TPK5100
Digitalization Project - Report
An interactive webpage to aid self-testing and review: The Highway to Success

November 2019

NTNU
Kunnskap for en bedre verden
Norges teknisk-naturvitenskapelige universitet

Preface

The purpose of this report is to show an outline of the product group 27 has produced for the project assignment in TPK5100 and how it contributes to digitization and learning. The report also shows what the group considered the sites' main function for its users, as well as what the group considered a success/failure and what was learned about project management. Link to the website: praktisk.azurewebsites.net
We would like to thank everyone who gave us feedback on our new interactive learning website. A special thank you to Bassam Hussein for great feedback and help during the project.

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1 Digitalization Projects

The project presented in this report is a digitalization project. Essentially, it is a restructuring project where software is developed and implemented to improve the way students learn about the course Applied Project Management. In this segment, challenges experienced by the group with this type of project is presented and discussed, in relation to project management literature.

The group experienced several challenges in the project. The main challenges related to digitalization projects are presented below:

- Handle expectations from different stakeholders, especially the end users of the interactive learning website.
- Define achievable specifications for the learning website.

The first bullet point describes a challenge related to expectations from stakeholders. An important factor contributing to the success of the project is to satisfy the expectations of the end users. As time was limited, a thorough stakeholder analysis was deprioritized, and the group had to make several assumptions on the expectations from

the end users. Several assumptions were made based on expectations of the group itself, as the group members are potential users of the product themselves, as students taking project management course. However, the entire group are students with thorough technological experience. It is not a given that all the other students learning about project management understand the website user interface as well as the group members do.

This challenge was also experienced in the restructuring project called "Staff reduction after introduction of speech recognition tool" [1]. This project failed because the end user of the speech recognition tool did not having the adequate knowledge to use the tool properly. This shows the importance of understanding the end users expectations when developing a digital tool.

The second bullet point describes a challenge related to defining achievable specifications for the learning website. Some features discussed had high uncertainty regarding the time needed for implementation. As an example, features like speech recognition and narrated questions were discussed, but was more difficult to implement than expected. Due to limited time these features were discarded.

Challenges like these are common in digitalization projects as new digital solutions are affected by high level of uncertainty. An example is the project "Common system for case processing". In this project they have challenges related to defining the project and clear achievable specifications.

It is difficult to completely remove challenges related to high levels of uncertainty in a digitalization project, as most digitalization projects includes developing new technological solutions. A strategy to deal with this uncertainty could be, in the planning phase, to review similar solutions done previously in order to get an understanding of whether the tasks are achievable within the time limit.

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

According to the expected learning outcome from the project plan[2] we wanted to produce a website application to help each student increase their learning outcome from the lectures in Applied Project Management. This is achieved by repeating some of the taught knowledge using an interactive game experience, thereby tackling the problem of learning from a different angle.

To accomplish this we developed a multiple-choice quizzing website. At this website students and others interested in project management can take interactive quizzes and read summaries from the book *The Road to Success* [1].

The website was launched[3] with all the critical functions we deemed necessary. The front page, as seen in Figure 1, gives a short introduction to what you can expect to get

out of using the website. As of launch on 23.10.19, that is questions from each chapter as well as a short description of the expected learning outcome.

