SPRINT 2

Group 15

Email: capsulefy.communications@gmail.com

Website: https://capsulefy03.herokuapp.com

GitHub: https://github.com/pabreblob/capsulefy/releases (Release 3)

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Introduction

The aim of this document is to provide information about the planification for this second sprint, the tasks that have been carried out and their results, as well as the conclusions the development team has arrived to after these two weeks. A quick overview of the business idea, team roles and costs is also provided, but for more extensive information about this topic please refer to the "Devising a project" document.

Business Idea

Capsulefy is an online time capsule that allow users to store their memories and share them in the future. Users will be able to create a time capsule, attach a message to it, load files such as videos or images into it and set a date when they want the capsule to be released.

The capsules can also be connected to the user's social networks so that a message is automatically posted when the capsule is published. Users will also be able to select a list of emails that will receive a notification message.

One of the main selling points of our product is allowing people to leave a message behind in case they pass away. For this reason, we will offer a dead-man switch option that once activated, will automatically release the capsule regardless of its publication date if the user hasn't refreshed the counter after a certain period of time.

Our capsules also offer extra features such as the possibility of splitting them into different modules, each of them with a different release date, or making them private so that they won't appear when listing the capsules.

We will be offering two different types of capsules: Free and premium capsules.

Each registered user will be able to create free capsules and upload files to them up to a maximum of 20mb in total. These capsules can be scheduled up to one year in the future and will be deleted 6 months after their release. These capsules can't be made private, split into modules or have a dead-man switch set up

Premium and modular capsules will cost 11.99 € each, can store up to 500mb of files and will not have a limit on how far into the future they can be scheduled, nor will they disappear after being released.

Development team

Our team is composed by five members, each one with different roles and responsibilities:

- Pablo Rebollo Lobo. His roles are project manager and backend developer. His main technological competencies are Spring, Django and PHP.
- Adrián Cantón Fernández, whose roles are business manager and full-stack developer. His main technological competencies are Django, Java and Bootstrap.
- Daniel Carpio Camacho, analyst and frontend developer. His main technological competencies are Django, JavaScript and Bootstrap.
- Juan Rodríguez Regidor, whose roles are requirements engineer and backend developer. His competencies are Django, Python and Bootstrap.

- Rafael Fresno Aranda. His role is backend developer and will also be in charge of the interaction of our product with other applications. His main technological competencies are Node.js, Django and PHP.

Our commitment as a team is to develop our business idea in order to create a minimum viable product in a good enough state so that it can receive appropriate feedback to decide whether or not release the full version to the market and apply that feedback to improve our product.

To reach this goal, we are compromised to meet the deadlines, listen to the feedback and cooperate within the team so that we can provide a product that meets our quality standards.

Competitors analysis

We did a market research in order to determine which existing online services our product will be competing with, which are their main features and what makes our product different from them. We found 4 other similar services. The results of comparing them to our product are the following:

	Viajeros en el tiempo	Mytimecapsule	Miigen	thetimecapsule	Capsulefy
Automatic content publication	✓	✓	✗	✓	✓
Free version	✓	✓	✓	✓	✓
Premium version	✓	✓	✗	✗	✓
Images	✓	✓	✓	✓	✓
Videos	✓	✓	✓	✗	✓
Social network interaction	✗	✗	✗	✗	✓
Dead man switch	✗	✗	✗	✗	✓

Figure 1: Competitors analysis table

We reached the conclusion that we are treading into an already existing market, but an undeveloped one, where we can offer features that makes us distinct from our competitors, such as the interaction with social networks and the publication of content in case the user has not logged in for a very long time.

There are other indirect competitors, such as official last wills or more traditional methods of sharing memories like photo albums, but they won't be able to offer the possibility of quickly sharing their contents online.

The innovation of our app are these two features no other application similar to us provides: The dead man switch and social network interaction. While the development of these features does not imply that we are innovating from a technological viewpoint, since we will be using already existing technologies (OAuth, API calls…), the way we are incorporating them into our business model is something new that has not been tried by our more direct competitors. Thanks to these features, our service is highly customizable so that every user can tailor their time capsules to their needs.

