



Digital Technology
Imagination
Creativity and
Entrepreneurship
for a High
Quality Teaching

Undertaking with CPS methodology

Teachers training updated



Co-funded by the
Erasmus+ Programme
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Project coordinator

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Course contents:

1. Proposal of CPS.
2. Why is it important to talk about undertaking?
3. CPS for running a business.
4. Creative Problem Solving as a management tool.
5. What should the teacher know?
6. The general process for undertaking.

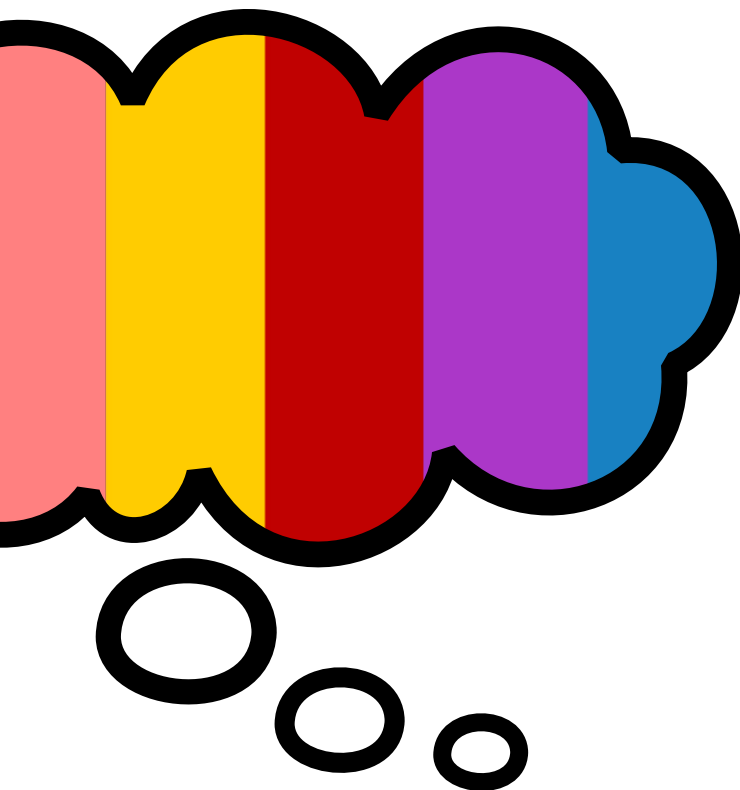


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Undertaking with the CPS methodology: teachers training updated | 4



#1.

Proposal of CPS



1. CPS approach

Some questions to focus the CPS approach at each school.

① Ages of the students?

② Time constraint?

③ Academic obligations?

Students and teachers



1. CPS proposal. **As a workshop (or series of workshops)**

1. Explain the general undertaking process and the CPS methodology to students.
2. Present the topic they are going to work on.
3. Divide students into groups.
4. Let each group work on the problem with the defined methodology, going through every step, asking them to write down their conclusions.
5. At the end of the session, each group will present their main results from each phase, and these will be discussed among all groups (each group will focus on the different or more original results in relation to those already presented).
6. Among all the groups, the best of the solutions presented will be selected by consensus.



1. CPS proposal. **Workshop approach**

Shopping basket [#1]

1. Chose a basic but complete shopping list.
2. Divide students into groups.
3. Let each group look for prices for the products (can be done online or by going to actual shops). They should look for the cheaper version and the most expensive version of each product.
4. They should try to find out what explains the price difference by several means (own research, interviews with adults in their households...).
5. Each group will present their results, and these will be discussed among all groups. If possible, it should be discussed between international teams, to see the differences in prices for the same product in different countries, and they should try to find out why the differences.
6. They can make their virtual supermarket using VR tools, with the conclusions of their work.

Steps:

1. Define a shopping basket that is healthy (research aspects related to nutrition).
2. Research on the origin of the products and the carbon footprint of their distribution (production process and logistics).
3. Create a virtual supermarket reflecting the information collected and highlighting local products.
4. Finally choose:
 - o The healthiest.
 - o The most attainable.
 - o The one with the lowest carbon footprint.
 - o The one preferred overall.



1. CPS proposal. **Workshop approach**

Fishbanks [#2] [GO!](#)



*Requires registration, which is
free for educational centers*

Steps:

1. Ask teams to organize their fleets to maximize profits using the Fishbanks simulator.
2. At the end of the game, discuss the results obtained and why.
3. Carry out a new campaign using what was learned in the previous one.
4. Compare the results and draw conclusions.

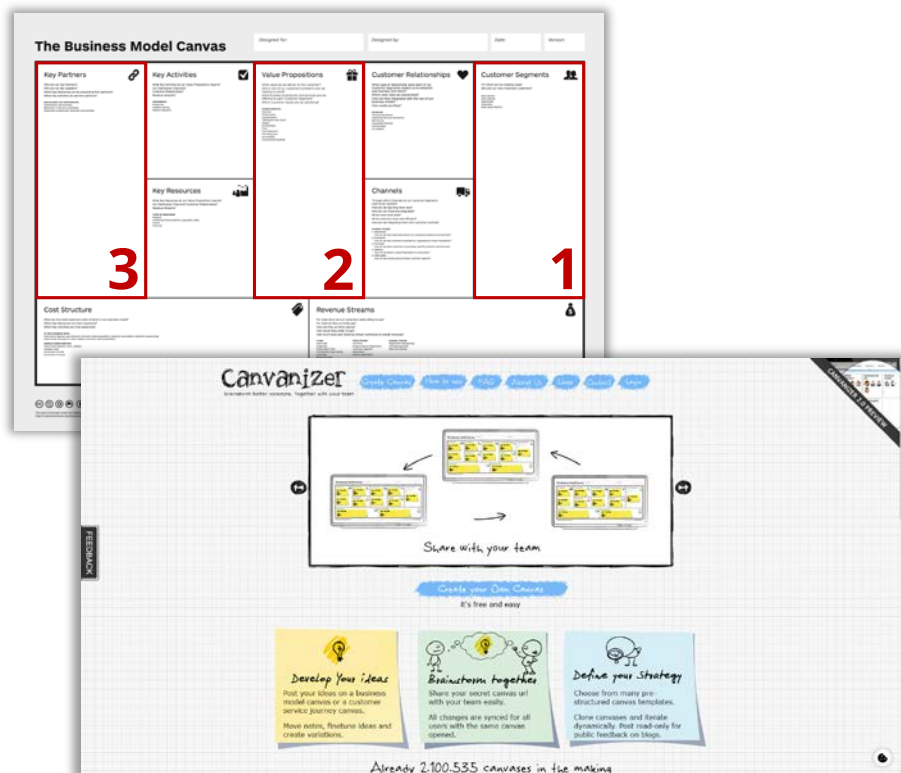
It is highly recommended that a previous simulation is carried out by the teachers, in order to get more confidence with the tool.

