GOLF

Project Plan

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Project Statement

In this chapter we will point out the reasons why the project is started and what will be achieved with it. Here we describe the formal client, the project leader, the problem, the project goal, the project deliverables and non-deliverables, the constraints and the risks.

Formal Client

Mr. Lilo who plays golf in his leisure time

Contact information

Mr. Lilo (Christina Morgan)

Rachelsmolen 1, Eindhoven

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Project Leader

Ms. Belcheva of the ICT department from Fontys ICT Eindhoven is the project leader.

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Current situation

In the current situation, the aforementioned formal client, Mr. Lilo, plays golf but plans on (1) creating (a) special device(s) (e.g. a special glove combined with a special golf stick) which would have the capability to take different kinds of measures like finger position, velocity, direction, wind velocity, temperature etc. related to golf play performance, and (2) an accompanying mobile app (iOS is preferred) that analyses the gathered data and plays a role acting as a personal

coach in guiding him to improve his play. In addition, he also sees a business opportunity in this project.

Problem description

Our client needs a mobile app and devices to help them analyze their movements and positions while playing golf in their leisure time. He also sees a great business opportunity in this idea. If he realizes it, he could both have earnings from it, but also use it to improve his personal play. He thinks that a mobile app, which tracks many important factors, can help people to improve their playstyle, and have a lot of benefits, thus it would possibly be a valuable investment for everybody who loves playing golf. The information derived could be displayed and used in a mobile app, which will serve not only as a play to keep personal data, but a place where you can a “personal coach” function that will give tips and advice regarding your play.

He also thinks that it would be great for people, who want to challenge their friends and share information between friends, which would be a very convenient option in the mobile app as well.

Project goal

The goal of this project is to develop a glove chip, golf balls and a mobile app. Mr. Lilo has a business idea about a mobile app that would help him and other people to improve their playstyle and it will also act as a personal coach, deriving information about important factors and analyzing the information. The mobile app will show information about the following characteristics:

- Position
- Grip style
- Velocity
- Wind velocity
- Temperature

All information will be saved in a mobile app, which could do the following:

1. Display data and save it for later access.

2. Analyze the data and share results like club speed, total hours played, consistency, leaderboard.

3. Let you connect to your friends, lets you challenge each other, and then compare the results

4. Provides 3D visualization of the player making the swings make a breakdown of the derived information and gives tips for improving their playstyle.

Project Deliverables and Non-Deliverables

In this project the deliverables are:

- The main chip, which has to be placed on the golf glove
- The source code of the mobile app
- iOS mobile app
- Special balls with microchip in them

We will not deliver:

- A golf club
- Since we will deliver a prototype, a user manual will not be delivered

Project Constraints

1: English Language

Due to the fact Mr. Lilo speaks English, the mobile app should be in English as well as all the documents for the project.

Constraint 2: Objective-C programming language

The prototype will be made for client's phone, so it needs to be for iOS, and at a later point, concerning the business goals, the project will be translated to other languages.

Constraint 3: Timeline

Concerning the deliverables, the client wants to see, the timeline is tight. Keeping up with the given deadline will bring about increasing the costs.

Project Risks

Risk 1: Not enough time to develop the mobile app from scratch

Probability: Medium

Impact on the project: High

Steps to prevent: Hire competent people. Start building the mobile app from the beginning of the project.

Risk 2: Problems with connecting Bluetooth connection

Probability: Medium

Impact on the project: High

Steps to prevent: Use only proven techniques for synchronizing the device and the glove chip and golf balls.

Risk 3: The 3D is not working properly/does not replicate correctly and precisely the movements (swings).

Probability: Low

Impact on the project: Medium

Steps to prevent: Hire people with experience working with Unity 3D.

Risk 4: The customer does not like the mobile app.