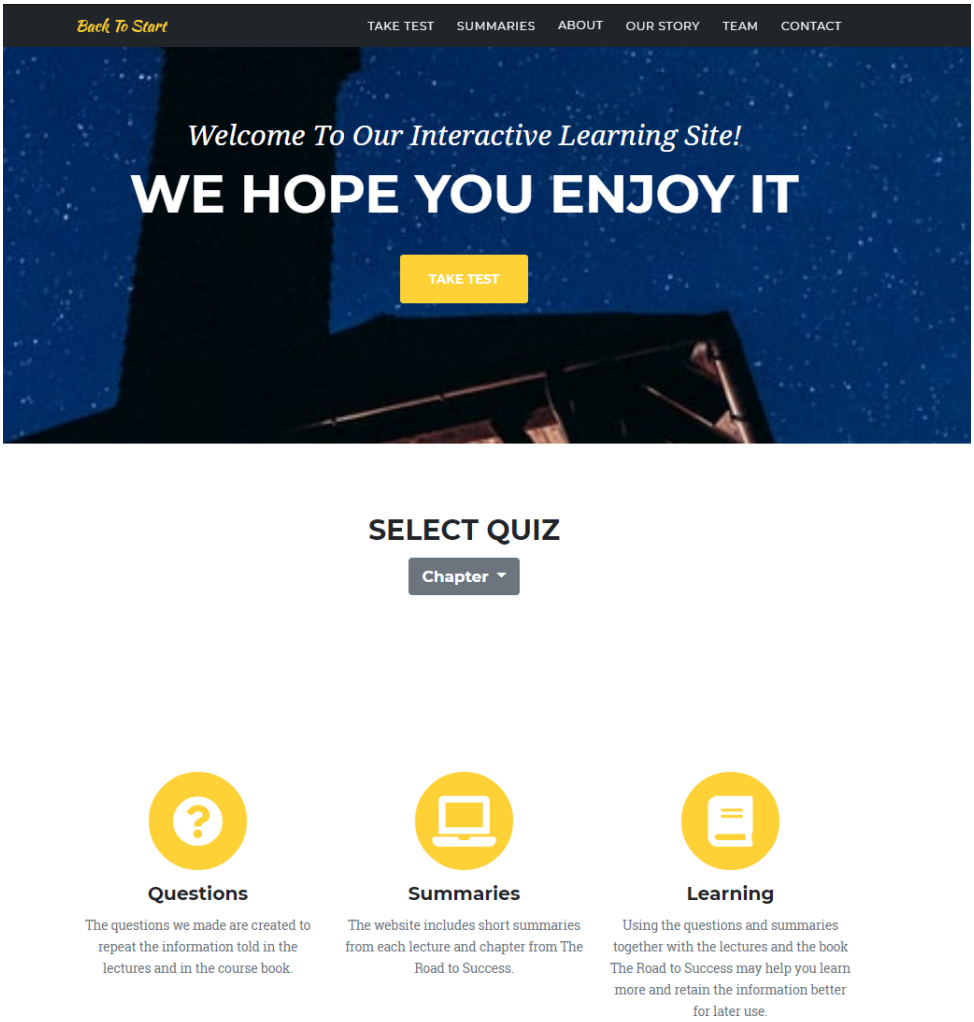

Figure 1: The front page gives a short introduction to what the student can expect from the web application, as well as letting the student choose which chapter to be quizzed on.

Every chapter has 3-4 questions each with 4 alternatives where only one of them is correct. The student is also presented with two aids; *"50/50"* reduces the number of alternatives to 2 while *"Ask an expert"* presents a hint for the question. A typical question can be seen in Figure 2 along with the result page of the same question.

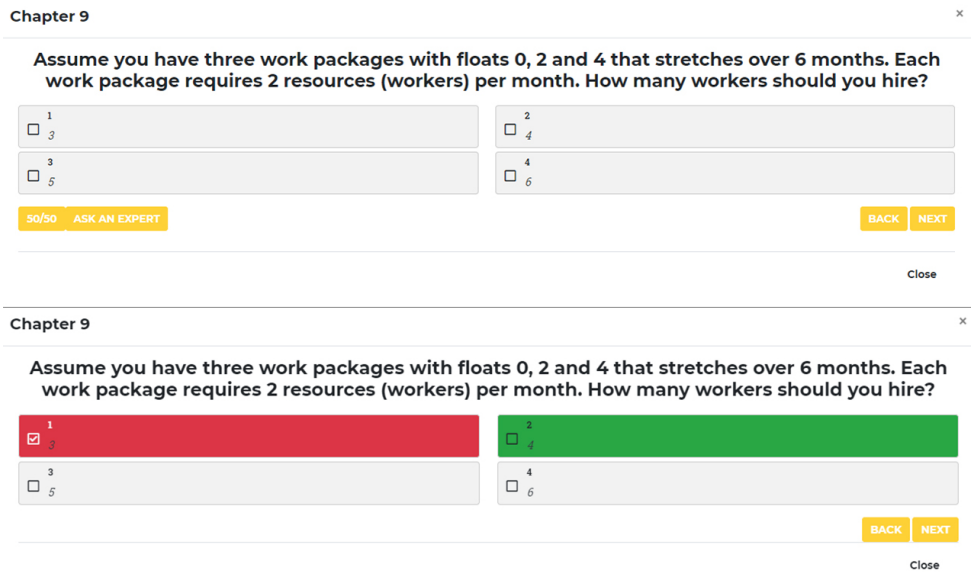

Figure 2: There are 3-4 questions from each chapter with 4 alternatives. The student can choose from two aids: *"50/50"* or *"Ask an expert"*. At the end of the quiz the student can view the results.

There were some minor success criteria that were included in the work breakdown schedule (WBS), such as "Narrated Questions" and "Speech Recognition Software" that were not completed. At one point during the project we did a new evaluation of the project scope and realized that more work than necessary was needed to complete these work packages. This was tied to risk number 4 in the risk management plan and we acted accordingly. A decision was made to exclude these success criteria as we deemed them as not important. In hindsight these work packages could have been omitted from the project plan or clarified as extra work.

The project group is quite satisfied with both the outcome and the process. Other risk owners did not need to take any actions and the rest of the work packages were completed within the allotted time frame.

We evaluate our project as successful					
Scale	Strongly dissagree	Dissagree	Neither agree nor disagree	Agree	Strongly agree
Your response					X

3 Self-evaluation of the value to the learners and documentation

The following section will disclose the group's assessment of the project and its value created to the learners.

Based on the feedback gathered we evaluate the experience and learning to our target audience to be of eminent value. From the various responses of the participants we conclude that the overall product fulfills its purpose as stated in the project guidelines for the course.

3.1 Evaluation method

The different evaluation methods used to determine the product value to the learners (students) were:

- **Contact form**: The website implemented a working contact form that provided users the opportunity to send feedback directly. The form enabled the user to leave their names, email, phone number and their feedback message. The message is delivered to *praktisktest@hotmail.com* and the user receives a confirmation email stating that the message has been sent. An example of a feedback from the contact form is shown in the figure below.