Cost estimation

Because we will be using Google Firebase to store all the files our users will upload to our system, we need to take into account the individual cost per user. By using Amazon S3, we will be charged 0.026 USD per GB per month.

Assuming we will be offering 500mb of storage in each of our Premium/Modular capsules, the cost of maintaining each 500mb capsule yearly is 0.156 USD (0.14€).

Assuming free users have 20 mb of storage, the yearly cost of maintaining a free user will be of 0.00624 USD (0.0127€).

In order to decide our storage and hosting funds, we will consider the cost of maintaining 2,000 premium capsules and 20,000 free users for a year, as well as an estimation of the cost of hosting our website and our database.

Our team has come up with 4 different cost estimations: A pessimistic one, an optimistic one, and two realistic estimations. These estimations cover costs during the development of our product, whose duration will be of 4 months, and some funds which may be used in order to deal with the risks that appear during the development or to cover initial server and advertisement costs. The factors that will affect our budget are the following:

- Team members' salaries.
- Hardware amortization.
- Advertising funds for the first 6 months.
- Storage and hosting funds for the first year.
- Risk prevention funds.
- Taxes.

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As for advertising funds, firstly we have to determine a target audience. Our product is targeted to people who regularly uses internet and social media. The age segments targeted are young people and middle-age people.

Our goal is to advertise ourselves on the internet. For that reason, we will be using google ads. Because we offer integration with Facebook and Twitter, reaching out to the users of these platforms is also considered a key aspect of our marketing strategy.

Google ads charge business for each time their advertising is clicked. Each business can set how much they can be charged, and depending the price set, their ad will be more visible.

Because we are a small company, we will be setting the cheapest price possible within the range of prices our possible competitors for that ad spot pay, which is one of around 220€ per month, with an estimated performance of 137-229 clicks per month

Facebook also allows us to customize how much would be willing to spend on a weekly basis. We have decided to spend about 140€ monthly for a Facebook advertisement which targets people of between 18 and 50 years old.

Same as Facebook, Twitter allows us to set a daily price. We will be using a similar budget to the one for Facebook, 5€ daily, which means ~150€ monthly for an audience between 18 and 49 years old.

In conclusion, we will be spending approximately 510€ monthly in advertisement. If in our project costs we are going to include the cost for the first 6 months, we will have a total cost of 3060€.

After these first 6 months, we will evaluate how this approach is performing, and depending on that we will decide whether increase or decrease our budget.

Development planning

We will develop our product following the SCRUM methodology. The development of our prototype will be split into three sprints. The results generated from each sprint will be the following:

- Sprint 1: Prototype with working core use cases and a piloting plan in order to start gathering feedback.
- Sprint 2. Full working MVP. This means that not only the core use cases will be implemented, but also the payment module, the registration module and the basic admin will be working. The core use cases may be to need adapted according to the feedback resulting from the previous sprint.
- Sprint 3: Polished MVP which will take into account all the feedback from previous sprints.

Team members performance measurement

In order to measure our productivity, we will be using Toggl. At the beginning of each sprint, we will have the tasks with their corresponding time estimation. At the end of the week, the estimated time will be divided by the real time invested in that task. This will be the efficacy ratio of this task. For each team member, the mean of their efficiency will be calculated, and it will be the member's performance ratio. If the task is left unfinished, their ratio will be used in order to calculate a member effectivity if its <1, because a unfinished task should only affect negatively to the efficiency ratio of a person and not the other way around. A ratio between 0.8 and 1.2 is considered the expected performance.

A ratio between 1.2 and 1.5 is considered as more efficient than expected, and a ratio bigger than 1.5 is considered more efficient than desired and the causes for this will be investigated.

A ratio between 0.8 and 0.5 is considered less efficient than expected, and a ratio smaller than 0.5 means that there have been major issues with that task and the reason why will be investigated.

Besides this ratio, it will also be taken into account whether or not a user has finished his tasks, and in case there are some tasks left unfinished, we will try to find out the reason and act accordingly.

