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The Road To Success.

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Preface

This project report is a summary of our small scale digitization project and the group process that lead us to a final product. With instructions and guidelines from the course *Applied Project Management*, we created a website with an overview of the curriculum from this course. During this project we have come upon events we could not foresee, and we have learned that a project must be flexible in order to withstand unpredictable obstacles. Nevertheless, this project report states that our process has been quite painless, and we dare to say this success is due to thorough planning, flexibility, and regular meetings, among other success factors discussed further in this report. Our project group consists of the following members:

Group number: 13

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1 Digitalization projects



1.1 Description of the product

Group 13 in TPK4115 have, during the winter and spring months of 2020, developed an internet application. The main purpose of this application is to collect, store and show information that is relevant for students taking this course. The reason why we started developing this app is described in our project plan, section 1.

Location of the app: https://trts.ivt.ntnu.no/

This application is built on an MVC (Model-view-controller) framework called Sails.js (The-Sails-Company, 2020). Sails is built on Node.js, a popular, lightweight server-side technology. Sails uses Express for handling HTTP requests, and wraps socket.io for managing WebSockets. We have used a template from https://sailsjs.com/ and built our app around this. The sails framework is a "back-end" web framework that have made it possible for us to create an application that uses a secure API and at the same time is user friendly. The language sails are built on, and what we have used to program our features, is JavaScript. On top of this app we have used a "front-end" framework called vue.js. that also uses JavaScript. For side rendering we have used Embedded JavaScript and Less (a CSS framework). For datastorage we have used a PostgreSQL server. In order to communicate with PostgreSQL, sails is providing us with Waterline, a powerful ORM (Object-relational mapping).

The reason we chose this development framework is because one of the group members have knowledge of JavaScript development languages and has developed a site like this before.

To collaborate with the code we have used GIT, a free and open source distributed version control system that lets us work seamlessly together. To store and build our application we have used GitLab. GitLab is free and have the possibility to build and deploy directly to Heroku, which is where our app is hosted. Heroku is a cloud platform that lets us scale the app accordingly to our needs. It was also free when we were in the developing stage. At the app's current stage it costs us 7 dollars per month for hosting on Heroku.

The application is designed to have an easy and intuitive access. But it is necessary to have

some sort of access control. The main reason for us to implement this is so that there will be less misuse of the information attached to the app. We can restrict the access so that only people that take the course will be granted access, or if the project owner wants to take a fee for accessing some or all the content. We have facilitated for future implementation of advanced access control.

Today there are two access levels when you sign in, user or admin. The user lets you read the information that is attached to this app. The admin user has the rights to write and add information, while the admin user can also add users and restore passwords. The default access right is "user".

This app is designed to have a welcome page that is different if you are sign in or out, so the user can easily see the difference. When signing in you get access to a list over all main topics from the book *The Road to Success* and some other topics that is relevant for students taking this course. Under each topic we have collected all relevant content available. The admin user gets some more options when sign in but also sees what a "regular" user sees. The reason for us to have two levels is so we can have a control over the content that is stored in this application.

1.2 Main challenges experienced in a small-scale digitalization project

The group sat down early in the semester to get an overview of what this project was all about. At that point, we had already stated some of our main challenges and how we should address them. Later we experienced another challenge regarding Covid-19, which caused us to change the project plan. All of these challenges are described in our project plan.

1. Collaboration

This was probably our main challenge, especially since we were faced with the unexpected Covid-19 pandemic during our project development. Fortunately, we saw some outlines of an outbreak of the pandemic early, and sat some ground rules when we wrote the initial project report. Hussein states in *The Road to Success* that "The multiplicity, as well as the diversity of stakeholders could give rise to organizational complexity." (Hussein, 2018). So in order to accommodate these challenges we used our initial meeting to give the group members roles and state our goals. We followed the suggested three stakeholder's management main tasks in order to decrease the complexity: identification, assessment, and implementation of communication strategies (Hussein, 2018). There was one person dedicated to do the follow up on this task. We believe that this helped us a lot to keep up with progress accordingly to our project plan.