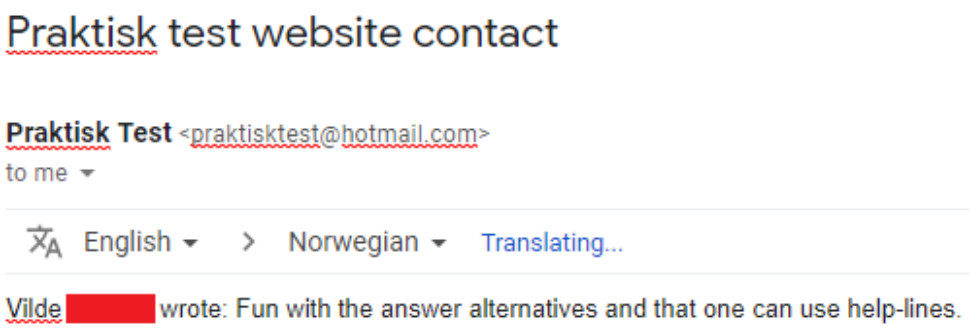

Figure 3: Example of feedback from the contact form.

- **Direct feedback**: Another source of data on the value created was gathered by surveying students in our class as well as students who took the class last year.

  These informants were selected with emphasis on individuals that have taken the course in earlier years as their feedback naturally holds more weight because they have a clearer overall picture on how they would want to improve the course if given the chance, and which tools could help benefit their learning experience. Intuitively, their opinions are of higher importance, especially in terms of professional and subject directed feedback.

9	25.10.2019	N/A	I think this is a very good idea, would love to have something similar within what I have studied earlier		
10	28.10.2019	N/A	I think the idea is good and the website is simple and clear.	I would have used this if the questions were exam relevant.	"Take Test" and "Select Quiz" buttons can be merged.
11	29.10.19	N/A	Creative idea and looks like a helpful tool.		Perhaps add an alarm reminder to take the quiz after class?

Figure 4: Example of direct feedback.

While former students provide an invaluable resource in terms of feedback, we also sought out people who were not connect to academia in order to assess our work from different perspectives. This proved to be very useful as we received feedback that addressed minor issues and improvements that we hadn't thought of or which didn't seem clear to us previously. There were also direct issues being addressed, for example that the 50/50 powerup was usable infinite times. For future work, we agree that we could flesh out more of the functions and concentrate on smaller enhancements that would improve the overall experience of the site like merging the "Take test" and "Select Quiz" buttons as one, like one interviewee pointed out.

We believe the finished product, the interactive learning website: The Highway to Success, has a significant impact on learning as it enables the future students taking the course to test their knowledge in short succession of the lectures on the subject held in class. By doing this, the students are reinforcing what has been just taught in an interactive and fun manner engages them personally. Repeating key points of the lectured material within minutes or hours the same day will have a tremendous impact on the student's performance on learning and remembering the curriculum. Additionally it creates value for learners by giving them a way to read summaries and providing acquiring knowledge from the book in a shortened and concise form.

Our product is of high quality and we recommend it to be used as learning aid in project management					
Scale	Strongly dissagree	Dissagree	Neither agree nor disagree	Agree	Strongly agree
Your response				X	

4 Factors that have contributed to failure / success

In this section the factors that contributed to success are evaluated. The success factors are divided into project management, process and project success factors. Although, the factors are somewhat coupled as, for example, management success greatly contributed to the project success.

A credible evaluation of whether the project is a success requires a lot of data on the achievement of the success criteria like user satisfaction, which is more accessible after releasing the product. However, a sample of user feedback on the website where gathered, as explained in Chapter 3. The feedback was positive which strengthens the assumption of project success.

4.1 Project Management Success

Success factors for project management success:

- Distribution of roles and responsibilities in the initiation phase
- Trello, a digital platform for assigning and following up tasks and work packages
- Risk assessment
- Early planning

One of the most significant success factors was the use of Trello. Trello made assigning tasks and following up progress easy after the weekly meetings. There is no excuse of not completing the tasks assigned as expected if it is written on a common website used by the team. The use of the digital collaboration platform further established clear roles and responsibilities which was one of the other important success factors. Clear roles and responsibilities is also listed in the book "The Road to Success" as an important success factor in the cases presented in the book[1]. A huge advantage of achieving this success factor is the reduced need of follow up by the project leader as well as creating a sense of ownership for the individual. This again makes working individually and flexibly easier, which is positive when team members have other ongoing projects.

Another success factor contributing to project management success, was the early start of the planning phase. Just after project assignment was posted, the group was formed and discussion on project outcome and product started. Once product and outcome was determined, roles and main responsibilities were distributed and team members could start working individually in and together in smaller groups early in the project lifespan. One of the activities performed in the initiation of the project was a risk assessment, which is another of the success factors experienced in this project. In this assessment "last ditch effort" were mentioned as a serious risk. The early planning and working with the projects was done as a measure to prevent this risk. As a result, the risk assessment together with

the measure of early planning is one of the important success factors contributing to the project success.

4.2 Process success

Success factors for process success:

- Project meeting each week
- Inclusive project manager
- Stakeholder involvement
- Continuity of project development
- Loyalty to decisions

When the process began we implemented weekly meetings so our project manager could do a check up on the individual work. At these meetings we created smaller work packages that everyone needed to complete until the next meeting. This contributed to a quick development of the web application.

The project manager also made sure to include himself in the tasks and worked closely with the technical team. This was a huge contribution to the success because the project manager could always see the progress of half of the team making him able to put pressure where needed.

