



Reflection Report for Product-Based Assignments

Q-Stu

TPK 5100 – Applied Project Management

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1. Introduction

Our project assignment is product based and regards the development of a website, Q-Stu, aimed at enhancing the overall learning experience at the university. The tool is able to do so by connecting students and professors and improving the communication flow between them.

After each lesson, students are requested to access the website and answer a survey about the concerned lecture. The survey is anonymous and regards how the lecture has been implemented in order to gain consciousness about the knowledge gained by the students and the effectiveness of the professors' teaching method.

The professors can then use the answers provided by the students to understand how to improve the overall teaching experience in order to increase the students' engagement and satisfaction as well as learning.

By clicking on the dashboard, the professors have access to a private area where the students' responses are provided in analytics form: graphics are shown for each question of a lecture survey aiming at providing an overall picture of the lesson's impact on the class.

The dashboard area is accessible only by the professor through a private password.

The idea behind the product is to improve the way courses are implemented in order to make students more satisfied with their university experience.

Students can usually express their ideas and opinions about a course only once it has reached its end, but at this point in time, the students' suggestions are pointless since the lectures have already taken place. In other cases, a reference group composed only of a few students represents the whole class, but in an indirect way. Thus, directly enabling students to give feedback about lectures during the teaching period can be very successful to improve learning and satisfaction.

The website will be firstly implemented on a small scale in order to evaluate the students' satisfaction with the product. The idea is to make the website primarily available only for the students of the class of Applied Project Management in order to assess on a sample the rate of engagement and interest towards the product. Then the website will be available for the whole university.

2. Evaluation of Project management effort

2.1. Roles, tasks and responsibilities

Successful projects are usually the result of careful planning and collaboration of the project team. Thanks to the initial definition of the project formal structure and project team, each of us was provided with a clear understanding of the given authority and responsibility necessary for the successful accomplishment of the project activities.

We all as a team have been able to participate in the planning process and be responsible for the completion of the various project activities. Our project manager managed our team in a successful way. Angelo, tracked resources and resolved issues as needed. Giulia, IT technician, supervised the website's progress and managed to solve all the issues that arose during the development of the website. Diana, the external coordinator, was skilled in communicating with the entities outside of the team (beta tester, end-users, students and professor). She has been the interface between our team and the stakeholders. Beatrice, the person in charge of the deliveries, managed in a precise way deliverables according to the schedule.

We all have, most of the time, respected our assigned roles and tasks, even if on certain occasions some roles were reversed or simply a team member joined another member in his/her role. This was the case of Angelo who often has put more effort into the development of the website functionalities together with Giulia and therefore missing the accomplishments of his other tasks.

2.2. Risk management

We performed a risk analysis, identifying the potential risks and then the measures to mitigate their impact. We had an overall good and comprehensive identification of the potential risks which reflects a clear understanding of the complexity of the project. During the development of the website many technical problems arose, as we have identified in the risk analysis, with a high-risk impact. Since we were aware of these kinds of risks, we perfectly handled the situation thanks to maintenance and continuous improvement.

We tried to mitigate the impact of other risks that we have identified in the Project Plan. We have provided the website with functionalities useful for teaching activities in order to differentiate our product from substitutes.

We also hope that the website could be introduced soon by professors even if we might have underestimated the risk associated with the lack of interest by them since we have

failed to promptly communicate with tutors/professors. In order to mitigate this risk, it would have been necessary to maintain good communication with the professor/tutors in order to specify and explain the way the website works and dispel doubts about it.

2.3. Communication plan

The communication plan was effective within our project team but was lacking with stakeholders.

Thanks to the project manager's capabilities, our group was able to follow the initial communication plan which included meetings twice a week. This schedule has enabled us to progress smoothly and on time maintaining continuous communication of the project progress. It has ensured that all of us were aligned on project goals and helped us on solving problems/discussions as soon as they arise. This allowed us to maintain trust and commitment for the entire duration of the project.

The external coordinator has been able to promptly involve students and end-users in the realization of the website, gaining relevant information through the survey. Moreover, she has also involved the beta testers in a good way, allowing the rest of the team to receive feedback about the finished product.

On the other hand, we were unable to follow the communication plan with tutors and professor. Our communication plan expected to keep the tutors informed by the specific channel, which in our case was lecture hours and zoom calls. We mistakenly didn't report the project's progress to the tutors.

The only feedback we gained from the professor has been the one after the submission of the pre-report. This feedback has provided us with relevant information for the improvements of our product. This situation makes us learn that all the key stakeholders must be kept informed about the conditions that are important for them in order to contribute to the project in terms of support and supervision.

2.4. Project result

Our group successfully managed to deliver the project results according to the originally stated success criteria. Internal collaboration and high level of commitment can be considered the key factors that let the project obtain the expected results. Our team has been able to create unity and understanding of the mutual relationship between us.