An example: We had a case with one key member missing out on a collaboration session, but since we had switched to using online collaboration tools and were logging our meetings, the member could pick up the tread at a later point. The management risks are further discussed in 2.3.

2. Technical risks

Technical issues are always a challenge when working with digitalization projects, as we have learned from the different cases studied in class. Therefore, we went with a framework the group had experience with, even though we know there will always be major or minor complications. All the different frameworks have small issues and twists that have been giving us minor setbacks. But since several group members had worked with projects like this before we were able to predict that it would be the case in this project as well. Development took place without major setbacks, although it was a time-consuming project. We were able to create a satisfying first version of the application and are certain that without programming skills this project would have been completely different.

3. Distribution

There were challenges in getting the application distributed to the test users. If we could have been promoting in a lecture hall, it might have given us a wider publicity and in that way gotten more students taking the course to test at an early stage. Eventually, we got a satisfying number of test users to test the app. As a lesson learned we see that we could have focused on a marketing approach, e.g. using Facebook for promotion. This is explained in more detail in chapter 3.

2 Self-evaluation of the project management effort in the project; success or failure?

2.1 Success or failure?

In the sense of delivering a working product that meets the requirements from the stakeholders, the project has been successful. Though, throughout the project the group has indeed met some challenges. One of the main quite unexpected challenges has been due to the outbreak of the pandemic virus, covid-19. This lead to the group managing all communication online. In addition, a new group member joined the project management team in them middle of the project process.

2.2 Collaboration

The lack of physical meetings left the group with only communication via Microsoft Teams. The collaboration, however, was not affected as much as one can imagine. The fact that the project is a digitalization project made things easier. One valuable insight was the importance of dividing individual roles for everyone in the team. This made the distribution of tasks smoother.

2.3 Managing risks and challenges

2.3.1 Risk management

Overall the managing of risks has been working according to the action plan presented in the project plan. Although there has been some challenges regarding restrictions due to the virus, we have also experienced some advantages for the team and the final product. For example, everyone working from home gave us more flexibility for the chosen time of our group meetings. In addition the lack of social activities resulted in more time to work on the project. Last but not least, a student on her exchange year had to come home to Norway, starting the course later than the rest, resulting in a valuable new team member in the group.

2.4 Deviation between project plan and the result

Since some deadlines have been postponed due to the virus, the plan that was set up has not been followed correctly in the manner of exact dates. Hence, there has been a slight deviation between the the actual activity and the plan. However, the group quickly made a time plan which was more up to date and therefore was able to keep all deadlines.

2.5 Summary

Another important notice is the fact that we shared a common goal. The common ambition in working in a project is an important success factor that gives the team members a smooth and nice working environment.

Evaluation: We evaluate our project management effort as successful

Scale	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Your response				Х	

3 Self-evaluation of the value to the learners

3.1 Description of our target audience and the learning objectives of our product

The purpose of our product, the online application, is as mentioned in chapter 1 to collect, store and show information that is relevant for the students taking the course TPK4115. In our project plan we walked through the expected benefits from our final product:

- Students taking the NTNU course *Applied Project Management* will get a greater overview of the essentials of the course.
- Students takning the NTNU course *Applied Project Management* will get a greater overview of the tools that are available for them, at the right time.
- All the stakeholders will be able to track users' progress in the application. To what degree depends on the product outcome.
- Ease the access to the course material.
- A common site to collect and store future course material.

Depending on what the project owner, Bassam Hussein, wants, the application is open for development and by that also open for change in the target audience. It could be made open for the public and distributed to people wanting to learn about the topic without taking the course at NTNU. This would probably limit the content of the application, as some material would be copyright protected. The other way would be to link the application further to NTNU and the course (e.g. through the login service FEIDE). By doing this the target group would be the same as we have planned for, but would connect it even more to the course. More material that NTNU is allowed to distribute to their students, such as textbook and other relevant literature, could be implemented in the application and enforce the learning outcome according to the expected benefits that we looked at above.

