

NOTE OF INTENT

ParkEasy: The app to optimize the use of parking spots in metropolitan areas



PARKEASY

PRESENTED TO

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FOR THE CLASS

GREAT TRANSITION, RESPONSIBILITY, INNOVATIONS, COMMONS

KEMI2000

BY

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DECEMBER 22TH 2018

Introduction

History has entered into the *Planetary Phase of Civilization*, a concept defined by the Global Scenario Group. Indeed, it states that we are living in a new era with profound shifts in science and technology towards a more complex and environmentally interdependent society. Therefore, the objective of the Great Transition class is to address the systemic challenge of the Planetary Phase. Each collective project gathered eight students from Sciences Po Paris and asked them to reflect upon one of the six *hot topics of the Great Transition*. The teams had to come up with a concept that had a deep understanding of our contemporary world whilst shaping its future in a sustainable manner.

Our team, Rhodium, envisioned a solution around the topic of *Collective Intelligence and the Sharing Economy*

I. Problem

The problem we have identified is the following: drivers lose considerable amount of time looking for a parking spot in congested cities, which causes negative externalities such as pollution, traffic jam and stress for inhabitants.

Numbers regarding the problem: Why is the problem important?

Every car user living in a metropolis can easily understand the problem. Indeed, one person in four takes more than 30 minutes to find a car park each week in Paris region. Yet, a standard car emits 120g of CO₂ for 1 kilometers on average, and it increases in the cities, so the carbon footprint is awfully huge. Moreover, 30% of traffic jams in built-up areas are due to parasitic search traffic : 78 million hours would be lost each year in France by motorists who turn before parking. In addition to traffic jam and pollution, the stress and anxiousness of the driver but also of the other users of the road increases. All the reasons and figures given above explains why this problem is so important and why it urgently need a solution.

What are the constraints?

The huge challenge to face to solve this problem is to reduce the time people spent to find a parking area without increasing the number of existing car park.

Why does this problem need a solution more than another one?

Among a lot of problems, we identified, we chose this one for three reasons.

- (1) It is a bottom-up innovation: each team member wanted to create this product for their own use.
- (2) By solving the problem, we would be able to reduce negative externalities (e.g. reduce the amount of CO2 pollution).
- (3) Feasible solution in the short-term.

Therefore, we sum up the problem by asking one simple question:

“How can we park a car within 2 minutes and without increasing the number of existing parking spots?”

II. Concept

We are forward thinkers with the ambition to offer a multimodal mobility service that accompanies the user, and which makes parking a lever for urban development.

To make life easier for users and communities, our project is innovating with a connected solution that aims to improve traffic flow, to optimize the time of the motorists, to improve the parking strategy and ultimately to reduce pollution. Our aim is to increase the parking capacity in a Paris, without creating new places, but simply by allowing the rental of available seats in private car parks. We want to take advantage of the democratization of the use of applications and the sharing economy, to allow us to link supply and need of parking spots. The advantage of our solution is that it benefits both drivers looking for parking spaces and owners of car parks (e.g. businesses, hotels, residences). Our concept allows alternative solutions of mobility whilst integrating all the existing services on the territory (e.g empty parking lots).

How is the app going to orient drivers to underutilized or unknown car parks?

- 1) Sensors on the parking spaces: The operation is quite simple: sensors will be placed on the parking spaces and on the car parks. This makes it possible to communicate, in real conditions, to the motorists the availabilities.
- 2) Sensors on buildings: Our company will offer to pay the inhabitants of buildings for the installation of a sensor on their balcony. The latter identifies the free places in the street and the information is transmitted to the app which is accessible to the entire community.
- 3) License Plate recognition system: We will offer the possibility to implement a Licence Plate Recognition technology in parking owned for instance by offices, schools and university. By doing so it will offer drivers using the app a state-of-the-art parking and owners using the app more flexibility and ease of use.

How is the app going to benefit the user?

Our app enables drivers to obtain early information on available parking space, make a reservation, access the reserved place and pay for the service booked. Moreover, it will give the time remaining with the option of adding extra time. Thus avoiding stress and saving valuable time.

How is the app going to benefit the community as a whole?

This app is a tool for cities. Thanks to the aggregated data (e.g. car movements and payments) we collect, cities are able to have a clear overview of the occupancy rate of parking lots, traffic bottlenecks and transactions. All in all, we help them to better understand the demand and supply of mobility within their city and therefore help them adjust accordingly their politics and government expenditures.

Is it original?

There is growing interest worldwide in integrating digitalization in parking management. In fact there is a wide range of existing parking solutions trying to develop optimization apps.