All of us were aligned with the purpose and specific goals thanks to the initial identification of the learning objectives and outcome expected from the project.

Furthermore, the project has been regularly revised according to the detailed schedule. We managed to follow the time schedule described in the Gantt Chart in the Project Plan. Major of the activities has been completed on time, except for the creation of the smartphone interface and the website design which took longer than planned. Doing extra work allowed us not to delay other activities' performance and therefore respect the deadlines.

We evaluate our project management effort as successful:

| Scale | Strongly Disagree | Disagree | Neither agree nor disagree | Agree | Strongly Agree |
|------------------|----------------------|----------|-------------------------------|-------|-------------------|
| Your response | | | | X | |

To sum up, we can overall evaluate the project management effort as successful. Despite some deviations all the members of our group are compliant with the specific roles and responsibilities. We managed to deliver all the expected results with respect to the time constraints, according to the product specifications and feedback provided by Beta tester.

3. Evaluation of the impact (Project success)

3.1. Impact on target audience

As stated in the introduction, Q-Stu aims at enhancing the overall learning experience at the university by improving the communication flow between students and professors. The target audience is composed of students and the product seeks to benefit such an audience. The project gains are on the students' side.

To achieve the intended outcome, the knowledge gained through the lectures' surveys must be properly used by the professors to enhance the learning experience, otherwise, students cannot benefit from the project. On the other hand, students must actively participate in the surveys in order to share their opinions and knowledge gained from the attended lecture. Both students and professors must use the tool constructively in order to make possible the achievement of the intended benefits. For the reasons cited above, there is a degree of uncertainty associated with the intended outcome.

The project success expresses the project value generation when the website is put into use, it regards the effectiveness of the project result. We are interested in the project value creation.

The website can have an extreme significance for students, and we can state this since being students ourselves we can truly understand and know what other students need and want and implement that as a consequence.

It happens several times that a student drops a course since the lectures are not carried out properly, lacking engagement and appeal for the learners as well as good teaching methods that actually enable them to comprehend and acquire knowledge about the treated topics. If only we as students could express our opinions about the way the lectures are structured and executed, it would make us much more satisfied with the studying environment and it would enable us to acquire knowledge better.

Our website can be the link between the students and the professors, enabling the former to share their ideas and making the latter capable of actually implementing the suggested improvements. Representing a bridge between the mentioned two entities, the website can create value for the target audience and have a great impact on the university experience.

3.2. Quality of final product

The final product developed by us is based on a questionnaire that we run in the initial phase of our project. The questionnaire was the starting point from which all the necessary information was gathered. The questionnaire was distributed among NTNU students (262 answers were collected in total). Thanks to it, we were able to understand the needs of the students and therefore create a product that was as suitable as possible for them. Furthermore, being students ourselves we were also able to grasp better the needs of such a population and concretize their achievement in the final product. Firstly, we introduced how the website would work, and then we asked a series of multi-choice questions. Students have been asked whether they found Q-Stu useful to improve the quality of the lessons and roughly the 85% agreed. Then we asked whether they would use the product and 55% of the respondents gave a positive answer. This was the starting point for our product since we needed students to be willing to use the website in order to make possible the upgrade of their lectures. Then the subsequent questions were about the criticalities encountered so far during their university experience that contributed to making it unpleasant and lowering their satisfaction. The major problem (for roughly 40% of the respondents) was the teaching

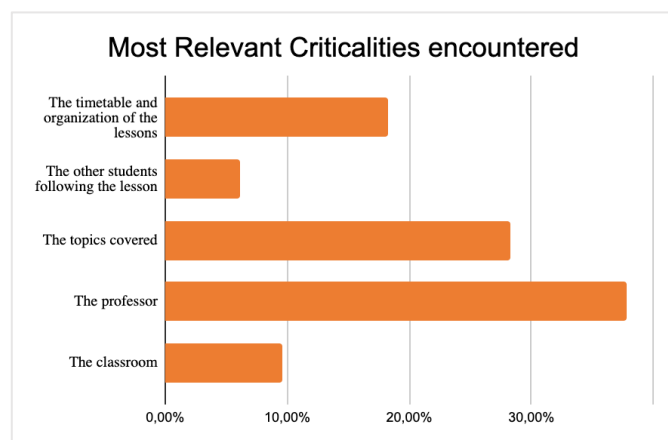


Table 1

method adopted by the professor, then the turn of the topics covered during the attended courses (for 30% of the students), and lastly the timetable and the organization of the lessons (for 20% of the people). The remaining 10% was about the classrooms and the other students attending the lecture (Table 1).

For what concerns the classrooms, we wanted to understand which were the major problems related to them and we found out that the absence of sockets and the equipment used during the lectures were the most voted ones (both by 45% of the students).