Check the instructional video on the simulator page.



1. CPS proposal. **Workshop approach**

Business Model Canvas [#3 | [GO!](#)]



Steps:

1. Explain the questions that must be answered in each section of the canvas and the order to cover it.
2. Give students the possibility to decide the activity they want to make the canvas about.*
3. Introduce the Canvanizer application so they can build their business model.
4. Once they complete their proposal, each group will exchange its canvas with other team (in pairs) and will try to improve it.
5. At the end, the groups that have exchanged Canvas meet to discuss their assessments.



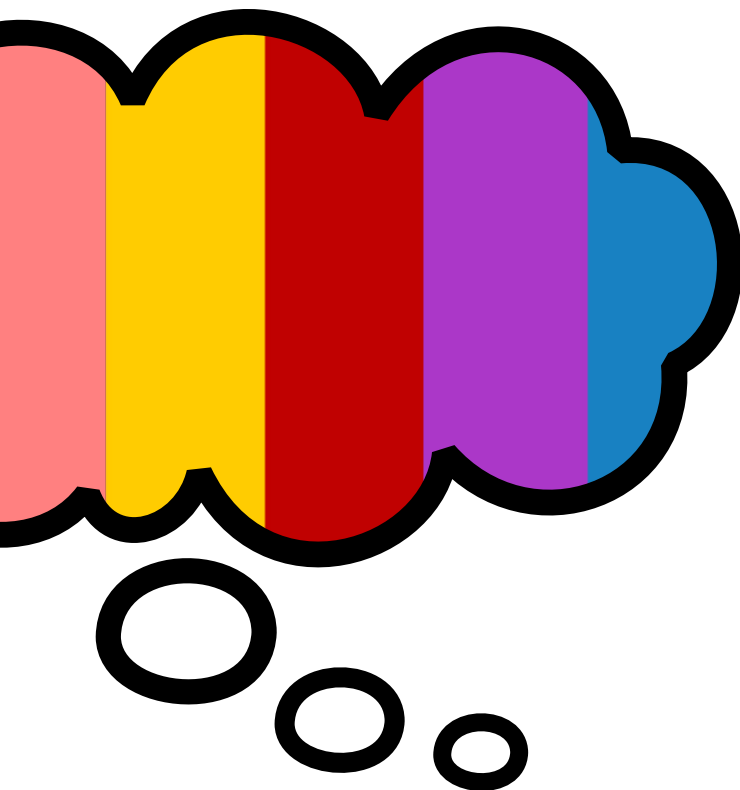
Consider the possibility of reusing the work in a previous CPS to develop possible business ideas from it (for example, on archaeology, robotics or podcasts).



1. CPS proposal. **As a project [#4]**

1. Explain the undertaking process and the CPS methodology to students.
2. Divide them into groups.
3. Each group must create a company following the methodology of the undertaking process, facing the different challenges that arise in each stage using CPS, **until they produce and sell their products**. General criteria of interest to the curriculum can be defined by the teacher to define the activities of the companies (based on sustainability, recycling, circular economy ...).
4. Each work session will focus on a specific aspect of the undertaking process, and the session will begin with a brief theoretical explanation on that aspect, followed by group work.
5. When reaching a project milestone, each group will present the main results from its work, and these will be discussed among all groups to try to identify improvements.





#2.

**Why is it important to talk about
undertaking and economics to the
students?**



2. Why is it important to talk about undertaking?

- o We need new enterprising people.
- o Allows students to see things "from the other side".
- o To understand the limitations of resources and the importance of their sustainable management.
- o To get more responsible and aware consumers.
- o To understand the ability of companies to be drivers of change with their decisions.
- o Greater proximity of the theoretical knowledge to the real world.
- o And ... because it is in our DNA to promote entrepreneurship ;-)



Future Work Skills 2020

While all six drivers are important in shaping the landscape in which each skill emerges, the color-coding and placement here indicate which drivers have particular relevance to the development of each of the skills.