An important lesson learned from the early chapters of Hussein's book is the involvement of stakeholders. We identified multiple stakeholders such as our professor, students taking the course and earlier students. We made sure to test our application on these stakeholders and used their feedback to improve and tweak the website so it could meet the specified requirements for this assignment.

A success factor that we did not maintain was loyalty to all our decisions. As mentioned earlier we cut out some of the work packages created in the planning phase due to a better understanding of the scope. This did create some confusion and reduced ownership for the members associated with these work packages, but with risk management we were able to reduce this impact by finding new tasks.

4.3 Project success

Success factors for project success:

- Sufficient resources
- Sufficient competency

- Communication with project owner

The availability of sufficient competency for web development was another important success factor. It was a key factor contributing to the completion of the product, and therefore a key factor to the project success. It would be difficult to achieve project success if the product was not completed in time since the project had a strict deadline. This success factor is similar to one listed in the book "The Road to Success" as an important success factor[1]. In the book expertly skilled project group is listed as a success factor experienced in one of the cases presented in the book.

Since we had decided to create a web based application it was very important that we had the correct competency in the group. Before we decided on what to create we took note of what background competence the group had. When we figured out that multiple people had previous experience with creating web pages we quickly began to steer the project in that direction.

As this project is part of an assignment we realized that it was extremely important to have a good communication with our professor, which is also the project owner. He set the expectations and criteria for the project and we had to make sure that we did not misinterpret anything. Even though we had a good communication throughout the process we managed to neglect the details for our report and had to rewrite a lot of parts when the report requirements were later shared.

5 Lessons learned

Since the group was comprised of students in the last year of their respective study programs, all the team members had decent experience with project and team work from earlier courses. Still, using the literature and material from TPK5100, one becomes more aware of the dynamics and factors that impacts a project. In this project, the most important lessons learned was:

- **Resource Planning**: In the early planning stages of the project, it was decided to split the group into two groups: a development team and a content creation team. There was several reasons for this choice, but most importantly it was done because the scope of the technological challenge in this project did not require 6 developers. In addition, some team members was more experienced with website development. This allowed the groups to become more specialized and have them utilize their skill set to greater effect. We recommend to identify your group members strengths and weaknesses, and use this knowledge before landing on a project idea and during execution.
- **Utilizing different project models**: During the project, the teams worked under a combination of a plan-driven and an adaptive model. The project plan illustrates the plan-driven approach, where clear milestones and deadlines are specified. The

adaptive model was implemented and updated weekly, granting the project team the needed flexibility during development. To facilitate this approach, we used a Kanban board which lists the issues that is currently being worked on - as well as future and completed tasks - and assigns these issues to a specific programmer. GitHub was used for source control and as the collaboration workspace. Furthermore, we used the typical workflow with branching and code reviews before new features got implemented, providing quality assurance and follow-up between the team members. If you decide to develop an app or need some kind of programming collaboration, we recommend looking into these tools.

- **The importance of involving stakeholders**: Because this project had clearly defined stakeholders, such as the project owner and the end-users, the importance of involving these parties was evident through the whole project life-cycle. In the initiation phase, we discussed different ideas internally, before landing on a concept we deemed to have a reasonable scope and complexity. Then this idea was discussed with the project owner, and with his feedback the idea matured and yielded both a purpose and a rationale. During the execution and control phase, including software development, we maintained the dialog with the project owner, keeping him informed of the progress and eventual deviations from the project plan. If the group was unsure, or disagreed internally, we discussed the problem with the project owner and resolved the issue. The end-users were more involved during the latter stages of the project, when the website was more finished and could be tested. Their feedback was valuable when determining if the product created value or if there were problems with the application that we had missed. Our experience suggest that the group should be conscious of when and how to involve the stakeholders.

- **The utility of project management tools**: Actively using the WBS to facilitate communication during meetings was of great use. When we realized that we had to reduce the scope, we used the WBS to quickly determine which work packages that was non-critical. This strategy was also in accordance with the deviation control assessed in the risk management plan. Our suggestion is to actively use these tools during the project.

References

[1] B. Hussein, *The Road to Success*. Fagbokforlaget, 2018.

[2] F. H. Bevreng, S. Theie, J. A. Olsen, W. A. Mangersnes, C. Nilsen, and O. M. Brokstad, "Tpk5100 - project plan," 2019.

[3] F. H. Bevreng, S. Theie, J. A. Olsen, W. A. Mangersnes, C. Nilsen, and O. M. Brokstad, "Highway to success." `http://praktisk.azurewebsites.net`, 2019.