Then, we wanted to dig deeper into the reasons why they could not be satisfied with the teaching method implemented by the professors. 25% of the respondents complained about the material used during the lectures, the same percentage stated that the major problem was a professor's poor explanation of the topics covered; the 20% were not content due to the scarce professor's interaction with the class and another 20% due the low availability of the teachers. Lastly, the turn of the weak motivation for learning for the remaining 10%. (Table 2)

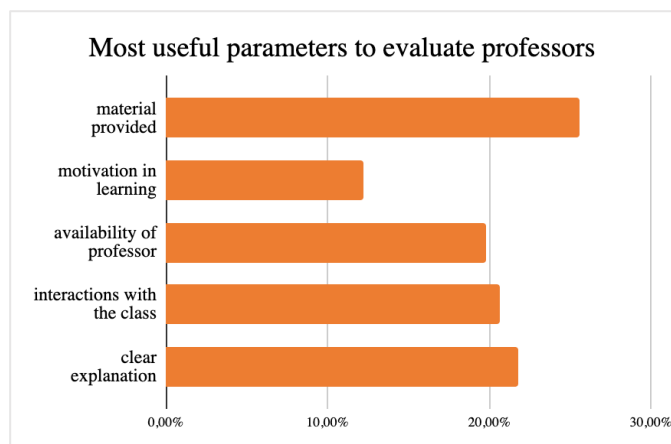


Table 2

Then, our aim was to understand the critical issues encountered by students in addressing new topics. 40% of the respondents stated that the topics were not well explained, 30% that they were not interesting, 20% that they were too complicated to get, and 10% that they took the prerequisites for granted. Next, was the case of how people can negatively affect lectures. The main issue for the majority of the students (70%) was the loud noise during lectures, for the 5% interruptions during the lectures and for the remaining percentage, none of the mentioned was the problem. In the end, we evaluated the issues related to the organization of the lessons. Students were not satisfied due to lectures' overlappings (35%), inconvenient times of the lessons (25%), teachers that do not respect timetables (20%), frequent assignments (15%), and absent communication of plan changes (5%).

The survey implemented has been the basis for our product and has been of extreme importance to develop the final website and to assess its valuable impact on students. Once the website was created, we shared the link with a small sample of students (about 20) in order to verify that everything worked as planned and collect, if any, possible pitfalls and improvements. Positive feedback emerged from the testing phase. Testers resulted to be satisfied with the final product and any problem was highlighted. The

testers appreciated the layout of the website and defined it as simple and immediate to use as well as very useful to share opinions and suggestions on possible ways to improve engagement and learning. Thus, the product provided the planned service to the end users, which refers to it as what they needed to make the time spent in the university more meaningful and interesting. Considering the sample that tested the product and their satisfaction level, we can state that the product was a success. The initial questionnaire gave us evidence of the positive impact that such a product could have and the testing phase enforced such a statement

We evaluate the quality of our final results as outstanding:

| Scale | Strongly Disagree | Disagree | Neither agree nor disagree | Agree | Strongly Agree |
|---------------|-------------------|----------|----------------------------|-------|----------------|
| Your response | | | | | X |

The quality of the final result can be defined as outstanding since it is able to answer the needs of the target audience and it has proven to be successful also by the students that tested it.

4. Factors that have contributed to failure / success

Success factors refer to a set of enabling factors that can lead to project success. They represent ground rules to which a project must adhere in order to increase the likelihood of success.

Trust and respect were common values shared by all the members of the project team. Since we have known each other since before the start of the project, we also share similar backgrounds in management engineering and are aware of each other's skills and abilities, we have trusted and respected each other's ideas and opinions, creating a positive working climate. The commitment was a crucial factor in our project: none of the team members worked in the past on similar projects and so each member lacked the technological skills required to implement such a website, but thanks to the high commitment shown by each participant, we have been able to create the intended product within the time constraint imposed on us.

Internal collaboration represented another fundamental aspect of our project. Since none of us had experience with website building, we needed to highly collaborate in order to achieve the final intended result.

The collaboration enabled us to build over each other's ideas and maximize work efficiency and productivity.

Being students ourselves we were aware of the target audience's needs and wants and this represented a crucial aspect of our project and final delivery.

Another factor that strongly influenced our project was a detailed plan kept up to date: we built the project breakdown structure and then we ordered the activities to be done chronologically, assigning to them an estimated execution time. The obtained diagram was used to assign resources to the different activities and to keep track of the project's progress over time.

As input to our project, we run a survey to understand the needs of the end users and create content as much suitable as possible for them. The mentioned above was another important aspect of our project. Beta testers involvement was another success factor, thanks to which we were able to verify that everything worked as planned. The Project Plan submission to the professor gave us important inputs to be used in the development of the final product. We did not involve the tutors and instead we should have asked for their opinion since they could have given us some important advices decisive for the success of the project.

Furthermore, we have always had in mind the final project goal as we wanted to enhance the satisfaction and the learning of students.

