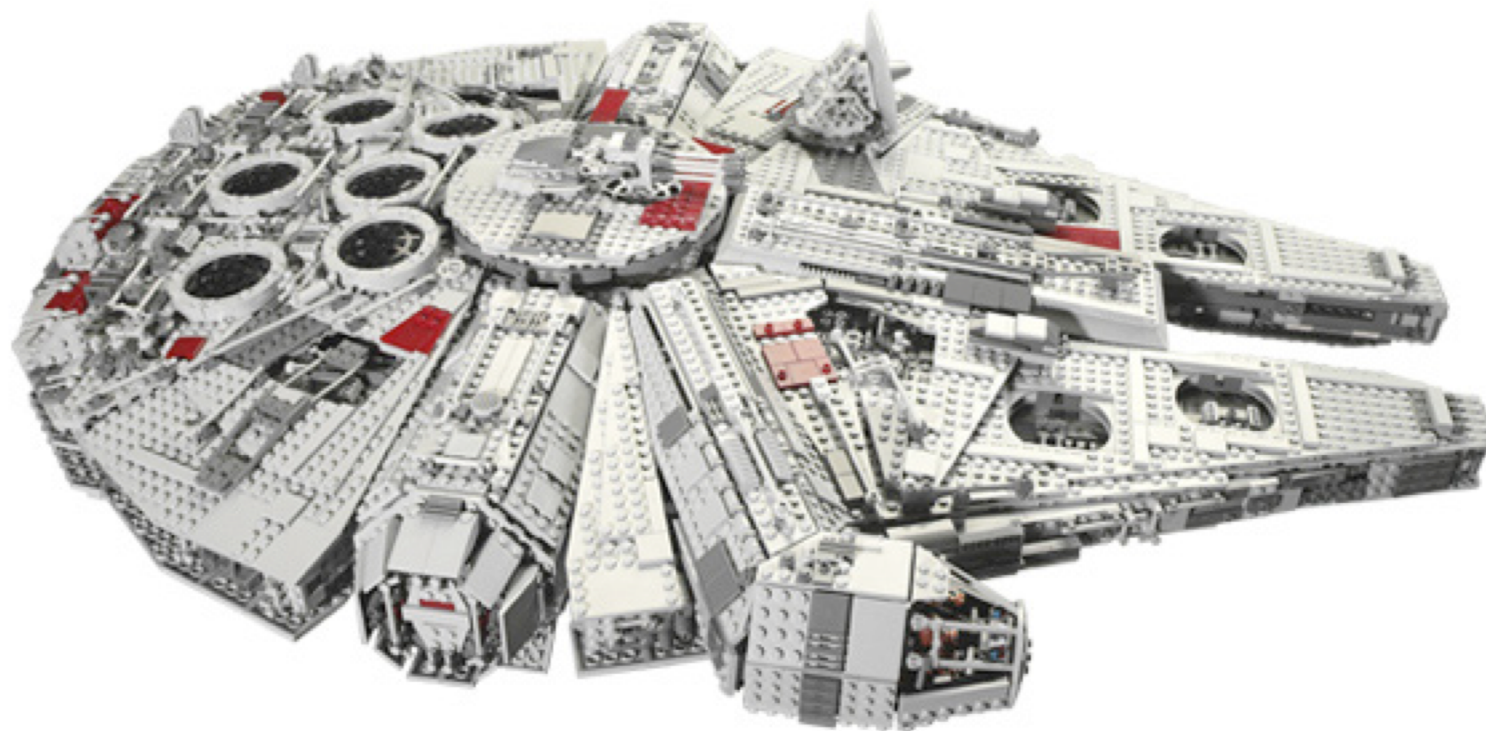
FIXE!! MAS COMO FAZEMOS ISSO?!

Alex Osterwalder

WHY USE A METHODOLOGY?



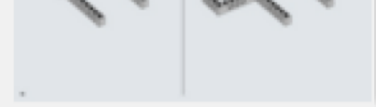
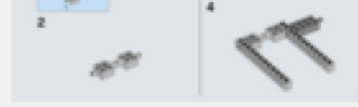
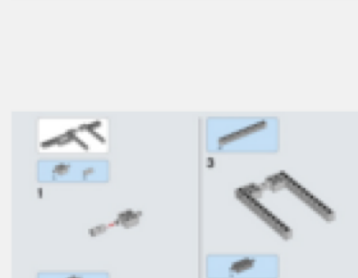
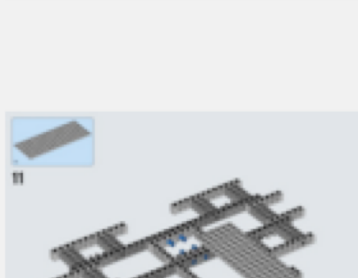
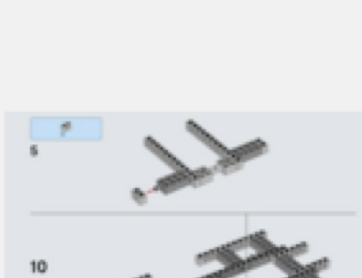
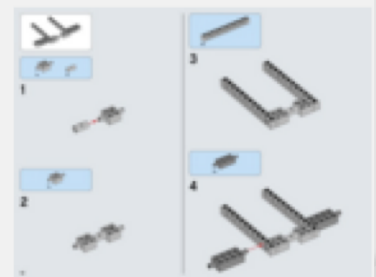
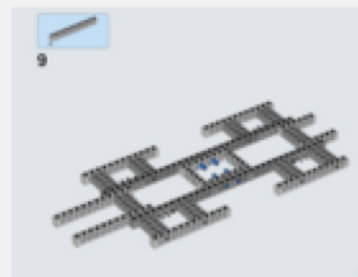
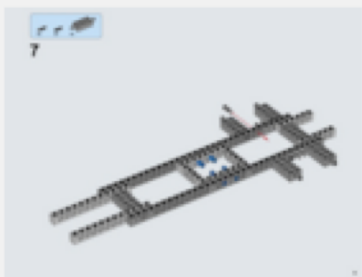
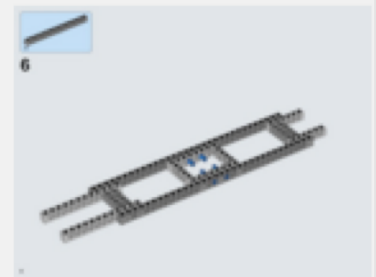
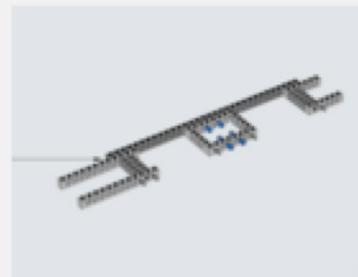
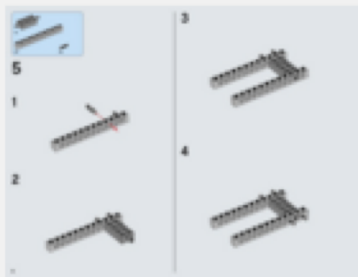
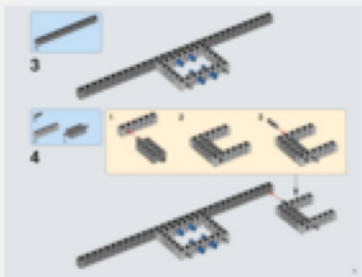
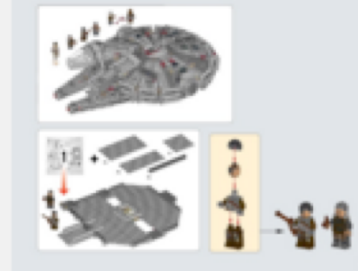
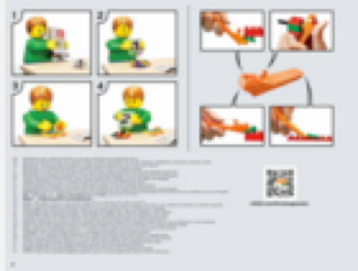
BUILD A STAR WARS SPACE SHIP!



GROUP A



GROUP B



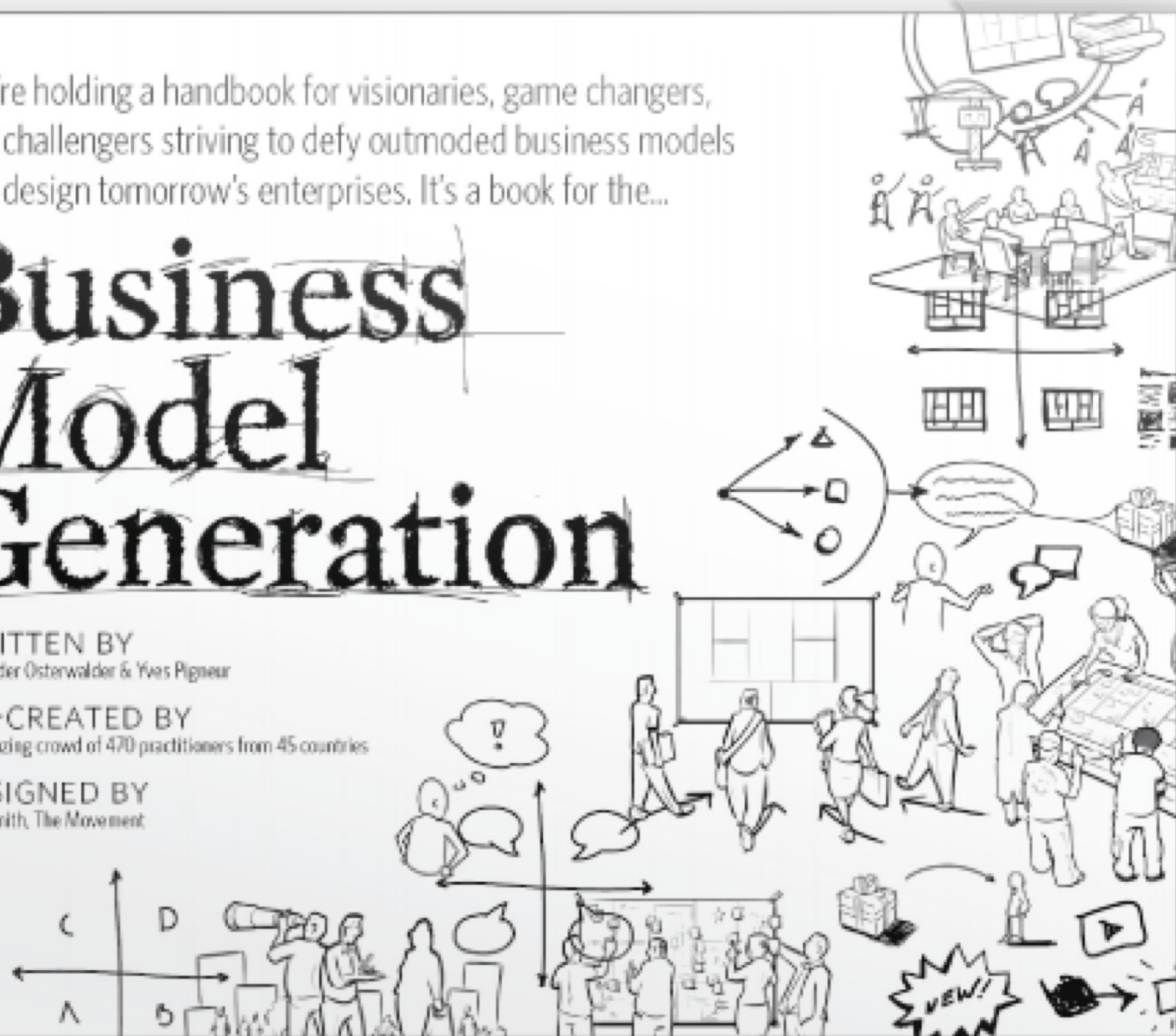
You're holding a handbook for visionaries, game changers,
and challengers striving to defy outmoded business models
and design tomorrow's enterprises. It's a book for the...