3.2 A description of the method used to evaluate the final product

To evaluate our final product, we distributed a survey to our informants. The survey included, among other things, open and closed questions to measure their overall satisfaction with the product and user interface, and it also let them vote on what they found the most useful. In addition to this we received a general feedback via email from our two professors Kristin Hafseld and Bassam Hussein. Both survey and email correspondence have been completed in Norwegian as seen in the appendix in chapter 6.

An advantage of being a student in the course, hence a part of the target group, and a part of the project group developing the product is that we were quite able to do an assessment of the product while working with it ourselves. Our project group consists of a good mix of students with different backgrounds. As we have worked with the product before distribution, each and every one of us have looked at the product as a student and asked ourselves if this would help us reach the learning objectives of our product.

3.3 The number of informants who have contributed to the evaluation, and how these informants have been selected

As a part of the course, each group is given a peer-review group. We sent out emails to the students in the group we were given, group 18 consisting of 5 students, and our two professors. In the email they were asked to access the application, make use of it and in the end filling out the survey. 6 people completed the survey and, as mentioned, we also got some general feedback from our two professors via email. The link with the application and survey were also posted on the course page on the Blackboard platform, but this has not resulted in any more participants of the evaluation.

3.4 Results of tests, surveys or interviews with students or persons who have reviewed the final product

Overall the informants were pleased with our final product. The full survey can be found in the appendix in chapter 6. The best and most important question for overall satisfaction is the one where we asked if this is an application they would actually use themselves. In Figure 1 we see that the average reply is 4,33 out of 5 where 1 is not at all and 5 a lot.

7. Er dette en applikasjon du ville ha tatt i bruk?

Responses

★★★☆☆

Gjennomsnittlig vurdering 4.33

Figure 1: Response to question 7 in the end survey

In question 5 they have given the application as a total a 4,17 on average out of 5, as we can see in the appendix in chapter 6. The informants seemed pleased with how the application is working and organized. As the project group anticipated they found the quizzes within each chapter and the summary of each chapter the most useful, as we can see in Figure 2.

4. Hvilke ressurser vurderer du som mest nyttige i applikasjonen?



Figure 2: Response to question 4 in the end survey

In the emails from our project owners and professors, Kristin Hafseld and Bassam Hussein, we got positive feedback. Bassam commented that the idea of such an application was good. Kristin tells us that she finds the tool very good. Of other positive aspects she mentions that the application is free, that the overview is good and neat and that the collection of information linked to each chapter makes the curriculum more interesting and accessible.

When it comes to improvements of the product there were a few comments in the open questions regarding user interface such as wanting a return button and putting the quizzes in the correct order. These are minor improvements that are not too complicated to fix and we have done so already with the latter one. There was also a comment about that there sometimes was a bit too much text. Combined with the fact that the informants found the chapter summaries and quizzes the most relevant for them this could be an area to begin with when it comes to improving the application. The summaries could for example be even more compromised/optimized. Furthermore our product is a website where the content easily can be changed and adapted to future needs. More questions can be added to the quizzes and more text and links to relevant websites may be added with small effort.

All in all the evaluation shows that our product has a good impact on the learners and that the informants could be even more satisfied with only a few adjustments. The evaluation of the product could probably have been even better if we had gotten even more informants to answer our survey or gotten feedback in other ways from more informants. **Evaluation:** Our product is of high quality and we recommend it to be used as learning aid in project management

Scale	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Your response				Х	

4 Factors that have contributed to failure/success

We conclude the self evaluation of the project management effort in chapter 2 with our project being a success. In the following chapter, we will try to explain some of the success factors that lead us to this conclusion. *The Road to Success* (Hussein, 2018) distinguish between four main types of success factors; case specific factors, characteristics related factors, organizational cultural factors and factors related to biases. We will briefly explain some of the common success factors in each category and relate them to our project success.