EasyPark (<https://easyparkgroup.com/>), a scandinavian Group, is the leader in terms of current innovative parking solutions. They cover all the Nordic countries but also parts of Germany, Austria, Italy, Spain, France, the Netherlands and more recently Switzerland. Nonetheless, EasyPark is not yet widespread in France. On the other hand, Parking Map (<https://www.parkingmap.fr/>) can be considered as our main local competitor. They offer very similar services both to drivers, cities and owner of cars parks. During the summer 2018, a partnership led by Colas with Parkingmap, Zenpark, Nokia and OpenDataSoft was announced. These partners are aiming to have their application ready in 5 years. Ultimately, our concept is not the most innovative one as other companies are working on similar issues. Nevertheless, it is responding to a real need in the Paris region.

Why do we believe in the success of this app?

As seen with Mr. Cardon, aggregated information not only benefit users of the app by giving them power to communicate and to inform themselves. It also benefits the platform that collects the data. In fact it gives the possibility to monetize its position as an intermediary on the other sides of the market.

II. Expected positive impacts

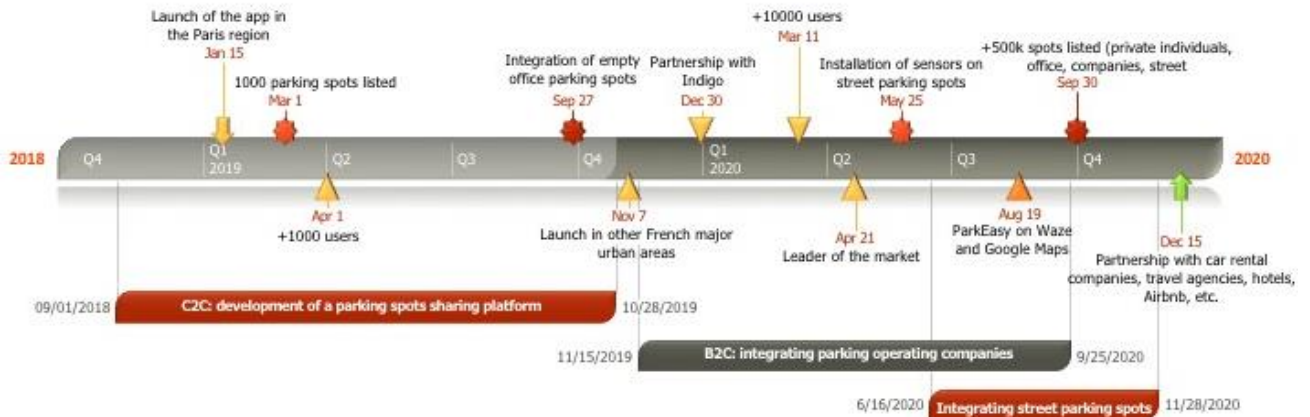
- 1) *The Ecological Component is the most important in terms of expected social benefits:* Our app aims to reduce the kilometers and the amount of time spend in the car, therefore limiting the emissions of greenhouse gases.
- 2) *Less stress and frustration for drivers:* Bringing wellbeing to the community
- 3) *Creating a community:* Ultimately, if the user experience turns out to be conclusive, we will federate and create a community around a concrete and achievable goal of improving life in society by making common issues aware of the ecological transition.

IV. Majors risks and actions to reduce them

- 1) *Low market shares and being unknown*: The solution would be advertising through SEM (search engine marketing) and SEO (search engine optimization).
- 2) *Risk of resilience from key partners*: Another potential risk is the creation of a coalition between important players such as Indigo and Vinci. They might see our app as a threat rather than an opportunity and therefore decide not to be part of it. Instead of joining us they might want to create a concept of their own. We would therefore need to explain clearly the benefits they can gain by joining forces with us.
- 3) *Risk linked to governing commons*: Our app is going to deal with information that are neither privately owned, nor managed by the government. Therefore, risks linked to governing commons are unavoidable because no one takes responsibility for it. To deal with this issue, Elinor Ostrom drew up a list of principles for running the commons. One action stated that deserves attention is the fact that our app must allow those affected by the rules to modify the rules. We should create a space within the app for users' suggestions and dispute resolution.

V. Deployment strategy and major milestones

Development strategy and major milestones



VI. Organizations

To make this application possible, we would first need a team of software and application developers to carry out the project of developing this new mobile application. They would work alongside with a team of researcher and more specifically environmental specialists to make sure that every environmental parameter is integrated into the app. In order for this project to be run as smoothly as possible, a project manager would be necessary. He would be responsible of defining clear and attainable objectives and make sure that the project team would see their need for the project satisfied in terms of technology, material and human resources. Therefore, an expertise in the domains of app development, environmental issues, urbanism, and project management are key to the success of this new application. In addition to that, we would need a specialist that could take care of all the legal aspect, lawyers either specialized in urban planning or on environmental regulations. Finally, we would need people to take care of all the maintenance and potential dysfunctions of sensors.