Appendices

A Direct Feedback

		Hidden	COMMENTS				
No.	Date	Full Name	User Experience	Learning Value	Improvements	Issues	Other Comments
1	11.10.19	N/A	I liked the look of the website, the quiz boxes were a bit small. But overall it looks very	I think the website could be useful if it was worked on a bit more, if the questions were exam related I could see myself practicing on it.	I don't know which questions I got wrong or right.	The 50/50 powerup was bugged. I could use it many times.	I liked the website layout but there's some bugs and there is some places without any text.
2	15.10.2019	N/A					I would have used the website. It was clear and easy to navigate and worked well
3	16.10.2019	N/A					Yeah, it worked really well that
4	16.10.2019	N/A	It was interactive and easy to		The font for the chapter names could be larger	Sometimes the scaling of the different objects were suboptimal.	
5	19.10.2019	N/A	Good overview, easy to understand everything				
6	20.10.2019	N/A	You have made a really user-friendly website. I would have	There's lacking summaries in some of the chapters.	Is it understood that summaries is related to the book used for the course?		Perhaps drop refuting questions in a quiz?
7	21.10.2019	N/A	Fun with answer				
8	22.10.2019	N/A	Very nice website! Also on mobile!	The quiz itself seems good, not a huge fan of the pop-up style you chose but other than that it is functional and effective.	I am a bit confused in the beginning of what exactly is the website's focus as the first impression is a vague site		
9	25.10.2019	N/A	I think this is a very good idea, would love to have this				
10	28.10.2019	N/A	I think the idea is good and the nice	I would have used this	"Take Test" and "Select Quiz" could be one button		
11	29.10.2019	N/A	Creative idea and looks like		Perhaps add an alarm reminder		
12	29.10.2019	N/A	Looks good and professional	This could have been usefull in some of the classes i teach if it was avalable to modify to fit other classes.			Use bombined with Canvas/blackboard

Figure 5: Feedback with names hidden

TPK5100 - Project Plan

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1 Type of product

The product we are producing in this project is a website application to increase the learning outcome each student has from the lectures in TPK5100, Applied Project Management.This is done by helping the students repeat the learned knowledge from the lectures.

2 Expected learning outcome

The expected outcome of this project is that students taking the course TPK5100 Applied Project Management may learn more from the lectures and retain the information learned in class for later use.

This is accomplished by motivating the students to repeat the information that is taught in class, and enabling them to test their knowledge through fun and interactive questions and answers, with some game features.

The overall outcome of the project is:

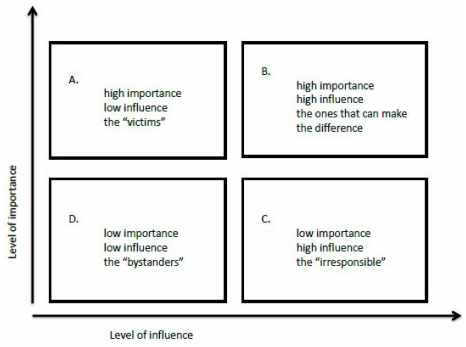
- Increase the number of students who review the given curriculum after lectures
- Encourage students to work evenly through the semester with the written curriculum
- Decrease the amount of students who cram for the exam at the end of the semester

To reach the desired project outcome, we propose to develop a web application that offers students several assisting services, such as:

- Series of questions for each lecture to test the students knowledge about the relevant information in that lecture
- Summary's from the lectures and chapters in the course
- Enable students to log their score for future use

3 Stakeholders; influence and importance

Several stakeholders are interested in the project.



Stakeholder matrix. Source: APMAS Knowledge Network

The future students taking *Practical project management* are the primary target group and would be categorized in the high importance, low influence group according to the stakeholder matrix figure. They are free to influence the outcome and direction of several aspects of the project but are ultimately left with little power.

The course lecturer is another obvious stakeholder that maintains a strong influential grip in how the development of the app is going to take shape, and in which directions. They will naturally hold a great amount of interest in the project too, making sure it is a reasonable and obtainable goal within the boundaries that were agreed upon. Just like a real project.

With a broader perspective on stakeholders, there will surely be an interest for older students that have taken the course before, perhaps due to different new life situations such as a new job position that requires particular knowledge or skill set from project management. The app can easily aid in refreshing knowledge for this group and will serve as a valuable tool.

Finally, the app's developers are the last obvious stakeholders that both hold a great amount of influence and power. Every member of the group has motivation on several levels regarding the outcome of the project and due to the group's size, every member possesses a great amount of power in controlling how the end result will be. That is time invested into the project, but also how proactive each member is. How well a team member partakes in the scheduled meetings and contributes to the project.

Risk Management Plan

Risk #	Risk	Impact	Initial risk rating	Risk treatment strategies		Residual risk
				Action	Risk owner and timeframe	
1	**Risk:** • Poor attendance **Source:** • Poor planning • Unmotivated workers	• Contributes to bad mood in the group • Setback in work schedule	**Consequence:** Medium **Likelihood:** High **Risk rating:** Critical	Not meeting at given time results in a warning. Less than 80% attendance results in more work under supervision from PM.	Project manager, full time period.	**Consequence:** Medium **Likelihood:** Low **Risk rating:** Marginal
2	**Risk:** • Last ditch efforts **Source:** • Unmotivated workers • Poor planning	• Poor result • Stressed workers	**Consequence:** Big **Likelihood:** High **Risk rating:** Critical	Internal due date 1 week before the normal due date. Set up weekly goals.	Project manager, full time period.	**Consequence:** Medium **Likelihood:** Medium **Risk rating:** Considerable
3	**Risk:** • Updating our application without contacting stakeholder **Source:** • Forgetfulnes • Overeagerness	• Misunderstanding the project requirements	**Consequence:** Big **Likelihood:** Low **Risk rating:** Considerable	Whenever new ideas are implemented or introduced that makes big changes, the stakeholder manager contacts project owner to keep the project on the right track.	Stakeholder manager, full time period.	**Consequence:** Medium **Likelihood:** Low **Risk rating:** Marginal