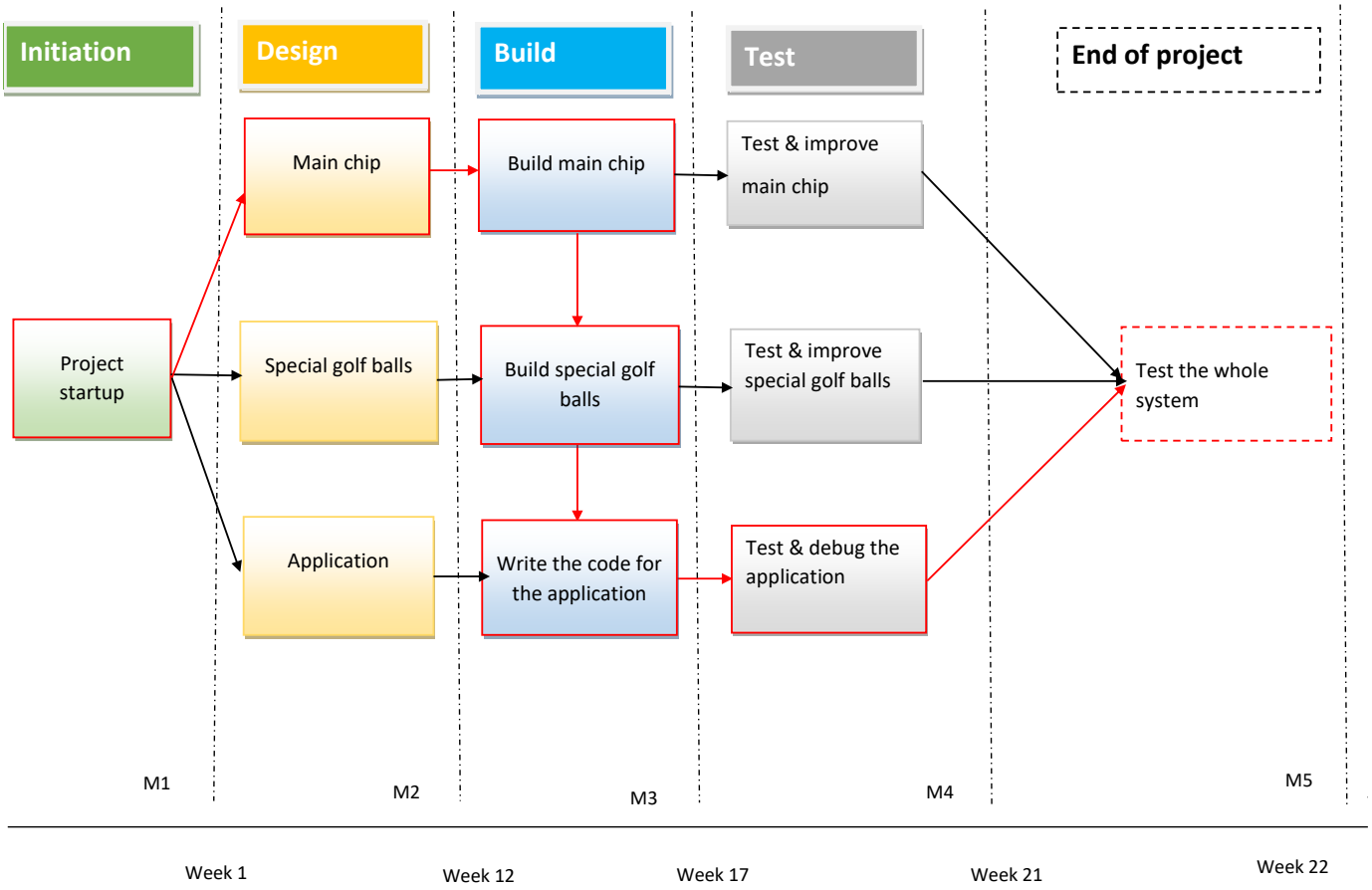
Probability: Low

Impact on the project: High

Steps to prevent: Make an online survey before launching. Make sure that professionals would write the tips. Make a commercial before launching and “hands on” event in the local golf club.

Phasing

In this chapter we will describe the phases of the project with their involved activities and the reached milestones. The critical path is marked in red.



Phase 1: Initialization

In this phase we are starting the project. Below we describe the required tasks:

- Kickoff meeting
- Discussing the project aspects with team members
- Interviewing the client about questions which are still unclear about the current situation, the problem and deciding on the end goal together with the client
- Gathering required information about the project implementation
- Special software developers meeting - defining the output and data flows

Estimated duration: *1 week and 5 hours*

Costs: -

Deliverables for milestone **M1**:

- Divided work among the team members for the hardware parts
- Divided work among the software team members
- Project plan

Phase 2: Design

We are going through several activities for each of the deliverables. Below you can find details.