Referring to the factors listed in the book, adequate early planning was implemented in order to understand as early as possible the degree of complexity of the project. By planning from the earliest phase of a project, it is possible to solve issues in advance and avoid them happening during the project. Systematic follow-up allowed us to control the progress of the project toward the final goal and ensure that all the people involved in the project were working as required.

Furthermore, by implementing a structured risk management process, we were able to identify in advance the possible threats that could have a negative impact on our project and define the necessary measures to prevent them from happening. The project team had adequate business insights since it was capable of understanding the needs of the target audience, being a representative sample of the end users.

Clarity of roles and responsibilities for those involved in the project was another important aspect that enabled the individuals to know their functions and to complement each other. For what concerns skills, knowledge, and competence of the project team, we lacked website-building capabilities, but we managed to acquire them and apply them within the time constraint.

For what concerns the provision of support from the project owner, we have received positive feedback about our product-based project.

5. Most important lessons from your project

Based on our experience as a group we would like to give some advice to future colleagues that may approach this type of project.

First, you should identify the learning objectives of your final product before deciding on the type of product. This may help you in describing a direction for your future new knowledge, skills, and attitudes. Moreover, set your expectations and guide your learning process because it may provide a clear purpose for the project and guide your work.

Our advice is to try to get out of your comfort zone. Developing a product-based project can allow you to develop new skills and put into practice what has already been learned. In our case the project allowed us to improve our soft skills and moreover, we learned new skills related to the IT field thanks to the creation of the website. Moreover you have to remember that planning plays an essential role: it is needed to identify desired goals, reduce risks, provide guidelines for decision making and allow setting a time frame. It also defines how to measure performance against the set goals and whose responsibility it will be.

We have learned that one of the most interesting aspects of participating in a project is that each of them brings with it new challenges and the possibility to always learn something new. Each project is a challenge and requires a clear identification of all parties involved, a careful analysis of the requirements, and a simultaneous evaluation of the compatibility with the constraints of time, cost, quality, and resources.

Our experience suggests that the stakeholders' involvement is very important because they can play a decisive role in the success of the project. As previously mentioned, we should have involved tutors and asked for their opinions and suggestions since their role is to monitor, guide, and train during the learning process.

6. Reflection on learning and unlearning

6.1. Learning

This project has allowed us to acquire new knowledge in various fields. Thanks to which we were able to handle different situations and challenges. Here it is a short list of them:

- *Communication skills*, we have learnt that the way you communicate with your project team and stakeholders is important for the success of the entire project.

- *Analytical and research skills*, ability to assess different scenarios and do all the required analysis.
- *Flexibility/Adaptability*, we have managed to work under changing circumstances and different scenarios.
- *Interpersonal abilities*, even if we have known each other before the project, we have been able to build a good work environment to complete the project in a good way and we have been also able to keep trust during the entire project duration.
- *Problem solving skills*, it was necessary to identify complex problems and review related information in order to develop and evaluate options and implement solutions thanks to the use of critical thinking.
- *Ability to plan, organize and prioritize work*, ability to plan all the tasks and ensure that we keep up with all the deadlines.
- *Managements skills*, the project manager has been able to manage the team and guide us along the way and monitor the progresses of the project in every step.
- *Computer skills*, we have learnt how to build an entire website designing all the parts and try to solve all the bugs.

We can also describe a situation in which we were forced to learn to go on with the project. At the beginning of our journey none of us was able to design a website since we didn't have this previous knowledge. So, trying to understand how to start to develop our website was the first challenge we faced. At first, we gained as much information as possible and after a lot of trials and despite some unexpected situations, thanks to our commitment and adaptability we managed to finish the website.

6.2. Unlearning

Despite all the obtained knowledge, we have also found out that some practices or beliefs are not always true for all the projects. Before carrying out this project, we believed that it was necessary to have mostly convergent ideas among the team members so that making decisions was very simple. But during the project we realized that this is not the case, major of the time it is necessary to compromise and finally coming to a decision is not a quick and easy process, it could take a lot of time.

Here it is an explanation on how we handled this kind of situation. During the choice of which functionalities should have included in our website, we all have different ideas. We ended up making a list of advantages and disadvantages for each of our ideas and each of us managed to explain why we should adopt his/her ideas instead of those of others. We finally found a deal and at the end we adopted a mix of all ideas.

7. Acknowledgments

We thank the professor, the tutors and all the students who helped us in the development of our product. Thanks to their commitment and support, we were able to carry out an outstanding result we were not expecting.

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10 key steps to building a great small business website (2019). URL: <https://www.forbes.com/sites/allbusiness/2019/05/25/small-business-website-tips/?sh=40cf1e8721ad>

What is a Gantt Chart? How to use Gantt Charts in Project Management. URL: <https://www.teamgantt.com/what-is-a-gantt-chart>

9. Appendix

9.1. Product

<https://apm4group.wixsite.com/my-site>

9.2. Video Presentation

https://studntnu-my.sharepoint.com/personal/angelop_ntnu_no/_layouts/15/onedrive.aspx?id=%2Fpersonal%2Fangelop%5Fntnu%5Fno%2FDocuments%2FGroup4%5FProject%5FAssignment&ga=1

9.3. Project Plan



PRE-REPORT PROJECT ASSIGNMENT

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1. Product (Q-Stu)

Our idea is to create a virtual interface between students and the Professor in order to guarantee real time feedback to both sides and monitor the learning experience.