Risk Management Plan

Risk #	Risk	Impact	Initial risk rating	Risk treatment strategies		Residual risk
				Action	Risk owner and timeframe	
4	**Risk:** • Making the application too complex **Source:** • Overeagerness	• Scope may become too large for this project. • Time to complete project may become to much.	**Consequence:** Medium **Likelihood:** Low **Risk rating:** Marginal	Project manager initiates discussion before implementing suggestions.	Technical manager, full project period.	**Consequence:** Medium **Likelihood:** Low **Risk rating:** Marginal
5	**Risk:** • Resistance from team members **Source:** • Unmotivated team members • Project manager with iron fist	• Our product may suffer and recieve bad reviews by users.	**Consequence:** Medium **Likelihood:** Low **Risk rating:** Marginal	Project manager initiates discussions with the resisting members and makes sure they are heard.	Project manager, full project period.	**Consequence:** Low **Likelihood:** Low **Risk rating:** Marginal
6	**Risk:** • Communication and information flow **Source:** • Team members don't work closely from before.	• Expectations might get mixed. • Misunderstandings might happen. • Messages might not be recieved by the intended recipient.	**Consequence:** Medium **Likelihood:** Medium **Risk rating:** Considerable	The team meets once a week during exercise hours to discuss and work on the project.	Project manager, full project period.	**Consequence:** Medium **Likelihood:** Low **Risk rating:** Marginal

4 Skills

We can divide the skills that are essential to produce our project into two categories: The hard skills required to develop the website and the Work Breakdown Structure, as well as the soft skills required for properly managing the project. For the website and WBS, hard skills in the following computer tools are expected:

- Microsoft Visio (Computer Program)
- Microsoft Azure (Cloud Service Platform)
- HTML (Programming language)
- CSS (Programming language)
- Javascript (Programming language)
- Python (Programming language)
- C# (Programming language)
- Microsoft SQL Server (system software)
- Microsoft Visual Studio (Computer Program)
- Microsoft Visual Studio Code (Computer Program)

The soft skills include but are not limited to: Leadership, communication, scheduling, critical thinking, decision-making, teamwork, creativity and time management.

For the hard skills we will delegate responsibilities to tools for different team members following their competence level and ambitions. This ensures that every team member can use previously learned knowledge and gain new knowledge if desired. The soft skills will hopefully improve throughout the project from participating in lectures, reading learning materials and delivering assignments.

5 Work Breakdown Structure & Project Schedule

The Project is divided into individual controllable tasks colored blue in figure 1. The tasks are distributed under bigger deliveries colored in light blue. These deliveries are distributed under the corresponding project phases colored in orange.