Activity: Designing the main chip

1. Doing an extensive research (55 hours)
2. Establishing design requirements and conducting requirement analysis (27 hours)
3. Deciding upon a chip architecture (16 hours)
4. Feasibility study (25 hours)
5. Conceptualization (7 hours)
6. Preliminary design (23 hours)
7. Contacting electrical engineering department (10 EUR / 3 hours)
8. Detailed design (86 EUR / 104 hours)
9. Design for manufacturability (100 EUR / 25 hours)
10. Production planning (13 hours)
11. Getting ready with possible solutions (9 hours)
12. Presenting different solution options to the client (2 hour)
13. Deciding with the client on a solution for implementation (1 hour)

Estimated duration: *7 weeks, 3 days and 6 hours*

Costs: *196 EUR*

Activity: Designing the special golf balls

1. Feasibility study (10 hours)
2. Conceptualization (20hours)
3. Preliminary design of the special golf balls (53 EUR / 20 hours)
4. Detailed design (40 EUR / 30 hours)
5. Design for manufacturability (35 EUR / 30 hours)
6. Production planning (74 EUR / 20 hours)
7. Contacting the client (3 hours)

Estimated duration: *3 weeks, 1 day and 5 hours*

Costs: *202 EUR*

Activity: Creating design for the app

1. Develop the logic to get to the output (5 hours)
2. Create a flowchart that provides a pictorial representation of the program logic (5 hours)

Estimated duration: *10 hours*

Costs: -

Deliverables for milestone **M2**:

- Specified requirements
- Working technical design concept of the glove main chip and the special golf balls
- Design for the app

Phase 3: Build

In this phase we are starting to build the final deliverables. The ongoing activities are listed below:

Activity: Building the glove main chip

1. Supplying with required materials (16 hours)
2. Electrical components manufacturing (100 EUR / 23 hours)
3. Implementing the chip (200 EUR / 21 hours)
4. Building a prototype (150 EUR / 26 hours)
5. Contacting the client (3 hours)

Estimated duration: *2 weeks, 1 day and 1 hour*

Costs: *450 EUR*

Activity: Building the special golf balls

1. Supplying with required build materials (90 EUR / 14 hours)
2. Electrical components manufacturing (86 EUR/15 hours)
3. Implementing the chip in the special golf balls (80 EUR /20 hours)
4. Building a prototype (300 EUR / 70 hours)

Estimated duration: *2 weeks, 4 days and 7 hours*

Costs: *516 EUR*

Activity: Making a prototype for the app (25 hours)

1. Implement the solutions for the app (15 hours)
2. Modify the code to the technical limitations (10 hours)

Estimated duration: *1 week, 1 day and 2 hours*

Costs: -

Deliverables for milestone **M3**:

- Working glove main chip
- Manufactured special golf balls with working chip
- Prototype of the app made with proto.io

Phase 4: Test

During this phase we put to the test the glove main chip, the balls and the app.

Activity: Testing the glove main chip

1. Make test plan (8 hours)
2. Testing team call (2 hours)
3. Performing different kinds of performance, usability, functionality, stability tests (50 EUR / 15 hours)
4. Reporting flaws and test results (40 EUR / 12 hours)
5. Discussing the results with the client (13 hours)
6. Making improvements (if necessary) (25 EUR/ 8 hours)
7. Second overview (16 hours)

Estimated duration: *1 week, 4 days and 2 hours*

Costs: *115 EUR*

Activity: Testing the special balls

1. Make a test plan (3 hours)

2. Testing team call (1 hours)
3. Performing physical tests for the special golf balls (20 EUR / 4 hours)
4. Performing different kinds of performance, usability, functionality, stability tests (20 EUR / 8 hours)
5. Reporting flaws and test results (7 hours)
6. Discussing the results with the client (8 hours)
7. Making improvements (if necessary) (21 EUR / 3 hours)
8. Second overview (30 EUR / 9 hours)
9. Succeeded tests, failed tests and a list for product improvement (10 hours)

Estimated duration: *1 week and 4 hours*

Costs: *91 EUR*

Activity: Testing and debugging the app

1. Make test plan (3 hours)
2. Testing team call (1 hours)
3. Performing different kinds of performance, usability, functionality, stability tests. Test interactions, animations and design patterns. (20 EUR / 8 hours)
4. Reporting flaws and test results (7 hours)
5. Discussing the results with the client (8 hours)
6. Making improvements (if necessary) (3 hours)
7. Second overview (30 EUR / 9 hours)
8. Succeeded tests, failed tests and a list for improvements (10 hours)

Estimated duration: *1 week, 1 day and 1 hour*

Costs: *50 EUR*

Deliverables for milestone **M4**:

- Tested and improved glove main chip
- Tested and improved special golf balls
- Tested and improved prototype of the app

Phase 5: End of project

During this phase we finalize the project and deliver it to the client.

Activity: Testing the system working as a whole

Estimated duration: *1 week*

Costs: -