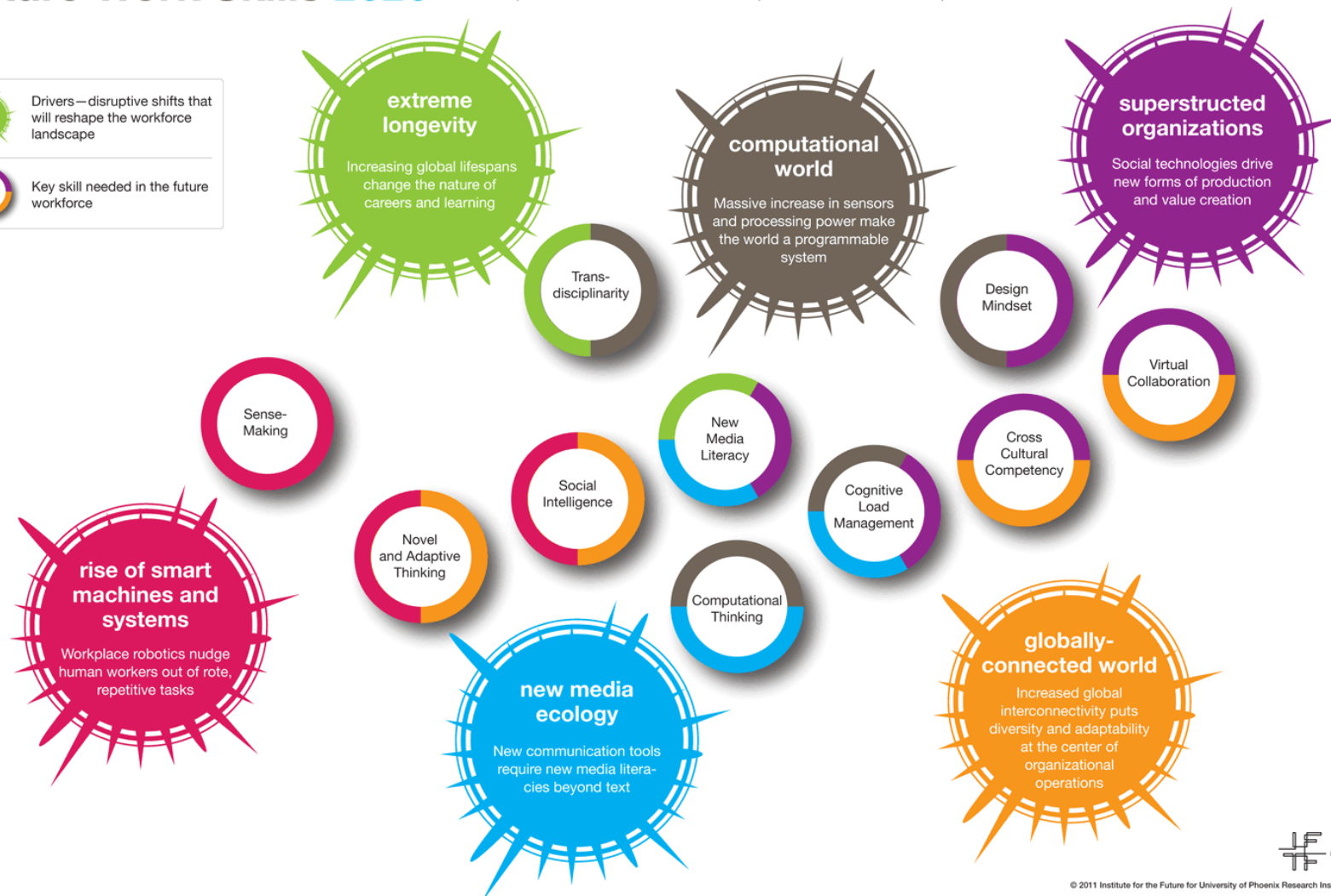
KEY

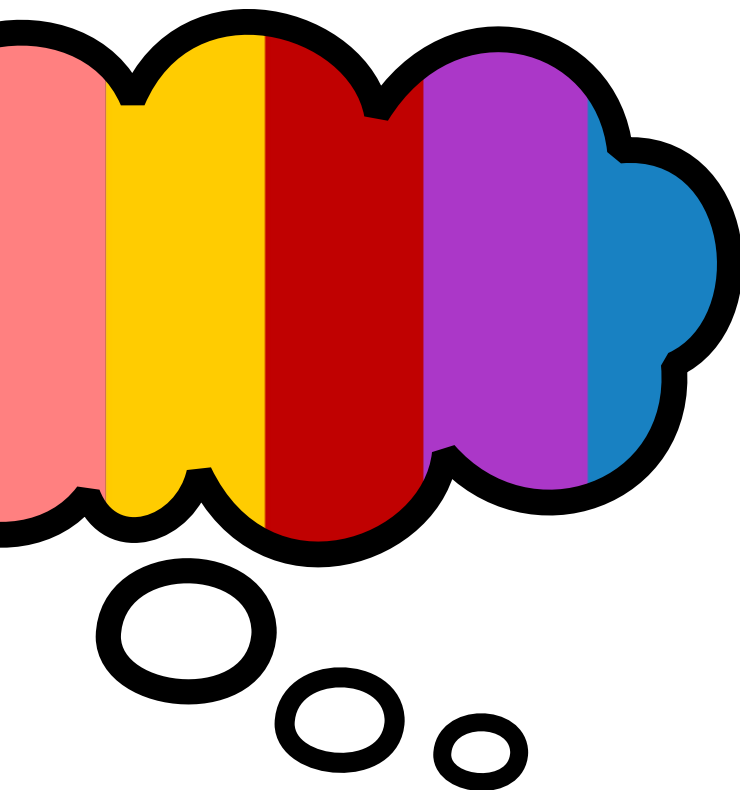


Drivers—disruptive shifts that will reshape the workforce landscape



Key skill needed in the future workforce





#3.

**CPS for running a business.
Problems and challenges**



3. The problems of running a business. **The growth of the company**

- o Make the right decisions to balance available resources with needs. To grow we can:
 - Sell more to customers we already have.
 - Sell to more customers.
 - A combination of both.
- o And for that, we can:
 - Grow on new products.
 - Grow in new markets.
 - Grow in new territories.
 - Grow into new customer groups.

+ PROS

&

- CONS



3. The problems of running a business. **The evolution of customers**

What it is new today, tomorrow it is obsolete.

What surprises us today, tomorrow we will take it for granted.

What satisfies us today, bores us tomorrow.

- o How do the expectations and needs of our target customers evolve?
- o What are our competencies doing to respond to the changes?
- o What can we do to respond to these changes, consistent with our identity?
- o Can we maintain our competitive advantage?
- o How should the company evolve its offer?
- o How can the company maintain a balance between its available resources and new needs?



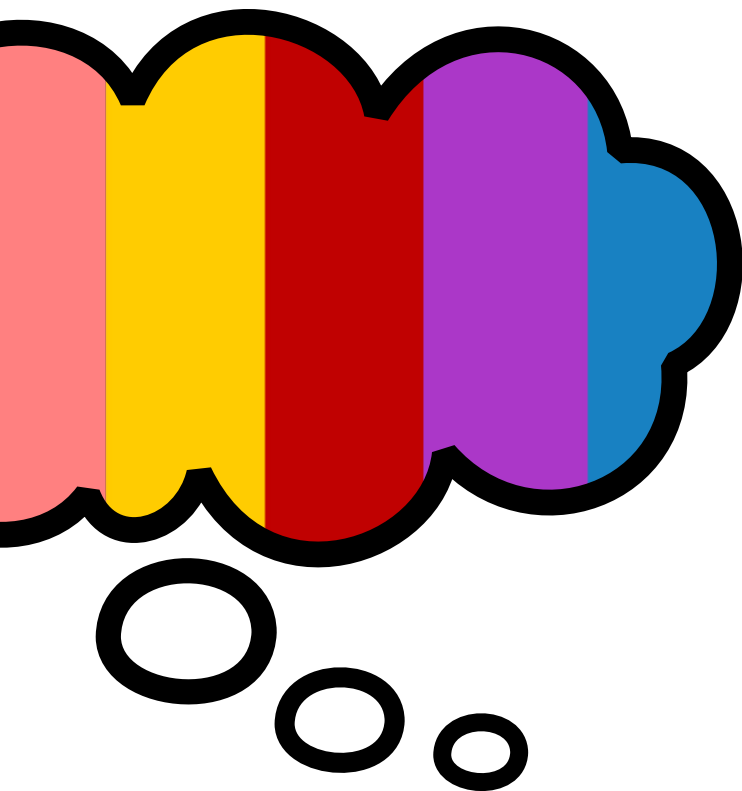
3. The problems of running a business. **The competition**

- o How does the competition react to changes in the market?
- o How does the competition react to our decisions?
- o Have old competitors left the market? Why?
- o Have new competitors emerged?
- o What new needs or expectations of our clients do they satisfy?
- o Is our competitive advantage at risk?
- o Is our position in the target customer group at risk?