In order to measure the project manager's efficiency, we will factor in his performance in his assigned tasks and the overall performance of the team, as one of the project manager's responsibilities is to ensure that the team is working well. The formula that we will be using is the following:

PM tasks performance * average team performance – Total days of delays in the tasks*0.1

Reasons why the performance may be better than expected:

- The tasks assigned to a member where easier than expected and therefore, took less time than the estimated. It will be taken into account so that he may receive a bigger workload in the future and the member will be suggested to review in depth the work he has carried out if he finishes it in less time than expected.
- Bad time estimation for that task. For the next set of similar tasks, their estimated time will be reduced until it is similar to the one that carrying out that task took.

If the performance is worse than expected, it is a bigger problem than taking less time than expected. The reasons why this may have happened are the following:

- Bad time estimation, just as when it takes less than it should. The same protocol previously mentioned applies to this case.
- A team member is not working properly. The member will be told that his attitude must change and will be closely monitored for the next set of tasks.
- Unexpected problems or the member did not have the skill required to complete the task in that timeframe. If there where unexpected obstacles, these problems and how they were solved will be written down in order to easily deal with them should the appear again. If the problem was that the team member was simply not able to do the tasks within the estimated time, it will be taken into account so that he is not assigned similar tasks and these are assigned to more efficient members.

An acceptable ratio is one whose value is between 0.5 and 1.5, if the performance of a member is not contained in that interval, we will know there is a problem that must be urgently dealt with. Regardless, the strategies available Will always be applied so that all the team can reach an optimal efficiency ratio, just with less urgency the closer their ratio is to the ideal.

Improvement actions taken from the first sprint

Firstly, when planning, we will divide our workload into smaller tasks with shorter duration. In order to measure if this is helping us improve, we will look at 3 things:

- Performance ratio.
- Maximum delay in days out of all the tasks. Maximum delay acceptable: 2 days.
- How many hours did each task take. Maximum hours per task: 6 hours.
- How many days did each task take. Maximum days per task: 6 days

If any of these thresholds is reached, that means we did a bad time estimation and should have probably divide these tasks into smaller ones.

More documentation of bugs and issues:

Each bug or problem found should be documented in our repository wiki.

Sprint 2 initial planning

Week 1 (April 1st-April 7th)

Task	Start Date	Estimated End Date	Team member	Time estimated
Initial meeting, adjust planification	April 1st	April 1st	All members	1.5h
Local settings	April 2nd.	April 2nd.	Daniel C.	1h
User sign in	April 2nd	April 2nd	Juan R.	2h
Remove expired capsules	April 2nd	April 2nd	Pablo R.	1.5h
Social Network Integration: Twitter	April 2nd	April 4th	Rafael F.	4h
Update modular capsules forms	April 2nd	April 3th	Adrián C.	5h
Fix pagination and search compatibility issues	April 3th	April 3th	Juan R.	1.5h
Notify via email when a deadman timer is about to expire	April 3th	April 4th	Pablo R	1.5h
Front end:User sign in	April 3th	April 4th	Daniel C	0.5h
Basic admin. Ban and unban users	April 4th	April 6th	Juan R.	2h
Front end: My account page	April 4th	April 6th	Daniel C	1.5h
Look for improvements in automations	April 4th	April 7th	Pablo R	4h

Implement basic payment method	April 5th	April 7th	Adrián C.	4h
PowerPoint	April 5th	April 7th	Rafael F	3h
Front end: List and search users	April 6th	April 7th	Daniel C	2h
Rehearsal	April 7th	April 7th	Pablo R	1.5h

Week 2 (April 8th-April 12th)

Task	Start Date	End Date	Team member	Time estimated
Meeting to discuss class and pilot user feedback	April 8th	April 8th	All members	1.5h
User interface	April 9th	April 11th.	Daniel C.	7h
Social Network Integration: Facebook	April 9th	April 11th	Rafael F.	4h
Make Premium capsules payment-only but giving us a way to test them	April 9th	April 10th	Adrián C.	4h
Basic admin: Dashboard with application data	April 9th	April 10th	Juan R.	3h
Apache jmeter tests	April 9th	April 11th	Pablo R	4h
SonarCloud tests	April 11th	April 12th	Adrián C	2h
Allow user to edit their notification mail	April 11th	April 11th	Juan R	2h
Sprint review and Sprint 3 planification meeting	April 11th	April 11th	All members	1.5h
PowerPoint	April 11th	April 12th	Rafael F.	3h
Deliverable documentation	April 11th	April 12th	Pablo R	4h