4.1 Case specific factors

The case specific factors are as the name states; specific to the individual case. In our case, our project development and product stand out by being affected by the Covid-19 pandemic, and by our team being students from the same group as the end users.

Success factor	Relation to our project
Techology/Solutions for video	As the ongoing pandemic had us separated geographically,
communication	we had to rely on alternative communication channels to
	keep ourselves updated on the progress of the project. The
	video conference tool from Microsoft Teams made a quick
	and easy solution to a potentially serious problem.
Double roles for the team	As all members of the team are taking the TKP4115
	course, we all had dual roles as stakeholders; both project
	group/developing team and target group/end users. This
	made it possible for us to understand both interests in the
	product, and find a fitting solution.

4.2 Characteristics related factors

The factors related to project characteristics are based on the project structure and ground rules. This includes for instance communication, involvement, planning and risk management. (Hussein, 2018)

Success factor	Relation to our project
Clarity of roles	We gave all team members an individual role early in the project. This helped us allocate the different areas of re- sponsibility in the project, and we all knew who to ask if there were questions on a specific topic.
Clarity of purpose and outcome	As the project had a relatively fixed purpose and outcome given in the assignment text, we always had a place to look if we felt unsure on what, how or when to do something.
Stakeholder involvement	The stakeholders were involved by two surveys. The initial one (See section 6) helped us identify needs and wants be- fore the product was developed, and the second one (See section 6) was given with the product as an evaluation. We also had running communication with the project owners, Kristin and Bassam, and were a part of the end user group ourselves.
Early planning	We set early deadlines for ourselves throughout the whole project, in order to have more time to discuss and refine before the actual deadlines.
Competence	Mattis had an especially big contribution here, as his IT knowledge was of great importance for us to be able to realize our product. Making this kind of an app would not have been possible without this competence.
Small organizational complexity	As the team was consisting of only five members, with two project owners and a small end user group, the organiza- tional complexity was small and easy to handle.
Realistic plans	Not giving ourselves too comprehensive work was a con- scious choice, especially after we were split up geographi- cally. The focus was to fulfill the task requirements in a manner of quality, not quantity.
Collaboration within project or- ganization	Even though the roles were set, we made sure to collaborate on decisions and update each other on the status of the different aspects of the project.
Regular team meetings	We had a fixed time for our team meetings, which made it easy to plan for as we all had several other courses and activities going on during the project.
Adequate documentation and reporting	We were writing a log from each meeting, making it easy for ourselves to see what had and hadn't been discussed, and what was supposed to be done before the next meeting. This was also a good tool if anyone was absent from the meetings.

4.3 Organizational cultural factors

The organizational cultural factors are human factors based on norms, values and human interactions. We assess them in order to understand the complex social factors affecting the project success, and know that they have a big influence on the motivation, cooperation, sense of ownership and unity of the team. (Hussein, 2018)

Success factor	Relation to our project
Commitment	The team was committed to making the project a success,
	especially as it affects our final grade in the course.
Honesty in reporting	The weekly meetings were a good way to report on the
	project progress. As we were honest with the group at
	all status reports, we were able to find good solutions if
	something was off schedule or in other ways didn't fulfill
	our expectations to the team and/or the project.
Trust	A strong sense of trust within the team made it easier to
	deal with the uncertainties of the project development. In
	addition, the mutual trust between the team and the stake-
	holders, especially the project owners, was a vital factor for
	the project success.
Flexibility	The team had to be inclusive both socially and project-
	wise when Frida joined the team late. The flexibility of the
	team was clearly shown as there was never a question on
	whether to include her in the group or not, and as a new
	area of responsibility was assigned to her during the first
	team meeting.