3. The problems of running a business. **Changes in the scenario**

- o Have new legal frameworks emerged (or are them foreseeable) that will hinder or impede our activity? Or that turn out to be an opportunity?
- o Have new social movements or trends emerged (or are emerging) that pose a risk to our business? Or could they be an opportunity?
- o Has an event occurred that has changed or could change the consumption habits of our target customers? In which way?
- o Have new technologies emerged that affect our products or services, or the way we deliver them or engage with target customers? Are new profiles required in the business to deal with these technological changes?

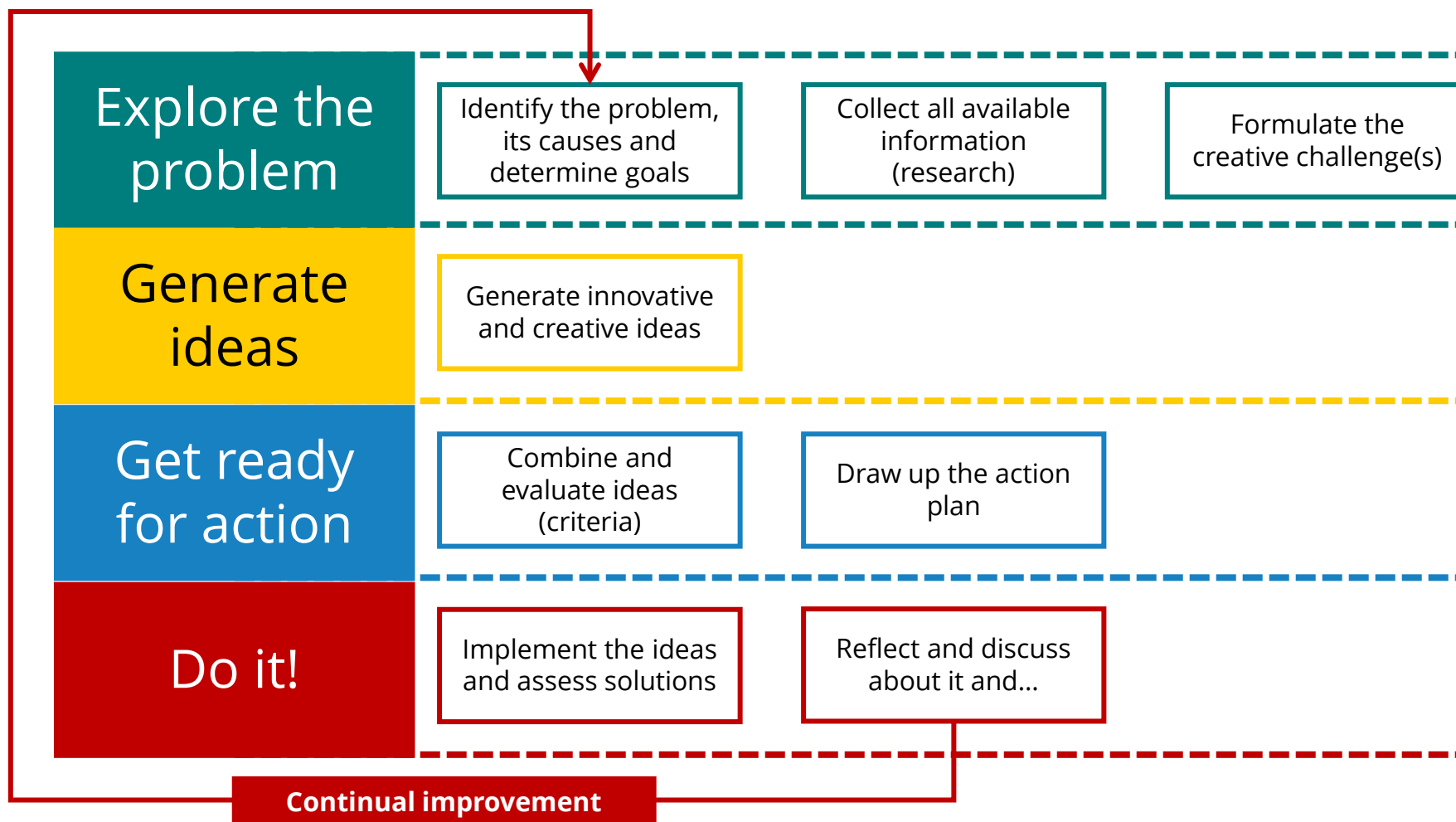


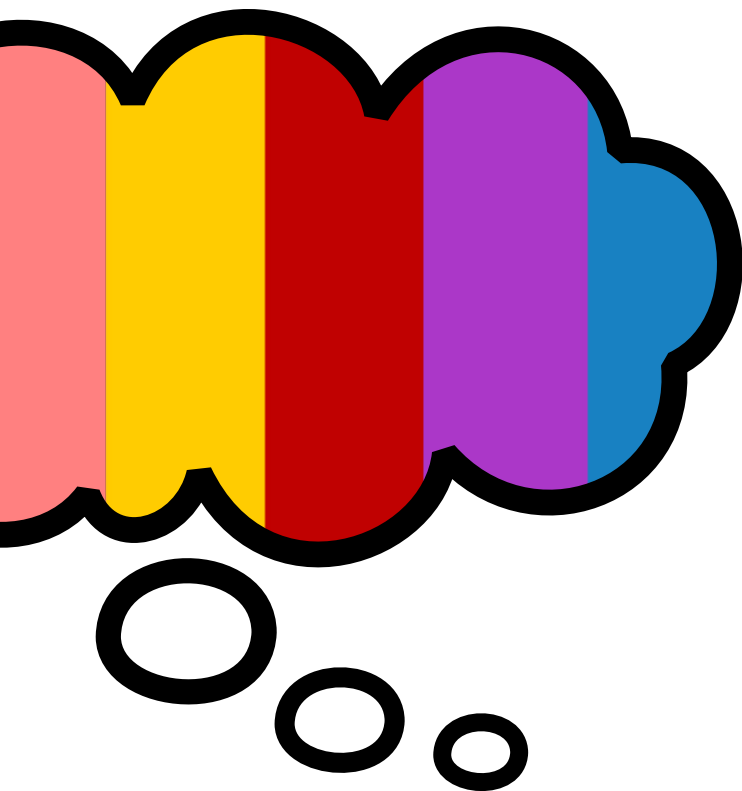
#4.