This tool will be a website called Q-Stu. Each student at the end of the lesson is requested to answer a survey to evaluate the professor's teaching method and knowledge gained. The survey is completely anonymous. It begins with general questions about how the lesson went, the percentage of understood topics, level of interest and comments about what the professor should improve in his lessons.

This is just a general example characterized by a minimal design of how the survey section of the website will look like:

Home Survey

Lecture 1 >

Lecture 2 >

Lecture 3 >

Lecture 4 >

Lecture 5 >

Home Survey

Lecture 1

😊 😊 😊 😊 😊 Good

Topics understood

☒ Topic 1

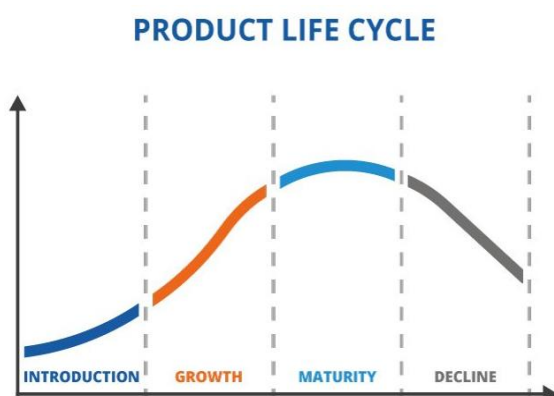
☒ Topic 2

☐ Topic 3

Suggestions for the following lectures

Send

After collecting all the student's responses, the professor could monitor the learning experience and visualize analytics, in order to manage the course in a more efficient way and guarantee engagement of the class.



The lifecycle of a general product is composed by four stages: introduction, growth, maturity and decline. Before this, the product needs to go through design and development and this phase is going to last for around 2 months in our case. The product is supposed to be introduced in the course of Applied Project Management next year and it's expected to reach the maturity stage the following ones, being adopted by all the other professors. We expect other similar apps and websites to be developed in the following years and the development of these substitute products will be the main reason leading to our product decline.

2. Outcome

We expect this website to result in a continuous interaction and a better communication between the professors and the students.

In most of the cases, students are asked to give their opinion about the course development and teaching method just at the end of the semester. In other cases, the students are not directly involved, but they are indirectly represented by a reference group, which is composed just by few of them.

Thanks to Q-Stu all the students will be directly involved and all of them will be free to express their opinion about the structure and the topics of each lecture. This is supposed to increase the students' participation.

Moreover, being the professors able to read the students feedback after each lecture, they could decide to make changes in the following lectures in order to be more aligned with the students' requirements and to avoid students' difficulties. This is supposed to increase students' interest, being the lectures shaped on their needs.

3. Stakeholders

We identified the stakeholders of our project and we classified each of them based on the influence/interest matrix. The resulting matrix is:

| | | Interest | |
|-----------|----------|--|--|
| | | Small | Large |
| Influence | Critical | <u>G2</u> <ul style="list-style-type: none">● Professors' coordinator● Tester● Web developer/advisor | <u>G1</u> <ul style="list-style-type: none">● Professor / Tutor● Students |
| | Marginal | <u>G4</u> | <u>G3</u> <ul style="list-style-type: none">● End users |

- **Professor/Tutor:** Being the owner of the project, he has significant expectations on this project and especially on the final output. This is why he has both great influence and large interest.
- **Students:** Before implementing the website, some students are requested to answer a survey about their needs regarding different teaching tools and methodologies. This group of students are representative of all the students. They will have great influence on our project since the entire website will be based on their responses. Moreover, from their side, they will have large interest since Q-Stu will be a tool developed ad hoc and aimed towards the students themselves.

- **End Users:** They are all the students that will have to use this website. They don't have a lot of influence on the development of the project, on the contrary of Student representatives, but they have a lot of interest on Q-Stu, since they are supposed to use this tool.
- **Web developer/advisor:** He/she has a great influence but not a large interest. He/she is the person that help us in the realization of the website. He/she has a great influence representing the expertise in the technology sector. He/she has small interest not being fully related to our project and representing just an advisor.
- **Professors' Coordinator:** He/she is representative of all professors in the university. He/she has a lot of power since every decision taken by the coordinator influences positively or negatively the teaching methodology of university. His/her interest is not related to our project itself but in every tool that can improve the teaching activity.
- **Testers:** They are in charge of testing the finished website. All the improvements on Q-Stu will be based on their feedbacks. This is why they have a lot of influence.