Business Model Generation

WRITTEN BY
Alexander Osterwalder & Yves Pigneur

CO-CREATED BY
An amazing crowd of 470 practitioners from 45 countries

DESIGNED BY
Alan Smith, The Movement



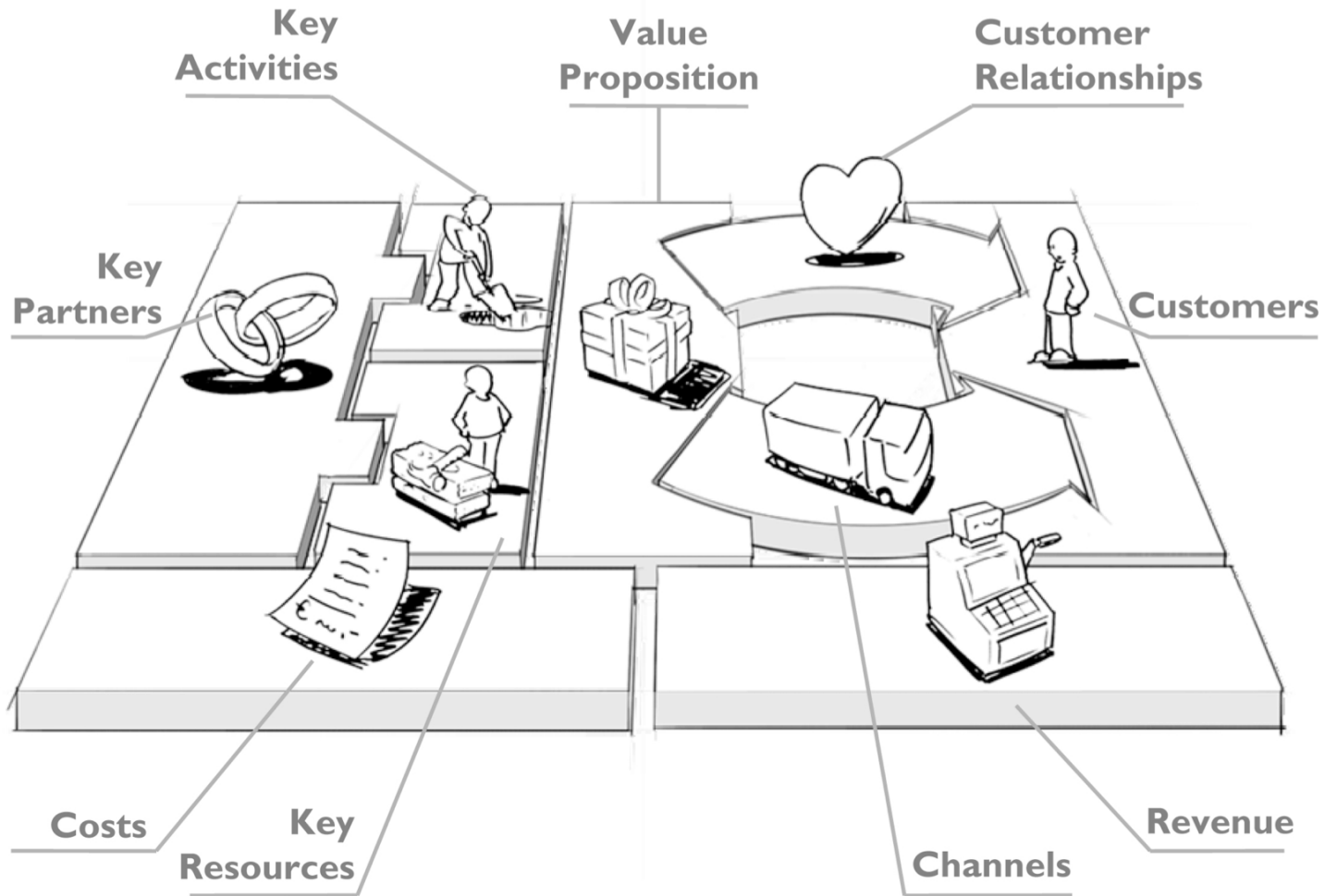
BUSINESS MODEL CANVAS

9 BUILDING BLOCKS

BUSINESS MODEL CANVAS

***IT IS USED TO:
DESCRIBE
DESIGN
CHALLENGE
INVENT
INNOVATE!***

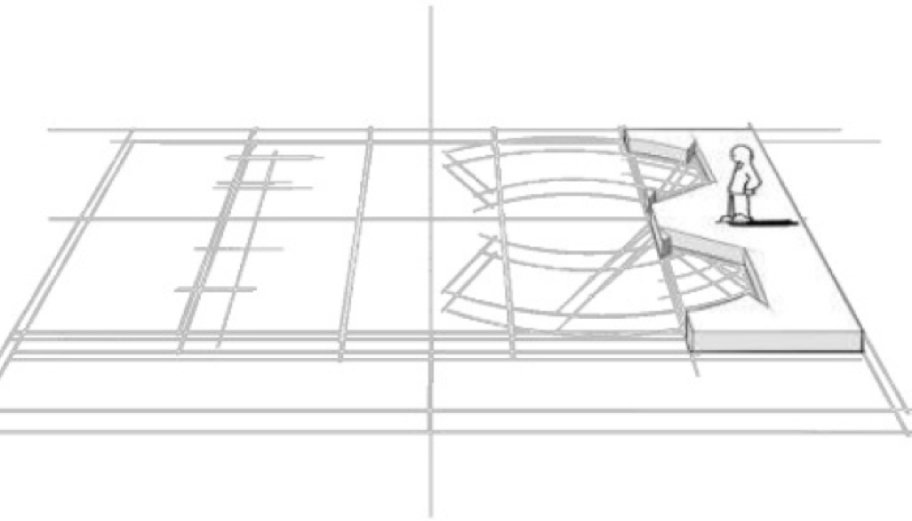
BUSINESS MODEL CANVAS



drawings by JAM

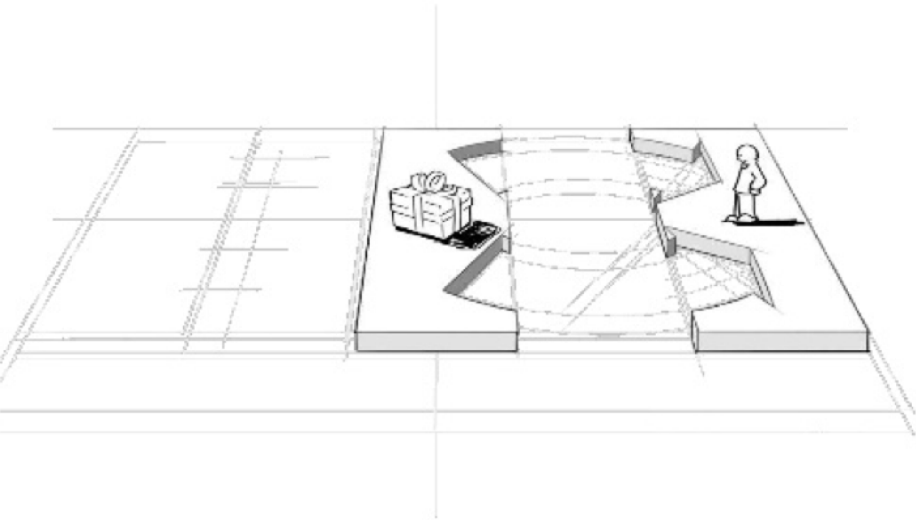
CUSTOMER SEGMENTS

Who are our most important clients?

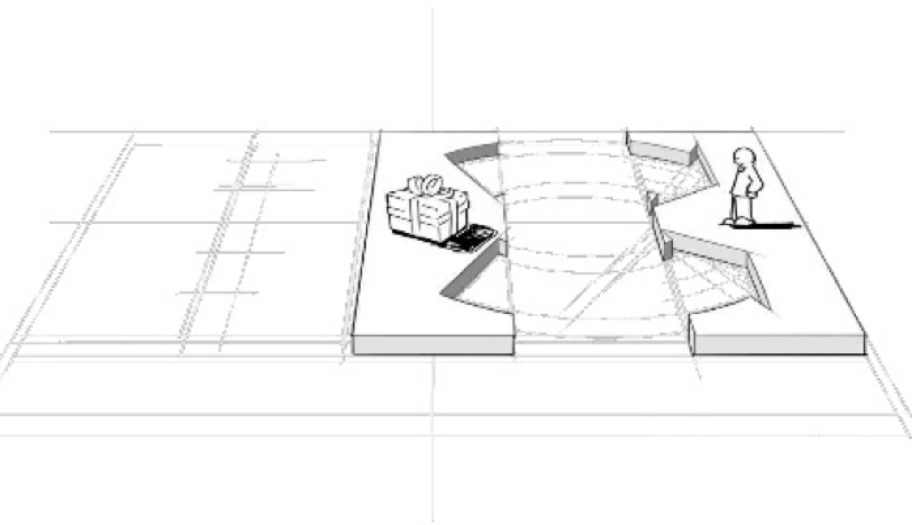


VALUE PROPOSITION

What is the problem we are trying to solve?



VALUE PROPOSITION

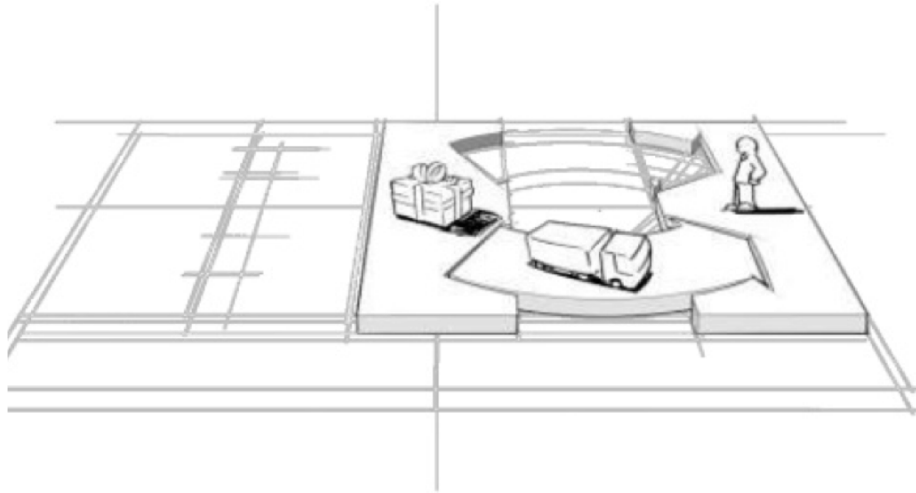


What is the problem we are trying to solve?

What is the solution we are proposing?

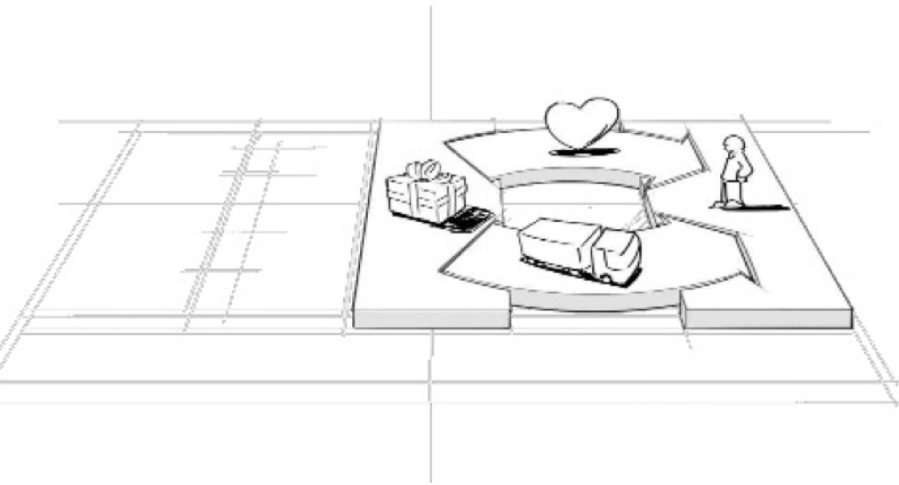
CHANNELS

How are we communicating the Value Proposition?

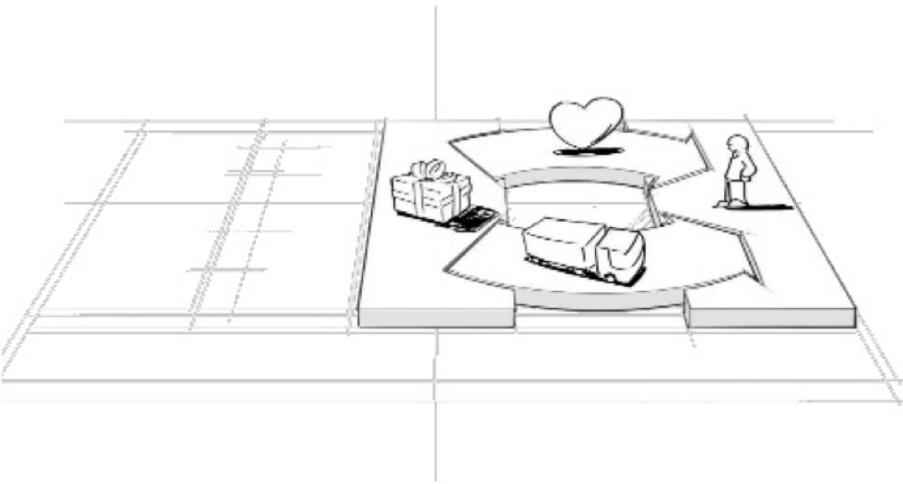


CUSTOMER'S RELATIONS

How will we obtain clients?



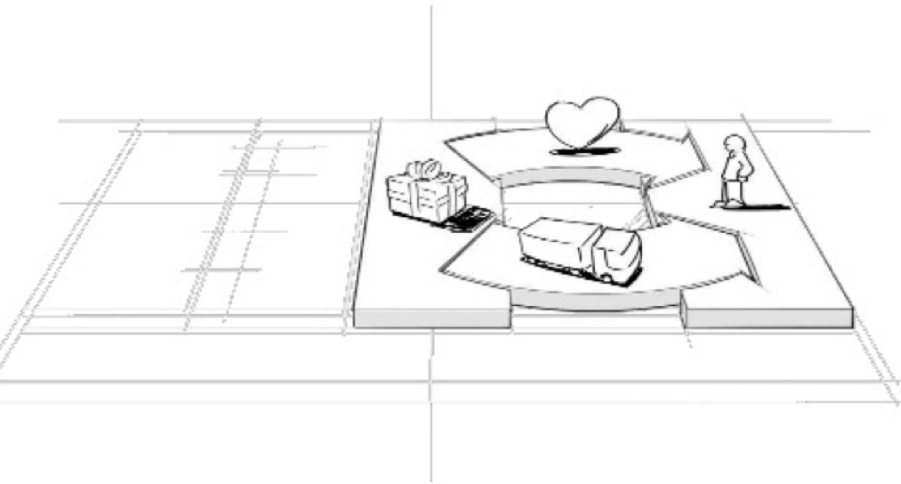
CUSTOMER'S RELATIONS



How will we obtain clients?

How will we maintain clients?

CUSTOMER'S RELATIONS



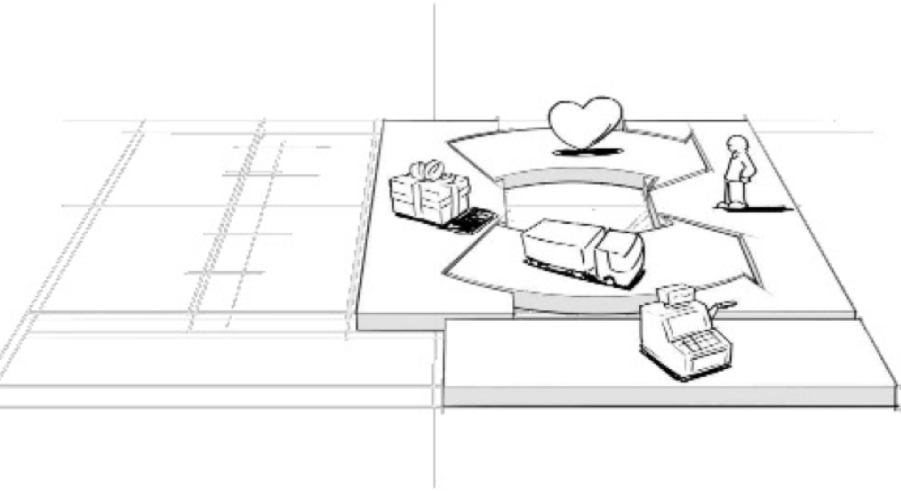
How will we obtain clients?

How will we maintain clients?

How will we grow clients?

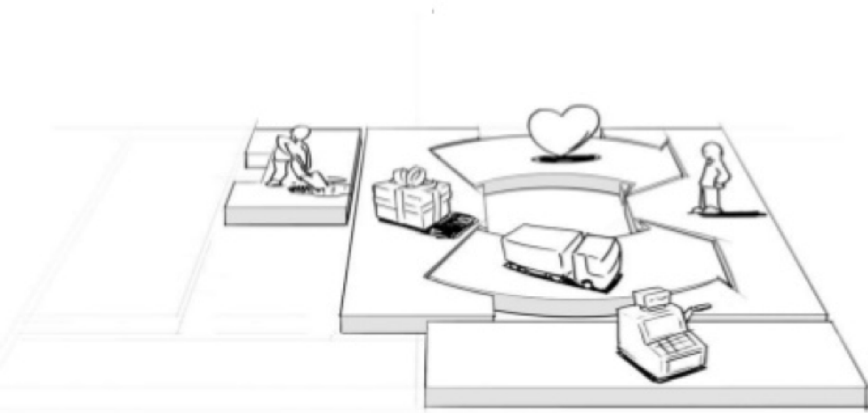
INCOME

What types of income flows can we identify?

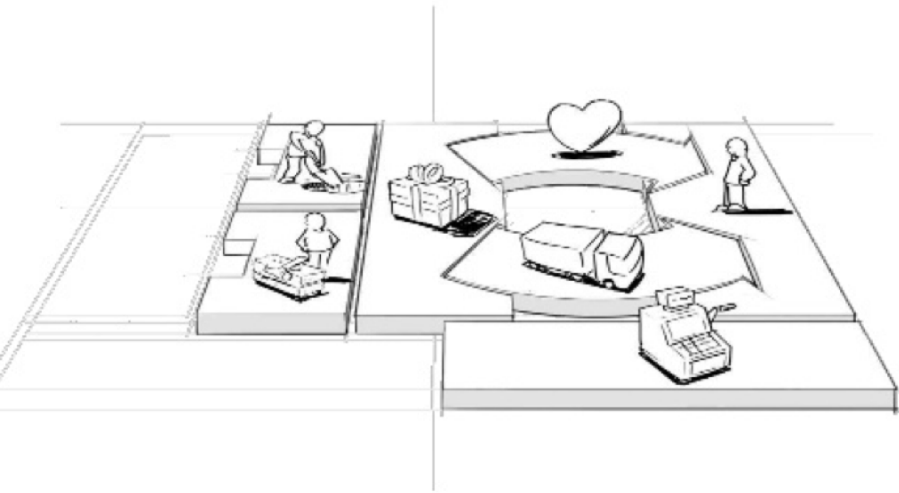


KEY ACTIVITIES

What are the critical activities demanded by my business model?