4.4 Factors related to biases

The factors related to biases are brought into the project by the team members. They are based on their habits, perspectives and delusions from previous projects, and can lead to flaws in the project development. (Hussein, 2018)

Success factor	Relation to our project
Available data	The content in our product is solely based on the pre-made
	content available from Kahoots, Youtube and The Road
	to Success-book (Hussein, 2018). However, the product is
	designed to be easy to develop, which makes adding new or
	alternative content possible.
Selective perception	As we were split geographically, there was at one point a
	big chance of falling into a situation where we perceived the
	same circumstances differently. This was not a problem as
	the video calls kept the communication fluent and easy.

The success factor we view as the most important for our project is the **technology/solutions** for video communication as the pandemic had us separated geographically in the middle of the project. Being able to continue the weekly meetings was crucial for the success, especially with the project being a digitalization project that was easy to work on separately from our individual homes.

We were also benefiting a lot from the early focus on **predictability** with regular team meetings, clear roles and early planning. This made it easy for us to prioritize the project as we knew that Wednesdays were the set day for working on and discussing it. We were also flexible on the time and day for the weekly meeting, in case there were any kind of obstacles. The common commitment made us trust each other, and this increased the motivation for working on the project.

5 Most important lessons from the project

Our project has run quite smoothly, despite being carried out in the midst of a pandemic. This is most likely due to thorough planning and frequent communication. Our first advise is therefore to use the first meetings to get to know each other. Use this time to clarify your skills, goals, learning objectives, how you view the task at hand, and discuss how each person can contribute. From this you can create roles within the group, and each person can already then know their responsibilities throughout the project. Clarifying these aspects will also make a project group go into a project with clear expectations to each other, themselves and the project. They will work toward the same goals, and can complement each other towards these. Without communicating these (hidden) expectations, one risks accumulating tension, confusion and frustration, which again can lead to dividing conflicts.

Our second advice is to meet often. Since the forming of our group, we have had meetings every Wednesday, for an hour or so. This gave us the ability to follow up our project carefully, involve each member of the group, and have continuous progress. By setting a fixed day of the week you avoid uncertainty around when to meet next, and there is continuity in your process. If everyone completes a task prior each meeting, the work load is small for each member of the group. Additionally, a good advise is to log your work. This will give you the opportunity to monitor your group process, reminding you what you did and what should be done until the next time you meet. Sharing this (alongside all your documents) in one digital place, makes each member autonomous in their work.

Furthermore, a project plan should be developed, manifesting the project agreed upon. The plan will show a manageable project - it should be possible within the given time, knowledge and resources. This plan should include a schedule with deadlines, a risk assessment, an overview of stakeholders and how these should be involved, and must describe an obtainable output. One advantage of having such a plan is that you get a clear overview and keep the deadlines, which might be crucial for the project. Another benefit is that along the way the group must speak the same language and agree on specific activities towards the output.

5.1 Lessons and advice for anyone who wants to carry out a project:

- Get to know each other within the team: Clarify expectations, commitments, goals, strengths and roles
- Communicate regularly: Have a set time of the week to create a routine and ensure that the project is prioritized.
- Make a thorough and flexible project plan: Set small goals and deliverables to make your process steady and predictable a good framework and flexibility should be balanced.
- Work within the agreed project schedule: Deadlines and deliverables should be kept.
- Communicate with stakeholders, end users and others: Involve their needs and get their feedback during your process.
- Acknowledge each others roles and different knowledge, and trust that you will complement each other and contribute with different parts.
- Digital storing: Keep everything on one platform, that is easy for everyone to have access to. A log can be useful and will enable group members to be self organized.

6 Appendix

On the following pages Appendix follows.

Emails



Mvh Kristin



Updated project plan and surveys

Following shows the updated time schedule that was done due to the circumstances described in the report. In addition the project plan (including the first time schedule) is attached in the end of the report. The surveys are attached here aswell, in Norwegian.