4. Risk assessment

We performed a risk analysis to understand how the project scope and outcome could change during the project development and after. We tried to identify the potential risks and the consequences they lead to.

A first possible risk is the development of a similar app or website before the end of our project. Under these circumstances, the students/professor might prefer that solution instead of the one implemented by our group. This will result in a project output that will not create value for the end users. Both the probability associated with the development of a similar app and the risk impact are low, considering that our product will be developed in a quite short time-period and professors might prefer our solution in any case.

Another risk is associated with the professors' behavior, which means that each professor might refuse to change his/her teaching method not finding this new tool useful. In this case the probability of this event is low since we think that Q-Stu is a valuable instrument and will bring improvements in teaching. The risk impact is significant considering that our tool might not be used in a proper and continuous way.

Once adopted, after the approval of the Professors' coordinator, the website may not have great success among students or above all could cause misbehavior on the part of students and thus force the teachers to eliminate this type of tool during teaching activity. Thus, also in this case the output will not create value for users. Indeed, in this case the probability is not even high since during the development process we planned to have students/end users active participation. We estimate the impact associated with this risk to be low because most of the students are going to use Q-Stu in a proper way due to their involvement in the development phase.

During the website creation technical problems might arise with a high probability. The risk impact is significant because the final output might be characterized by different features compared to what we were expecting. Moreover, during the testing phase, we might have some

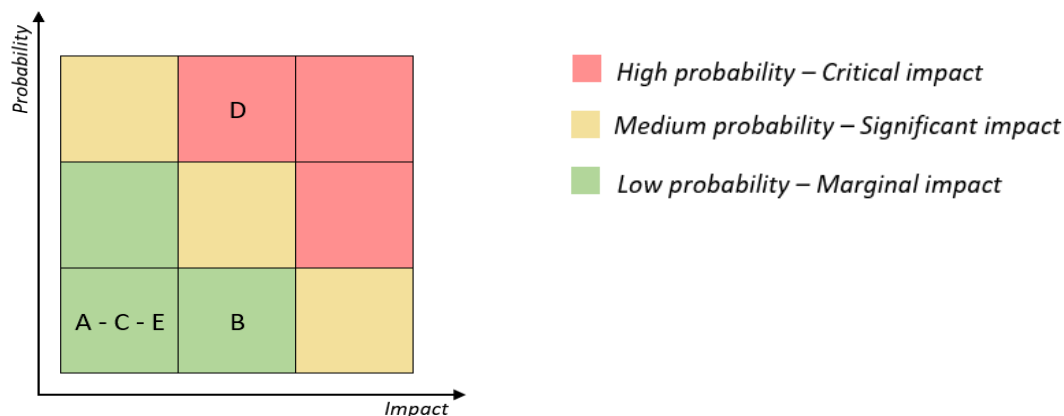
IT infrastructure problems, meaning that the website might not be able to support the answers submitted by all the students.

Finally, the risk associated with privacy and data processing must be considered. In our case the probability related to this risk is not high since a whole consensus policy must be kept in mind and moreover student's answers and data will be kept completely anonymous.

Summarizing all risk factors, we are able to build up the Risk Register, which includes the description of the risk factors, the responsible person for the management of risk, the probability of occurring, consequences and the measures that can be taken to mitigate the risk.

| Risk | Risk Impact | Measures/When | Responsible Person | Consequences |
|------------------------------------|-------------|---|----------------------|---|
| A) Presence of substitute products | Low | Development in short time | Project manager | No creation of value |
| B) Lack of interest by professors | Low | Good communication | External coordinator | No creation of value |
| C) Website failure | Medium | End User involvement and active participation | IT technician | No creation of value |
| D) Rise of technical problems | High | Maintenance and continuous improvement | IT technician | Website not able to support the answers submitted by the students |
| E) Privacy and Data Processing | Low | Compliance with policies | IT technician | Sharing of confidential data |

The risk factors identified can be also represented in a risk matrix. They are mapped considering their probability and their impact on the project.



5. Skills

The creation of such website requires the development of several skills.