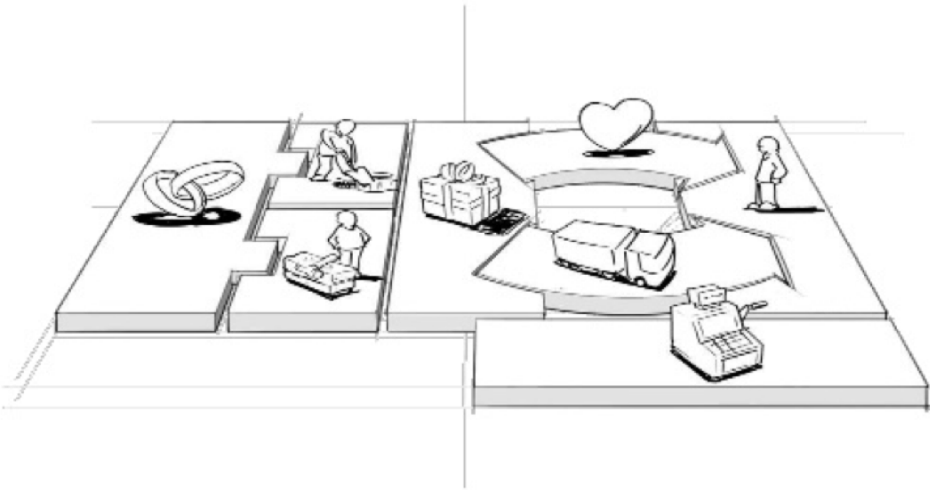
KEY RESOURCES



What are the critical resources demanded by my business model?

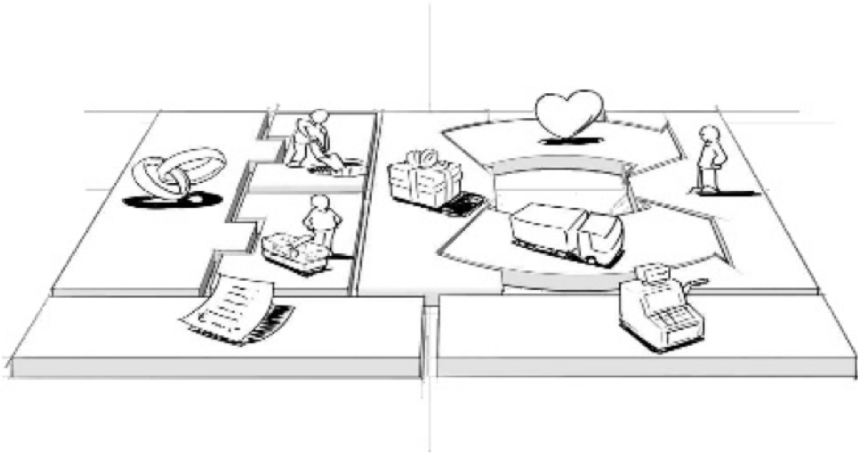
KEY PARTNERS

Who are the critical partners and suppliers of my business?

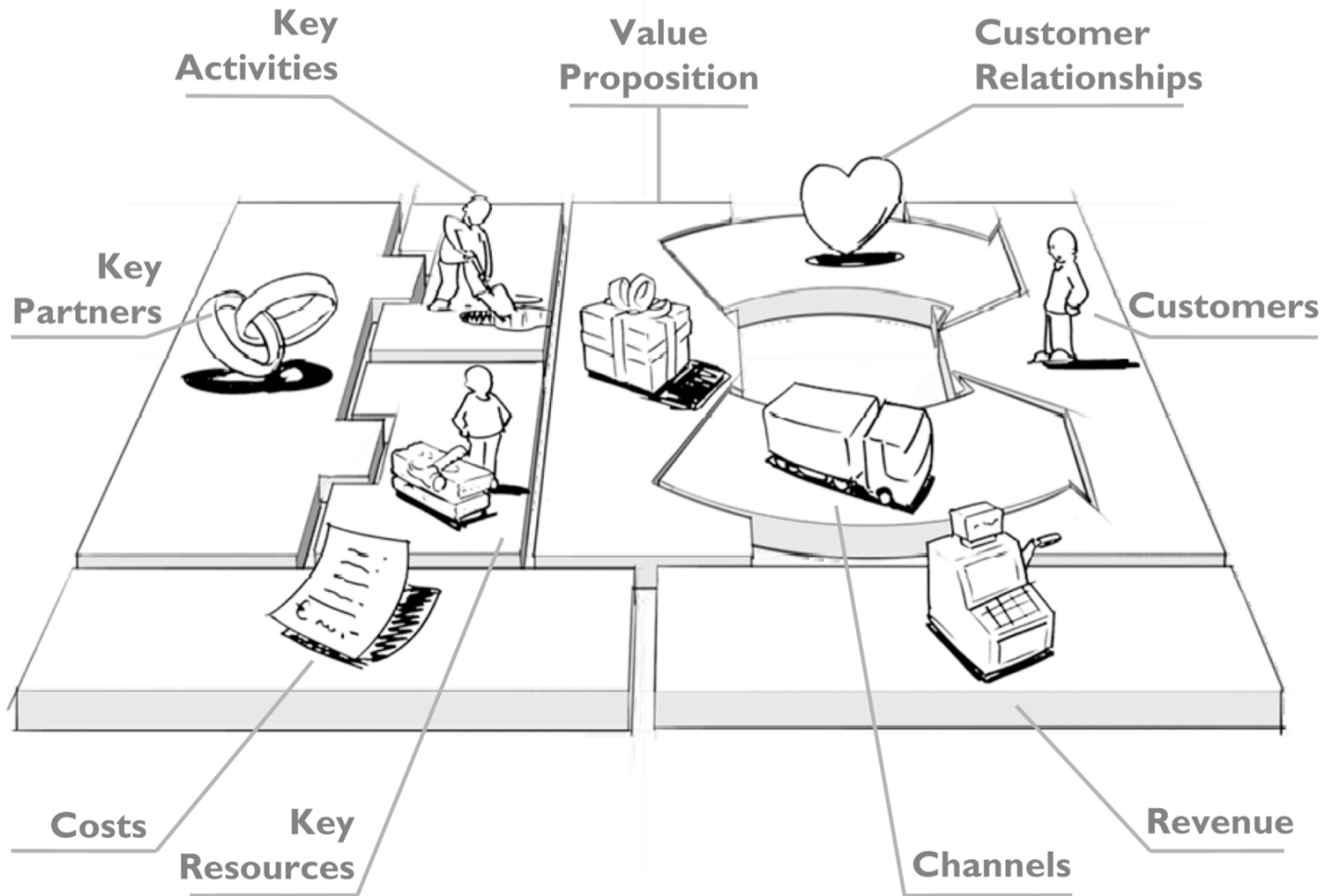


COSTS

What is the resulting cost structure?



BUSINESS MODEL CANVAS



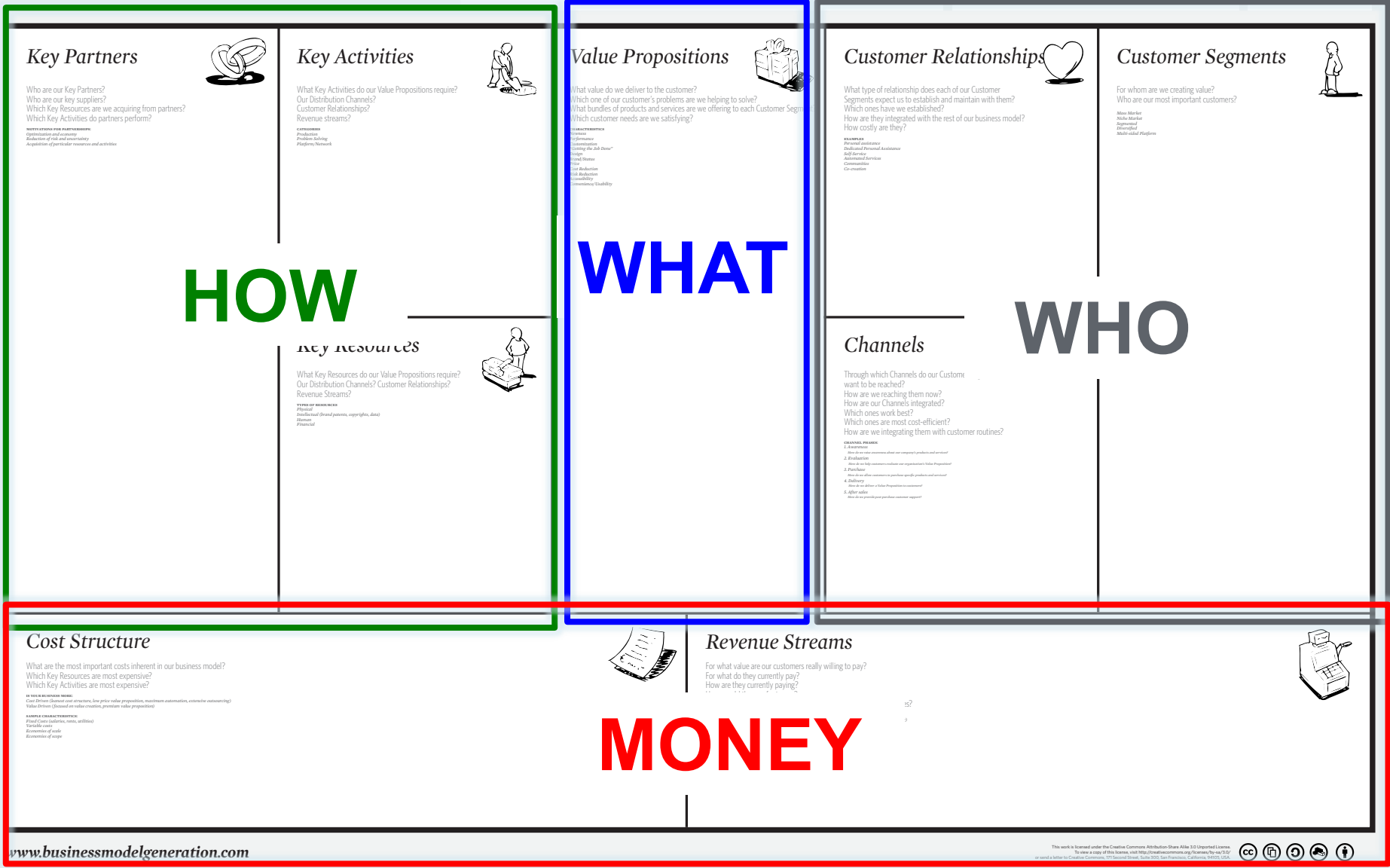
drawings by JAM

The Business Model Canvas

Designed for:

Designed by:

On: Day Month Year
 Transition: To



Key Partners



Who are our Key Partners?
 Who are our key suppliers?
 Which Key Resources do we acquire from partners?
 Which Key Activities do partners perform?

KEY RESOURCES FOR PARTNERSHIP:
 Capitalization and connectivity
 Reduction of risk and uncertainty
 Acquisition of particular resources and activities

Key Activities



What Key Activities do our Value Propositions require?
 Our Distribution Channels?
 Customer Relationships?
 Revenue Streams?

CHANNELS:
 Production
 Problem Solving
 Platform Network

HOW

Value Propositions



What value do we deliver to the customer?
 Which one of our customer's problems are we helping to solve?
 What bundles of products and services are we offering to each Customer Segment?
 Which customer needs are we satisfying?

VALUE PROPOSITIONS:
 Personalization
 Convenience
 Cost Reduction
 "Getting the Job Done"
 Simplicity
 Speed
 Social Status
 Risk Reduction
 Risk Reduction
 Reliability
 Convenience/Usability

WHAT

Customer Relationships



What type of relationship does each of our Customer Segments expect us to establish and maintain with them?
 Which ones have we established?
 How are they integrated with the rest of our business model?
 How costly are they?

CHANNELS:
 Personal Assistance
 Online and Personal Assistance
 Self-Service
 Automated Services
 Communities
 Co-creation

Customer Segments



For whom are we creating value?
 Who are our most important customers?

MARKETS:
 Mass Market
 Niche Market
 Segmented
 Diversified
 Multi-sided Platform

WHO

Channels

Through which Channels do our Customers want to be reached?
 How are we reaching them now?
 How are our Channels integrated?
 Which ones work best?
 Which ones are most cost-efficient?
 How are we integrating them with customer routines?

CHANNELS:
 1. Direct sales
 How do we create customer contact (our company's production and service)?
 2. Distribution
 How do we create customer contact (our company's Value Proposition)?
 3. Partners
 How do we create customer contact (our company's products and services)?
 4. Delivery
 How do we deliver our Value Proposition to customers?
 5. After sales
 How do we provide post-purchase customer support?

Cost Structure

What are the most important costs inherent in our business model?
 Which Key Resources are most expensive?
 Which Key Activities are most expensive?

KEY RESOURCES:
 Core System (Support your structure, low price value proposition, maximum automation, extensive networking)
 Value Stream (Support your structure, premium value proposition)

CHANNELS:
 Fixed Costs (salaries, rent, utilities)
 Variable costs
 Economies of scale
 Economies of scope

Revenue Streams

For what value are our customers really willing to pay?
 For what do they currently pay?
 How are they currently paying?

MONEY



KEY PARTNERS



KEY ACTIVITIES



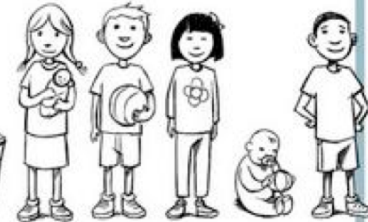
VP



CUSTOMERS RELATIONSHIP



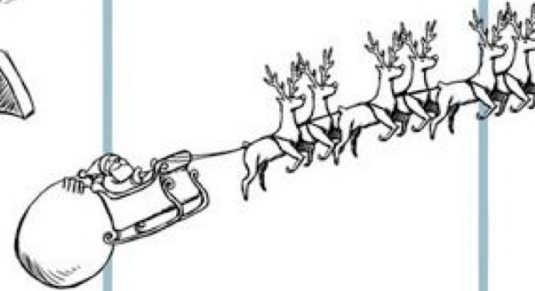
CUSTOMERS



KEY RESOURCES



CHANNELS



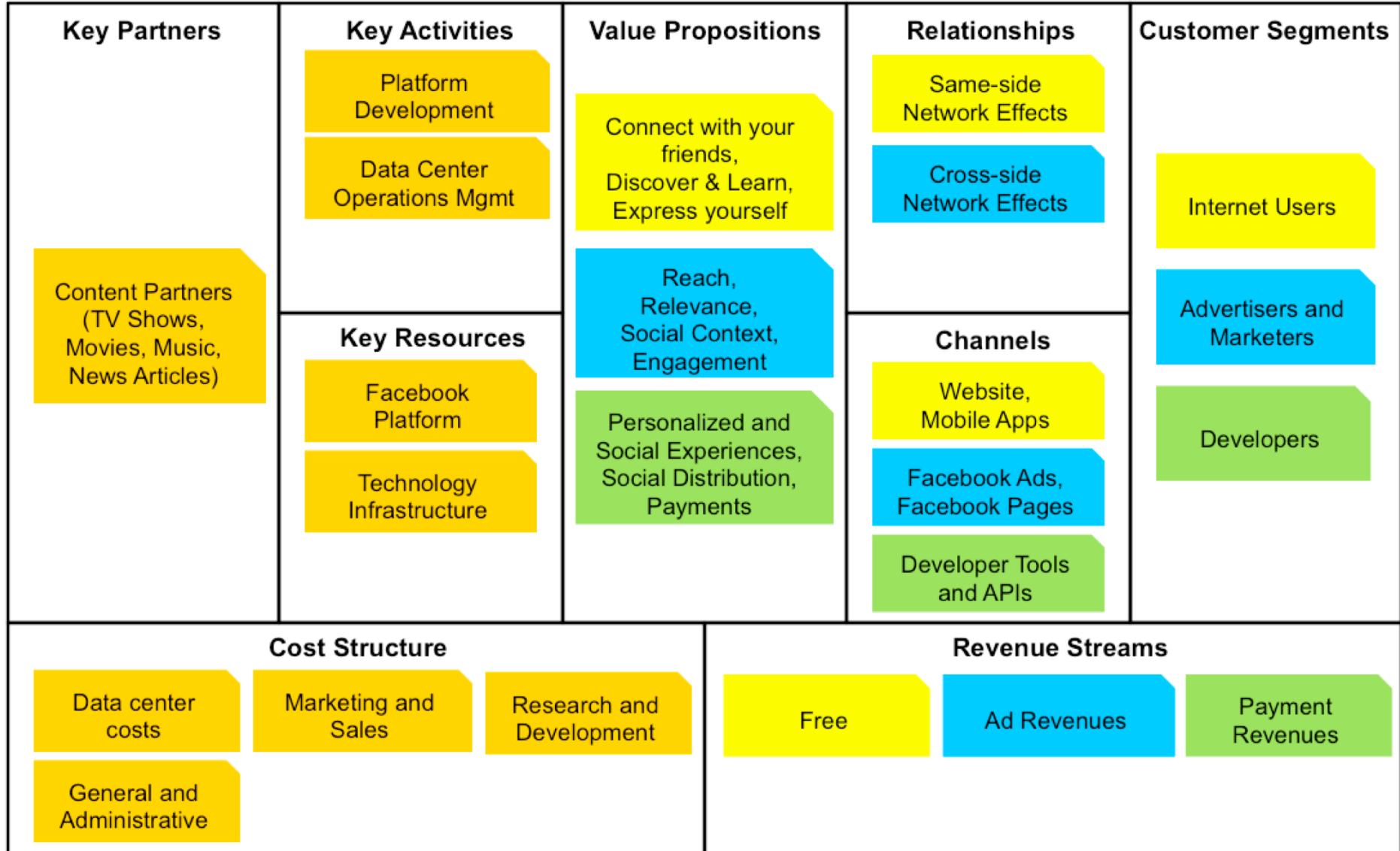
COST STRUCTURE

REVENUE STREAM



facebook

Facebook – World's leading Social Networking Site (SNS)





