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INTERREG IIIC

CyberMoving WORKSHOP GUIDEBOOK

Bridging the Gap between Invention and Innovation!

THE WORKSHOP GOAL:

Guidelines to adjust CyberCars development with the specific context of mobility in cities.

KEY POINTS:

Explore people opinion (Urban planers, politicians, traffic planers, users, etc.) about the future applications of Cybercars Fleet, or about the news functions.

Evaluate when CyberCars will become innovation for cities' mobility.

EXERCISE

General Objective: Develop a new products based in Cybercars Fleet.

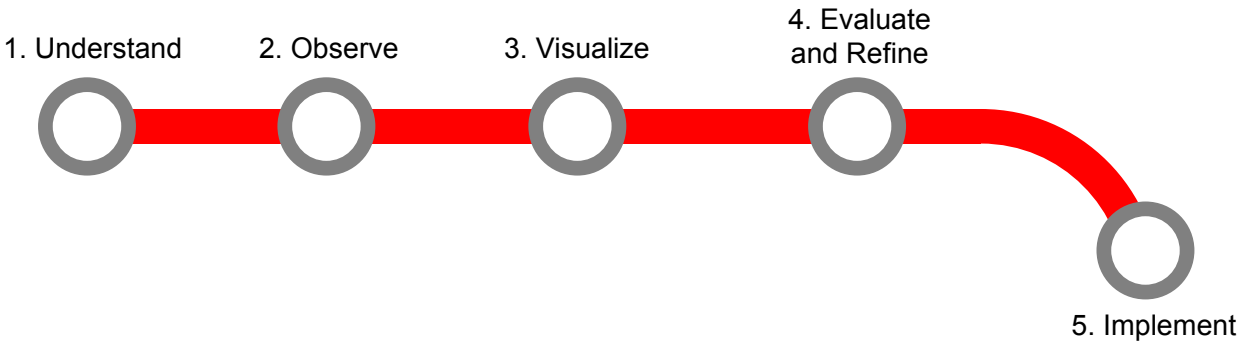
Specific objectives to transform the Invention in Innovation:

- Suggest new functions to the system to fit the people needs
- Suggest new applications to the system.
- Enumerate conditions and constraints to apply Cybercars in the Cities or in private sites (Present and Future).
    - Hint: It makes sense start with controlled applications like Natural Parks, Hospitals, Airports, Historic Centres, etc. before applied in the Cities to complement other transports? This strategy could speed up the people adoption?
- Enumerate the potential users of this mobility technology.
- Suggest what type of demonstrations necessary to disseminate the product on the potential users (using the Cyber Moving Fleet), and what partners should invite to put strength in the demonstration.
- Suggest what type of demonstrations necessary to persuade the local authorities (Politicians, Urban Planers, Traffic Planers, etc.) to adapt the solution

Source: IDEO, "The deep dive" (www.ideo.com)

IDEO's 5 Step Method

IDEO[1] provides a practical step-by-step method any team can use to **develop new products**. This method will help the Connected Cities team to perform the main exercise objective "Develop a new product based in Cybercars Fleets".



1st Step: Understanding:

You must understand the market, the technology, the client and the perceived constraints affecting the problem (How put the Cybercars in the Cities). While the constraints may change later in the process, it's important to begin with a **firm understanding** of the context. Before attempting to create new solutions, you need to understand the product's context: the relevant technologies, competitive environments, potential market segments, and the current forces for change in the arena in which the product will appear. These steps maybe require talking with colleagues and review the yesterday CyberMoving Demonstration (Observing People).

[1] It's hard to believe that objects such as the Palm V organizer, the neat-squeeze dispenser, and the Polaroid i-zone camera have anything in common. Yet these were all developed at IDEO, a Palo Alto-based engineering and design firm.

Source: IDEO, "The deep dive" (www.ideo.com)

To do (<u>20 minutes</u>) - What you know about Cybercars

To materialize diffuse ideas, please remember what you know about Cybercars in the Cities and write 30 sentences (with ideas and key points) related with Potential markets, Applications, Technology, Improvements, Problems, etc.

That step makes the Cybercar concept and gives the team a common direction.

1	Older people	17	Bike on the back
2	Reduced mobility	18	Luggage
3	Shopping cart	19	Free lunch
4	Mother with children	20	Audio comment
5	Pregnant women	21	Music
6	Tourists/Signat sebing	22	Better stop
7	Faster	23	Barrier free access
8	Dedicated vanes	24	Different colours
9	Theme park	25	Different target group
10	University campus	26	Different routes
11	Older students	27	School busses
12	Hospitals	28	Demo: safety
13	Internet access	29	Demo: Elo friendly
14	Doors (climate)	30	Marketing approach
15	Better seating	31	Demo: speeding maximum
16	More capacity	32	Safety belts

Source: IDEO, "The deep dive" (www.ideo.com)

2) **Observe:** What confuses? What is liked? What is hated? What is not satisfied?
Remember one more time when you observed the "natives in their habitat" – safety issues, people with inabilities, traffic jams, pollution, urban barriers, etc.
Once there is a broad direction, it is crucial to focus on the potential users and customers.