Project schedule

Creating a Webpage. Course: TPK4115, Applied Project Management



Undersøkelse - Nettside i faget TPK4115



1. Hvilke materialer bruker du mest når du leser mot eksamen?



2. På Blackboard i dette faget, er det noe du savner/tenker kunne vært bedre?

13
Responses

Siste svar "Kommer ikke på noe." "Nei, føler emnesiden inneholder det meste" "Enklere oversikt over innholdet i kapitlene."

3. Kunne du tenkt deg en applikasjon/nettside hvor alt innholdet i dette faget er samlet?





4. Ville oppsummeringsquizer fra hvert kapittel hjulpet deg fram mot eksamen i dette emnet?





Brukerundersøkelse TRTS

6 Responses

07:59 Gjennomsnittlig tid for å fullføre

1. Hvordan synes du inndelingen etter kapitler i boka fungerer?

6 Responses

4.5

Gjennomsnittlig antall

2. Har du forslag til en annen inndeling som ville fungert bedre?

	Siste svar
6	"nei"
Responses	"Nei"
	"Riktig rekkefølge på quizene i quiz-mappa."

3. Hvordan synes du det er å finne frem til quizer og andre ressurser?

6 Responses

 $\star \star \star \star \star \Leftrightarrow$

Gjennomsnittlig vurdering 4.00

Aktivt

Status

4. Hvilke ressurser vurderer du som mest nyttige i applikasjonen?



5. Hvordan vurderer du applikasjonen som helhet?

6 Responses



 $\star \star \star \star \star \star$

Gjennomsnittlig vurdering 4.17

6 Responses Siste svar "Svært høyt nivå på produktet som har blitt utviklet. Fremstår profesjo... "Synes det generelt fungerer bra. Ville kanskje være enda mer attraktiv... "Til tider litt mye tekst. Ellers mye bra!"

7. Er dette en applikasjon du ville ha tatt i bruk?

6 Responses

 $\star \star \star \star \star \star$

Gjennomsnittlig vurdering 4.33

7 Peer review report

We were evaluating the product made by group 24.

7.1 Strengths and weaknesses

Strengths:

- The idea has potential in the sense of the lecturer getting easy and fast feedback.
- The thought of being anonymous is an advantage for shy students.
- The implementation into Blackboard makes it easy to find and use for both the lecturer and the students. No external links gives a tidy appearance.

Weaknesses:

- There are other available aids that have more functions than *No Hands Up*, e.g. Menti or Kahoot. We would have liked a place to write comments or other ways to give feedback, rather than just pushing the colored buttons. It might cause more confusion for the lecturer than helping.
- The product does not exist, which makes hard to test the product and evaluate it properly. We understand that the product was hard to create, but would have expected more argumentation and elaboration in the product description document in order to grasp more of the functions.
- The product does not take into account that not all students use digital devices for taking notes in the lectures. For students taking notes by hand, there might be an obstacle finding their devices when using the product.
- There is no further explanation on what to do with the information collected from the surveys.
- This product will encourage the students to use their phone during the lectures time, which might lead to an unfocused situation.

7.2 Evaluation

The product we reviewed is of high quality and we recommend it to be used as learning aid in project management

Scale	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Your response		Х			

We recommend this product on a scale from 0 to 10: $\mathbf{3}$

References

Hussein, B. (2018), The road to success: Narratives and Insights from real-life projects, Fagbokforlaget, Bergen.

The-Sails-Company (2020), 'Sails', https://sailsjs.com/.



Department of Mechanical and Industrial Engineering

TPK4115 - Praktisk prosjektledelse

Project plan

Group 13

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April 29, 2020

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1 Product Description

For this project we wanted to produce a website or a kind of application. This is based on the different interests and skills of the people in the project group. The people involved, or the stakeholders (Hussein, 2018) and their interests were as follows:

- Project owner: "DON'T WANT ANOTHER MOVIE"
- End User: Clear overview of the curriculum.
- Project group: Clear overview over the curriculum, and a achievable project.
- Other students and teachers at NTNU: An application that can be used in other courses at NTNU.