NESPRESSO®



Nespresso altered
the **business model**
of espresso coffee

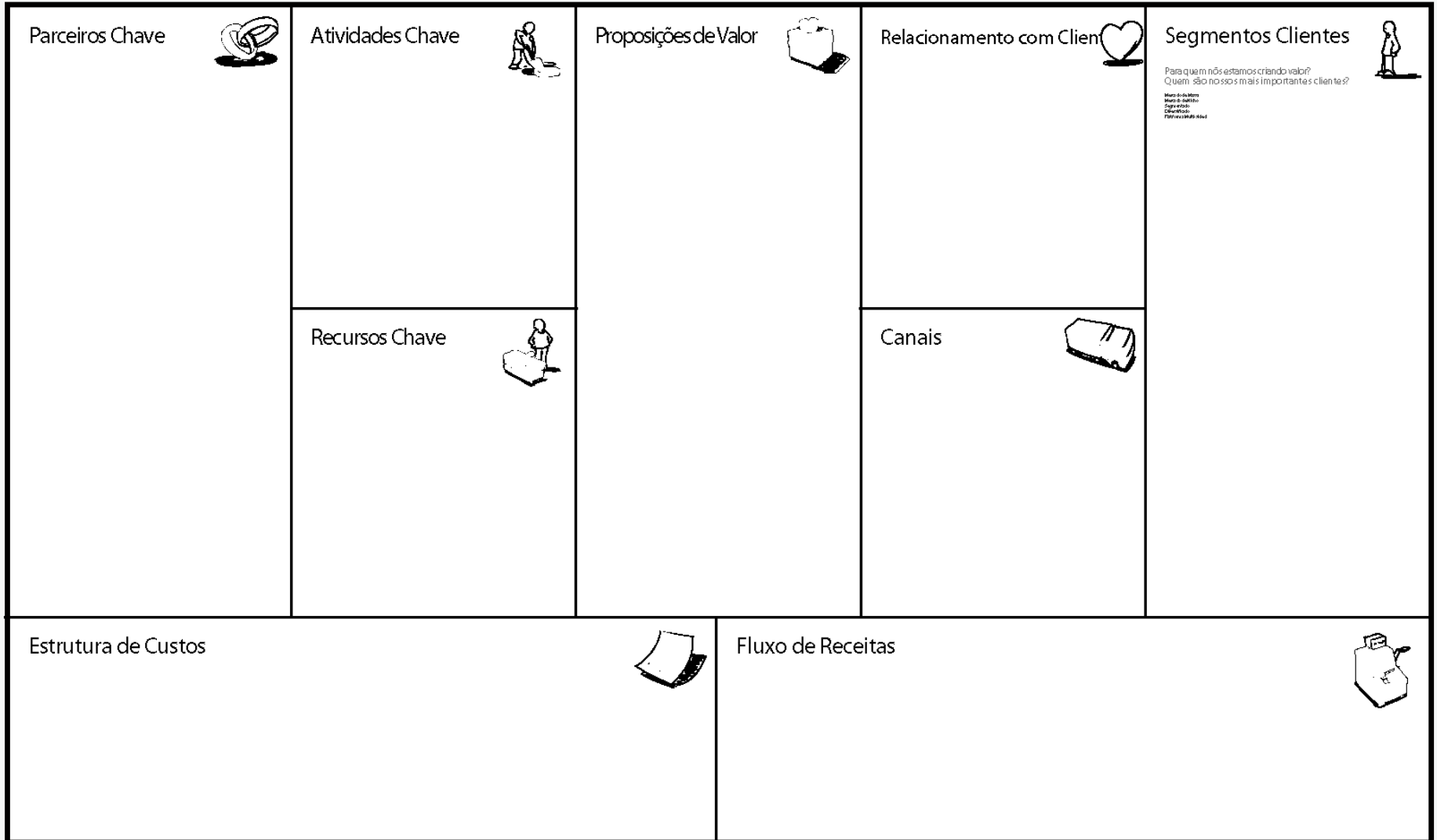
Visão Geral do Modelo de Negócio

Elaborado para:

Elaborado por:

Em: Dia Mês Ano

Interação: No



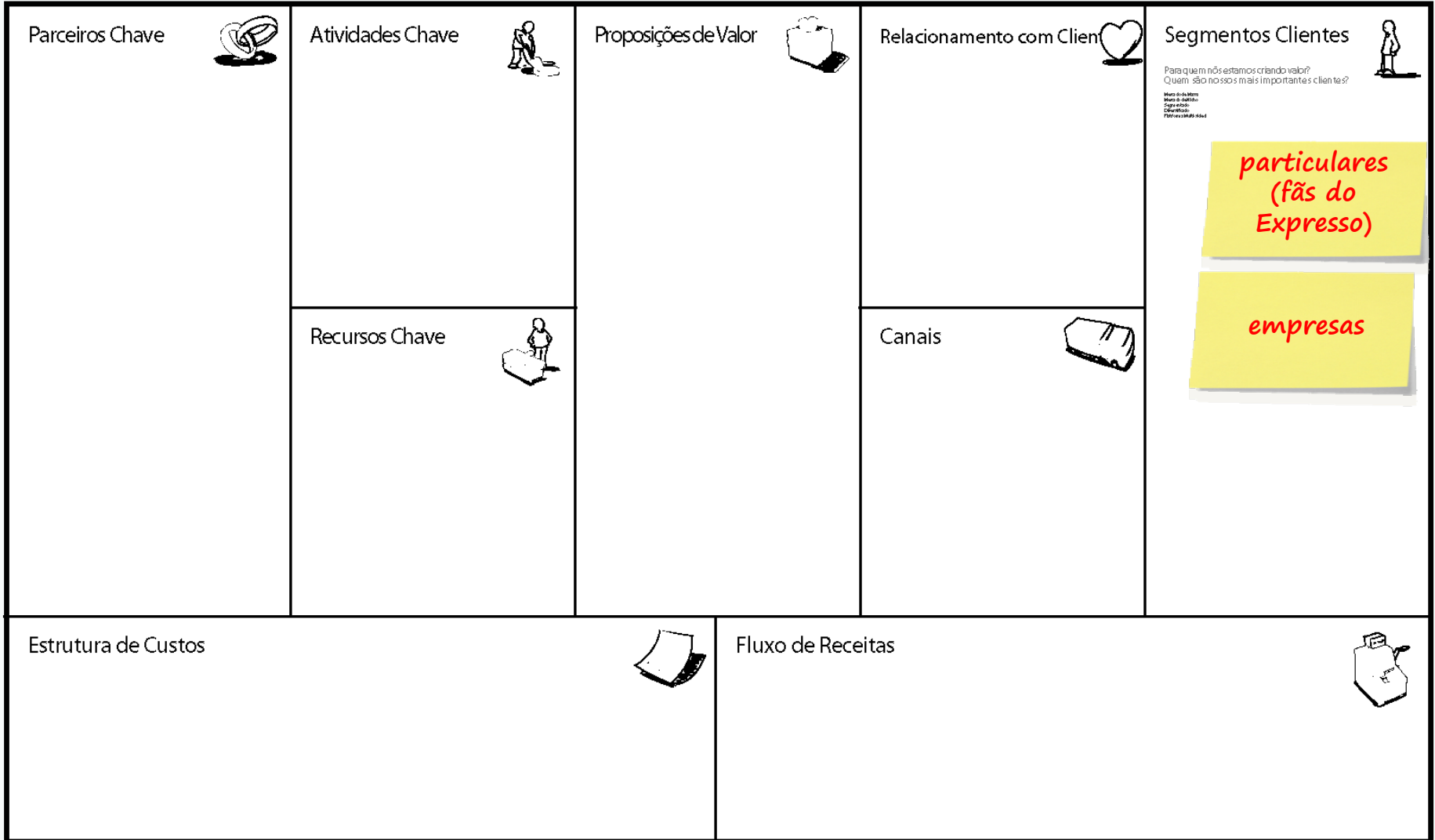
Visão Geral do Modelo de Negócio

Elaborado para:

Elaborado por:

Em: Dia Mes Ano

Interação: No



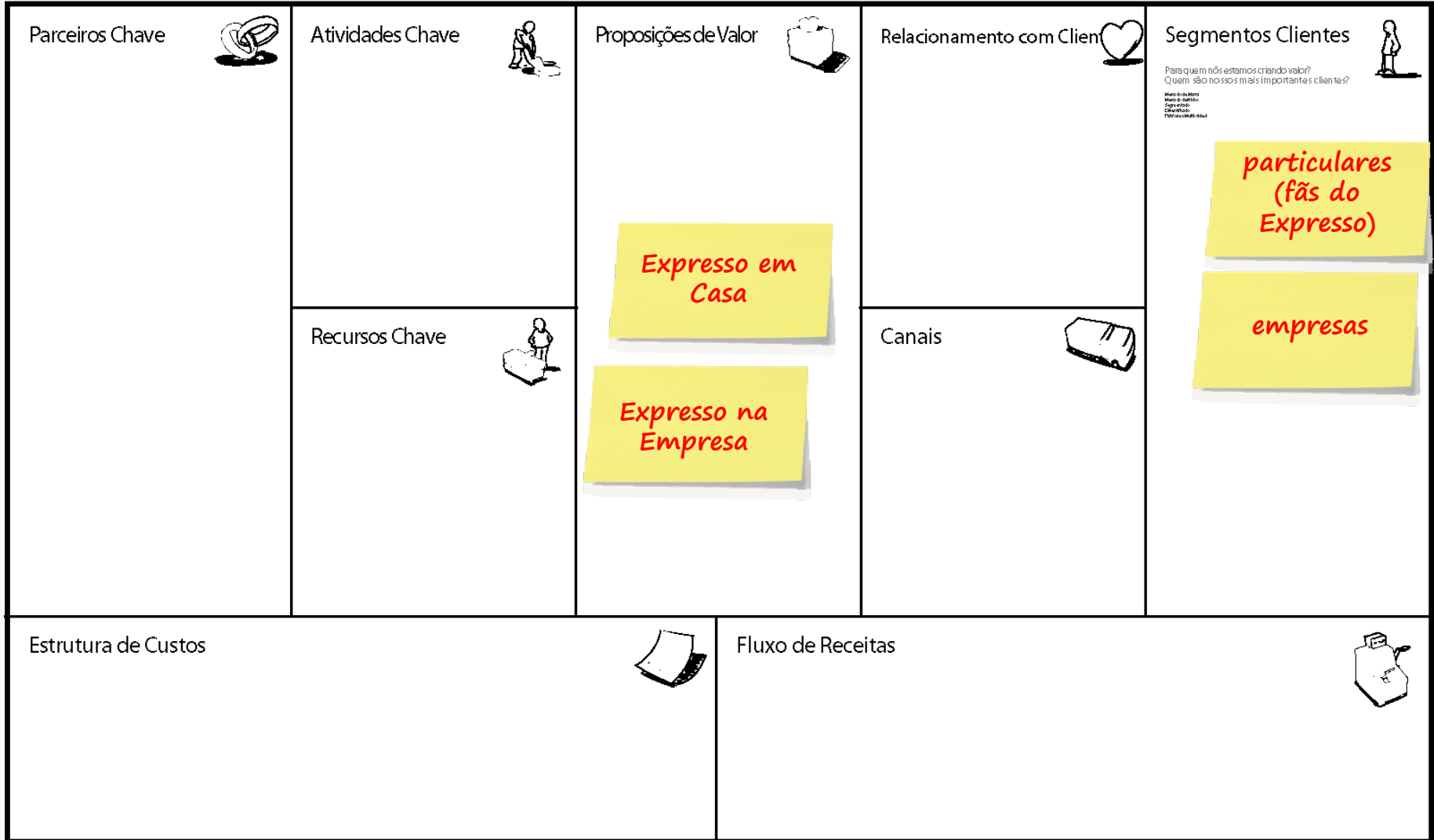
Visão Geral do Modelo de Negócio

Elaborado para:

Elaborado por:

Em: Dia Mês Ano

Interação: No



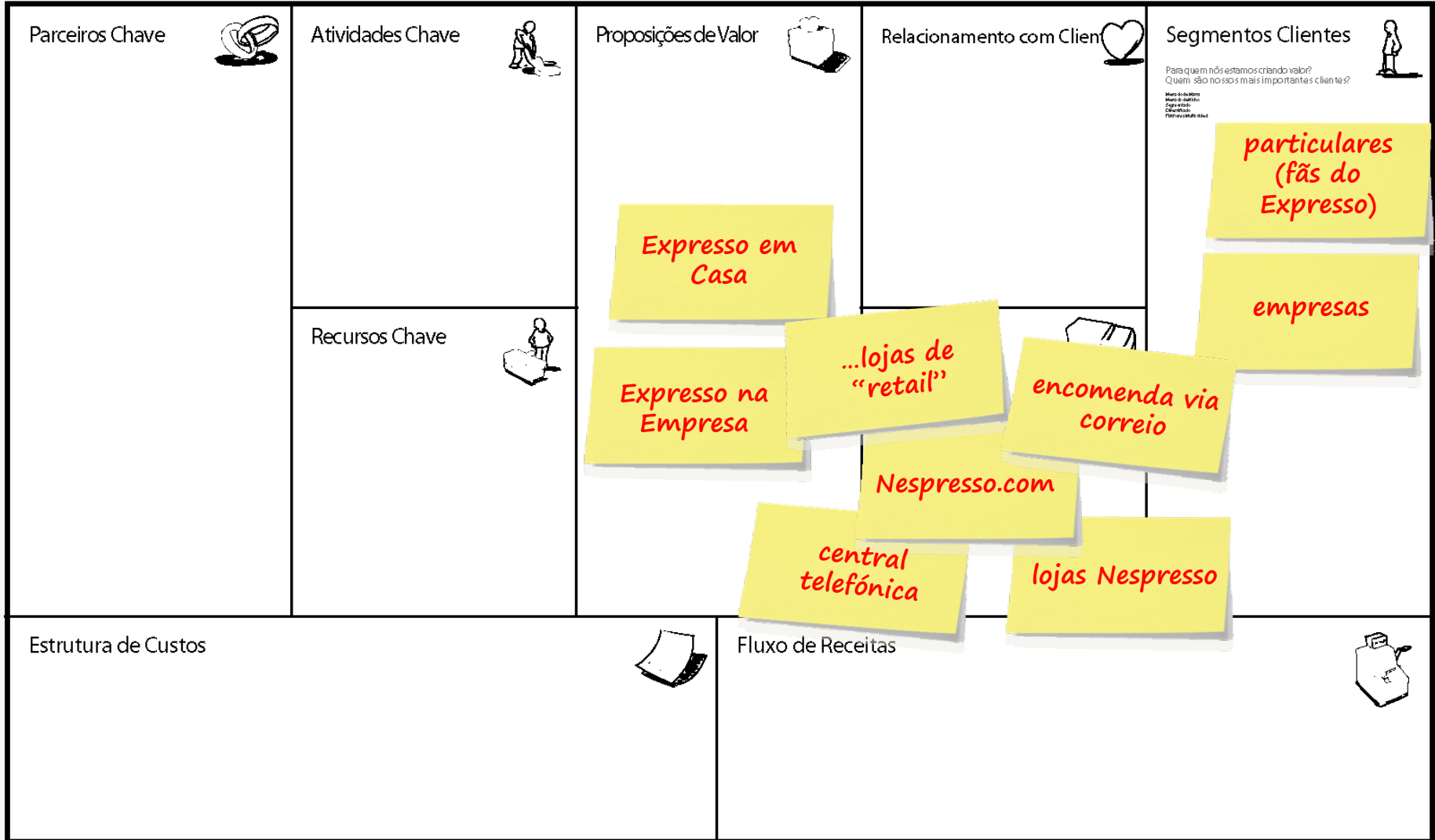
Visão Geral do Modelo de Negócio

Elaborado para:

Elaborado por:

Em: Dia Mês Ano

Interação: No



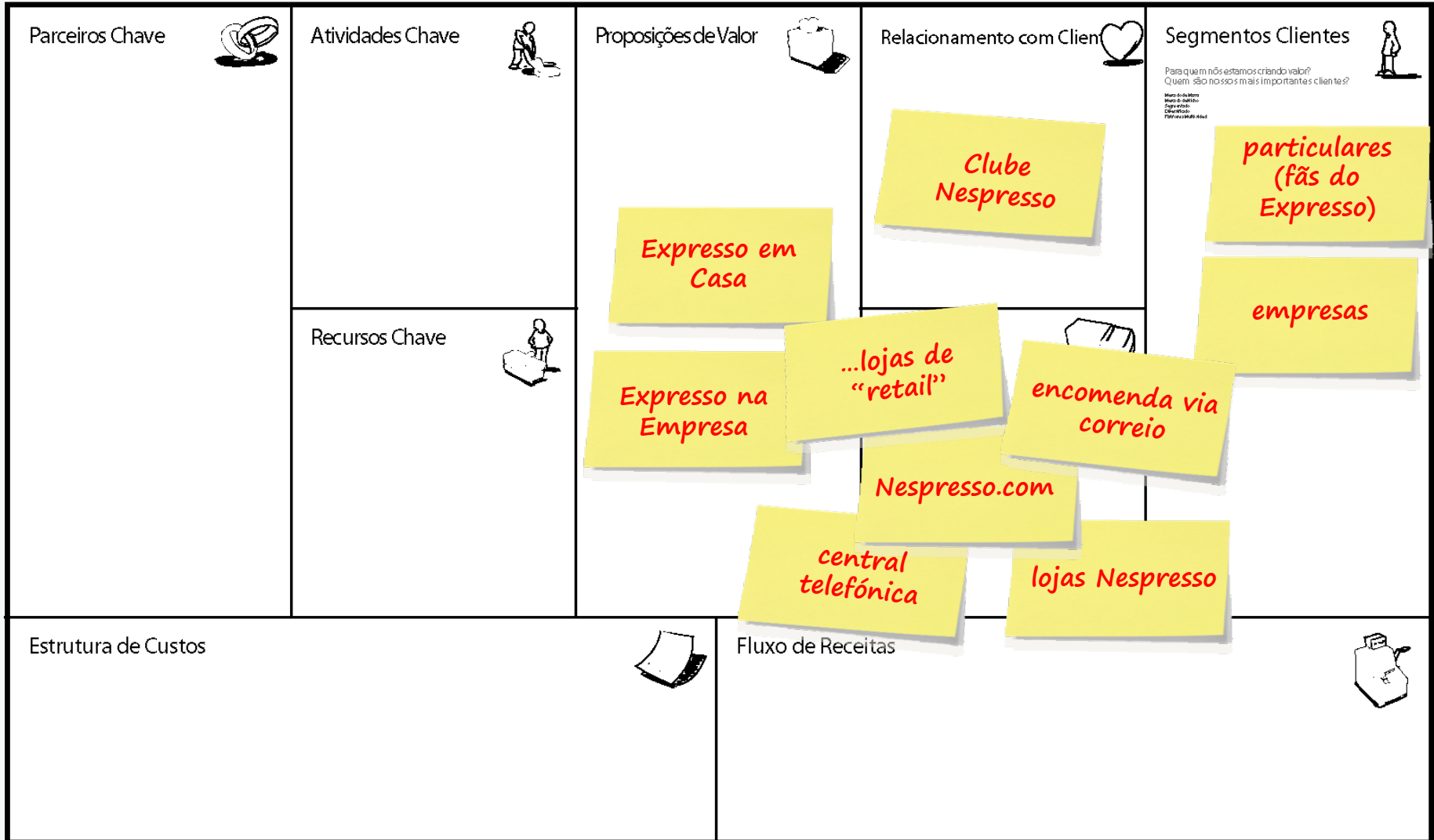
Visão Geral do Modelo de Negócio

Elaborado para:

Elaborado por:

Em: Dia Mês Ano

Interação: No



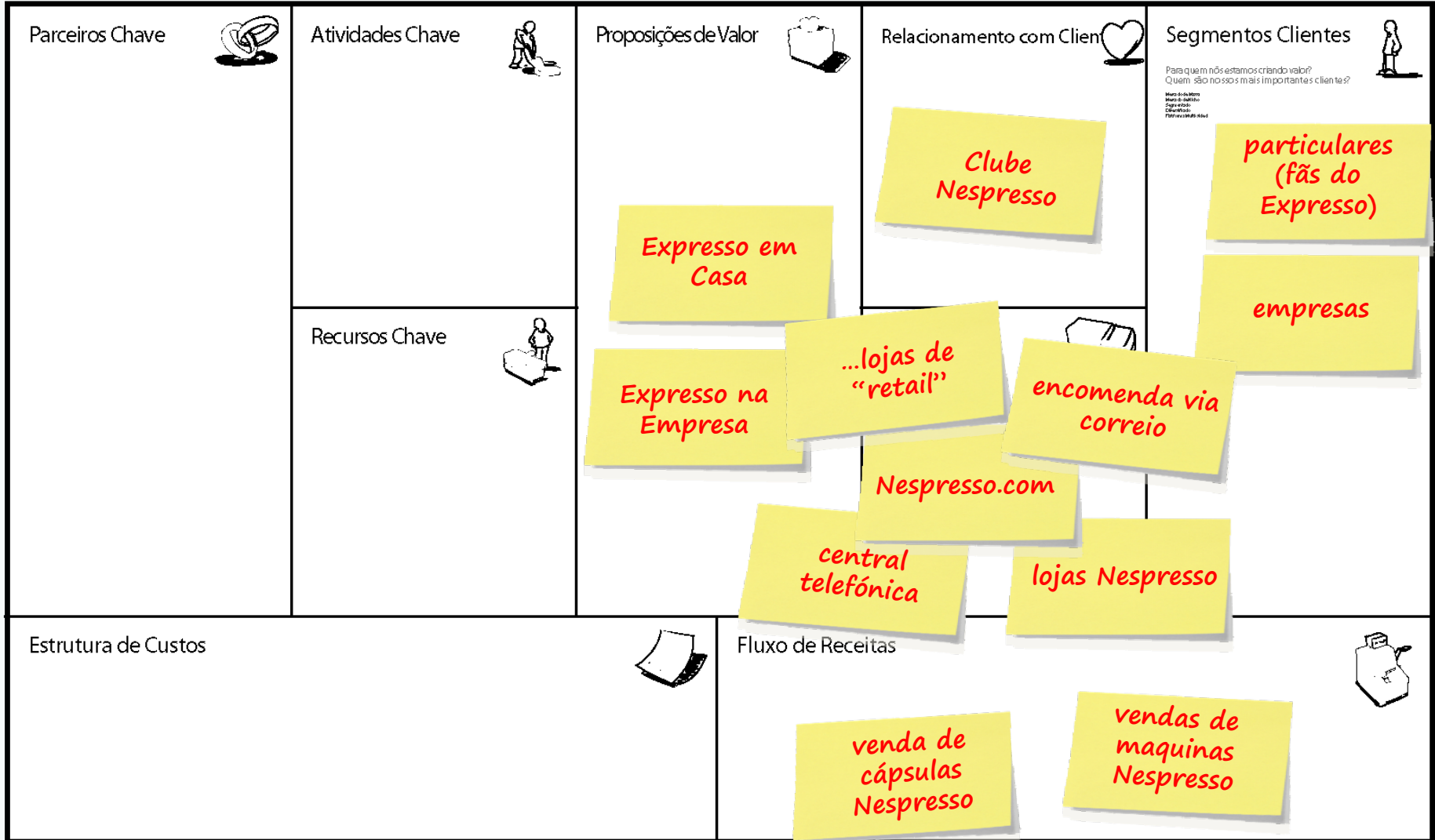
Visão Geral do Modelo de Negócio

Elaborado para:

Elaborado por:

Em: Dia: Mês: Ano:

Interação: No:



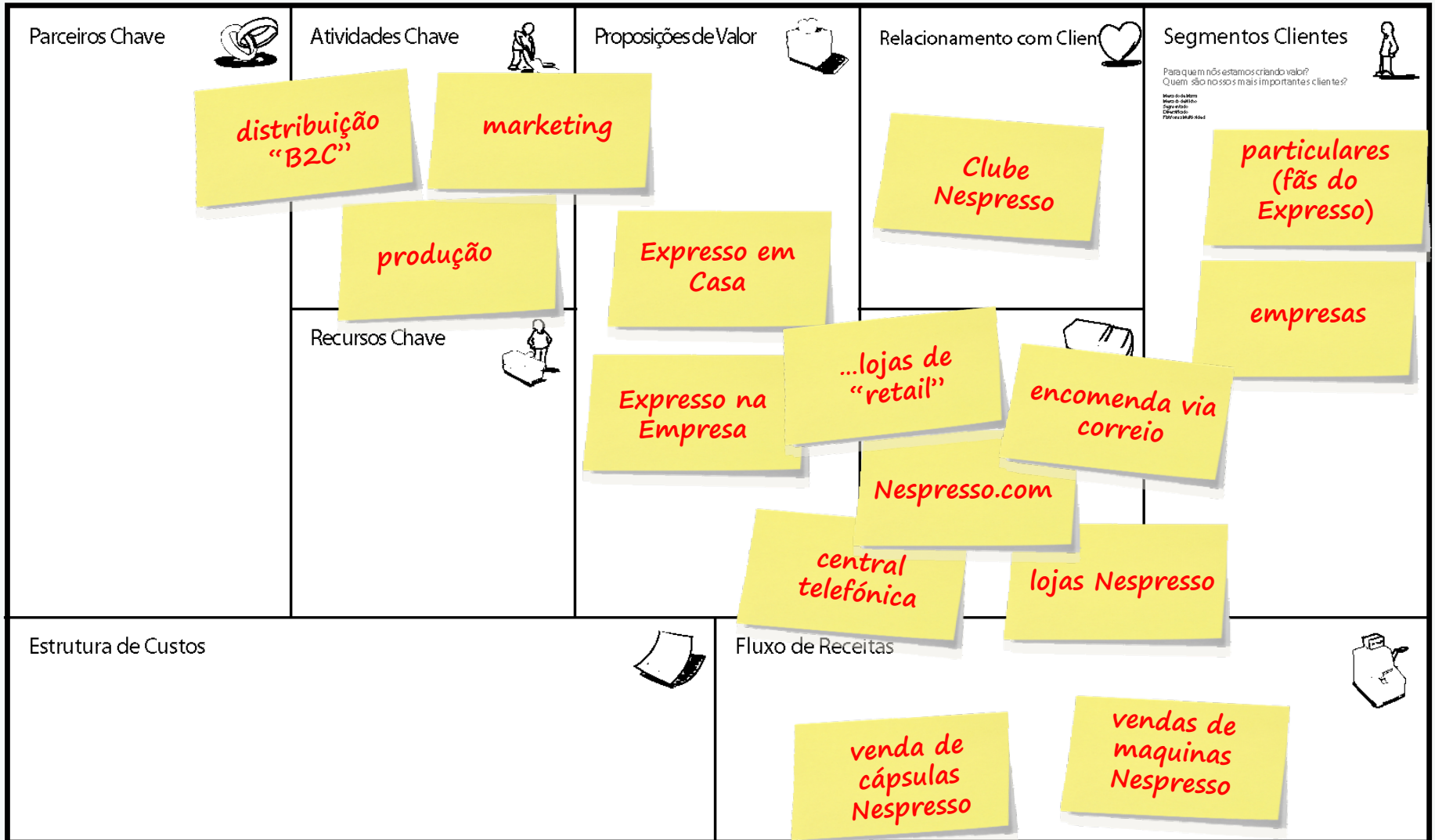
Visão Geral do Modelo de Negócio

Elaborado para:

Elaborado por:

Em: Dia: _____ Mês: _____ Ano: _____

Interação: Nº: _____

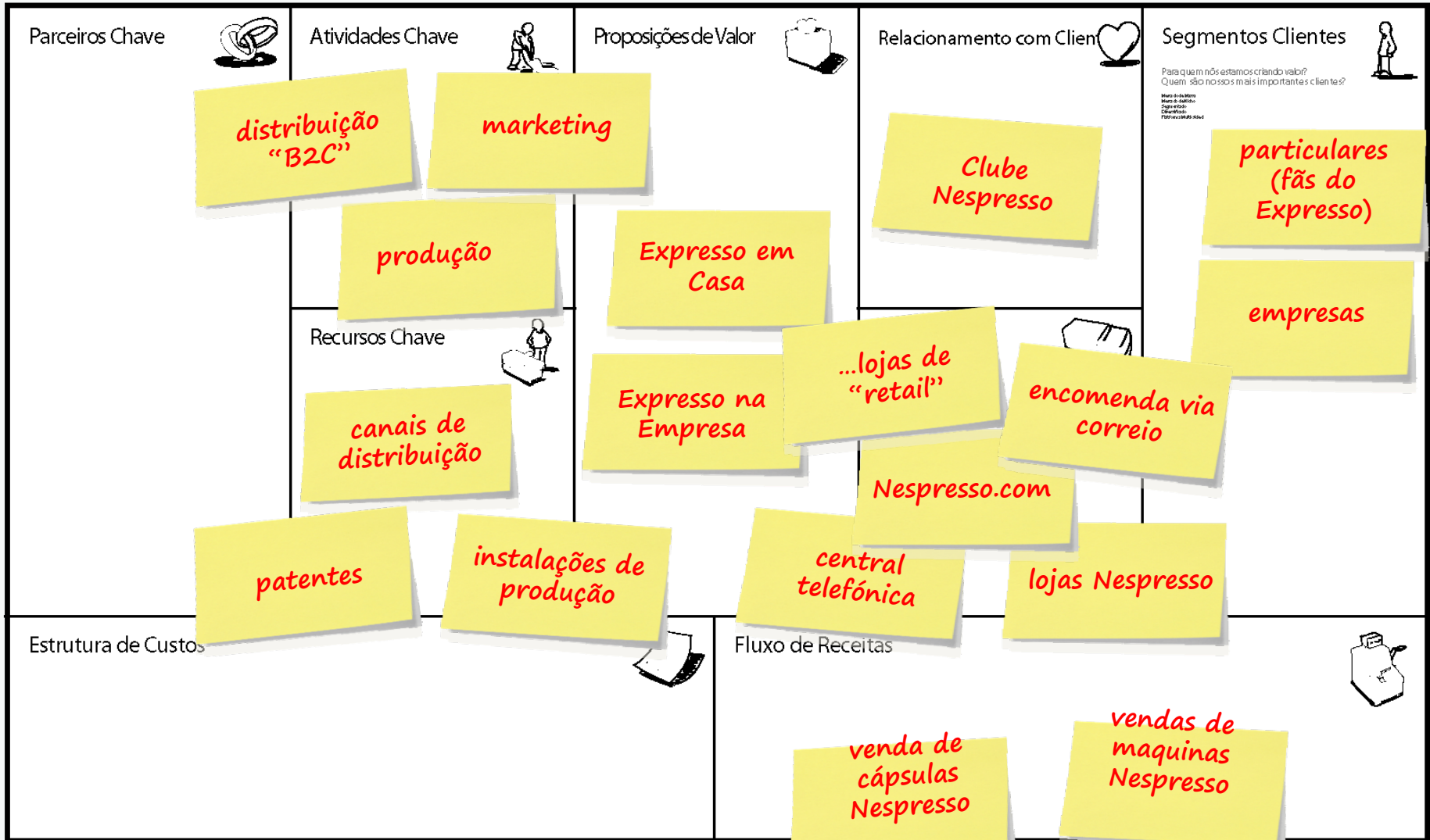


Visão Geral do Modelo de Negócio

Elaborado para:

Elaborado por:

Em: Dia: _____ Mês: _____ Ano: _____
 Interação: No: _____



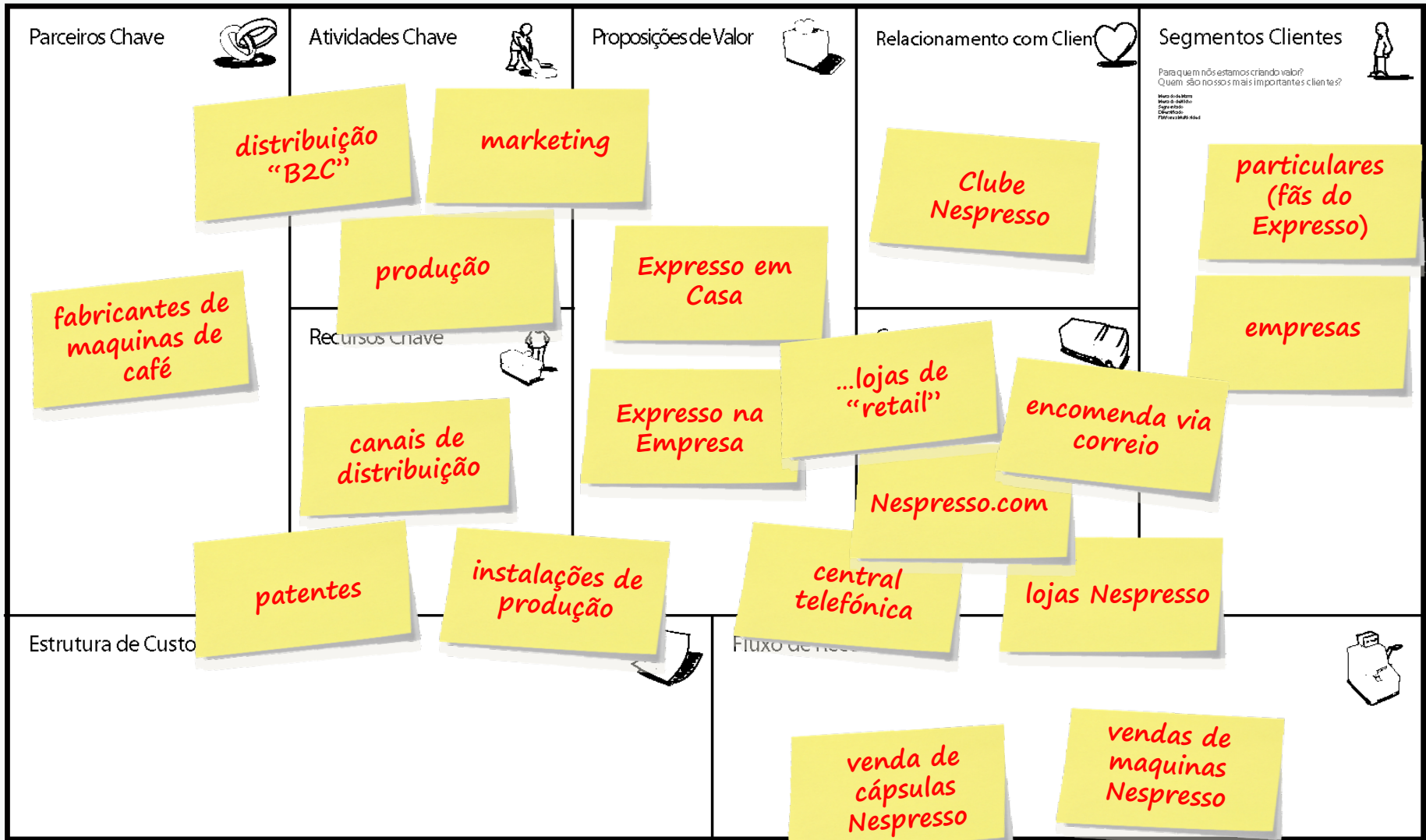
Visão Geral do Modelo de Negócio

Elaborado para:

Elaborado por:

Em: Dia, Mês, Ano

Interação: No



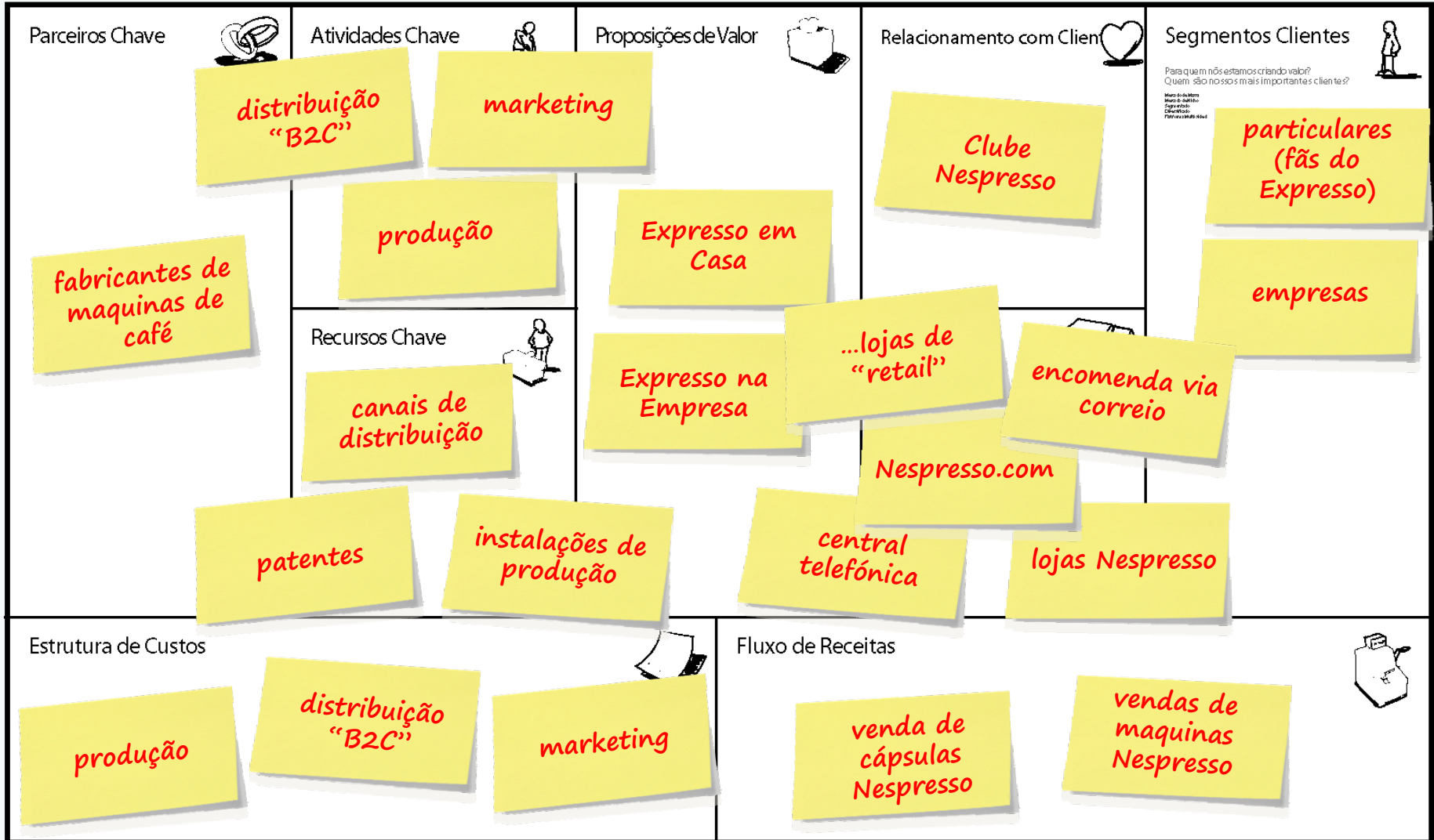
Visão Geral do Modelo de Negócio

Elaborado para:

Elaborado por:

Em: Dia Mês Ano

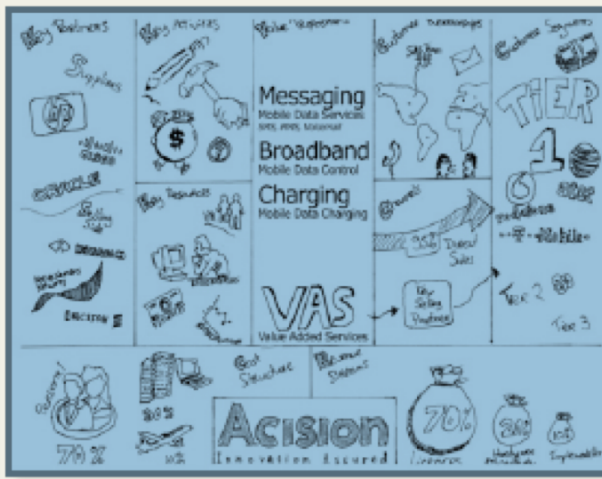
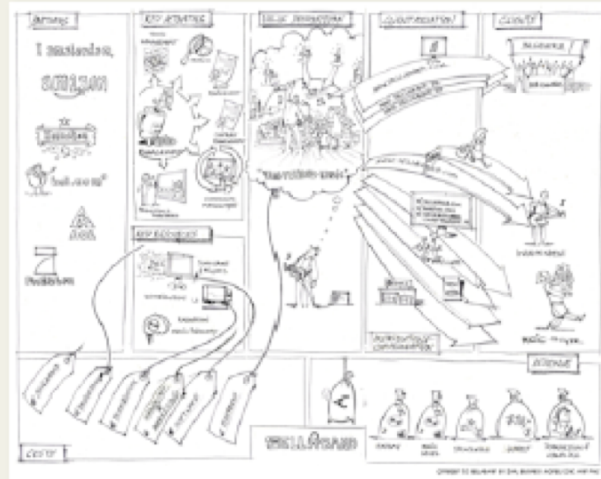
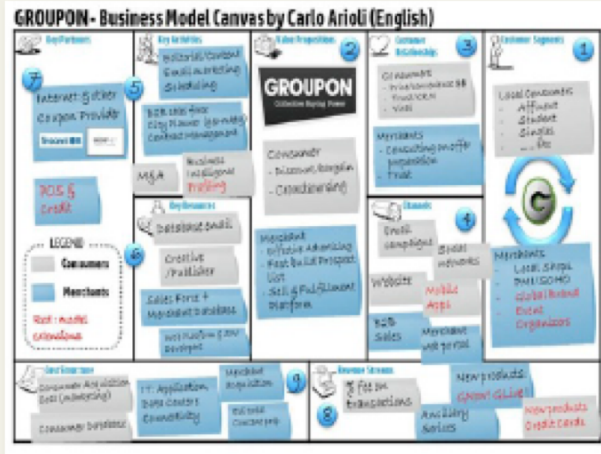
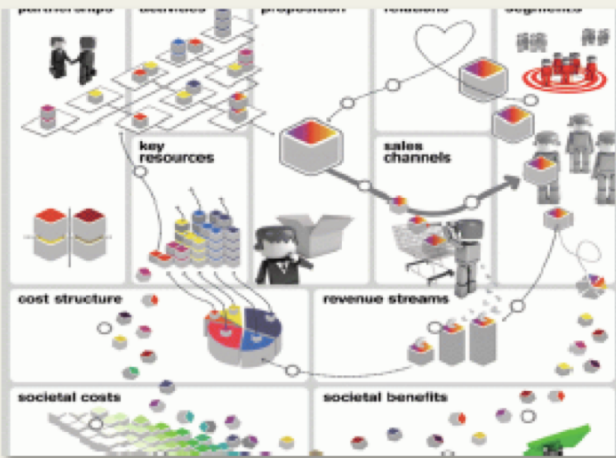
Interação: No



How can you
describe your

Business Model?

BMC – Universal Language!





