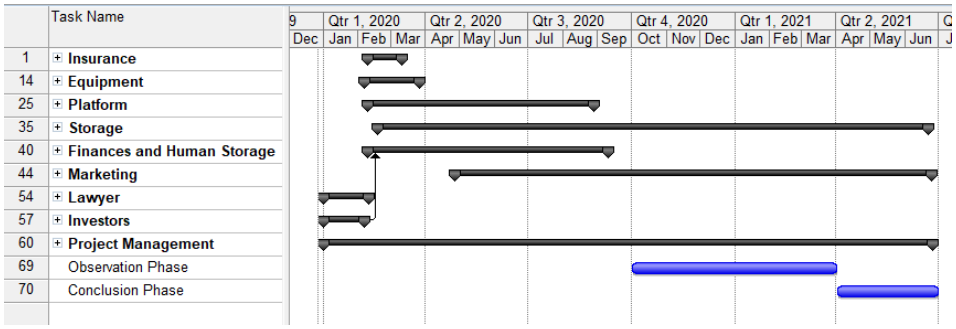
Project Budget

The following table contains a summary budget based on the planned cost components and estimated costs required for successful completion of the project. We are assuming that we have **100.000€** to invest.

Contract and Insurance negotiations (01/01/2020 to 23/04/2020)	Contract Attorney	600 €
	Insurance Broker	60 €
	Finances and Human Resources	300 €
	Work Insurance	150 €
	Electronic Equipment	50.000 €
	Total	**51 110 €**
Web Platform and Advertisement (01/05/2020 to 31/09/2020)	Advertisement	2 000 €
	Web Application Design	5 000 €
	Finances and Human Resources	375 €
	Total	**7 375 €**
Observation Phase (01/10/2020 to 01/04/2021)	Personnel Resources	17 400€
	Drivers	1 200 €
	Management	16 200 €
	3rd Party Services	13 010 €
	Storage Space	1 200 €
	Insurance	5 150 €
	Finances and Human Resources	1 980 €
	Electronic Maintenance and Repair	4 500 €
	Web Application	180 €
	Total	**30 410 €**
Total		**88 895 €**

Gantt Chart

The chart below shows how the summary tasks are scheduled. The full Gantt chart is on the file "H4 Gantt Chart".



Deviation from proposed schedule	**Estimated date** (only workdays)	**Likelihood of terminating the project by the estimated date**
0%	30/06/2021	0,66
10%	20/08/2021	1
20%	13/10/2021	1

Milestones

Our principal milestones are the following:

Project Milestone	**Target Date (mm/dd/yyyy)**
Project Kickoff	01/01/2020
Investors negotiation closed	8/02/2020
All contracts done	23/04/2020
Begin to develop the web platform	01/05/2020
End of the development of the platform	01/08/2020
Start of the Observation Phase	01/10/2020
Project Completion	30/06/2021

Scarce Resources

The identified scarce resources are:

- The management team (André Nicolau, João Ferreira and Silvana Graça)
- Electronic devices

Project Appraisal

The problems we intend to solve are that some people won't buy electronic devices due to how expensive they might be, even with installments, some people don't wish to own devices full-time and would rather just have them for shorter periods of time. Furthermore, the companies who sell these devices do not profit from these potential customers.

Our solution is to buy (or rent, as a project alternative) electronic devices from certain providers, in our case laptops from HP and Asus, and allow people to rent these devices from us at an appealing price. After several rentals of a device we allow a customer to purchase it at a lower price.

By buying or renting these devices from providers we give them profit. By providing an appealing price of rental we will allow people that do not wish to own a device full-time to just have them for shorter periods of time and by allowing them to buy the device at a lower price after certain number of rentals we allow people with less money to afford these devices. As such, we believe to solve the problems presented.

The full duration of the project will be 377 days, with a 66% probability of ending the project in time.

The project assumes an initial investment of 100.000€ and after our budget calculations we remain with an amount of 11,105€ for risk management. We have a NPV of 318.151,15€; an IRR of 31,32%; a ROI of 78% and an annualized of ROI 2,91%. We expect a return after 9 years starting from the beginning of the project and assuming after the conclusion of the project the exploration continues.

Commented [JMDF1]: Problem

Commented [JMDF2]: Solution

Commented [JMDF3]: Why it solves the problem

Commented [JMDF4]: Monetary Cost

Time Assumptions

All the times assumed for each task and calculations are in the excel file "Task Duration", in appendix.

Sum of the expected time (μ)	374
Sum of the Variances (σ_μ^2)	18
The expected time (D)	377
The expected time (D2) + 10%	414,7
The expected time (D3) + 20%	452,4

$$Z = \frac{(\mathrm{D} - \mu)}{\sqrt{\sigma_{\mu}^2}} = \frac{377 - 374}{\sqrt{18}} = 0{,}414$$

$$Z2 = \frac{(\mathrm{D2} - \mu)}{\sqrt{\sigma_{\mu}^2}} = \frac{414{,}7 - 374}{\sqrt{18}}$$

$$Z3 = \frac{(\mathrm{D3} - \mu)}{\sqrt{\sigma_{\mu}^2}} = \frac{452{,}4 - 374}{\sqrt{18}}$$

Since D, D2 e D3 > μ, we computed the P(0,414) = 0,66; P(Z2) = 1 e P(Z3) = 1

PERT/CPM network

The PERT/CPM network will give us a global view of the precedence, duration and slacks of the tasks. The PERT/CPM is available in the file named “pert_cpm.png”.

Critical Path: 58 - 59 - 56 - 27- 28 - 29 - 30 - 69 - 70

Data for Budget Calculation

Project Component	**Cost per Unit**	**No. of Units per year**
Contract Attorney for an hour session	100 €	6
Insurance Broker for an hour	20 €	3
Drivers’ payment for each delivery	6 €	400
Management’s monthly Salary	800 €	42

Storage Space monthly payment	200 €	12
Life and work Insurance for 3 people	150 €	1
Equipment Insurance (cracked screen, liquid damage, theft, third party, operating errors, fire damage) *	100 €	50
Outsourcing Finances and Human Resources monthly payment	75 €	12
Electronic Maintenance and Repair service monthly payment (diagnosis and formatting)	45 €	200
Hosting Service monthly payment	30 €	12

* https://www.simplesurance.co.uk/laptop-insurance?partner=383563&utm_medium=aff&utm_source=ipvt&utm_campaign=laptop

Resources

The resources needed to each task is in the MS Project file "H4 Gantt chart with Resource Allocation". Below is a summary of the hourly distribution of the allocated resources for each summary task.

Task	André Nicolau	João Ferreira	Silvana Graça	Lawyer	Broker	Development Team	Finances and HR
Investors	92h	92h	32h				
Lawyer			56h				
Insurance	16h	32h	44h		3h		

Equipment	54,4h	34,4h	30,4h	4,4h			
Storage Space	24,8h	16h	62,2h	1h			
Finances and Human Resources			49,4h	1h			16h
Platform	17h	80,4h	40h	3,8h		640h	
Marketing	107,2h	24h	47h				
Project Management	58h	98h	34h				

To do resource leveling we used the time slacks of the independent tasks by splitting them and scheduling within their determined time period to the available resources.

The most important scarce resource is the management team, since there are only three members distributed to all the parallel tasks in the beginning of this project, this might become a problem while we are still looking and hiring experts and outsourcing teams. During our marketing and observation tasks we have to consider the electronic devices we will buy as a scarce resource, since it limits our number of clients and monetary revenue.