On our road to find out what kind of web page we were to create, we went through some of the former work produced in this course. To our great frustration there where not one place we could go to in order to find the information we needed. From that frustration an idea arrived. We wanted a place to collect all this information. In order to see if this is in the end users' needs, we had to make some initial research with the stakeholders.

A part of our initial research was to have a dialogue with the project owner on his preferences regarding the project. He explained that he had three main requirements we should meet:

- The product should consist of digital technology.
- Give value to the students of Applied Project management.
- Give value for future students taking the course.

The students taking this course were another part of our initial research. Is this product something the students need and are willing to use. We went ahead and conducted a small oral survey in order to assess the end users' needs. The initial feeling, was that the other students also implied some of the same frustration.

We have concluded that the findings from our initial research this product is something we should continue to explore and start developing.

Therefore, we are starting to develop an application than can collect all the different products, tests, and Kahoot's that have been and will be produced necessary for this course.

2 Expected Benefits

The term benefit means the produced outcome of the project after it is operationalized. It includes benefits to the owner, users, society, and so on. The outcome is often characterized by unpredictability, and therefore goals should be met to achieve intended outcomes. A main principle is that benefits will be accomplished if the purpose is achieved.

We assess these expected benefits from our product:

- Students at NTNU course "applied project management" will get a greater overview of the essentials of this course.
- Students at NTNU course "applied project management" will get a greater overview of the tools that are available for them, at the right time.
- All the stakeholders will be able to track progress at some point. In which degree depends on the product outcome.
- Ease the access to the course material.
- A common site to collect and store future course material.

3 Stakeholders

In every project it is important to know who the stakeholders are and how to manage them.

Stakeholders:

- End users (Students taking the course)
- Bassam Hussein and Kristin H. F. Hafseld (Project owners)
- Project group (us)
- NTNU
- Suppliers of resources needed to create webpage

Table 1: Stakeholder matrix

		INTEREST		
	1	Small	Large	
Influence	Critical	Group 2 Suppliers of re- sources needed to create web- page Relations of project group	Group 1 Bassam Hussein and Kristin H. F. Hafseld (Project owners) End users (stu- dents) Project group (us)	
	Marginal	Group 4 NTNU	Group 3	

Group 1: The most critical group that we need to have good contact with the whole time and see fit that they are satisfied. They have big expectations and demands to the project. Concerning the project owners, we will attend classes every Thursday and during the breaks or after we will discuss major decisions that we make and will be able to ask questions. We will submit all tasks given in compliance to their deadlines. To better specify what our product should include, a survey will be made and distributed to our end users (classmates). When the product is getting closer to be finished, a group of the end users might be asked to try it out and give their comments before launching the product for the whole class. When it comes to the project group as stakeholders, we already have regular meeting time every Wednesday afternoon. This might increase to two times per week closer to the project deadline. A good dialogue in a chat group allows us to discuss things while working on our own. Roles have been divided within the group so that we know who is the uppermost responsible for what. The regular meetings will be minuted. This way those who might be absent can catch up easily.

Group 2: This group is necessary to keep satisfied, but they do not have much interest in the project. We depend on the suppliers, and should therefore choose someone we can rely on. Relations of the project group can affect the project group members so that the progress is not advancing as planned.

Group 3: This group have a big interest in the project, but their contribution is marginal. We have not found any stakeholders in this group, there no specific plan on how to handle them.

Group 4: The university itself is a stakeholder that should be given as little time as possible. They could in some way interfere in the project, but then probably through the project owners. But as they are the employer of the project owners and the university that all the end users are attending, they should be kept in mind.

4 Risk Assessment

In this chapter we will consider the risks for the project. It is important to be able to predict some risks to facilitate when one of them might happen. Below the risks are divided in to three different categories.

4.1 Project management risks

All members of the team have different schedules therefore there might be some problems considering finding hours for meetings. In addition working close to each other and relate to deadlines from project owner it is not to consider, unlikely that the group might disagree in some aspects of the project.