BUSINESS MODEL CANVAS

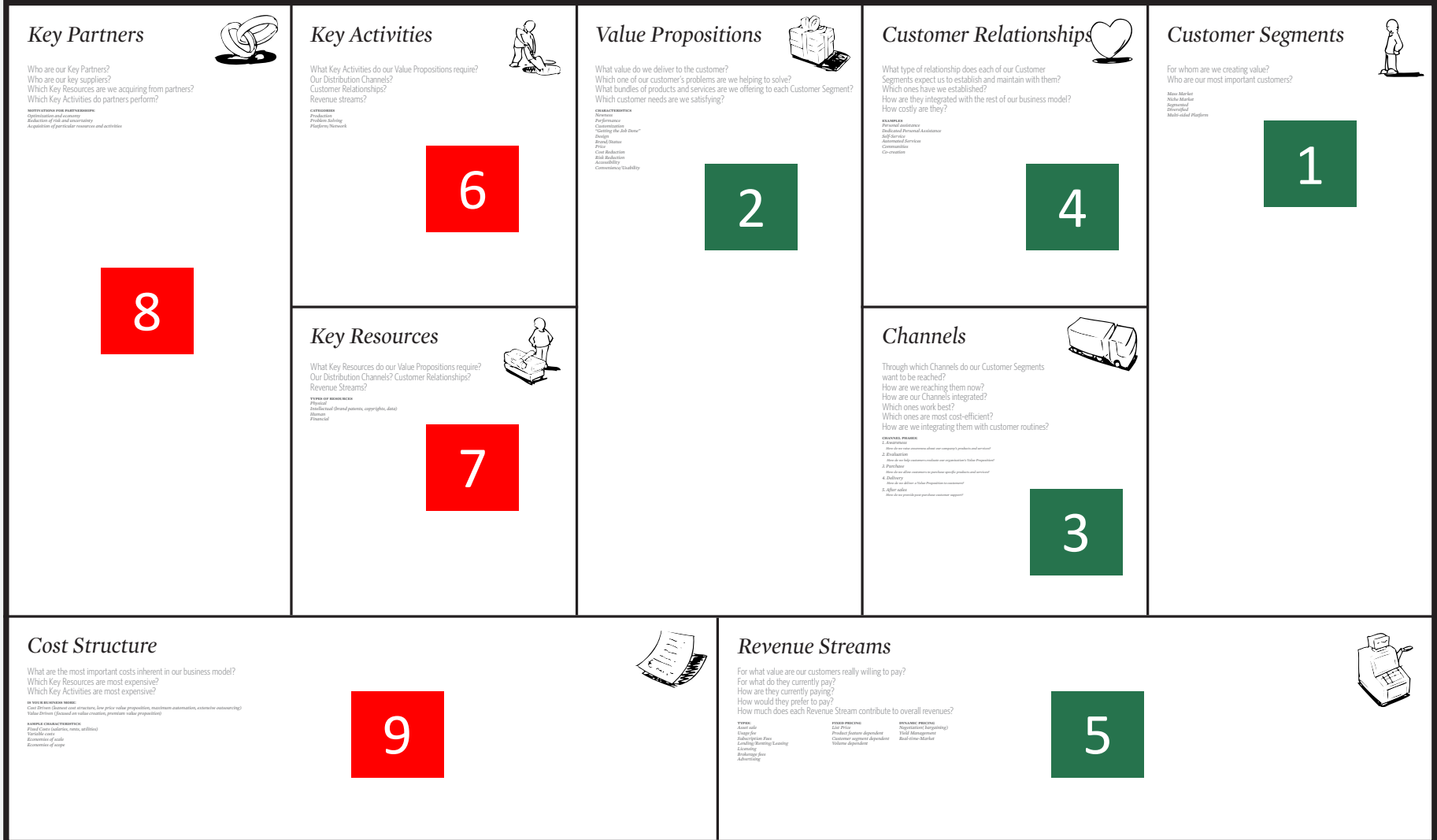
9 BUILDING BLOCKS

The Business Model Canvas

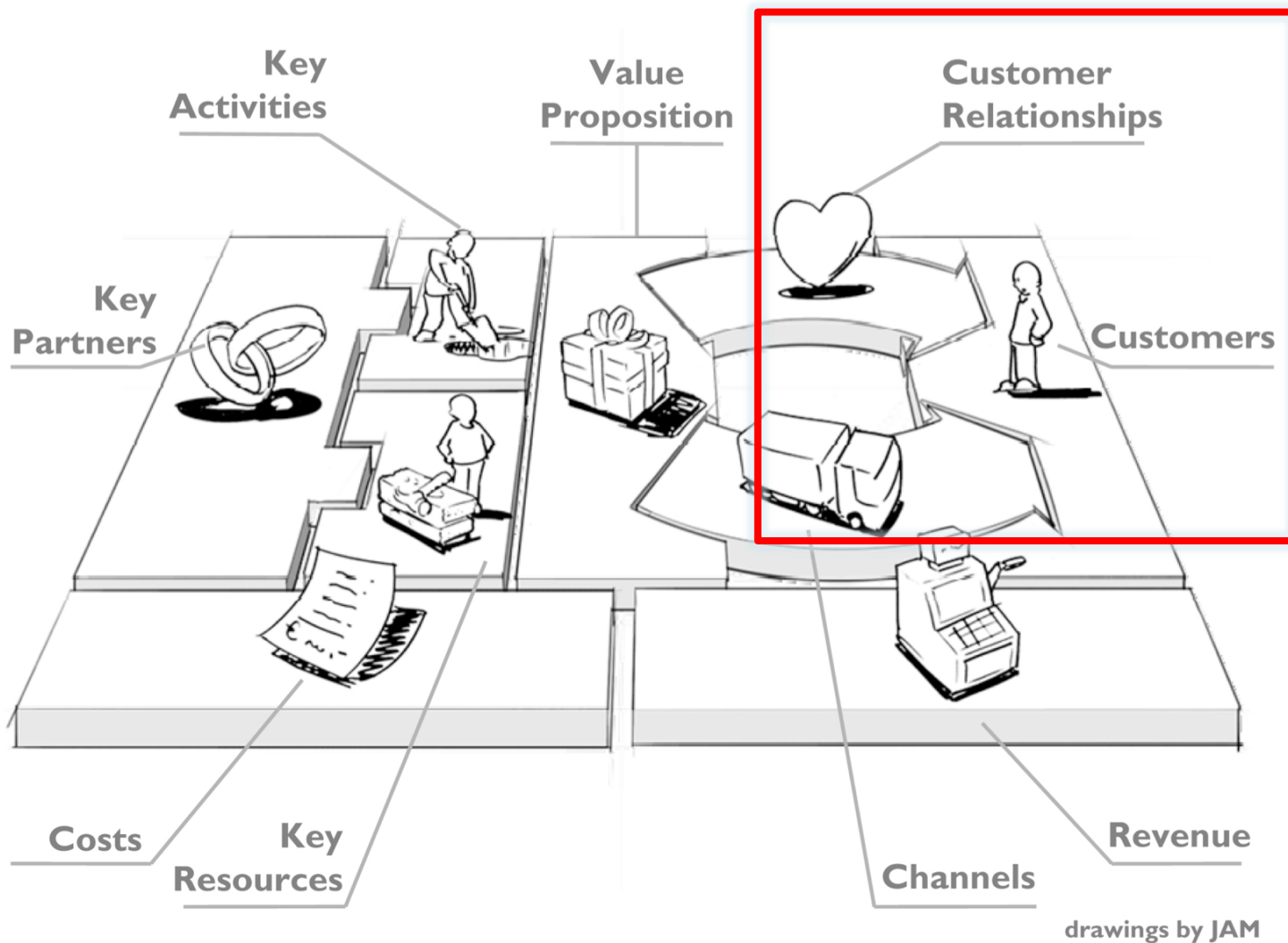
Designed for:

Designed by:

On: Day: Month: Year:
Iteration: No.:

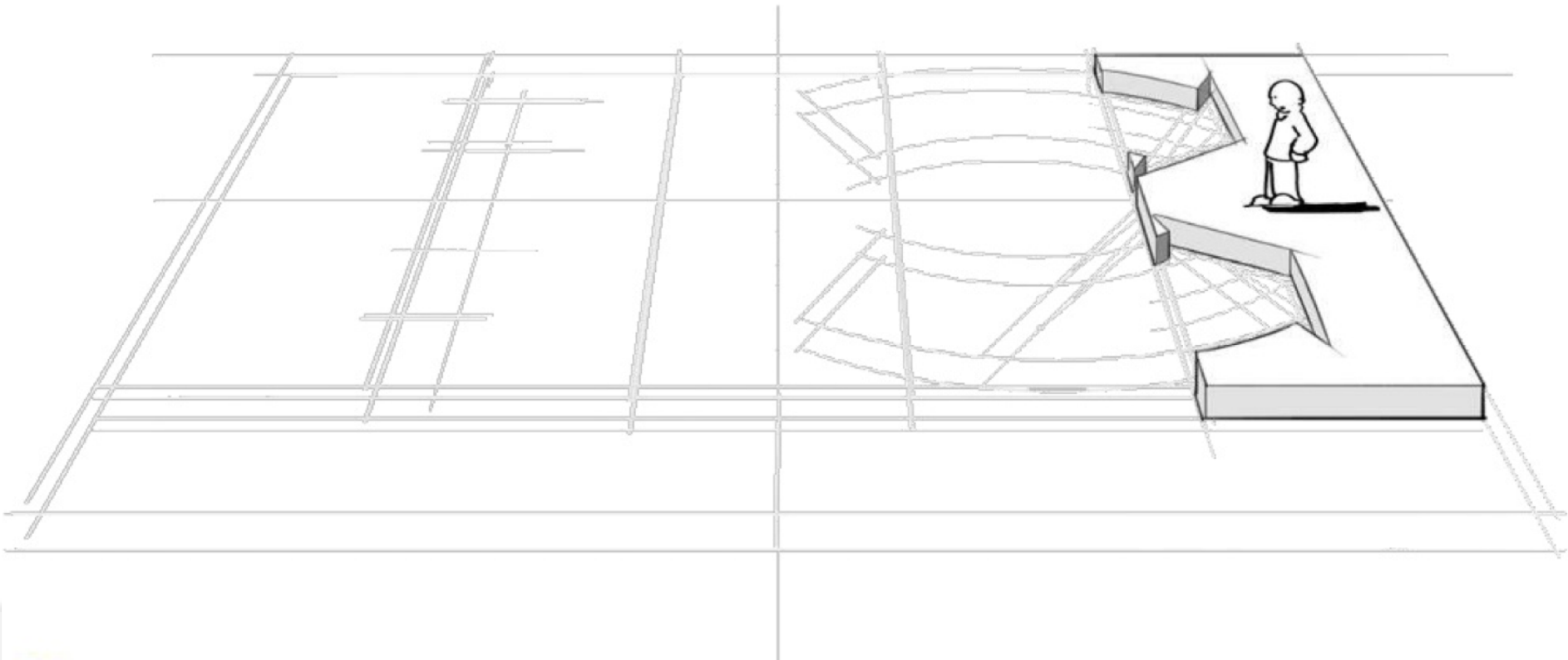


BUSINESS MODEL CANVAS



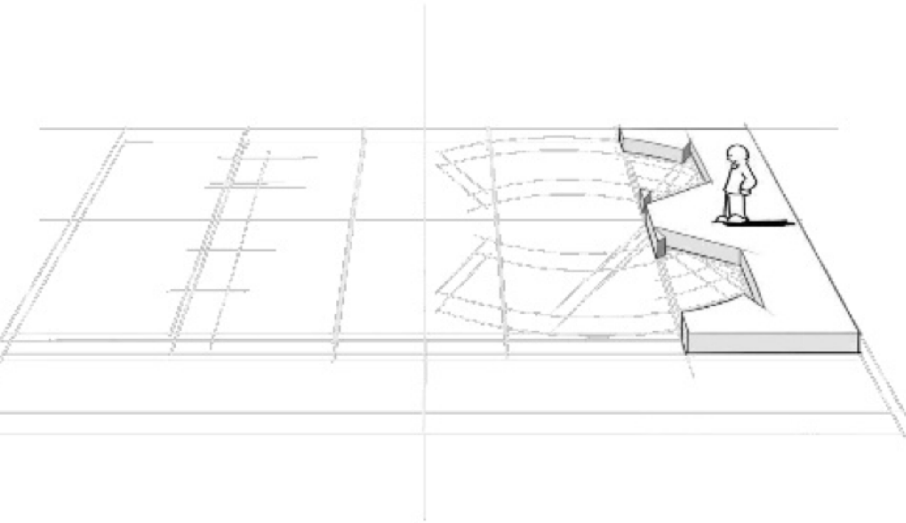
CUSTOMER SEGMENTS

SEGMENTOS DE CLIENTES



CUSTOMER SEGMENTS

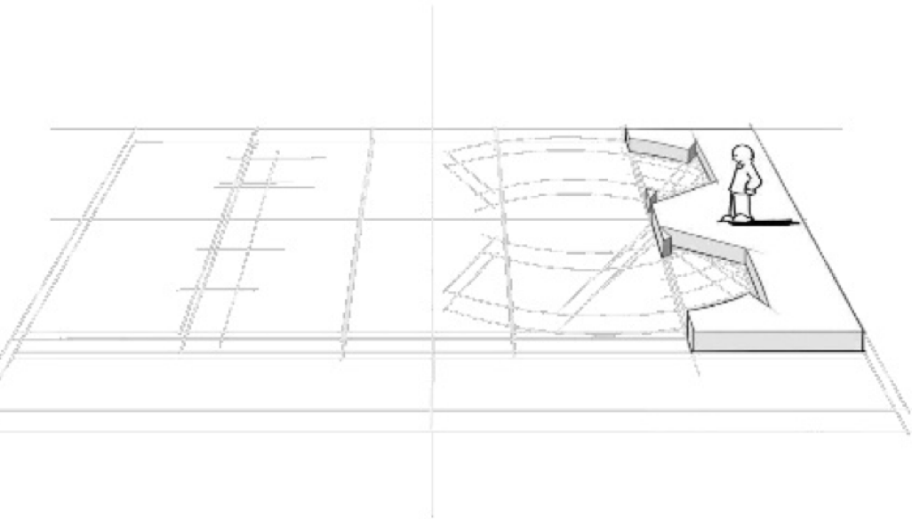
SEGMENTOS DE CLIENTES



Who are our most important clients?
And our users?

CUSTOMER SEGMENTS

SEGMENTOS DE CLIENTES

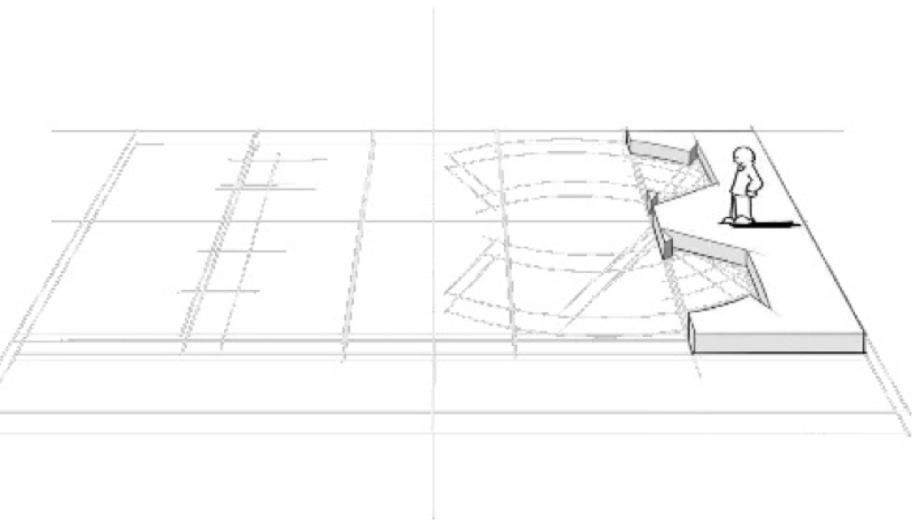


Who are our most important clients?
And our users?

And who influences? And who decides?

CUSTOMER SEGMENTS

SEGMENTOS DE CLIENTES



Who are our most important clients?
And our users?

And who influences? And who decides?

What are their most important characteristics?