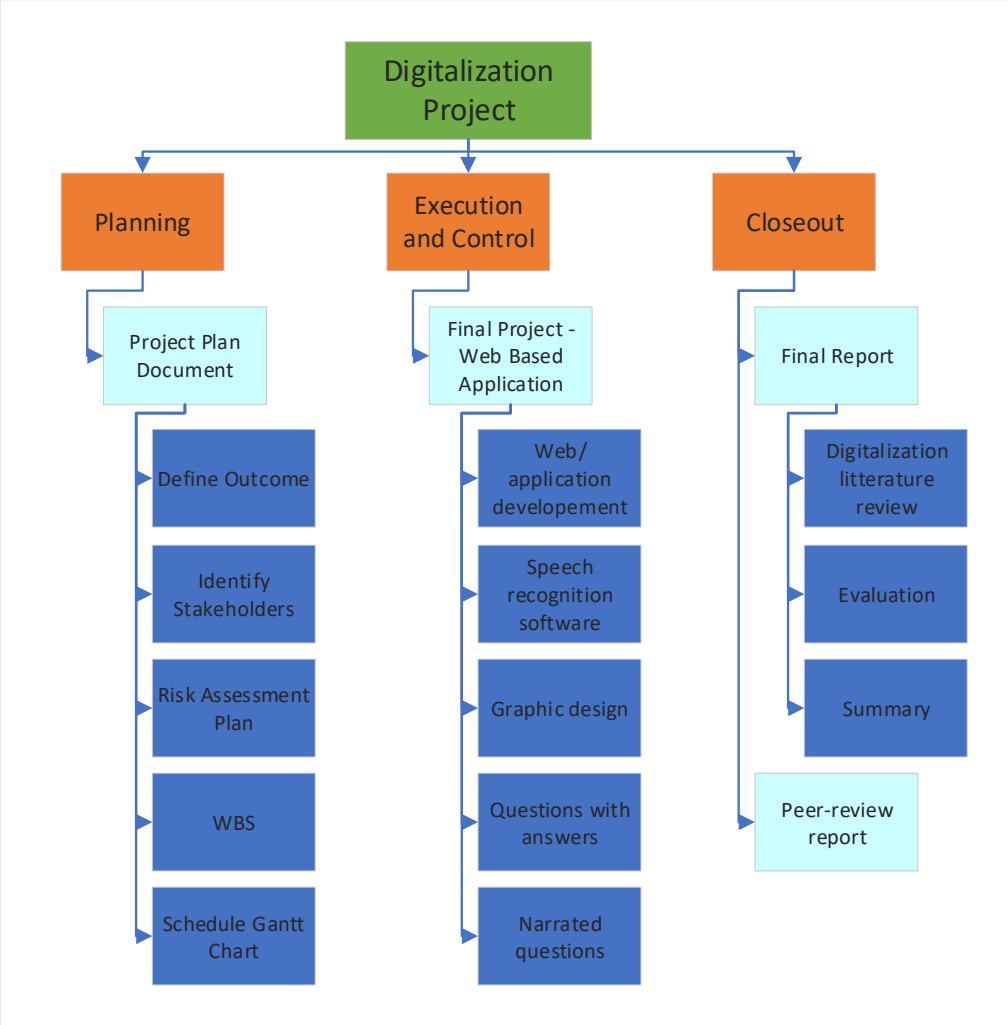
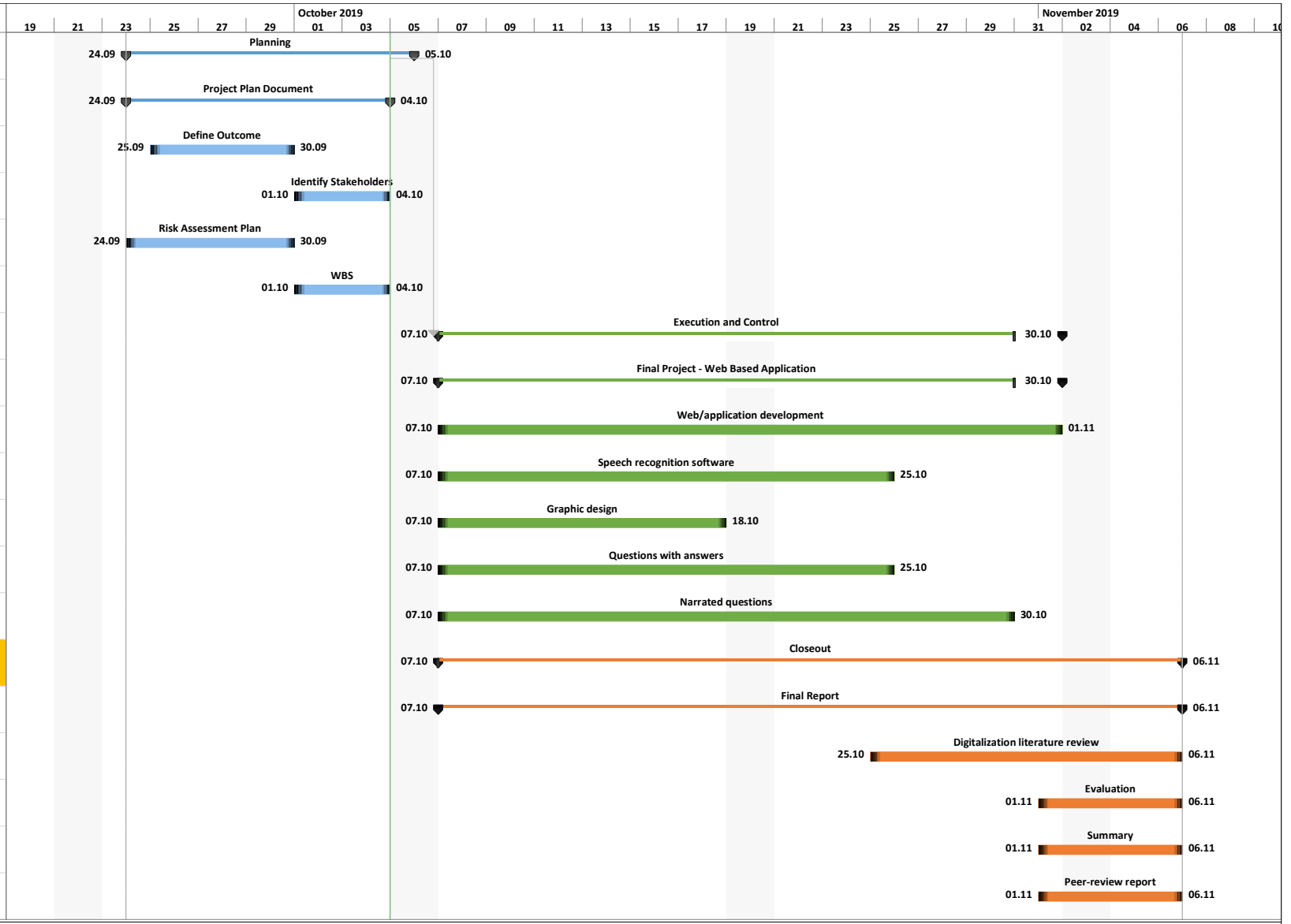


Figure 1: Project Work Breakdown Structure.

ID	Task Mode	Task Name	Duration
1		Planning	10 days
2		Project Plan Document	9 days?
3		Define Outcome	4 days
4		Identify Stakeholders	4 days?
5		Risk Assessment Plan	5 days
6		WBS	4 days?
7		Execution and Control	18 days
8		Final Project - Web Based Application	18 days
9		Web/application development	20 days?
10		Speech recognition software	15 days?
11		Graphic design	10 days?
12		Questions with answers	15 days
13		Narrated questions	18 days
14		Closeout	23 days
15		Final Report	23 days?
16		Digitalization literature review	9 days?
17		Evaluation	4 days?
18		Summary	4 days?
19		Peer-review report	4 days?