Creative Problem Solving as a management tool



4. Creative Problem Solving as a management tool. **CPS fundamentals**





#5.

**What should the teacher know?
Basic economy tools and concepts
we are going to be using**

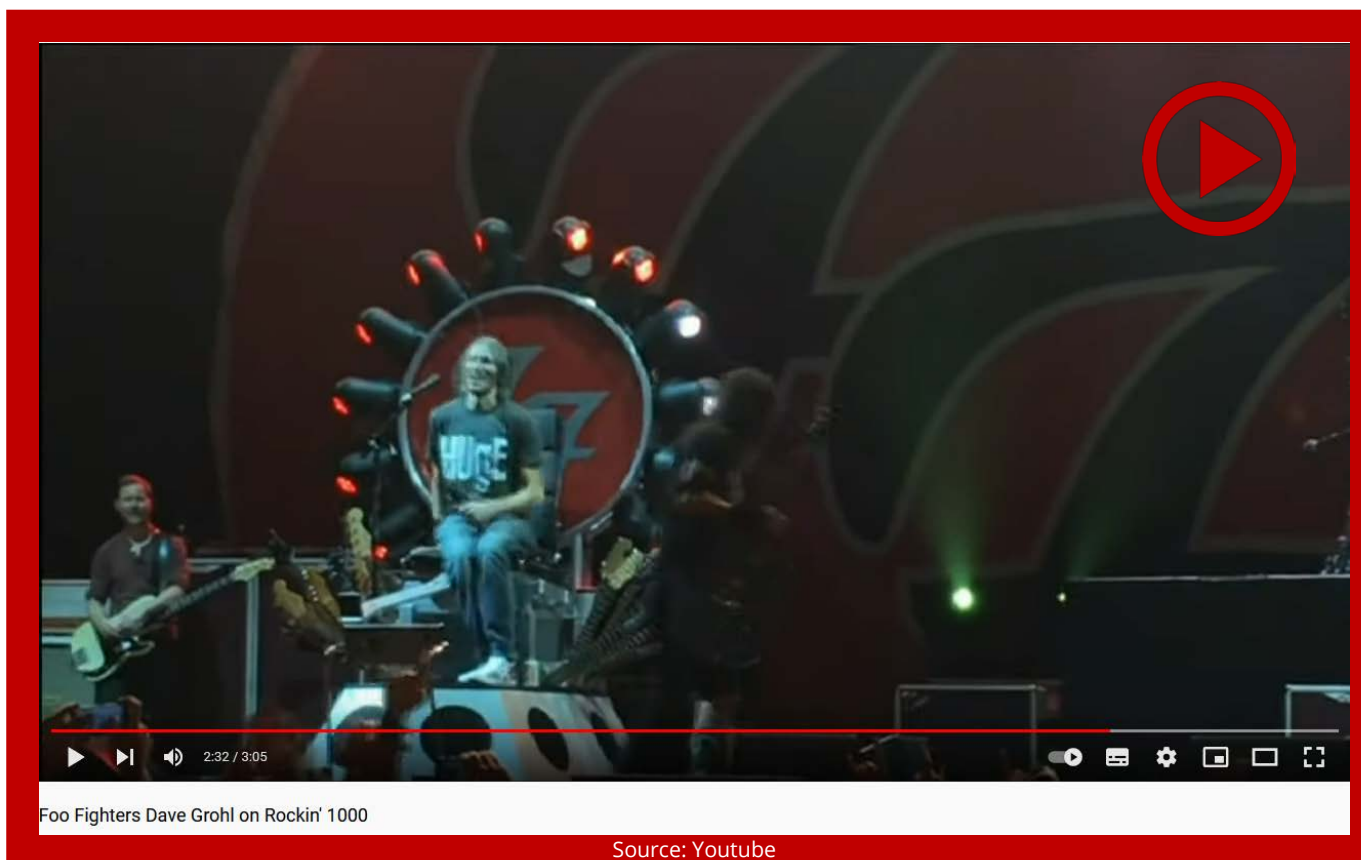


5. Basic economy tools and concepts. **“Undertaking”** mindset





5. Basic economy tools and concepts. **“Undertaking”** mindset





5. Basic economy tools and concepts. **Marketing mix: product**

- o Know your business.
- o Identify opportunities.
- o Identify target customers (needs + expectations)
- o Define the product + services.
- o Plan the differentiation.
- o Develop the business plan.
- o Assess feasibility.



5. Basic economy tools and concepts. **Marketing mix: price**

- o Number of **monetary units** the consumers must pay for each unit of product that the company sells in the market, as a **counterpart to the value** that the consumer **perceives** when achieving a certain **level of satisfaction** with the company's offer.

Setting the price right:

- o Which is the cost per unit produced? (**dead point**).
 - Materials + Manufacturing + Associated services + Personal + Investments.
- o Is there competition? How much are they charging? (market price – customer trust).
- o Do we offer a special value?
 - Differentiation.
 - Emotional factors.



5. Basic economy tools and concepts. **Marketing mix: promotion**

- o Better, talk about communication.
- o It is not enough with being good, you must seem so.
- o Know your customers base (needs + expectations).
- o The purchase decision is based on quality (management concept).
- o Quality is based on perception.
- o What the customer does not know, it does not exist.
- o We need to know the opinion of the customers.
- o Two-way communication is key.



5. Basic economy tools and concepts. **Marketing mix: placement**

The place the business wants to occupy in the **perception** of real and potential customers: the business needs to develop its **competitive edge**.

- o For what qualities do we want to be recognized?
- o What value do we add?
- o What does our competition do?
- o How can we differentiate ourselves from the rest?
- o Why would the potential customers prefer us?



5. Basic economy tools and concepts. **Business model: competition**

- o Identify the competition.
- o Identify favorite attribute combinations in the market.
- o Determine our competitor positions.
- o Find out the product relevant attributes for the customers' base.
- o Identify the ideal position for the market.
- o Select our own position (based on differentiation, feasibility and profitability).