2.1 - To do (20 minutes)
Remember last Cybermoving Experience, the people engaging in the practice, what they are used to, and what matters to them. After this, list the **system disadvantages** (Urban transport based in Cybercars) interpreting the different typical users: Young People; People Disables; Old People; Sellers; Residents; Politicians, "Urban Technicians", "CyberMoving Company", Tourists, etc.).

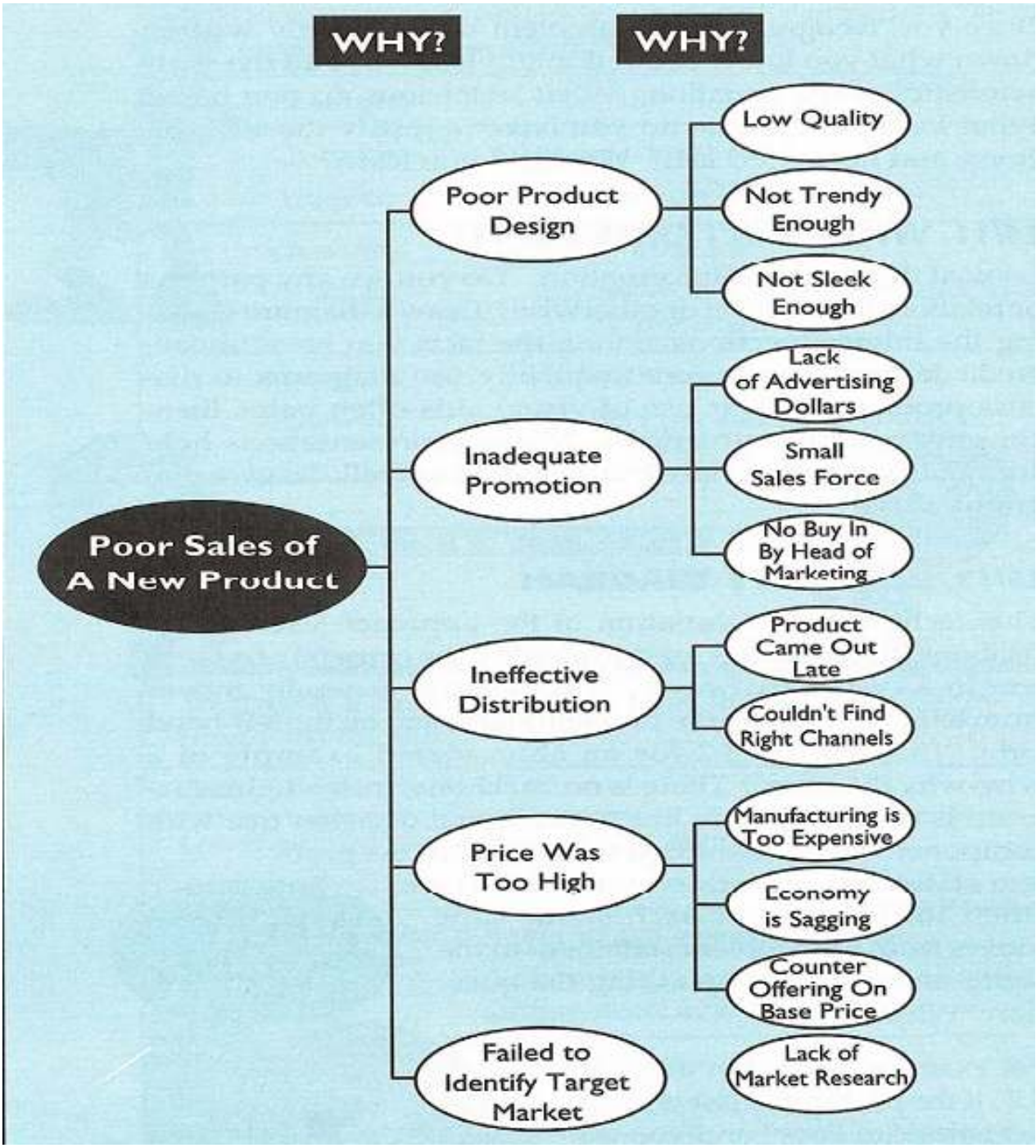
Please feel free to choose other scenarios using this technology.

Visualizing these characters will help you to anchor your perspective about what designs will mean in practice, to the different people who may use them.
For this exercise it is important to take aware in "User desirability", "Business viability" and "Technical feasibility" (please remember the exercise objectives).