Partners, sponsors of the project

Aside from the human resources needed to carry out this project, many actors would be involved. First and foremost, we need to set agreements with major operating companies in and around paris, such as Vinci or Indigo. We would also be looking for private companies

with underutilized parking lot. Schools like sciences Po or Pierre Mendes France center in the 13th district have a parking lot with plenty of unused spots during the week-end or even during weekdays, it would be interesting to make them potential actors of this optimization. The same goes for corporate offices and supermarkets ; allowing car users to park on unused spots not only would be beneficial for them but it would also be considered as a milestone for company's social corporate responsibility (SCR) by taking such action for the common good that are beyond the interests of the firms. We also must work with navigation apps, such as Waze who is one of the major GPS navigation software, and more directly with Google who own the app since 2013. Regarding the sensors, one of the partner could be companies like Bosch.

Concerning Public actors, we would try to develop partnerships and be sponsored by major public institutions at european, national and local scale but also by local associations. Finally, we would set deals with collective ownership and private parking spot owners.

VII. Return on investment analysis

Let's now focus on more financial and numerical information. The underlying objective of the project, apart from the benefits of the service it offers, is for us to be able to make it profitable. It is therefore important to talk about the return on investment (ROI) and measure the gains generated by the initial investment needed. This implicates analyzing the short-term performance of the project, as it will be an indicator for future references.

To measure the investment profitability, we need to take into account all of the costs and sources of revenue involved in the launching of our service. To avoid approximative numbers, we will not try to give a precise budget of it all but simply evaluate what the different expenses and profits will be.

The cost structure is the following is specific and includes human resources, equipments, patents... More precisely, it would be the following:

--- Human resources include:

- teams of environmental specialists to conduct research and development strategies concerning traffic in urban areas, data of parking turnover, ratios of time spent looking for a parking spot, what kind of parking space remains available for long periods of time...
- app and website developers, to help us with the technical launching of the project
- project managers and legal advisors to make sure that everything goes well and without issues

Of course, large human resources implicate large personnel costs and wages, which weight a lot on the balance sheet and need large revenues to compensate for.

--- Equipments and data (fixed costs)

- A very important element of our project are parking space sensors, which will help us monitor in real-time the available parking space and send information to the users about where this space is and where they can park their car immediately.
- If we decide to use private parking space to offer more parking opportunities to our users, we will need to invest in high-performing tools that will detect that the person wanting to enter the parking lot is a user of our service (cameras?, scanner?...).
- To develop this equipments, filing patents and using specific database is necessary. This requires datacenter rents and high costs of R&D.
- Finally, creating the website and the app will constitute an important part of the fixed costs.

--- Marketing and advertising costs

To counterbalance the costs, let's take a look at the different revenue streams:

--- Commissions on a small percentage of the transactions costs. Owners and uses would be charged a certain amount when using a parking spot; owners would be charged a little bit more than users, on the same model as Airbnb and other sharing-economy services.

--- Commercials

--- Investments of our key partners:

- It is not excluded to have funds come from some of our partners. Private companies could want to invest and even take share on the long run. This would constitute an important revenue stream.

- Major operating parking companies could want to work hand in hand with our service and make the partnership more easy by lowering the costs or investing.
- Public aids of some of our public partners to support the project, sensibilize people to it and make people more aware of it.

As the project it just starting, we are expecting high investments and important costs, particularly fixed costs, which will be amortized by time as the project lives and grows. With time, the investment will become more and more profitable and the return on investment ratio will show even more performance.

There is another important aspect of the return on investment that we must mention: the Social Return on Investment (SROI). The SROI takes into account not only the profitability of the investment but more importantly the broader impact of the project based on extra-financial indicators and value. In our case, the SROI will help measure not only the social impact but also the environmental one, as pollution and congestion will be reduced and, at the same time, people's lives are made less stressful.

Conclusion

ParkEasy tackles the issue of Collective Intelligence and the Sharing Economy by responding to a simple challenge: with the increasing number of large metropolitan areas around the globe, the time spent trying to park a car has become one of the major factors of congestion and an underestimated source of noise pollution and CO2 emissions. To address that, ParkEasy offers an innovative digital platform optimizing parking space in urban and suburban areas by connecting car users to all empty parking spots owners (private individuals, parking operators, offices, supermarkets, street parking). ParkEasy does not build new parking spots from scratch but rather maximizes the full potential of existing resources by promoting the sharing economy. Ultimately, ParkEasy aims at transforming parking in metropolitan areas from a burden to a lever for urban development and social cohesion.

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