Sprint 2 status after Week 1(April 7th)

The tasks planned were carried out successfully. Only one task suffered a delay due to the person in charge of it had exams we did not take into account when planning for this week. The task suffered a delay of 2 days but it was successfully completed The status of the tasks at the end of this first week were the following (meetings will be excluded from this analysis, as they all took place within the time estimated):

Task	Start Date	Estimated End Date	End Date	Team member	Time estimated	Time invested
Initial meeting, adjust planification	April 1st	April 1st	April 1st	All members	1.5h	1.5h
Local settings	April 2nd.	April 2nd.	April 2nd	Daniel C.	1h	0.5h
User sign in	April 2nd	April 2nd	April 2nd	Juan R.	2h	2h
Remove expired capsules	April 2nd	April 2nd	April 2nd	Pablo R.	1.5h	1.5h
Social Network Integration: Twitter	April 2nd	April 4th	April 6th	Rafael F.	4h	4h
Update modular capsules forms	April 2nd	April 3th	April 3th	Adrián C.	5h	6h
Fix pagination and search compatibility issues	April 3th	April 3th	April 3th	Juan R.	1.5h	1.5h
Notify via email when a deadman timer is about to expire	April 3th	April 4th	April 4th	Pablo R	1.5h	2h
Front end:User sign in	April 3th	April 4th	April 4th	Daniel C	0.5h	0.25h
Basic admin. Ban and unban users	April 4th	April 6th	April 4th	Juan R.	2h	1.5h
Front end: My account page	April 4th	April 6th	April 6th	Daniel C	1.5h	1.25h
Look for improvements in automations	April 4th	April 7th	April 7th	Pablo R	4h	4.5h
Implement basic payment method	April 5th	April 7th	April 2th	Adrián C.	4h	4h
PowerPoint	April 5th	April 7th	April 7th	Rafael F	3h	3h
Front end: List and search users	April 6th	April 7th	April 7th	Daniel C	2h	2h
Rehearsal	April 7th	April 7th	April 7th	Pablo R	1.5h	1h

Besides the planned tasks, new tasks appeared through the week:

Task	Team member	Time invested
Problem with test in Travis	Daniel C	1.5h
Check deadman switch when editing capsules	Daniel C.	0.25h
Fix ajax search	Juan R.	0.5h
Add tooltip explaining what the notification email is for	Daniel C	1h
Improve sign up forms	Juan R.	2h

The performance ratios of our team members at the end of the week were the following:

- Adrián Cantón: 0.94
- Daniel Carpio: 1.44
- Rafael Fresno: 1
- Pablo Rebollo (Project manager): 0.93
- Juan Rodríguez: 1.08

After reviewing these ratios, we came to the conclusion that our performance had improved significantly, and now all the members were in the ideal performance range except one who performed better than expected. Looking at this, we can say that the actions we took helped us to achieve a better performance. Taking a look at the other metrics we previously defined in order to measure how good the actions we took from what we learned on the previous sprint were:

- Maximum delay in days out of all the tasks: Only one task was delayed, and it had a 2 days, which was the limit we decided for this metric.
- How many hours did each task take. The maximum number of hours a task took was 6 hours.
- How many days did each task take. The maximum amount of days a task took was 5 days.

With these results, we can say that our actions helped us improve, but there is still room for improvement. As for our GitHub wiki, last sprint it only had one entry. As of today, there are 5 entries, explaining how to fix some troubles we have run into.