Play	Disadvantages	Play	Disadvantages
All	Criminality; no assistance; no communication; slow.	Young people	Low velocity.
Shoppers	No space for bags.	Elderly	No low floor.
Disabled	No low floor.	Mothers with strollers	No low floor.
Politicians	No protection; road works/ congestion.	Technicians	One more actor on the road.
Other drivers	Can't curse the driver.		

Source: IDEO, "The deep dive" (www.ideo.com)

Why Why Diagram



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2.2 - To do (30 minutes)

Using the disadvantages written in the last page, fill the next frame, regarding "Why Why Diagram". Why change/create the actual System (Cybercars in the Cities). Please remember the exercise objectives.

	Why ?	**Why ?**
Change the actual System	Poor Product Design	- Not eye catching - Only in blue - Seats are poor - Unsafe doors
	Poor Driving Experience	- Pedestrian are faster - No smooth ride - Problem with seating in steep streets - No signal before start
	Accessibility	- Height difference between vehicle and street - Safety bar clumsy
	Lack of space	- Luggage - Stroller - Number of passengers
	No facilities	- No communications

Source: IDEO, "The deep dive" (www.ideo.com)

3) **Visualize - How will our brainstormed solution solve the problem?**

At the third step, your attention finally turns to the system being designed.

How will our solution is complete? How it solve the problem?

To do (20 min) - Find new ideas to improve the Cybercars System

Read all the last steps and find new ideas to improve the Cybercars System (Vehicles, System management, User interface, News Applications, etc.).Please take into account the main exercise objectives and use the brainstorming technique.

Brainstorming rules:

- Elect a moderator;

- Define the problem you want solved clearly, and lay out any criteria to be met (see the slogan above the table "**Bridging the Gap between Invention and Innovation, The Cybercars in the Cities, Soon!**"
- Keep the session focused on the problem;
- Ensure that no one criticizes or evaluates ideas during the session. Criticism introduces an element of risk for group members when putting forward an idea. This stifles creativity and cripples the free running nature of a good brainstorming session;
- Encourage an enthusiastic, uncritical attitude among members of the group. Try to get everyone to contribute and develop ideas, including the quietest members of the group;
- Let people have fun brainstorming. Encourage them to come up with as many ideas as possible, from solidly practical ones to wildly impractical ones. Welcome creativity;
- Ensure that no train of thought is followed for too long;
- Encourage people to develop other people's ideas, or to use other ideas to create new ones ; and
- **Appoint one person** to note down ideas that come out of the session. A good way of doing this is to use a flip chart.

Source: IDEO, "The deep dive" (www.ideo.com)

	Description	Votes
1	Competition industrial designer	6
2	Mass customisation	8
3	Standardized speeds for different streets	2
4	Manual or overrides	1
5	Voice communication	8
6	Bicycle hanger	3
7	Luggage hanger	3
8	Platform ramp	7
9	Dynamic route information vehicle	5
10	Dynamic route information stop	8
11	Garbage bin	4
12	Platooning with garbage container	1
13	Light inside	8
14	iPod	4
15	Wireless internet	6
16	AIRCO	7
17	Questionnaire	
18		
19		

Source: IDEO, “The deep dive” (www.ideo.com)

4) **Evaluate and Refine (15 minutes):**

Once there is a basic structure for the design, the details are filled in, and user testing at a variety of levels is performed to provide feedback (remember the CyberMoving demonstration).

Read all the items mentioned in the 3rd exercise, and choose the best **7 features** to hit the **main exercise objectives** (page one).

	Features
1	Mass customization
2	Voice communication
3	Dynamic route info at stop
4	Light inside
5	Platform ramp
6	AIRCO
7	Improved industrial design
8	Wireless internet

Source: IDEO, "The deep dive" (www.ideo.com)

5) **Implement: commercialize, market…**

In the "implementation" stage, you will focus their attention more on the pragmatic aspects of building the designed object: costs, manufacturability, durability, quality control, maintenance, and so on. Take advantage of the cross-functional teams throughout the process is to ensure that these considerations have not been ignored in the previous steps, because in general they cannot be simply patched on at the end.

5.1 - The aim of this exercise is not implementing but prepares your product presentation (20 minutes):

Please write your system proposal in slide (PowerPoint) or paper sheet. You could complement your presentation with other methods, or different materials. Do not forget to include distinctive ideas, applications, advantages, dissemination tasks, etc.

5.2 – The aim of this exercise is to persuade the audience to "buy" your product. They need to know your "value proposition" (8 minutes).

Now, imagine that you have a company and need to sell the product to implement in the cities. You will have 8 minutes to do your proposition ("extended elevator speech").

Please take into account the **exercise main objectives**.

The audience will choose the best product…
Good look.

Conclusions:

The ideas collected with this exercise will be including in Connected Cities best practices manual, and will used by Pedro Nunes Institute to improve the Cybercars development strategy.

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Specific objectives to transform the Invention in Innovation

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