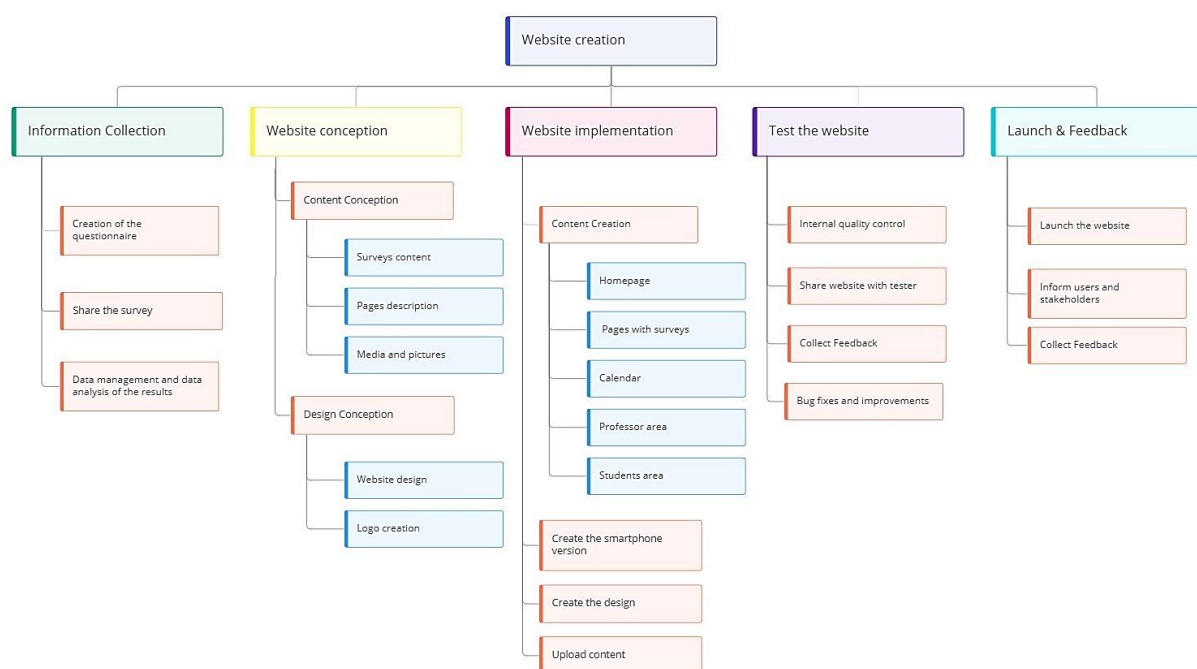
Primarily, none of us has already worked on similar projects, meaning that we are supposed to develop technological skills in order to build the website. We need to increase our knowledge about website builder programs and about concepts like domain.

Because of our lack of experience and knowledge, we expect this project to be really complex for our group. Consequently, it's really important to improve our project management skills. This type of project requires a lot of attention in the initiation phase in order to identify in the right way all the possible stakeholders of the project and our roles and responsibilities.

Finally, we are supposed to improve our teamwork skills in order to collaborate and be able to manage in the best way possible conflicts that could arise during the project development.

6. WBS

A project breakdown structure has been built in order to have a deliverable-oriented hierarchical decomposition of the work to be executed by the project team to accomplish the project objectives and create the required deliverables.



Initially, we started by considering the initial phase of collecting information that allows us to be able to create content that is as suitable as possible for end users. This information will in fact be collected through a questionnaire that will be distributed to a number of NTNU students (minimum 250, using the total number of students of the NTNU as a population size and a 90% of confidence level). This first questionnaire will be useful to have data that can reflect the needs of students who will use the service. After collecting the information, it will be necessary

to manage and analyze it to exploit the results to create the final survey, the one that will be uploaded on the website and through which the students can evaluate the professor's teaching method.

Then the website conception occurs, in this phase the website content is created based on the information collected in the previous questionnaire. Furthermore, the texts, images and media that will be present on the final site will be chosen. In this phase, in addition to the creation of the content of the site pages, the logo and a draft of the site design will also be created.

During the website implementation phase, it is assumed to have all the material and resources necessary to be able to start the development of the website. This phase is the most critical on a technical level because it consists in the creation of the site, and in the fusion of all the material developed and created in the previous phases. Furthermore, it will be necessary to adapt the website created to the smartphone interface, and once we have found that everything works, we will need to focus on the design and graphics.

The testing phase involves a first quality control of the product by the team, and only once this first check has been passed, it will be possible to share the site with a small number of people (about 20), in order to verify that everything works as expected and collect information on possible improvements before the launch. This will be followed by a second phase of bug fixes and improvements.

Finally, once verified that the site works, the product launch will take place, and the consequent information of users and stakeholders. After the launch, the product will be monitored, and any feedback will be collected in order to make any future changes.

7. Schedule

To organize the project and the deadlines we decided to make a Gantt chart. The activity packages identified in the project breakdown structure have been placed in chronological order, and for each of them we have tried to estimate the time needed to be completed.

In this way it will be easier to have an overview of the progress of the project and to understand if the progress is in line or late with the deadlines set.

Finally, thanks to this diagram, it is possible to allocate the resources for the various activities, in order to divide the tasks in an optimal way. When each person finishes the assigned task, they can update the diagram with the percentage of completion in real time so that everyone knows which part of the project has been already completed.