Project: Web Based Application
Date: Sat 05.10.19

Task	Inactive Milestone	Start-only	Path Driving Predecessor Summary Task
Split	Inactive Summary	Finish-only	Path Driving Predecessor Normal Task
Milestone	Manual Task	External Tasks	Progress
Summary	Duration-only	External Milestone	Manual Progress
Project Summary	Manual Summary Rollup	Deadline	
Inactive Task	Manual Summary	Path Driving Predecessor Milestone Task	

6 Success factors

Most of the success factors for this project is related to organizational complexity, restrictions and uncertainty due to the nature of the task. The team consists of members from various fields of study and backgrounds, and we therefore need to reduce chance of assumptions and conflicts. We have also decided that our project requires a certain level of technical skills and the project manager must therefore be careful to properly utilize and follow up key members with the correct expertise. A list of success factors follows:

- An effective communication channel
- Clear and realistic objective
- Clear roles and responsibilities
- Careful risk management
- Establishment of a project leadership
- Make sure all team members elicits commitment and gains a level of ownership
- An agreed upon process for conflict resolution
- Goals agreed upon by all members and a clear view of the scope
- Distributing internal expertise
- Establish a good relationship within the team
- Stakeholder involvement
- Flexibility (ability to address problems as they arise)
- Trust within the team

7 Characteristics of a Digitalization Project

Digitalization projects are very similar to restructuring projects in the way that the main goal is to change how people operate or re-structure work processes. However, in a Digitalization project the deliverables are more concrete because this must be driven by some technological transition - such as acquisition or development of new IT solutions. The deliverable is a tangible asset and the change is the main outcome [1]. According to the Gartner IT glossary[1], digitalization is defined as such:

"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" [2]

In other words, digitilization must produce value - it must deliver something useful for the project owner. Sometimes the project owner's interest aligns with that of the end-users, which could be customers or employees (or students, as in this project). In a typical digitalization project there is a wide array of stakeholders, which can lead to the interests being divided. This could in turn be a contributing factor to project failure, because major stakeholders holds differing views as to what constitutes project success. [3]

Another key feature often seen in digitalization projects is the agile work process, especially during a software development stage. Because of the inherent uncertainties in such a project, it is almost infeasible to imagine the waterfall approach working out. Instead, the *fail early, fail often* mantra is adapted, re-calibrating the course forward as new challenges emerge. This key concept maintains the project teams flexibility, but requires close follow-up and involvement of the stakeholders throughout all project phases. [1]

Even though the main driver in the project is the technical transition, experience have shown that soft factors, or more specifically human factors, are imperative in ensuring project success. Because of the organizational complexity, namely the diversity of the stakeholders, getting management and workers to collaborate can become a challenge. The adaption, from the human point of view, can cause internal growth pains because people are reluctant to change. In this project we do not believe that these soft factors are so important; Because our solution offers **extra** learning assistance, people should not have to change their current learning habits in order to use it.

[1] www.gartner.com

References

[1] B. Hussein, *The Road to Success*. Fagbokforlaget, 2018.

[2] J. Bloomberg, "Digitization, digitalization, and digital transformation: Confuse them at your peril," 2018.

[3] F. Hartman and R. A. Ashrafi, "Project management in the information systems and information technologies industries," *Project Management Journal*, 2002.

TPK5100
Digitalization Project - Peer-review evaluation Report

November 2019

Kunnskap for en bedre verden

Norges teknisk-naturvitenskapelige universitet

Preface

Group number: 27
Student names and numbers:

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2. Simen Theie Havenstrøm - 501793
3. Fredrik Hoel Bevreng - 501787
4. Ole Martin Brokstad - 501789
5. Wilhelm André Mangersnes - 758252
6. Casper Nilsen - 501786

1 A) Evaluation

A) Based on your evaluation (as a group) please indicate the strengths and weaknesses of the final product.

Strengths

- Looks professional and excellent video quality
- Good learning aid for blind and visually impaired.
- A lot of information.
- A detailed presentation of the case.
- Many different shots and good video transitions from clip to clip

The video created by group 25 tries to illustrate for the viewer how soft factors influenced the Ivar Aasen oil drilling project. They have managed to create a Youtube video that is visually stunning and gives us a documentary feeling. The audio quality is also high which helps.

This is a great way to introduce the concept to people with visual impairments. Any written case that is recorded is great for those who can not read.

The video presents the case detailed orally. This is good if the learner want to attain a deeper understanding of this case and its learning outcome, without reading.

Weaknesses

- The video contained a lot of typos, it should have been proof-read more thoroughly.
- There were no subtitles, which could've been useful.
- A significant part of the video is the sound. The pronunciation could have been better.
- There are no references to the source material from which the script is based on.
- The idea can arguably be called unoriginal.
- The narrator should speak louder and clearer or use better recording equipment suited for the task.

The video looks very professional, but a part of the impression one obtains is ruined by the amount of typos in the credits and the text that covers the video footage from Aker BP. This should have been double checked before uploading the video.

It is sometimes hard to follow the narrator, which is not a native English speaker. Because of this, it would have been useful to include the script as subtitles. It could also help to add the sources for the script material, such that interested students could look up further information about this project.

2 B) Support

The product we reviewed is of high quality and we recommend it to be used as learning aid in project management					
Scale	Strongly dissagree	Dissagree	Neither agree nor disagree	Agree	Strongly agree
Your response			X		

3 C) Grade

On a scale from 0 to 10: 7
Recommended grade: C/B