Problems during the first week

We faced three problems during this week:

- On April 1st, Django was updated to version 2.2. In this version, “None” can not be passed as a value to encode. We did this in some of our tests, but because we were not using the 2.2 version, we did not notice any problem. However, when executing our tests in Travis, they were launched using the 2.2 version, and therefore, failed. We had to investigate the reason of this failure and fix it. As a solution, we could either force Travis to use an older Django version or upgrade the one we were using. We decided to upgrade the Django version we were using, because it probably works better and will receive more support. However, this means that we need to look out for other errors that may appear due to the version change and pay attention in case another update rolls out.
- On April 7th, we decided to deploy our application in order to test in and record the demo videos to shown on class the next day. However, we noticed that a lot of server errors that did not happen while deploying in localhost. We spent a few hours just to realize that the problem was caused by migration conflicts. We managed to fix these problems but we had to spend a lot of time and as a result, the quality of our demo videos was not as good as desired. In order to solve any unexpected issues when deploying, we have decided to set our deployment date 2 days before the deadline, this means we deploy our application on Wednesday, so we have 2 days to test the application in our server. Because of this, we will need to adjust our week 2 planning.
- We waited for our weekly meeting on Monday in the afternoon to talk about the feedback provided by our pilot users and what actions are we going to take about it. Because of this, we were not able to listen our evaluator’s opinions about this during

our class. To prevent this, we will have a meeting on Saturdays when we receive the opinion of our pilot users, even if short. This way, we can start thinking about possible actions to take and show them during class.

Feedback received from our pilot users

On April 6th, we retrieved the forms we handed to our pilot users. Our seven pilot users answered it, and the result we obtained were the following:

- All of them were able to list and display capsules, create, edit or delete free capsules and create, edit or delete premium capsules
- One person was not able to delete a module, and say it was confusing

As for comments and feedback they provided, we have highlighted the following opinions:

- There was a lack of confirmation button when deleting capsules. **Action that we will take**: Implement confirmation buttons when deleting a capsule or a user's data
- Lack of date pickers when having to input a date. They found tedious writing a date manually. This feedback was provided not only by one user, most of them hold the same opinion. **Action that we will take**: Add date pickers in our date input fields.
- No return button when displaying a capsule. **Action that we will take**: Add "return" button when displaying capsules or a user's profile.
- Some of the features were not very clear to them, such as the deadman switch. **Action that we will take:** Add a "help" section with a video explaining how does our deadman switch work.
- When trying to access to a page that did not exist, they found the 404 page not friendly to the user. **Action that we will take:** Work on a 404 page that looks better and that gives the user the option to return to our main page.
- When adding multiple emails to the notification email in a capsule, there should be a text, a tooltip or a placeholder showing that in order to add more than one email, these must be separated by a comma. **Action that we will take:** Add a placeholder showing how to input multiple emails.

Overall, they found our application interesting, but they also said that there is a lot of room for improvement on the UX department.

Sprint 2 Week 2 reschedule

Due to the problems we had encountered during the first week and the fact that we had already received feedback from our pilot users to work with, we decided to reschedule our second week of this sprint. The tasks that were decided to be carried out are the following:

Task	Start date	Estimated end date	Team member	Estimated time
Meeting to discuss class and pilot user feedback	April 8th	April 8th	All members	1.5h
Fix functional tests	April 8th	April 10th.	Adrián C.	0.75h
Admin dashboard	April 8th	April 10th	Juan R.	3h
Delete user's data	April 8th	April 10th	Pablo R.	1.5h
Add datepicker	April 8th	April 10th	Adrián C.	1h

Fix listing of notification mails in “my account”	April 8th	April 10th	Daniel C	0.5h
Add confirm button when deleting users or capsules	April 8th	April 10th	Daniel C	1h
Allow user to edit their notification mail	April 8th	April 10th	Rafael F	1h
Add “about us” page	April 8th	April 10th	Daniel C	0.25h
Add return button when displaying a capsule or user	April 8th	April 10th	Daniel C	1h
Correct previous front end errors and improvements based on feedback	April 8th	April 10th	Daniel C	1.5h
Deploy application	April 10th	April 10th	Adrián C	2h
Test the deployed application	April 10th	April 12th	Daniel C Juan R	2h each
PowePoint	April 10th	April 12th	Rafael F	5h
Pilot user form	April 8th	April 12th	Pablo R	1.5h
User manual	April 8th	April 12th	Pablo R	1h
Sprint 2 retrospective documentation	April 8th	April 12th	Pablo R	4h
Rehearsal	April 20th	April 21th	Pablo R	1.5h