It is possible to see how at the beginning the activities are much more time-consuming, but on the other hand some of them can be performed in parallel. While towards the end of the project the activities are much shorter, but they are one in line with the other and therefore it is not possible to proceed with activities in parallel.

| Creation of the Website | | | | | | | | | |
|-------------------------------|-----------|--------|--------|--------|---------|--------|--------|--------|----------|
| | September | | | | October | | | | November |
| | Week 1 | Week 2 | Week 3 | Week 4 | Week 1 | Week 2 | Week 3 | Week 4 | Week 1 |
| creation of survey | | 100% | | | | | | | |
| Share the survey | | | 40% | | | | | | |
| Data analysis | | | | 0% | | | | | |
| Content Conception | | | | | 0% | | | | |
| Design Conception | | | | 15% | | | | | |
| Content creation | | | | | | 0% | | | |
| Creation smartphone interface | | | | | | 0% | | | |
| Creation design | | | | | 0% | | | | |
| Upload Content | | | | | | | 0% | | |
| Internal quality control | | | | | | | 0% | | |
| External quality control | | | | | | | | 0% | |
| Make improvements | | | | | | | | 0% | |
| Launch | | | | | | | | | |
| Inform users and stakeholders | | | | | | | | | 0% |
| Collect feedback | | | | | | | | | 0% |

8. Success factors

We identified some factors that can contribute to the success of our project.

First of all, internal collaboration is at the basis of a successful project, tasks are performed quicker and more efficiently: productivity is enhanced, and by cooperating it is possible to build over others' ideas achieving more meaningful and successful results. When people collaborate with each others, they are more stimulated at working and doing their best.

High level of commitment by all the parties involved can truly generate a successful project. When people are committed, they will do their best to achieve the aimed results. Communication must be complete and constant both among the project team members and with all the other parties involved. In particular, the client must be consulted regularly due to his/her must have approval on the project.

Agreement and alignment on project purpose and scope are at the basis of a successful project, the same happens for the need that the project aims to fulfill. A good planning is required to deliver the intended results on time and with a good quality degree.

Furthermore, the project must be revised regularly in order to identify possible pitfalls and take corrective actions if needed: project follow up is essential to verify that time schedule is met and tasks are performed as planned. All the possible risks that may be generated by uncertain situations must be defined and then studied in order to be avoided.

9. Roles and responsibilities

The planning process requires the identification of the project deliverables and the correspondent tasks to generate them as well as the related risks. Responsibilities should be assigned with respect to the tasks to be performed, roles should be defined and then associated to people with due dates and liabilities.

First of all, we assigned the role of project manager, who is responsible for controlling the whole evolvement of the project. The entity is in charge of assigning roles to the members of the project team and then controlling deadlines and how tasks are performed.

The project manager is also responsible for dealing with the project stakeholders. The roles that have been assigned are the IT technician, in charge of creating the website and a survey to be addressed towards students to understand their needs and priorities, the external coordinator, responsible for dealing with the external actors to the project, like the survey addressers and the end users, and a person in charge of the report to be submitted and the video to be made.

After defining what roles were needed for the development of the project, the roles were assigned among the team members.

- Angelo was chosen as a project manager based on his ability to have a general view of the progress of the project, as well as good organizational skills.
- Giulia was chosen as IT technician who is the only one who has sufficient IT skills for the development of the site
- Diana was selected as external coordinator, this to exploit her precision in dealing with problems, and her ability in relationships with other people.
- Beatrice is in charge of the deliveries. This role is suitable for her as she is always very precise and focused on the final output, which allows to have a person who manages the results of the project

10. Communication plan

Effective communication is a key success factor, both within the members of the project team to align expectations, goals and working procedures, and with the project stakeholders aiming at keeping them updated about the ongoing status of the project.

Team members should meet twice a week to keep each other up to date about the tasks performed and the general evolution of the project. The communication channel through which stakeholders such as the professor and the project tutor would be kept informed is via email. Status reports are intended to be shared with them on a weekly basis.

Further details on the communication plan that has been developed can be found in the table below, for each communication goal, it has been defined who is in charge to create the content, which is the format and the frequency of the communication.

Communications plan

| Target audience 6 | Content creator 6 | Format 6 | Objectives 6 | Frequency 6 | Notes 6 |
|---------------------|---|------------------------------------|---|--|---|
| Team | Project manager | WhatsApp, Google Drive, Miro (WBS) | Align the team on results and assign tasks | Twice per week | N/A |
| Students | External coordinator | Survey | Understand which are the most significant parameters to evaluate a lesson | At the begin of the project | N/A |
| Beta-tester | External coordinator | Email | Verify that the website is functioning correctly | Once the product is finished | N/A |
| Professor | External coordinator (with project manager) | Pre report | Update the professor on the progress of the project, and understand what to improve | Halfway through the development of the project | It could be to write ask for other information in case there are issues or changes in the project development |
| Web developer | External coordinator (with IT technician) | email, Zoom call | Ask for assistance to develop the website | Only in case there are problems in the development | N/A |
| Tutor | External coordinator (with the whole group) | Zoom, face-to-face meetings | Receive feedbacks on the development of the project | Twice per month | N/A |