5. Basic economy tools and concepts. **Business Model Canvas**

The Business Model Canvas

Designed for: _____ Designed by: _____ Date: _____ Version: _____

Key Partners Who are our Key Partners? Who are our key suppliers? Which Key Resources are we acquiring from partners? Which Key Activities do partners perform? KEY PARTNER RELATIONSHIPS Complementarity and synergy Reduction of risk and uncertainty Reduction of particular requirements and activities	Key Activities What Key Activities do our Value Propositions require? Our Core Activities (Channels) Customer Relationships? Revenue streams? KEY ACTIVITIES Production Platform building Infrastructure Performance Customization Logistics Design Buyer/Seller Risk Local Recruitment Local Production Accountability Government responsibility	Value Propositions What value do we deliver to the customer? Which one of our customer's problems are we helping to solve? Which bundles of products and services are we offering to each Customer Segment? Which customer needs are we satisfying? VALUE PROPOSITIONS Newness Performance Customization "Tailored fit" (a la carte) Design Buyer/Seller Risk Local Recruitment Local Production Accountability Government responsibility	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? CUSTOMER RELATIONSHIPS Personal assistance Channel partner assistance Self Service Community services Co-creation Co-creation	Customer Segments For whom are we creating value? Who are our most important customers? CUSTOMER SEGMENTS Mass segment Niche segment Segment of one Segment of many Segment of one
Key Resources What Key Resources do our Value Propositions require? Our Distribution Channels? Customer Relationships? Revenue Streams? KEY RESOURCES Physical Intellectual Financial Human Structural (brand, patents, copyrights, etc.) Financial	Channels Through which Channels do our Customer Segments 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. Awareness How do we enter awareness about our company's products and services? 2. Evaluation How do we enter into customers' evaluation or organization's trial period? 3. Purchase How do we allow customers to purchase specific products and services? 4. Delivery How do we deliver a 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 COST STRUCTURE Cost of Goods Sold (materials, services, etc.) Infrastructure costs Distribution costs Production costs Marketing costs	Revenue Streams 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? REVENUE STREAMS Asset sale Licensing fee Subscription fees Usage-based pricing Advertising Commission Royalty License Service fees Customer segment Market segment Product line Product line	

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The makers of Business Model Generation and Strategizer

Strategyzer
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5. Basic economy tools and concepts. **Business Model Canvas**

The Business Model Canvas

Designed for:

Designed by:

Date:

Version:

Key Partners

Who are our Key Partners?
Who are our Key Suppliers?
Which Key Resources are we acquiring from partners?
Which Key Activities do partners perform?

KEY PARTNER RELATIONSHIPS
Complementarity and synergy
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?

KEY ACTIVITIES
Production
Platform building
Infrastructure

Value Propositions

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

VALUE PROPOSITIONS
Newness
Performance
Customization
Convenience
"Getting the job done"
Design
Brand/Status
Price
Risk Reduction
Access
Compatibility
Convenience/Usability

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?

CUSTOMER RELATIONSHIPS
Personal assistance
Personalized service
Self-Service
Automated services
Co-creation

Customer Segments

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

CUSTOMER SEGMENTS
Mass segment
Niche segment
Segment of opinion leaders
Segment of niche market

Key Resources

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

KEY RESOURCES
Physical
Intellectual
Human
Financial

Channels

Through which Channels do our Customer Segments 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 interact personally with our customers?
2. Indirect sales
How do we interact personally with our customers?
3. Partners
How do we partner with other customers to purchase specific products and services?
4. Retailers
How do we partner with other customers to purchase specific products and services?
5. Online sales
How do we partner with other customers to purchase specific products and services?

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?

COST STRUCTURE
Fixed costs
Variable costs
Cost of goods sold
Cost of services
Cost of distribution
Cost of customer support
Cost of infrastructure
Cost of marketing
Cost of research and development
Cost of capital

Revenue Streams

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?

REVENUE STREAMS
1. Asset sale
How do we sell our assets?
2. Transaction fee
How do we charge for transactions?
3. Usage fee
How do we charge for usage?
4. Subscription
How do we charge for access to our services?
5. Advertising
How do we charge for advertising?
6. Commission
How do we charge for commission?
7. Royalty
How do we charge for royalty?
8. License
How do we charge for license?
9. Franchise
How do we charge for franchise?
10. Other
How do we charge for other?

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5. Basic economy tools and concepts. **Business Model Canvas**

The Business Model Canvas

Designed for:

Designed by:

Date:

Version:

Key Partners

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

KEY PARTNER RELATIONSHIPS
Distribution and channels
Production of R&D and innovation
Acquisition of particular resources and activities

Key Activities

What Key Activities do our Value Propositions require?
Our Innovation Canvas?
Customer Relationships?
Revenue streams?

KEY ACTIVITIES
Production
Platform building
Infrastructure

Key Resources

What Key Resources do our Value Propositions require?
Our Innovation Canvas?
Customer Relationships?
Revenue Streams?

KEY RESOURCES
Physical
Human
Financial
Intellectual
Structural (brand, patents, copyrights, etc.)

Value Propositions

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

VALUE PROPOSITIONS
Newness
Performance
Customization
Convenience
"Getting the job done"
Design
Brand/Promise
Price
Cost Reduction
Risk Reduction
Accessibility
Convenience/Usability

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?

CUSTOMER RELATIONSHIPS
Personal assistance
Channel partner assistance
Self Service
Customer services
Community
Co-creation

Channels

Through which Channels do our Customer Segments 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. Awareness
How do we raise awareness about our company's products and services?
2. Evaluation
How do we help customers evaluate our organization's Value Proposition?
3. Purchase
How do we allow customers to purchase specific products and services?
4. Delivery
How do we get ahold of a 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 COST STRUCTURE
Cost of Sales (direct costs, variable costs)
Fixed costs
Overhead or fixed costs
Economies of scale

Revenue Streams

For what value are our customers really willing to pay?
For what do they currently pay?
How would they prefer to pay?
How much does each Revenue Stream contribute to overall revenues?

REVENUE STREAMS
Asset sale
Usage fee
Subscription fees
Licensing/royalty/licensing
Advertising
Brokerage fees
Subsidies

REVENUE STREAMS
One-time sale
Recurring (subscription)
Usage-based (pay-per-use)
Performance-based (commission)

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5. Basic economy tools and concepts. **Business Model Canvas**





5. Basic economy tools and concepts. **Canvanizer** [GO!]

The screenshot shows the Canvanizer website interface. At the top, the logo 'Canvanizer' is followed by the tagline 'Brainstorm better concepts. Together with your team'. Navigation links include 'Create Canvas', 'How to use', 'FAQ', 'About Us', 'Links', 'Contact', and 'Login'. A central diagram illustrates the workflow: three laptop screens displaying business model canvases are connected by arrows in a circular fashion, with the text 'Share with your team' below them. To the left of this diagram is a vertical 'FEEDBACK' button. Below the central diagram is a blue banner that reads 'Create your Own Canvas' and 'It's free and easy'. At the bottom, there are three colored boxes: a yellow box for 'Develop Your ideas' (posting ideas on canvases), a green box for 'Brainstorm together' (sharing secret canvas URLs), and a blue box for 'Define your Strategy' (choosing templates and cloning canvases). A diagonal banner in the top right corner says 'CANVANIZER 2.0 PREVIEW'. At the bottom center, it states 'Already 2.100.535 canvases in the making'.