STEVE BLANK

THE FOUR STEPS TO THE EPIPHANY

Successful Strategies
for Products that Win

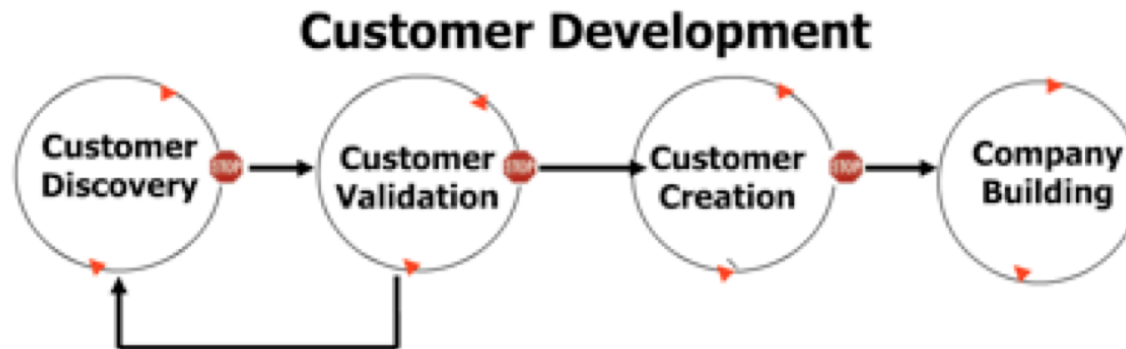
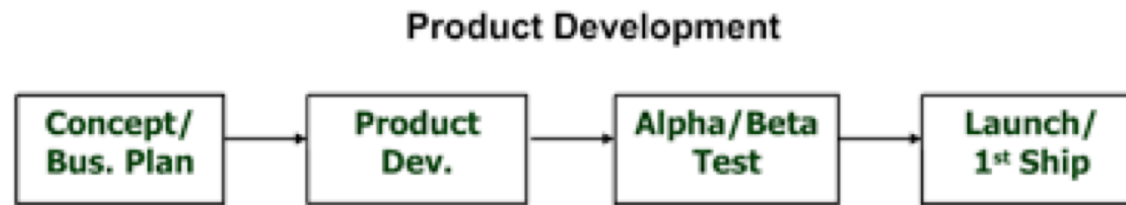
The book that launched
the Lean Startup revolution

Steve Blank



CLIENT DEVELOPMENT

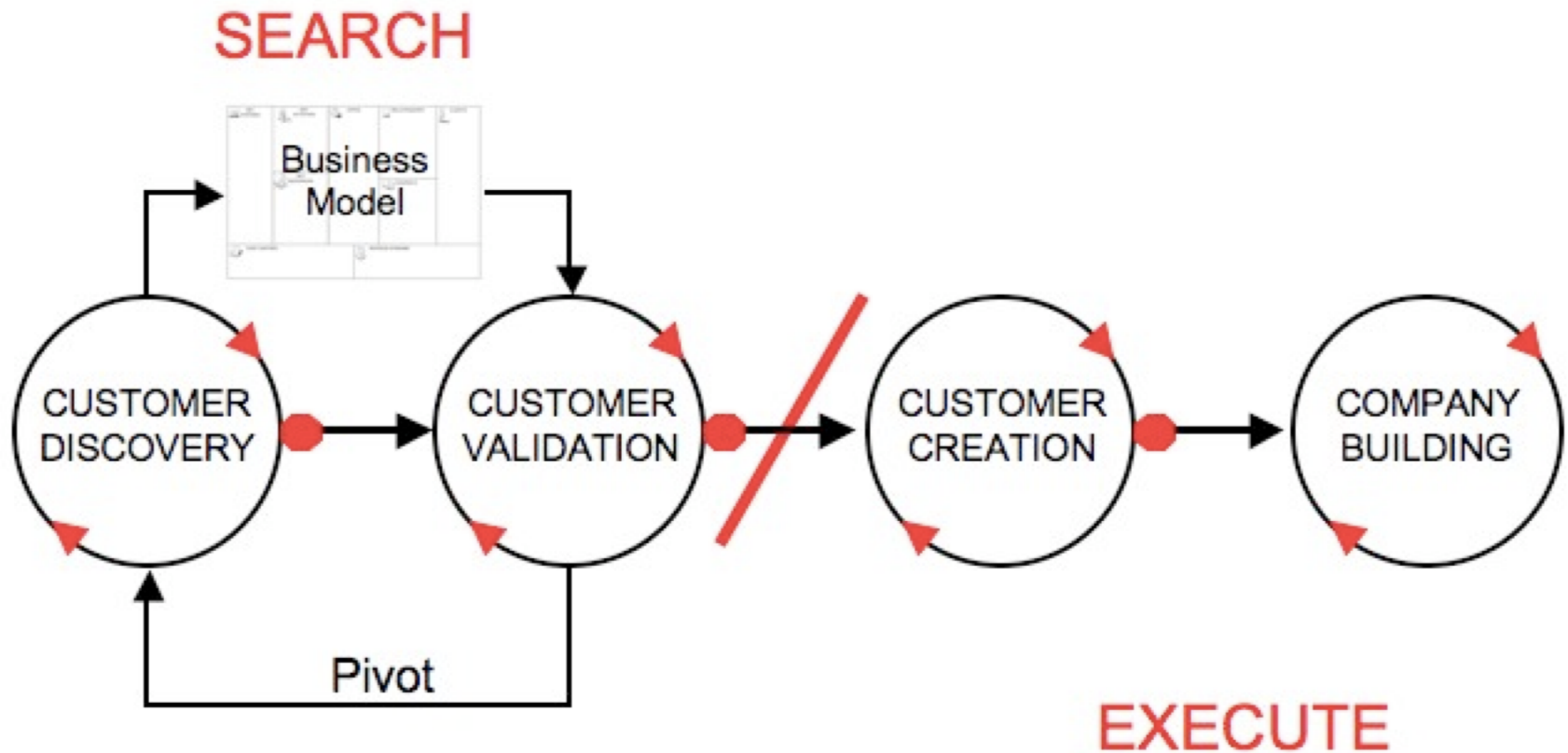
Customer Development is as important
as Product Development



OR WHY 9/10= START-UPS FAIL!!!!

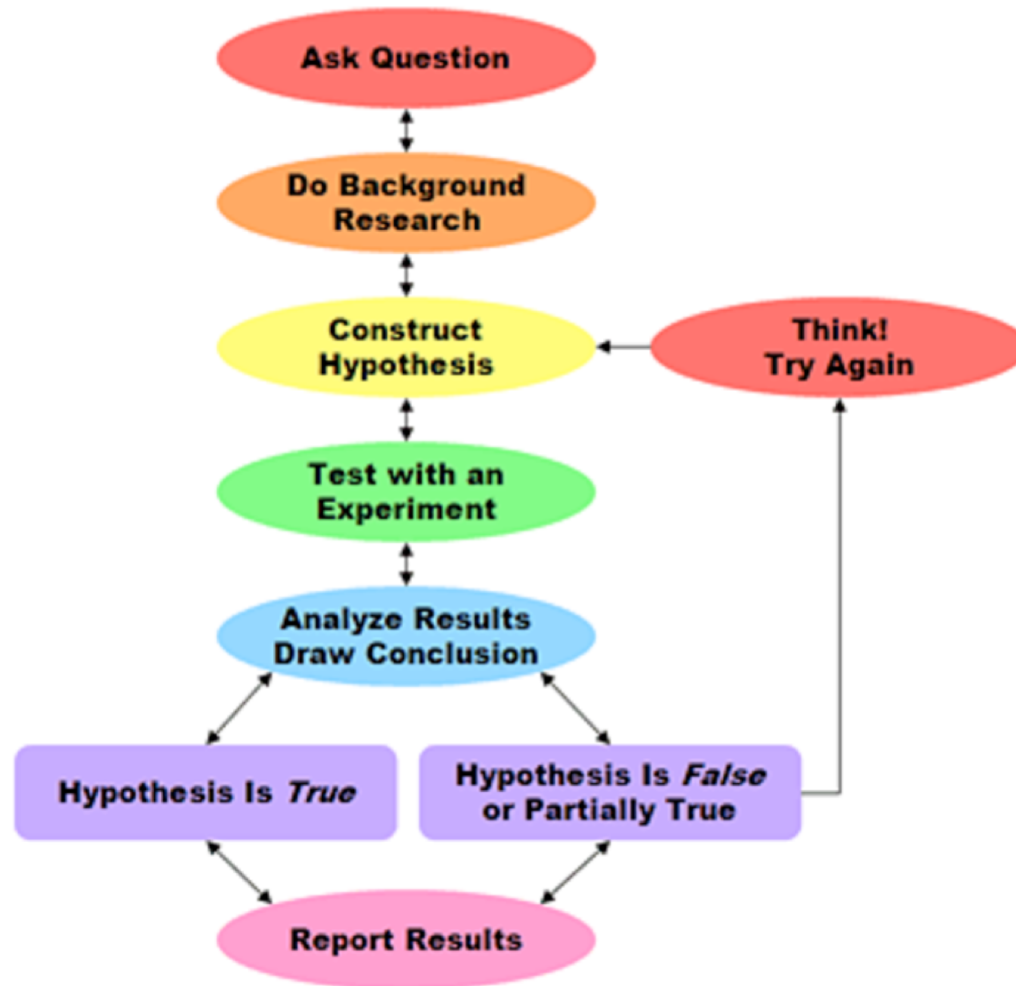
CLIENT DEVELOPMENT

Customer/Client Development Model



HOW TO TEST?

Scientific Method



TESTS

- INTERVIEWS
- FORMS
- A/B TESTING
- WEBSITE
- SALES DOOR-TO-DOOR
- CROWDFUNDING
- E-COMMERCE MULTISTORES

Formulário de Hipóteses

Componente:	
Hipotese	
Teste	
Validação	

Exemplo nº1

Componente: Proposta de Valor - Problemas

Hipótese	Lista de Problemas
Teste	Entrevistas 50 pessoas e verificar se existe concordância em relação aos problemas que a equipa de projecto identificou.
Validação	> 75% concordam em relação aos três problemas principais.

Exemplo nº2

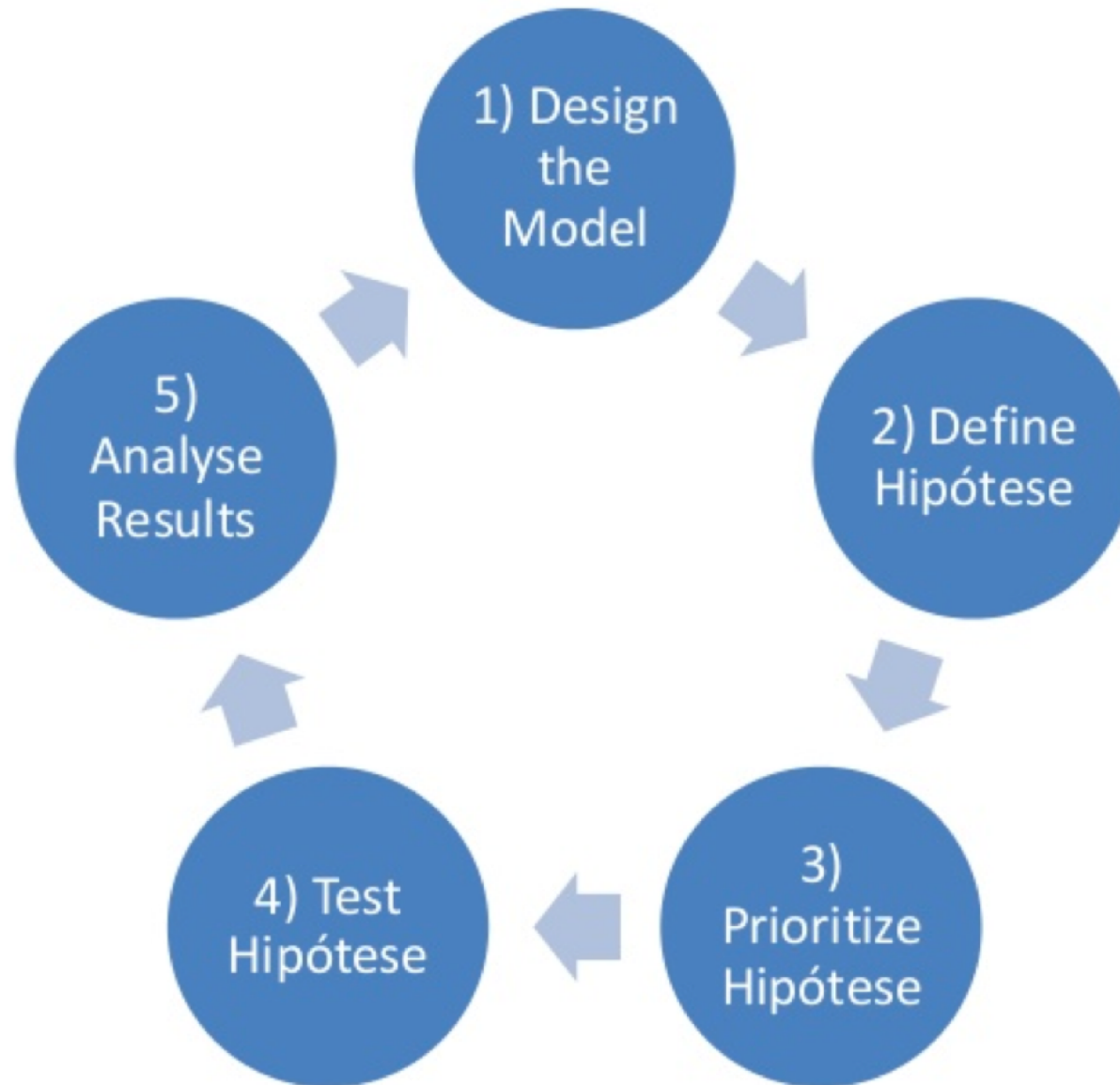
Componente: Proposta de Valor - Soluções	
Hipótese	Soluções para os Problemas dos Empreendedores
Teste	Entrevistas 50 pessoas e verificar se existe concordância em relação aos atributos da proposta de valor definida na versão 1.0 do modelo de negócio.
Validação	> 40% concordam em relação aos atributos da proposta de valor descrita na versão 1.0 do modelo de negócio.

Exemplo nº3

Componente: Canais

Hipótese	Internet como principal canal
Teste	Criar Landing Pages e colocar na Loja Electrónica um pacote fictício. Gerar tráfego e registar encomendas durante 2 semanas.
Validação	50 pedidos de informação e 10 encomendas

Processo de Validação



HOW TO DEFINE PRIORITY?

Probabilidade da Hipótese ser Inválida

Muito Alto		10	15	20	25
Alto			12	16	20
Médio				12	15
Baixo					10
Muito Baixo					
	Muito Baixo	Baixo	Médio	Alto	Muito Alto

Impacto caso a Hipótese seja Inválida

Quadro de Validação

Quadro de Validação de Hipóteses					Modelo de Negócio		Versão	
Hipóteses por Validar		Hipóteses com Maior Risco	Hipóteses em Teste	Hipóteses Validadas				
				Hipóteses Invalidadas				








BUSINESS MODEL CANVAS

The Business Model Canvas

Designed for:

Designed by:

On: Day Month Year
 Iteration: No.

<h3>Key Partners</h3>  <p>Who are our Key Partners? Who are our key suppliers? Which Key Resources are we acquiring from partners? Which Key Activities do partners perform?</p> <p>IMPORTANCE FOR BUSINESS MODEL: Negotiations and contracts Reduction of risk and uncertainty Acquisition of particular resources and activities</p>	<h3>Key Activities</h3>  <p>What Key Activities do our Value Propositions require? Our Distribution Channels? Customer Relationships? Revenue Streams?</p> <p>CATEGORIES: Production Problem Solving Platform/Network</p>	<h3>Value Propositions</h3>  <p>What value do we deliver to the customer? Which one of our customer's problems are we helping to solve? What bundles of products and services are we offering to each Customer Segment? Which customer needs are we satisfying?</p> <p>VALUE PROPOSITIONS: Storage Performance Customization "Selling the Job Done" Access Speed of Service Price Total Solutions Risk Reduction Availability Complementing Usability</p>	<h3>Customer Relationships</h3>  <p>What type of relationship does each of our Customer Segments expect us to establish and maintain with them? Which ones have we established? How are they integrated with the rest of our business model? How costly are they?</p> <p>EXAMPLES: Personal assistance Personalized Assistance Self-Service Automated Services Communities Co-creation</p>	<h3>Customer Segments</h3>  <p>For whom are we creating value? Who are our most important customers?</p> <p>Market Segments: Mass Market Niche Market Segment Individual Multiple Platforms</p>
<h3>Cost Structure</h3>  <p>What are the most important costs inherent in our business model? Which Key Resources are most expensive? Which Key Activities are most expensive?</p> <p>BY HOW MUCH DO COSTS VARY? Cost Structure depends on structure, size and value proposition, equipment automation, extensive outsourcing Value drivers (price/costs) can either erode or provide a competitive advantage</p> <p>KEY COST STRUCTURES: Fixed Costs (salaries, rents, utilities) Variable Costs Economies of scale Economies of scope</p>	<h3>Revenue Streams</h3>  <p>For what value are our customers really willing to pay? For what do they currently pay? How are they currently paying? How would they prefer to pay? How much does each Revenue Stream contribute to overall revenues?</p> <p>STREAMS: One-time Recurring Usage Fee Subscription Fees Licensing/Royalty Fees Advertising Referral Fees Abonnement</p> <p>REVENUE STREAMS: Sell Products Products/Services Dependent Customer segment dependent Volume dependent</p> <p>REVENUE STREAMS: Sell Products/Services Sell Services/Products Sell Other Revenue</p>			