4.2 Technical risks

In a sense the group might have taken on a too great challenge. There is, of course, a risk in the technical part since only one of the team members has experience in this kind of work. However, the outcome if a risk like this is would appear is not that big and the solution would be to limit the expectations.

4.3 Business risks

The project is supposed to help students in learning the subject. However, due to the students different way of learning, one might find the web page unnecessary because the ability to self store the correct information.

Table 2: Risk	assessment	table
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	Table 2: Risk assessment table			
Risk	Means to pre- vent	Action	Probability/ Consequence	
Time con- summation	Understand the im- portance of plan- ning. All team mem- bers should know their deadlines.	Make sure that ev- eryone are on the same page consider- ing the deadlines	Medium/Medium	
Sickness	Make sure to com- municate whether someones not feeling good.	Take responsibility of your work and help each other. If you feel like you need help with an assignment it is im- portant to ask for help in a reasonable time before deadline.	Medium/High	
Travelling	Make sure to not plan any travels close to important deadlines of the project and commu- nicate with the team when you are plan- ning to be away for more than a week.	The team member who is travelling need to make sure they do their job and assignments.	Medium/Low	
Technology	Everyone should be familiar with the technology that is in use.	Ask for help if neces- sary	High/High	

Epidemic	Due to the erup- tion of corona in eu- rope everyone should be aware to wash hands. If visiting an area where the erup- tion is out in the society you should follow NTNU's re- strictions on staying home for at least 14 days.	Do not join meetings and work only from home.	Low/Medium

5 Skills acquired to produce the project

Below follows the skills the project group consider necessary to have in order to meet the requirements for the project.

- Knowing a data-language that can convert our and our stakeholder's needs into something useful and clear:
 - Full-stack programming skills.
 - Deployment of software skills.
 - Webpage design skills.
- Academic skills: ability to acquire knowledge and information, knowledge of the webpage material.
- Writing skills.
- Cooperational skills: communicate and support each other within the group.
- Creativity: Seeing solutions to challenges and ability to think new and innovative.

6 Project breakdown structure

A project work breakdown structure (WBS) shows the key project deliverables, the sub-deliverables and the work packages (Hussein, 2018). By visually dividing the project into smaller parts, the structure and distribution of tasks becomes more clear. The tasks are interrelated, but also separate from each other, and small projects in themselves.



Figure 1: Work project structure

7 Project Schedule

The method that is used is a Gantt-schedule which is attached in Appendix 10.

8 Digitalization project

Gartner Glossary defines the word digitalization: "Digitalization is the use of digital technologies to change a business model and provide new revenue and value-producing opportunities; it is the process of moving to a digital business" (Glossary, 2017).

With our project of making a webpage for easier learning and better accessibility of curriculum in mind, this is definitely a digitalization project. Our webpage includes making a quiz which means that we will have to extract information from the curriculum (book, presentation and notes from class) and make it accessible for the end users online. By making the available resources more accessible, the students will hopefully learn more.

9 Additional Value

We hope this project gives us some opportunities to learn about project planning in a safe environment. We believe that a project like this will give us some learning and challenges regarding the following skill sets and knowledge.

- Group processes: Learning about group dynamics in practice.
- Practise what we have learned in this course.
- The surplus of learning to plan: Everything can be planned, but there is a balance between planning ahead and learning as you go. The more you can define something the better and more predictable the outcome turns out.
- Untapped skills may appear.
- Get some free knowledge for the written exam.
- Make new friends.
- Insight in how digitalization project works and the challenges it has.

References

- Glossary, G. (2017), *Digitalization*. Accessed from: https://www.gartner.com/ en/information-technology/glossary/digitalization (Accessed: 04.03.2020).
- Hussein, B. (2018), The road to success: Narratives and Insights from real-life projects, Fagbokforlaget, Bergen.

10 Appendix

Schedule



Figure 2: Gantt-schedule for the project.