Canvanizer
Brainstorm better concepts. Together with your team

Create Canvas How to use FAQ About Us Links Contact Login

Share with your team

Create your Own Canvas
It's free and easy

Develop Your ideas
Post your ideas on a business model canvas or a customer service journey canvas.
Move notes, finetune ideas and create variations.

Brainstorm together
Share your secret canvas url with your team easily.
All changes are synced for all users with the same canvas opened.

Define your Strategy
Choose from many pre-structured canvas templates.
Clone canvases and iterate dynamically. Post read-only for public feedback on blogs.

Already 2.100.535 canvases in the making



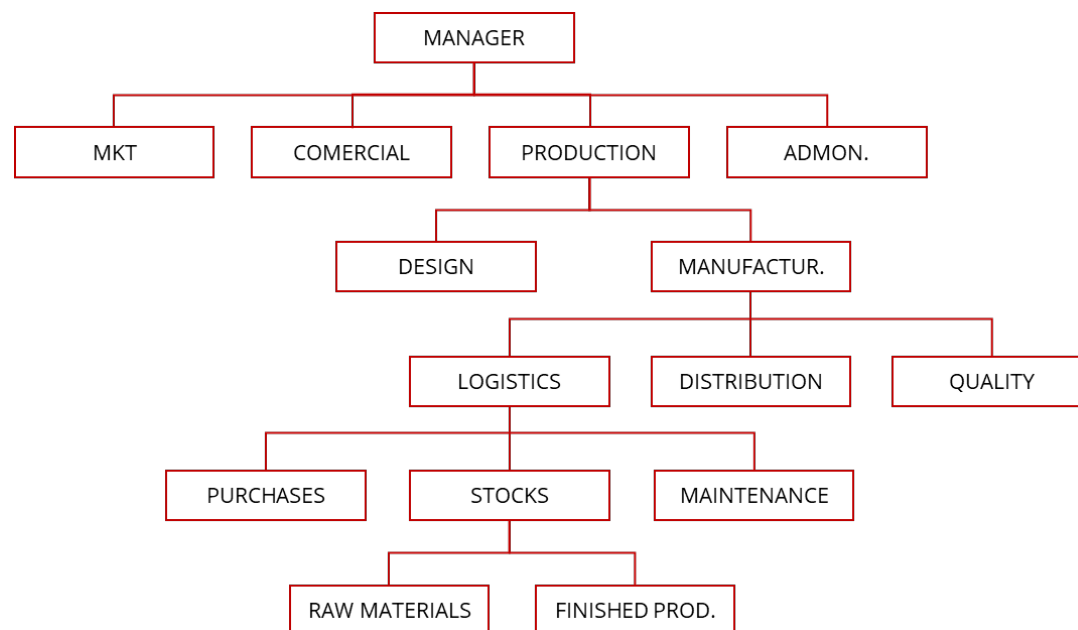
5. Basic economy tools and concepts. **Corporate identity**

- o Better if it is clearly referred to the product / service.
- o Be consistent with the position the company sought.
- o Unique (at least, different from what is known).
- o Simple (easy to remember, interpret and reproduce).
- o Careful using the colors.
- o Adaptable (sizes, supports, applications).
- o Modern appearance, but not “fashionable” (as it must last).



5. Basic economy tools and concepts. **Organization chart**

- o The organization must be adequate to achieve the desired results.
- o Identify where the value lies/is created.
- o Balance needs and the available resources.
- o Define responsibilities and functions.
- o Communicate them.





5. Basic economy tools and concepts. **Diversification**

- o Expand the offer of products and services of the company:
- o Adding new related activities.
 - Vertical forward
 - Vertical backwards
 - Horizontal
- o Adding completely new activities.



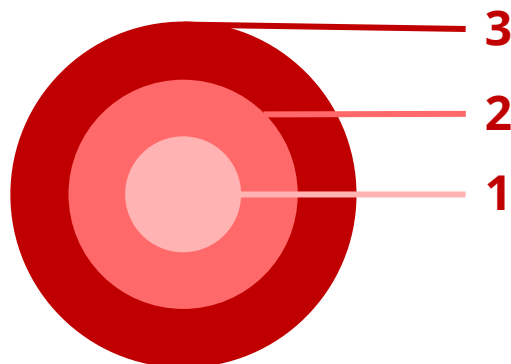


5. Basic economy tools and concepts. **Corporate Social Responsibility**

Green Paper "[Promoting a European Framework for CSR](#)":

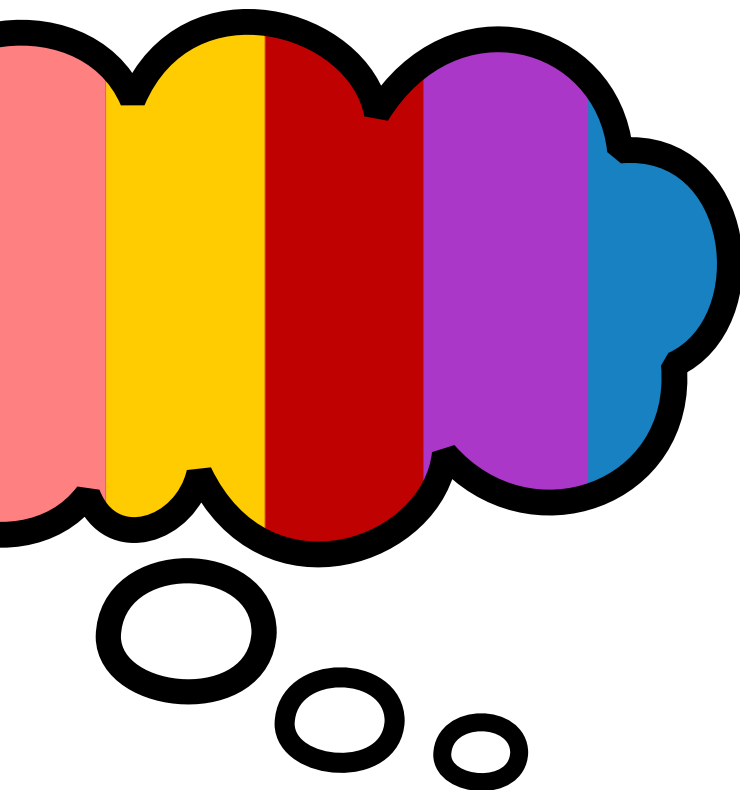
"Integration, by companies, of social and environmental concerns in their business operations and their interactions with their stakeholders on a voluntary basis".

- o Volunteer.
- o Integrated.
- o Social and Ambiental concerns.
- o Stakeholders.



Some tools for the CSR

- o CSR statements and policies
- o Self-assessment tools
- o Social balance
- o Codes of conduct
- o CSR strategies
- o Sustainability reports and memories
- o Integrated Management Systems



#6.

The general process for undertaking

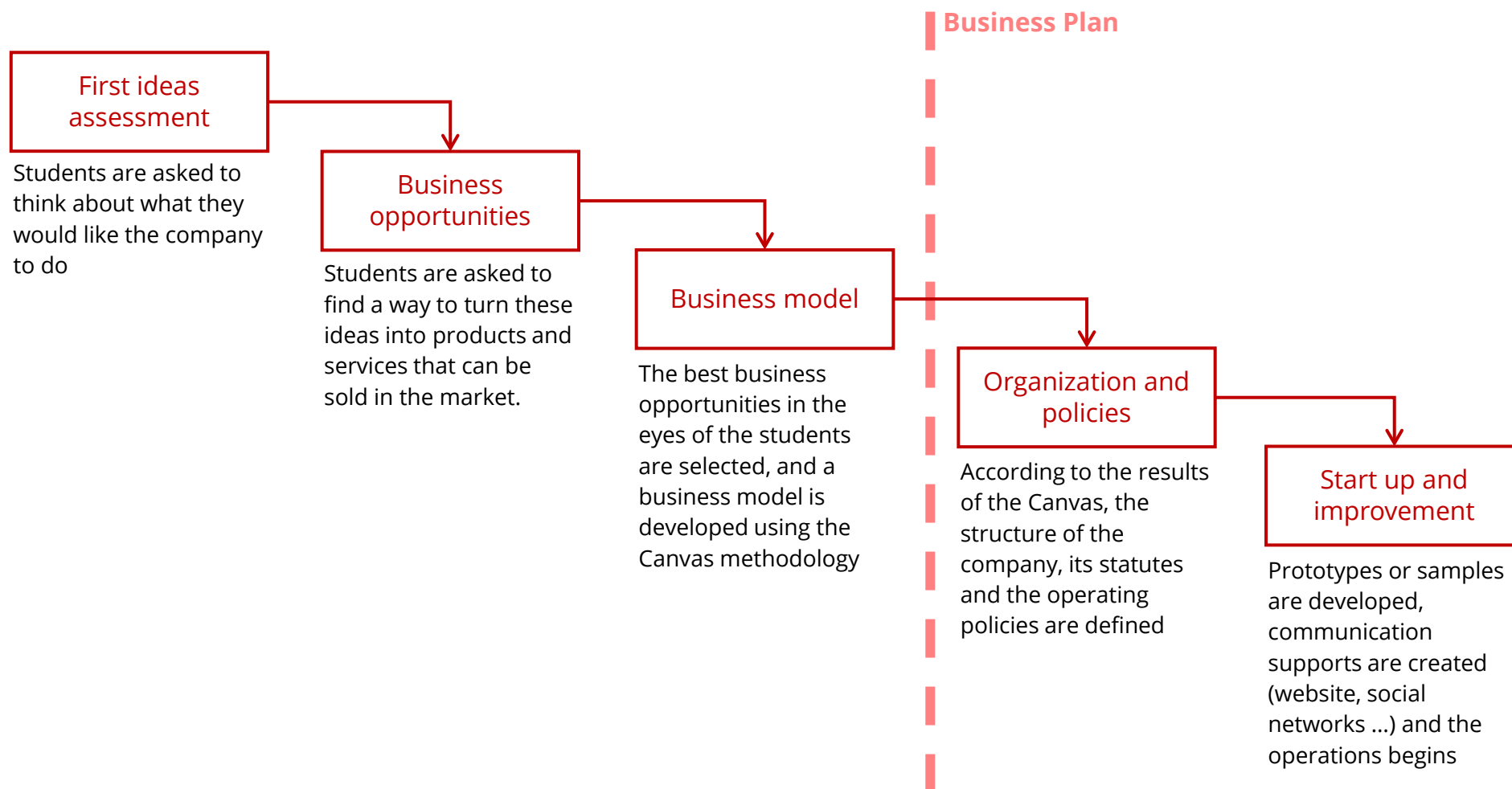


6. The general process for undertaking. **What does it mean to undertake?**

- o Motivation vs necessity.
- o Entrepreneurial attitude.
- o A business opportunity.
- o Draw a plan.
- o Set limits (red lines).
- o Find the right people.



6. The general process for undertaking. **An overview**





6. The general process for undertaking. **Idea vs business opportunity**

- o Can it be materialized and sold?
- o Is there anyone willing to pay for it?
- o Are there enough potential customers in our market?
- o Will we have competitors?
- o What are we going to do differently from them?
- o How are we going to reach customers?



6. The general process for undertaking. **The business model (value)**

- o Focused on clearly defined target customers.
- o Identify characteristics that matter to them (significant).
- o Know what the competition offers.
- o Define the value in terms that the customer understands.
- o Build the competitive edge.
- o Establish channels to communicate value.
- o Open communication channels with customers.



6. The general process for undertaking. **Complete the business plan**

The business model is just a static first approach. Before starting, a more detailed and dynamic analysis is required:

- o Market analysis (market volume, consumers, suppliers, competitors...).
- o Business plan (market segmentation, products offer, prices, advertising and communication...).
- o Organization (facilities, production equipment, layout...).
- o Human resources plan (job profiles, training, experience, categories, salary...).
- o Legal aspects (company creation procedures, relations between shareholders, taxes...).
- o Economic and financial analysis (estimate of income, estimate of expenses, sources of financing...).
- o Conclusion on feasibility.



6. The general process for undertaking. **Starting up**

- o Balancing available resources with needs.
- o Forecast financing and cash needs.
- o Follow the plan outlined.
- o Communique.
- o Built identity, relationships and competitive edge.
- o Respect the limits set.
- o Measure and improve.



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